June 10, 2019

VIA ELECTRONIC FILING

Adam J. Teitzman
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, Florida 32399-0850

Re: Docket Nos. 20190015-EG, 20190016-EG, 20190018-EG, 20190019-EG, 20190020, 20190021-EG- Commission Review of Numeric Conservation Goals

Dear Mr. Teitzman,

On behalf of Intervenors Southern Alliance for Clean Energy, I have enclosed the testimony and exhibits of Jim Grevatt. Please file these documents in Docket Nos. 20190015-EG, 20190016-EG, 20190018-EG, 20190019-EG, 20190020, 20190021-EG. Please contact me if there are any questions regarding this filing.

Sincerely,
/s/ Bradley Marshall

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy and correct copy of the foregoing was served on this 10th day of June, 2019, via electronic mail on:

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DATED this 10th day of June, 2019.

/s/ Bradley Marshall
Attorney

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Commission Review of Numeric Conservation Goals Florida Power & Light Company	)	DOCKET NO. 20190015-EG
In re: Commission Review of Numeric Conservation Goals Gulf Power Company	)	DOCKET NO. 20190016-EG
In re: Commission Review of Numeric Conservation Goals Duke Energy Florida, LLC	)	DOCKET NO. 20190018-EG
In re: Commission Review of Numeric Conservation Goals Orlando Utilities Commission	)	DOCKET NO. 20190019-EG
In re: Commission Review of Numeric Conservation Goals JEA	)	DOCKET NO. 20190020-EG
In re: Commission Review of Numeric Conservation Goals Tampa Electric Company	)	DOCKET NO. 20190021-EG

TESTIMONY OF JIM GREVATT
ON BEHALF OF
SOUTHERN ALLIANCE FOR CLEAN ENERGY

June 10, 2019

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, title and employer.

A. My name is Jim Grevatt. I am a Managing Consultant at Energy Futures Group, located at 10298 Route 116, Hinesburg, VT 05461.

Q. Please describe Energy Futures Group.

A. Energy Futures Group ("EFG") is an energy efficiency consulting firm established in 2010. EFG specializes in the design, implementation, and evaluation of energy efficiency, demand response, renewable energy and other distributed energy programs and policies. EFG has worked on behalf of utilities and other energy efficiency program administrators, public utility commissions, other government agencies, and environmental, low-income, and affordable housing advocacy organizations in 36 states, seven Canadian provinces, and several countries in Europe. EFG's recent work has included serving as advisors on the development of efficiency program portfolios and policies in eight of the ten highest-ranking states in the American Council for an Energy-Efficient Economy's ("ACEEE") 2018 State Energy Efficiency Scorecard.[1] In addition, EFG has authored or co-authored reports on lessons learned from leading residential retrofit programs in North America and Europe; the key pitfalls that can be encountered in performing energy efficiency potential studies; emerging practices in the use of energy efficiency to defer or entirely avoid electric transmission and distribution upgrades; a regional residential lighting strategy for the Northeast; the effectiveness of leading efficiency financing initiatives; and a national best practices manual for cost-effectiveness analysis of efficiency resources.[2]

Q. Please summarize your professional and educational experience.

A. I have worked in the energy efficiency industry since 1991 in a wide variety of roles. Prior to joining EFG, I served as the Director of Residential Energy Services at Efficiency Vermont and the District of Columbia Sustainable Energy Utility. I also served as the Manager of Energy Services at Vermont Gas Systems, managing both residential and commercial energy efficiency programs. I have extensive hands-on experience conducting hundreds of energy audits for Vermont's Low-Income Weatherization Assistance Program and Vermont Gas Systems' demand side management (DSM) programs.

In my current role as Managing Consultant at EFG, I have advised regulators, utilities and other energy efficiency program administrators, environmental organizations, and low-income and affordable housing advocates in numerous states, including Missouri, Mississippi, Maryland, North Carolina, Pennsylvania, Delaware, Virginia, New Jersey, Illinois, California, Vermont, Maine, Colorado, New Mexico, Nevada, Iowa, and New Hampshire, as well as British Columbia. I use my in-depth knowledge of energy efficiency program operations and management, and my experience in strategic planning, to help ensure that programs achieve their desired market impacts. I received a B.F.A. from the University of Illinois. My resume, attached as Exhibit JMG-1, provides additional detail regarding my professional and educational experience.

Q: Have you previously testified before the Florida Public Service Commission?

A: No, I have not.

Q: Have you previously testified before other similar state regulatory bodies?

A: Yes, I have provided expert witness testimony before utility commissions in North Carolina, Colorado, Nevada, Kentucky, Iowa, and British Columbia, and have authored public comments on behalf of clients in multiple proceedings in Pennsylvania. I have also appeared numerous times before the Maryland Public Service Commission.

II. TESTIMONY SUMMARY

Q: What is the purpose of your testimony?

A: My testimony assesses the reasonableness of the energy efficiency savings goals proposed in this proceeding by the Florida utilities. My testimony focuses most heavily on the goals proposed by Florida Power & Light Company (FPL). However, because I address policy issues related to goal setting, as well as generic concerns regarding the methodology used to develop the efficiency potential study upon which all the utilities' goals are based, my testimony also addresses the goals of Duke Energy Florida, LLC, Gulf Power Company, Tampa Electric Company, JEA, and Orlando Utilities Commission.

Q: Please summarize the conclusion you have reached with regard to the utilities' proposed savings goals.

A: The utilities' proposed savings goals are unreasonably low. Specifically, the utilities' proposals would leave enormous amounts of cost-effectively achievable energy savings potential untapped. That may require them to invest in more expensive supply options, saddling their customers with higher electricity bills as a result.

Q: What is your basis for that conclusion?

A: There are two primary reasons I conclude that the utilities' proposed goals are unreasonably low:

1. Misguided reliance on the Ratepayer Impact Measure (RIM) test.

The utilities argue that the RIM test is the appropriate cost-effectiveness test for determining what efficiency measures to promote. However, the RIM test is not actually a test of cost-effectiveness. Rather, it is a test of a measure's or program's potential to cut into utility profits (i.e., lost revenue), which would only effect rates if it caused utilities to seek regulatory approval to increase rates to remain just as profitable as without the efficiency programs. Therefore, it is really just a test of whether rates, and thus bills, could go up for non-participants if a utility goes below the lower bound on their allowed return on equity and increases rates through a rate case, because participants will see bills go down even if rates increase. And, even as such a test, it is not particularly useful. That is why no other state in the country relies on the RIM test as the sole or even primary determinant of whether an efficiency measure or program merits utility investment. It is also why the RIM test is not applied to supply-side investments; if it were, many supply-side investments, such as new power plants and capacity upgrades to substations, would be routinely rejected.

That is not to say that potential rate impacts should not be a consideration in determining the level and pace of cost-effective efficiency investments. They just should not be the only factor considered. Instead, as discussed in the National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency

Resources, regulators should consider trade-offs between bill savings, participation levels, and rate impacts. For example, basing FPL's efficiency savings goals on the amount of savings the Company estimates to be cost-effectively achievable under the Total Resource Cost (TRC) test, instead of no efficiency measures (only demand response measures passed the RIM test), would increase rates by only five thousandths of a penny per kWh ($0.00005/kWh), but would reduce the cumulative net present value of revenue requirements (CPVRR) by over $100 million. Simply dismissing the opportunity to provide such benefits to customers on the basis of an almost imperceptible rate increase does not seem reasonable.

2. Reliance on a fundamentally flawed efficiency potential study.

The efficiency potential study significantly understates the level of energy efficiency savings that can be achieved cost-effectively under the TRC test. First, and probably most importantly, it screens out all measures that have less than a two-year payback on the grounds that is necessary to exclude free riders. That alone cuts the estimate of achievable potential roughly in half. However, the potential study had already excluded all naturally occurring savings – the savings that would be associated with free riders – before it applied the two-year payback screen. Doing this means that presumed free riders were effectively removed from the estimate of savings potential twice, thus the two-year screen inappropriately removed only non-free rider savings potential.

The potential study also artificially and arbitrarily assumed that financial incentives for efficiency measures could not be greater than the level at which the "payback" would be bought down to two years. Again, the rationale was to limit free ridership

based on the assumption that customers facing paybacks of two years or less would all invest in such measures. However, there is no empirical or analytical basis for that assumption. In fact, as discussed further in Section IV of my testimony, the utilities' own analyses suggest that limiting financial incentives to a two-year payback would dramatically reduce the number of customers who would participate in programs – directly contradicting the stated basis underlying the assumption.

Other conservatisms built into the potential study include the omission of early retirement measures; some unreasonably high assumptions regarding non-incentive costs; and various other measure-specific concerns. I discuss all of these concerns in greater detail in the following sections of my testimony.

Q: Given these concerns, what would you recommend the utilities' savings goals be?

A: I recommend that the utilities' savings goals be based on the amount of savings that would be cost-effectively achievable under a properly applied TRC test – i.e. one that corrected for all of the problems with the potential study that I have discussed. Unfortunately, those problems are so numerous and complex that the utilities' studies cannot be readily modified to produce appropriate goals. Thus, I recommend that the PSC examine the magnitude of the problems with the potential study, in conjunction with an examination of the actual achievements of leading southern utilities such as Duke Energy Carolinas – which achieved savings equal to 1.67% of annual sales to customers eligible to participate in its programs in 2018 – and Entergy Arkansas – which achieved savings equal to 1.44% of sales to eligible customers in 2018.

III. PROBLEMS WITH PRIMARY RELIANCE ON THE RIM TEST

1. The RIM test is not a cost-effectiveness test.

Q: Please describe the RIM test.

A: The RIM test compares (1) utility system benefits (avoided energy costs, avoided T&Dtrm costs, avoided capacity costs, etc.) to (2) the sum of (A) utility system costs (efficiency program costs) plus (B) lost revenues. It is only a test of whether rates will go up if the utility seeks and receives rate adjustments necessary to maintain the level of profits it would have earned absent the efficiency programs. It is not a test of cost-effectiveness.

Q: Why is it not a test of cost-effectiveness?

A: Because it doesn't just assess changes in costs. A cost is an expense or sacrifice incurred to produce an object, service, or outcome. Efficiency program spending is a cost. However, lost revenues, which are central to the RIM test and typically dominate the so-called "cost" portion of the RIM benefit-cost test equation, are not actually a cost.

Q: Why are lost revenues not a cost?

A: Lost revenues can occur when efficiency programs cause total electricity sales to decline, requiring the recovery of both a utility's fixed costs (e.g. the CEO's salary, the cost of trucks and repair crews, etc.) and its past, sunk costs (e.g. a power plant built in the past for which costs – along with a rate of return to provide profits for a utility's shareholders – are still being recovered) to be spread over a smaller volume of sales. No new costs are incurred. The utility still needs to recover the same

amount of money that has been approved by regulators for its fixed costs. But because the same amount of money needs to be recovered over a smaller volume of sales, rates may need to be increased.

Q: Isn't it important to understand the rate impacts of efficiency programs?

A: Yes. But rate impact assessment is different from cost-effectiveness assessment. When faced with a choice between an electric bill for 1000 kWh at $0.10/kWh ($100 total) or a bill for 800 kWh at $0.11/kWh ($88 total), customers will be better off to choose the latter because it will cost them less even though the rate is higher.

The real issue with rate impacts caused by efficiency programs is that not every customer will see their bill go down; while efficiency program portfolios can be designed to be broad and diverse enough so that all customers have the opportunity to participate, not every customer will choose to take advantage of those opportunities and participate. Thus, concerns about possible rate impacts driven by lost revenues are really concerns about non-participants. Put another way, the RIM test is really a test of impact on those customers who choose not to participate in an efficiency program.

Q: Does the RIM test have value as a test of impact on non-participants?

A: It has some value, but even as a test of impact on non-participants it is not particularly helpful on its own. For one thing, a RIM benefit-cost ratio does not tell you by how much rates will go up or down. Further, it doesn't tell you how many customers would be adversely affected, particularly over a multi-year period. Nor does it tell you which customers would be adversely affected. Finally, it doesn't tell you

anything about the benefits you would be forgoing if you allow concerns about non-participants to determine all investment decisions.

Q: Why do those things matter? Why isn't it reasonable to strictly adhere to RIM test results and eliminate efficiency programs that produce any rate impacts and therefore any amount of impact on those who choose not to participate?

A: Conceptually, it is never a good idea to pursue an investment when its benefits do not exceed its costs, however any economic analysis must monetize all costs and benefits if it is to be used dispositively. One can point to examples in which regulators approve investments that nominally increase costs on the basis of benefits that are understood, but that are not precisely valued. For example, regulators regularly approve upgrades to the distribution system in order to improve reliability. Similarly, as discussed in Mr. Wright's testimony, regulators in some states approve low income efficiency programs even when they do not pass the TRC or other cost-effectiveness tests. However, in both of those examples the underlying rationales for approval are still that benefits exceed costs. In the example of distribution system investments, regulators are making a judgment that increased reliability – a benefit – is worth the cost. In the low income efficiency program example, regulators are making a judgment that the equity benefits of serving low income customers and/or other unquantified or unmonetized benefits (e.g. reduced utility credit and collection costs, health, and safety benefits, etc.) are worth the cost. Put simply, regulators are still adhering to the principle that benefits must exceed costs. It is just that some benefits have not been monetized so that they fit easily into a cost-effectiveness test, and regulators are using their informed judgment to compensate for that.

In contrast, there is no conceptual reason to always reject any and all investments that may increase rates and/or that may result in inequities between different customers. While those outcomes may in isolation (i.e. all other things being equal) be undesirable, they are often accompanied by other outcomes that are highly desirable, requiring regulatory consideration of trade-offs. Indeed, regulators approve rate increases and make decisions in other proceedings regularly that create some level of inequity between different customers. That can happen as a result of approvals of supply-side investments that increase rates (which I discuss further below), as a function of rate design decisions,[3] and probably in other ways as well. Regulators approve such investments when they conclude that the benefits associated with the investments are substantial enough to outweigh equity concerns.

Put another way, regulators routinely – either explicitly or implicitly – consider trade-offs between rate impact and/or equity concerns on the one hand, and benefits to the system as a whole or to customers as a whole on the other. That same consideration of trade-offs should apply to consideration of which energy efficiency program investments to support as well.

2. The RIM test is not applied to supply-side investments.

Q: Is the RIM test typically applied to supply-side investments?

A: No, not in my experience.

Q: What would happen if it was?

A: Many proposed supply side investments would fail. Put simply, because the RIM test is a test of whether rates may go up, any supply-side investment that would raise

rates, all other things being equal, would fail the RIM test.

Q: On p. 39, lines 18-23 of his testimony, FPL witness Whitley states the following: "Because all customers on FPL's system are served by the Supply option if that option is chosen, all customers are 'participants' in the selected Supply option. Electric rates and bills for all customers move in the same 'direction', either up or down from year-to-year compared to another Supply option that could be selected. Therefore, there is no subsidization of one group of customers by another group."
Do you agree?

A: No. I disagree with both the notion that all customers are "participants" when a supply investment is made and – more importantly – the assertion that there is no subsidization of one group of customers by another group when supply-side investments are made.

Q: Why do you disagree?

A: Consider supply-side investments that are made solely to address growing demand – either at the system-level (e.g. a new power plant) or at the local level (e.g. a substation capacity upgrade). By definition, the need for those supply-side investments is driven solely by new customers who are adding load to the system and/or existing customers whose demands are growing. If we are making an analogy to efficiency programs, they are the only "participants" in the supply-side investment. The new power plant and/or the new substation is being built to meet their needs, not the needs of customers whose demand is not growing. It is hard to understand how existing customers whose demand has remained unchanged or even declined could be

characterized as "participants" in a substation capacity upgrade driven entirely by other customers' peak demands.

More importantly, the costs of the new power plant and/or the substation capacity upgrade in this scenario will not be borne solely by the customers whose new demand or growing demand created the need for the supply-side investments. Instead, to the extent that these costs are recovered through rates, they will be borne by all customers, including those existing customers whose demand did not grow. In the case of a substation (or other distribution system) capacity upgrade, customers who are not even served by the substation being upgraded will pay some (if not most) of the cost. That is the very definition of cross-subsidization.

Q: Are you suggesting that there is a problem with how the costs of supply-side investments are allocated?

A: I am not offering an opinion on that subject. I am simply making the point that there may not only be rate increases, but also cross-subsidization between different customers when supply-side investments are made. Thus, strict adherence to the RIM test in order to eliminate any rate impact and any cross-subsidization between customers is imposing a very different "screen" on efficiency program investment decisions than regulators impose on supply-side investment decisions – even though efficiency programs can be a lower cost alternative to some of those supply-side investments. In supply-side proceedings, not using the RIM test requires regulators to appropriately apply their judgment in assessing benefits, whereas the use of the RIM test in energy efficiency proceedings falsely implies that such judgment is not required.

3. Reliance on RIM test means rejecting hundreds of millions of dollars of bill savings.

Q: What are the implications of adopting the RIM test as the basis for determining whether an efficiency measure or program is promoted?

A: The short answer is that rejecting all efficiency measures that fail the RIM test will result in total electric bills for the state that are hundreds of millions of dollars higher than they could have been.

Q: What is the basis for that statement?

A: As Table 1 shows, the cumulative present value of revenue requirements (CPVRR) for FPL's TRC plan was $104 million lower than the CPVRR for the RIM plan it has proposed instead. And that is just for FPL. Also, it is a very conservative estimate of the amount of bill reductions that could be achieved because of numerous problems with FPL's analysis of achievable TRC potential which I discuss in the next section of my testimony.

Q: What would be the trade-off in terms of rate impact for adopting the FPL TRC plan (instead of its proposed RIM Plan) and achieving that $104 million in CPVRR savings?

A: As Table 1 shows, the trade-off, also based on FPL analyses, would be an average increase in electric rates of about five thousandths of a penny per kWh (or less than a 0.06% increase) – if the utility sought and received approval for rate adjustments necessary to keep its profits at the same level as without efficiency programs.

Table 1: Bill Savings and Rate Impacts of FPL TRC Plan (vs. RIM Plan)[4]

	CPVRR		Levelized Rate		
Plan	(millions $)	Difference from RIM Plan (millions $)	($/kWh)	Difference from RIM Plan ($/kWh)	Difference from RIM Plan (percent)
TRC	$52,924	-$104	0.096332	$0.000054	0.056%
RIM	$53,028	$0	0.096278	$0.000000	0.000%

4. No other state relies on RIM to screen out efficiency measure or programs.

Q: Are you aware of any other state that relies on the RIM test to screen efficiency measures or programs out of demand-side management (DSM) portfolios?

A: No. A number of jurisdictions consider the results of the RIM test along with the results of a variety of other tests when determining which efficiency programs to support. However, to my knowledge, no other state in the country relies on the RIM test as the sole or even primary determinant of whether individual efficiency measures or programs merit utility investment. Indeed, in 2012 the American Council for an Energy Efficient Economy published a report that showed that only one of the 41 states that relied upon one cost-effectiveness test as its "primary" test– Virginia – used RIM[5] as the primary test, and in 2018 the Virginia General Assembly passed legislation rejecting that practice.[6]

To my knowledge, there are only three notable changes with regard to the use of the RIM test since that report was published. First, in 2014, Florida shifted to relying on RIM as its primary test.[7] Second, as noted above, Virginia no longer relies on RIM as its primary cost-effectiveness test. Instead, the state currently supports any efficiency program that passes three of the following four tests: RIM, TRC, Utility Cost Test

(UCT) and Participant Cost Test (PCT).[8] Third, the state of Iowa partially applies RIM at the total portfolio level, which is notably different from the Florida utilities' proposed approach of using RIM to screen out individual efficiency measures and programs. Efficiency measures and programs that fail the RIM test are included in DSM portfolios to the extent that demand response programs that pass RIM provide enough downward pressure on rates to offset the upward pressure on rates associated with the efficiency programs. Even under this constraint MidAmerican Energy proposed an annual utility energy efficiency investment of roughly $165 million between 2019-2023.[9]

IV. PROBLEMS WITH THE FLORIDA POTENTIAL STUDIES

1. Measures with paybacks of less than two years were inappropriately excluded.

Q: How did the Florida utilities treat efficiency measures with a payback of less than two years in their assessments of efficiency potential?

A: All such measures were removed from estimates of efficiency potential.[10]

Q: What is the rationale put forward by the Florida utilities for excluding all efficiency measures with a payback of less than two years from their efficiency potential studies?

A: The utilities suggest that this exclusion is necessary and appropriate to "minimize the impact of 'free riders.'"[11] The underlying rationale is explained by FPL witness Koch:

> "It simply recognizes that rational customers will act in their own economic interest and take measures to reduce energy consumption, if it is sufficiently attractive economically for them to do so without a utility incentive payment. It is also an example of a free market economy working as it should – rational economic decisions being made in one's best interest without government intervention through mandates or provision of incentives."

Q: Do you find that argument to be persuasive?

A: No. There are several major problems with the argument:

1. The utilities have provided no empirical evidence or data to support the notion that all efficiency measures with a payback of less than two years are or would be routinely purchased or installed by customers in the absence of utility programs.
2. The argument that customers would adopt measures with short paybacks because it is economically rational ignores the underlying premise for utility sponsored efficiency programs: that market barriers often preclude customers from investing in efficiency measures that are cost-effective.
3. Even in cases in which there are no non-financial market barriers, some customers will not buy measures with two-year paybacks because they are even more short-term focused than that. Low income customers are good examples. This is discussed further in Mr. Wright's testimony.

4. The utilities' own analyses of achievable potential – in which they assume that significant portions of potential for measures with initial paybacks of longer than two years would not be captured if financial incentives for such measures were limited to

reducing paybacks to two years – directly contradicts the premise that all or most customers would invest in measures with paybacks that short.

5. In developing estimates of technical potential – the foundation for both economic and achievable potential – Nexant already accounted for naturally-occurring efficiency. Thus, the potential effects of free ridership were already excluded from the estimates of savings potential before the application of the two-year payback screen. Thus, the two-year payback screen is a redundant adjustment for free riders that artificially makes cost-effective efficiency potential appear to be lower than it really is.

Q: How does the application of a two-year payback screen to eliminate efficiency measures from estimates of economic and achievable potential ignore the underlying premise for utility-funded efficiency programs?

A: The underlying premise for utility-funded efficiency programs is that such programs are necessary to address market barriers to customer adoption of cost-effective efficiency resources. Those market barriers can take many forms, including many non-financial forms. Key examples of market barriers that can stop customers from investing in measures, even those with short payback periods, include:

- Lack of awareness of a DSM measure;
- Lack of awareness of potential savings benefits – both of customers who would buy or install measures and sometimes of sales staff for retailers, contractors, or other vendors selling products;
- Concern with service or product degradation;
- Availability of a DSM measure;
- Past experiences with DSM measures;
- Competing demands for available financial resources;

- Split incentives – between the entity or individuals that must pay for a measure and the entity or individuals that would receive the benefits (e.g. between landlords and tenants and between builders and home-buyers); and
- Limited or inadequate technical expertise of trade allies (e.g. HVAC contractors, new construction design professionals, builders).[12]

Q: Are there data to support the notion that the combination of market barriers faced by consumers leads to less than universal purchase and installation of measures with paybacks of up to two years?

A: Yes. First, one can look at market shares for efficient products that the utilities removed from their estimates of efficiency potential because of their short paybacks. Consider, for example, Energy Star commercial griddles and Energy Star computer servers. Both measures were removed from FPL's TRC analysis because of the two-year payback screen,[13] but both have national market shares of under 20%.[14]

Q: Can you provide examples of how the utilities' own analyses of achievable potential directly contradict the premise that all or most customers would invest in measures with paybacks of two years or less?

A: Consider the two-speed pool pump measure. This measure passed the TRC test for FPL and had an estimated payback without any efficiency program incentives of 3.5 years. Because FPL (and the other utilities) assume that financial incentives for measures cannot buy the customer payback to less than two years, the Company assumed that its program rebates could only cover 43% of the measure cost and that the remaining 57% of the incremental cost of the measure would need to be borne by its customers. Under that assumed constraint, the Company estimated that an

efficiency program promoting this measure could only acquire 4% of the savings potential because the out-of-pocket cost to customers would still be relatively high.[15] Put another way, FPL has estimated that even with the cost bought down to a two-year payback, 96% of its customers would not buy the measure! That obviously and fundamentally contradicts the notion that the vast majority of customers considering efficiency measures with two-year paybacks would buy such measures and therefore be free riders in any utility programs promoting such measures.

Q: How did Nexant exclude naturally-occurring efficiency from its estimates of technical potential?

A: Nexant makes clear that it excluded two forms of naturally-occurring efficiency from its estimates of technical potential in section 5.1.1 of its potential study report:

1. savings that will materialize in the future as a result of government codes and standards; and
2. additional savings that will materialize in the future because some customers will buy products more efficient than required by such minimum standards without utility-funded efficiency programs – what Nexant calls "baseline measure adoption."

As Nexant put it, the result is an estimate of "net penetration rates" (emphasis added) which represents "the difference between the anticipated adoption of efficiency measures as a result of DSM efforts and the 'business as usual' adoption rates absent DSM intervention." This was accomplished by:

> "…discuss[ing] the assumptions included in the base sales forecast with the [utility's] load forecasting group to determine the assumptions on naturally-occurring efficiency adoption, as well as using utility-specific and regional data on current levels of efficiency adoption that were

included in the applicability factors applied to each measure."[16]

Q: How does the fact that Nexant excluded naturally-occurring efficiency from its estimates of technical potential make the application of the two-year payback screen when estimating economic potential "redundant" as a mechanism for removing free riders?

A: By definition, free riders are efficiency program participants that would have installed promoted measures without the program. Again, by definition, the savings from such potential free ridership are included in Nexant's estimate of naturally-occurring efficiency (baseline measure adoption) which Nexant excluded from its estimates of technical potential. In other words, Nexant's estimates of technical potential already removed any savings from customers who could be candidates to be free riders. Because economic potential and achievable potential are both subsets of technical potential, no additional adjustments are necessary to remove potential "free riders" at those stages of the analysis. Thus, the fact that Nexant and/or the utilities applied a two-year payback screen at the economic potential stage means that they have inappropriately "double-adjusted" for potential free riders.

Q: Are you suggesting that because Nexant excluded the effects of naturally-occurring efficiency from the potential study that utility programs to promote efficiency cost-effective measures with paybacks of two years or less would not have free ridership?

A: No. I am simply saying that the exclusion of naturally-occurring efficiency is, by itself, all that is necessary to develop estimates of net savings potential – i.e. savings after removing free riders – that is cost-effectively achievable. The next step is to

design programs to acquire that potential. Inevitably, most such programs will have some level of free ridership – from both measures with shorter paybacks and measures with longer paybacks. The level of free ridership will be a function of the market and the program design.

Q: Do you agree that it is appropriate to address free ridership, both in setting savings goals and in the design and implementation of programs?

A: Yes. As already discussed, if the two-year payback screen were removed from the potential study the result would be an estimate of net savings potential – i.e. excluding any savings from possible free riders. After addressing other concerns discussed below this would be an adequate basis for goal setting. Then, when the utilities design and implement programs to capture that level of savings potential, the savings they produce from such programs should be evaluated and adjusted to exclude the effects of free ridership. That is the way concerns regarding free ridership are addressed in numerous other jurisdictions.

Q: In his deposition, witness Herndon stated that although he was unaware of any other jurisdiction that adjusted estimates of efficiency potential by removing measures with two-year paybacks or less, he was aware of programs in other jurisdictions that limit financial incentives to levels necessary to buy paybacks down to two years.[17] Doesn't that support the notion that applying a two-year payback screen is a reasonable approach to removing free riders from the potential study?

A: No. To the contrary, it supports the alternative approach that I have suggested instead. Potential studies that already adjust for naturally-occurring efficiency do not

need and should not have another arbitrary adjustment applied to their estimates of savings potential. And no other state or potential study of which either I or Mr. Herndon are aware does that.[18] However, once savings goals are set, it is appropriate to design programs to minimize free ridership (in conjunction with other objectives). For some measures or some programs in some markets, one option that can make sense is to limit incentives to levels that are associated with customer paybacks of two years, or some other time period. For other measures, programs, and markets that would not make sense. In fact, in my experience, while payback may be one factor that is considered in the determination of incentive levels, specific financial incentive payback limits are typically only applied in other jurisdictions to custom Commercial and Industrial programs targeting larger business customers. Put simply, this is a program design issue not a potential study or goal setting issue.

Q: What is the effect of the application of the two-year payback screen to the utilities' estimates of TRC cost-effective achievable potential?

A: As sensitivities to their analyses, the utilities each estimated how much higher the estimates of economic potential would be if the two-year payback screen was reduced to one year. As Table 2 shows, just reducing the two-year payback screen to one year would increase estimates of economic potential by 54% for FPL and by 26% to 71% for the other utilities. Two of the utilities – TECO and Gulf – provided estimates of economic potential without a two-year payback screen. I have estimated that number for FPL by rerunning its cost-effectiveness tool. The result of eliminating the inappropriate two-year payback screen entirely is to increase the estimate of economic potential by 80% for Gulf, 139% for TECO and over 150% for FPL. Put simply, eliminating the two-year screen results in roughly a doubling – or more – of

cost-effective savings potential.

Table 2: Impact of Two-Year Payback Screen on TRC Economic Potential

Utility	TRC Economic Energy Efficiency Potential (GWh)			% Increase in TRC Econ Potential vs. 2-Year Payback Screen	
	w/2-year payback screen	w/1-year payback screen	without payback screen	1-Year Payback Screen	No Payback Screen
FPL	3554	5490	8905	54%	151%
Duke	3117	3915	n.a.	26%	n.a.
TECO	747	1275	1785	71%	139%
Gulf	981	1253	1762	28%	80%
Orlando	465	710	n.a.	53%	n.a.
JEA	1024	1383	n.a.	35%	n.a.

2. In estimating achievable potential, incentives were inappropriately limited to levels necessary to buy customer paybacks down to two years.

Q: How did the utilities address the issue of payback periods for cost-effective efficiency measures whose payback without financial incentives was greater than two years?

A: The utilities included efficiency measures that were cost-effective and had paybacks of greater than two years in their estimates of achievable potential. But when estimating how much savings was achievable from those measures, they assumed that they could not provide financial incentives greater than the amount that would be associated with buying the customer payback down to two years. Again, the rationale that they put forward for adopting this assumed limitation was that buying paybacks down to levels below two years would mean paying free riders.

Q: Is that a reasonable conclusion?

A: No. For reasons I have already stated, it is not reasonable to assume that all measures with a two-year payback or less will be universally purchased and installed without a utility program. Further, as I've also already discussed, the utilities own estimates of achievable potential show that they do not actually believe that buying paybacks down to two years will ensure that most customers will purchase and install such measures. If they actually did believe that, then their estimates of achievable potential would be the same as (or very close to) their estimates of economic potential; instead, as Table 3 shows, they are dramatically lower, particularly for FPL.

Table 3: Achievable Potential as Percent of Economic Potential With a Two Year Payback Screen

	GWh		
Utility	TRC Econ Potential w/2-year payback screen	TRC Achievable Potential	AP as % of EP
FPL	3554	196	6%
Duke	3117	432	14%
TECO	747	305	41%
Gulf	981	222	23%
Orlando	465	137	29%
JEA	1024	262	26%

Q: What are the implications of this inappropriate assumption?

A: By the utilities' own admission, this assumption has the effect of lowering estimates of achievable potential. In fact, as Table 3 shows, only TECO estimates that it can achieve as much as 40% of its economic potential; none of the other utilities estimate that they can achieve even 30% of their economic potential. Put simply, for measures

for which market barriers are such that it is not possible to achieve significant market penetration without driving paybacks to less than two years, the utilities' estimates of achievable savings potential have been artificially reduced.

Q: Why is FPL's estimate of the portion of economic potential that it can achieve – 6% – so much lower than all the other utilities?

A: I am not certain. However, it is worth noting that FPL essentially adopted a three-year payback screen. It did this by assuming that the incentives it could offer for measures with paybacks of between two and three years (when buying paybacks down to two years) were too small to have an impact on the market, so they eliminated such measures from their achievable potential estimates.[19] The result was eliminating about half of the TRC cost-effective measures that passed the two-year payback screen when estimating TRC achievable potential. I do not know if the other utilities did the same thing. If they did not, then this could be a big part of the reason FPL's estimates of achievable potential, as a percent of economic potential, is so much lower than the others.

3. Potential study inappropriately excludes early retirement measures.

Q: What is "early retirement"?

A: Early retirement is when an efficiency program successfully encourages a customer to cost-effectively replace a still functioning piece of electricity-consuming equipment before that equipment would otherwise have been replaced.

Q: How did the potential studies exclude such measures?

A: The potential study assumes that the only opportunity for efficient equipment measures is at the time such equipment would naturally turn over, when customers have already made a decision to replace equipment. Thus, it assumed that the portion of the market that can be affected each year is equal to the number of customers with a particular piece of equipment divided by the average measure life of that equipment. For example, if a commercial light fixture has an average life of 15 years, the potential study assumed that one-fifteenth of the existing stock of such light fixtures would get replaced each year and that efficiency upgrades could only occur at that pace.

Q: Is it reasonable to limit estimates of savings potential to such time of turnover opportunities?

A: No. It is usually true that the costs of efficiency savings are lower at the time of natural turnover than through early retirement. Indeed, early retirement is probably not cost-effective for many measures. However, that is not true for all measures. In fact, there are some measures for which early retirement can be quite cost-effective and from which substantial savings can be realized. Commercial light fixtures are notable examples. In fact, savings from such measures – at least in the short to medium term – can be substantially higher than savings that are achievable when waiting until time of natural turnover. This is because the baseline from which savings from early retirement measures should be initially measured (i.e. the existing equipment efficiency) can be much less efficient than the baseline for a standard new piece of equipment.[20]

Q: Do utility efficiency programs in other states include early retirement measures?

A: Yes. Again, not for all measures, but for some measures. In fact, early replacement is common enough that a number of states' Technical Reference Manuals (TRM), which document common assumptions and/or protocols for estimate savings, include specific reference to early retirement measures (alternatively called early replacement measures) and how to estimate savings for them. For example, the Arkansas TRM "allows for early replacement of certain measures that have been verified through a number of evaluations." It further states that such early replacement has the benefit of

> "being able to claim higher energy savings for the remaining useful life (RUL) of the equipment (the efficiency difference between the new, efficient equipment and the existing equipment), and then dropping to lower energy savings rates (under higher baselines) only for the period of the EUL that exceeds the RUL (the difference between new, efficient equipment and a code baseline)."[21]

Illinois is an example of another state whose TRM explicitly allows for calculating savings from existing equipment efficient levels for early retirement measures.[22]

Q: What was the utilities' rationale for excluding early retirement measures from the potential study?

A: FPL has suggested that the reason early retirement measures were not included in estimates of achievable potential is that there was a "lack of reliable information on early retirement adoption rates."[23]

Q: Is that a reasonable explanation?

A: No. As noted above, a number of utilities across the country run programs that include some early retirement measures. They all develop estimates of participation rates for those programs when developing plans they submit to their regulators.

Q: What are the implications of excluding early retirement measures from the potential study?

A: Excluding early retirement measures has the effect of reducing estimates of achievable potential, at least in the near to medium-term (e.g. in the next five years) during which the less efficient existing equipment would have been the baseline from which to measure savings.

4. Cost-effective mid-efficiency measures excluded from economic savings potential when higher-efficiency measures – to which all savings potential was assigned when estimating technical potential – fail economic screening.

Q: What should happen when estimating technical potential and economic potential from end uses for which there are multiple potential "tiers" of efficiency improvement?

A: When estimating technical potential, the most efficient measure should be assumed to be purchased and/or installed. For example, for residential pool pumps for which there are two efficiency upgrade options – two-speed pumps and variable speed pumps – the estimate of technical potential should be based on the presumption that all new pool pumps are the most efficient option, or variable speed pumps. To ensure that there is no double-counting of savings, the study should assume no market penetration of the less efficient upgrade option, or two-speed pumps.

When estimating economic potential, all of the savings should be assumed to come from the most efficient measure that passes the cost-effectiveness test, which may be a lower level of efficiency than was included in the technical potential estimate. For example, if the most efficient option on which technical potential was based – variable speed pool pumps in the example I've been using – fail cost-effectiveness screening, but the less efficient option of two-speed pool pumps pass, the economic potential should be based on the presumption that all new pool pumps purchased in the future will be two-speed pool pumps.

Q: Is that how the utilities and their consultant estimated technical potential and achievable potential?

A: That is how all the utilities estimate technical potential. However, it is not how they all estimated economic potential. At least FPL and TECO failed to assign economic savings potential to measures that could cost-effectively provide levels of efficiency above baseline when the most efficient alternative measure used to estimate technical potential was not cost-effective.

Q: Can you provide an example?

A: I will give two FPL examples, one related to the efficient pool pumps discussed above and another related to air source heat pumps as replacements for electric resistance furnaces.

I'll start with savings potential from efficient pool pumps. Because variable speed pool pumps are more efficient than two-speed pool pumps, FPL estimated technical

potential from pool pumps based entirely on the savings that variable speed units could provide. That amounted to about 58 MW of summer peak savings, 33 MW of winter peak savings and 280 GWh of annual energy savings.[24] Again, that is the appropriate way to estimate technical potential. Then, when conducting cost-effectiveness screening, FPL found that although the two-speed pool pump passed the TRC test, the variable speed pool pump did not. Once it realized that was the case, the Company should have included in its estimate of economic potential the savings that could be provided by two-speed pool pumps. However, it neglected to do that. Instead, even though the two-speed pool pump was TRC cost-effective, the Company estimated that the economic savings potential from the measure was zero.[25]

Similarly, when analyzing the savings potential by displacing electric resistance heating, the utilities analyzed two options: (1) a SEER 14 air source heat pump and a SEER 21 air source heat pump. Because SEER 21 is more efficient than SEER 14, FPL estimated technical potential from heat pumps replacing electric resistance heat based entirely on the savings that SEER 21 systems could provide. That amounted to about 77 MW of summer peak savings, 95 MW of winter peak savings and 474 GWh of annual energy savings.[26] Again, that is the appropriate way to estimate technical potential. Then, when conducting cost-effectiveness screening, FPL (and TECO) found that although the SEER 14 air source heat pump displacing electric resistance heat passed the TRC test, the SEER 21 alternative did not. Once it realized that was the case, FPL and TECO should have included in their estimate of economic potential the savings that could be provided by SEER 14 air source heat pumps displacing electric resistance heat. However, they neglected to do that. Instead, even though the SEER 14 air source heat pump displacing electric resistance heat was TRC cost-

effective, FPL and TECO estimated that the economic savings potential from the measure was zero.[27]

Q: What is the effect of the two TRC cost-effective measures you have identified as being inappropriately excluded from FPL's estimates of economic potential?

A: It is substantial. As Table 4 shows, just correcting the omitted savings from these two measures could increase FPL's estimate of TRC economic energy savings potential by 25%. It would also increase FPL's estimate of TRC economic winter peak savings by 33% and summer peak savings by 5%.

Table 4: Corrected FPL Pool Pump and ASHP Economic Potential Estimates

	Technical Potential			FPL Econ Potential			Corrected Econ Potential		
Measure Name	**GWh**	**S-MW**	**W-MW**	**GWh**	**S-MW**	**W-MW**	**GWh**	**S-MW**	**W-MW**
Two-Speed Pool Pump	0	0	0	0	0	0	92	29	28
Variable Speed Pool Pump	280	58	33	0	0	0	0	0	0
SEER 14 ASHP vs elec res heat	0	0	0	0	0	0	223	0	46
SEER 21 ASHP vs elec res heat	474	77	95	0	0	0	0	0	0
Totals for Both Measure Groups	**754**	**135**	**128**	**0**	**0**	**0**	**316**	**29**	**74**
FPL Total for Other Residential							1251	618	228
% Increase from Correction							**25%**	**5%**	**33%**

Q: How did you develop those estimates of corrected economic potential?

A: I compared FPL's estimates of the per unit savings of the lower tier efficiency measure to the higher tier alternative. For example, two-speed pool pumps produce only 33% of the energy savings, 50% of the summer peak savings and 87% of the winter peak savings that a variable speed pool pump would produce.[28] I then multiplied those ratios by the technical potential of the higher tier measure to estimate the economic potential of the lower tier measures.

Q: Have you identified and quantified the impact of all measures for which this problem occurs within FPL's estimates of economic potential?

A: No. That would require a substantial amount of analysis which, given the range of issues I have had to address, I was not able to undertake as part of drafting this testimony. Nor have I assessed the extent to which this may be a problem for the other utilities.

5. Some non-incentive cost assumptions are unreasonably high.

Q: How did the utilities apply non-incentive costs when estimating achievable savings potential?

A: The utilities made assumptions about average program costs per measure and included those costs when assessing which measures were cost-effective for estimates of potential.[29]

Q: Have you reviewed those assumptions?

A: Only for FPL.

Q: Did you find FPL's non-incentive cost assumptions to be reasonable?

A: Some appear to be unreasonably high. For example, FPL assumes that the average non-rebate cost for promoting investment in residential LED light bulbs is $29 per light bulb! That is unfathomably high. By way of comparison, Commonwealth Edison, the electric utility serving the Chicago metropolitan area, rebated approximately 11.25 million light bulbs in its 2018 Residential Lighting Discounts program.[30] Its non-incentive costs for the program were $5.98 million[31] – or about

$0.53 per light bulb. In other words, FPL assumed a non-rebate cost per light bulb that was on the order of 55 times higher than ComEd's actual program experience.

Similarly, FPL assumes that the non-incentive costs per low flow showerhead and per faucet aerator are $29, or more than four times the total cost of the showerhead and nearly ten times the cost of the aerator. Again, that is unfathomably high.

Q: What are the implications of using such unreasonably high assumptions for non-incentive costs?

A: It depends. To the extent that the measures with problematic non-rebate cost assumptions were excluded from the estimates of achievable potential because they had paybacks of less than two years, as appears to be the case with low flow showerheads, there is no effect because FPL had already (inappropriately) excluded such measures from its estimate of achievable potential. However, it appears that some measures with potentially high savings potential (e.g. residential LED light bulbs) may have been excluded from TRC economic potential, and therefore TRC achievable potential as well, because of the unreasonably high non-incentive costs.

6. Assorted other potential study conservatisms contribute to underestimation of achievable cost-effective savings potential.

Q: Have you identified any other problematic assumptions with the utilities' efficiency potential studies?

A: Yes, though I have not exhaustively reviewed every assumption in the studies. There are literally at least tens of thousands of different assumptions, so reviewing every one of them, as well as how they all interact, would have been an enormous

undertaking which I did not have the resources to pursue and for which this kind of proceeding is not well-suited given the amount of back-and-forth questioning that would be required. However, I have selectively examined a number of assumptions and identified more granular concerns. Examples are as follows:

Understating residential heat pump water heating savings per unit. In estimating savings for residential heat pump water heaters, the utilities make a couple of problematic assumptions that lead to understating savings. First, the Energy Factor assumed for a heat pump water heater – 2.5[32] – is at the low end of the range for available models. Indeed, of the 58 models with capacities of less than 55 gallons that are Energy Star rated, only two had Energy Factors of below 2.8; the average was 3.3 – or about 25% more efficient than assumed by the utilities.[33] In addition, the utilities inappropriately used a "manufactured home square footage adjustment" to reduce estimated savings potential for heat pump water heaters installed in manufactured homes by 41%.[34] There is no basis for reducing water heater savings down by the size of the home. Water heater savings are primarily a function of the number of occupants in the home; the utilities' savings formula for heat pump water heaters had already accounted for the fact that manufactured homes have fewer occupants than single family homes.[35]

- Artificial cap on measure lives of 20 years. Nexant appears to have assumed that measures cannot have lives of longer than 20 years.[36] That is too short for a number of measures such as attic insulation or wall insulation added to homes, whole house fans, and centrifugal chillers. Other jurisdictions assume lives for such measures of 25 years[37] or even longer. Capping measures at 20 years results in understating of the cost-effectiveness of some measures.

- Use of average line loss rates rather than marginal line loss rates to convert savings at the customers' meters to savings at the generator.[38] Efficiency programs' impact on line losses are – by definition – equal to marginal loss rates. This is important because line losses grow (largely) exponentially with load,[39] meaning that marginal line loss rates are much higher than average line loss rates. Thus, by using average loss rates the utilities are understating the economic value of efficiency savings.
- Failure to include all participant benefits in TRC test. It appears as if the utilities included only electric system benefits in the calculation of the TRC test. They exclude a number of additional participant benefits such as other fuel savings (e.g. natural gas savings that can occur when insulating a home with central air conditioning and gas heat), water savings (e.g. associated with low flow showerheads), or any of a range of non-energy benefits. The utilities suggest that is appropriate because inclusion of such benefits is "inconsistent with the test's purpose which is to evaluate DSM measures from an all resource perspective." However, other fuel savings and water savings are "resource benefits." More importantly, the utilities have misconstrued the conceptual purpose of the TRC test, which is to assess cost-effectiveness from the combined perspective of the utility system and program participants.[40] By including all participant costs, but not all participant benefits, the utilities' TRC analyses violate one of the fundamental principles of cost-effectiveness analysis, with the result being a bias against efficiency resources.[41]

7. Combined effect of potential study conservatisms is dramatic understating of achievable potential.

Q: What is the combined effect of all of the conservatisms in the utilities' potential studies on the bottom line estimates of achievable savings?

A: That is very difficult to precisely quantify without essentially conducting a new analysis in which all assumptions are re-examined and revised (as needed), which I did not have the resources to do and for which this kind of proceeding is not well-suited. However, the impact is huge. As noted earlier, just eliminating the inappropriate two-year payback screen would have the effect of increasing TRC economic potential by roughly half.

An alternative way to approach this question is to compare what the Florida potential studies suggested was economically achievable under the TRC test to what utilities in other leading states in the South have recently achieved. As Table 5 below shows, Duke Energy Carolinas (DEC) achieved savings equal to approximately 1.67% of sales to eligible customers in 2018.[42] That is at least 7.5 times greater than what any of the Florida utilities have suggested is TRC achievable and more than 90 times what FPL has suggested is TRC achievable – even though DEC was not implementing a plan designed to achieve all cost-effective savings. Similarly, Entergy Arkansas achieved savings equal to approximately 1.44% of its 2018 sales to eligible customers.[43] That is at least 6.5 times what any of the Florida utilities have suggested is TRC achievable and about 80 times what FPL has suggested is TRC achievable – again, even though Entergy Arkansas was not implementing a plan designed to achieve all cost-effective savings.

Table 5: Florida TRC Achievable Estimates vs. Leading Southern Utility Actuals[44]

Utility	State	Study or Actual?	Year(s)	Annual TRC Achievable Savings (GWh)	Total Eligible Sales (GWh)	Savings as % of Eligible Sales
FPL	FL	Study	2020-2029	20	108,514	0.02%
Duke	FL	Study	2020-2029	43	38,024	0.11%
TECO	FL	Study	2020-2029	31	19,187	0.16%
Gulf	FL	Study	2020-2029	22	10,809	0.21%
Orlando	FL	Study	2020-2029	14	6,568	0.21%
JEA	FL	Study	2020-2029	26	11,825	0.22%
Duke Energy Carolinas	**NC/SC**	**Actuals**	**2018**	**811**	**48,454**	**1.67%**
Entergy	**AR**	**Actuals**	**2018**	**256**	**17,730**	**1.44%**

V. RECOMMENDATIONS

Q: What cost-effectiveness test would you propose that the Public Service Commission (PSC) rely upon in setting the utilities' energy efficiency savings goals?

A: As I stated earlier in this testimony, I strongly recommend against relying on the RIM test, as it is not a test of cost-effectiveness, has limited value in assessing potential impacts on non-participants, and is not used when assessing the reasonableness of supply-side resources for which energy efficiency can be a lower cost alternative. Conceptually, a properly executed TRC test – one that fully accounts for all utility system and participant impacts – is a much better gauge of the value of efficiency. The PSC could also consider a separate assessment of potential rate impacts, along with estimates of how many customers may participate over a 10-year period, to determine whether any constraints on acquisition of all TRC cost-effective efficiency potential may be warranted in order to balance concerns about impacts on any customers who choose not to participate.

Q: Are you suggesting that the PSC base the utilities' energy efficiency savings goals on their current estimates of TRC cost-effective achievable potential?

A: No. As I also discussed above, the TRC test as used by the utilities does not account for all utility system benefits or all participant benefits and therefore understates what is cost-effective. Perhaps even more importantly, there are numerous other problems with the utilities' efficiency potential studies' methodologies and assumptions that lead to significant underestimation of cost-effective potential, even under their definition of the TRC.

Q: How would you suggest the PSC establish efficiency savings targets for the utilities in this proceeding?

A: If the PSC does not order that the Utilities conduct a properly executed TRC Test, and given the absence of a defensible empirical analysis of cost-effective efficiency potential in the state, one approach would be to make an attempt at partially correcting the utilities' TRC economic potential results as I discuss below. This would be a very conservative approach as many issues leading to lower TRC results would remain unaddressed (such as FPL assigning zero economic potential to certain measures). Another approach would be to base energy efficiency targets on what the leading utilities in the South are already achieving. Specifically, the PSC could require each Florida utility to ramp up to 1.50% incremental annual savings per year – a level comparable to the 1.67% Duke Energy Carolinas achieved in 2018 and the 1.44% achieved by Entergy Arkansas in 2018.

Q: Couldn't comprehensive corrections be made to the utilities' potential studies to address the problems you have identified?

A: Yes, conceivably. However, the problems are numerous, complicated, and interactive. Moreover, it is likely that there are others that I have not been able to identify given the limited time available to review numerous assumptions for literally thousands of efficiency measure permutations for six different utilities. Put simply, it would be an enormous undertaking to comprehensively address the issues I raised in my testimony, as well as ensure that there are no others that need addressing.

Q: Can you illustrate the magnitude of the impact of correcting for any of the problems you have identified?

A: Yes. I have estimated the impacts of correcting just two of the many problems noted: (1) the double-adjustment for free riders resulting from the application of a two-year payback screen; and (2) unreasonably low expectations by most of the utilities (the one possible exception being TECO) regarding the portion of economic potential that is achievable. As Table 6 shows, just correcting those two problems – by not using any payback screen and assuming that about half of economic potential is achievable instead of the 6% assumed by FPL and the 14 to 29% assumed by all but one of the other utilities (TECO assumed 41%) – would suggest that at least average annual savings ranging from 0.4% to 0.8% of annual electricity sales, depending on the utility, would be cost-effectively achievable over the 2020 to 2029 period.

Table 6: Results of Eliminating Two-Year Payback Screen and Assuming 50% of Economic Potential is Achievable

Utility	2017 Annual Sales (GWh)	Utility Estimates of Average Annual Achievable Potential (GWh)	Utility Estimates of Achievable Potential as Percent of Sales	10-Year TRC Econ Potential without 2-Year Payback Screen (GWh)	Average Annual TRC Econ Potential without 2-Year Payback Screen (GWh)	Partially Corrected Average Annual Goal at 50% of Econ Potential (GWh)	Partially Corrected Average Annual Savings as Percent of Sales
FPL	108,514	20	0.02%	8905	891	445	0.4%
Duke	38,024	43	0.11%	5599	560	280	0.7%
TECO	19,187	31	0.16%	1785	179	89	0.5%
Gulf	10,809	22	0.21%	1762	176	88	0.8%
OUC	6,568	14	0.21%	835	84	42	0.6%
JEA	11,825	26	0.22%	1839	184	92	0.8%

Q: How did you estimate economic potential without a two-year payback screen?

A: As discussed above, both TECO and Gulf provided their own estimates of TRC economic potential without any payback screen. I have used their estimates. For FPL, I computed the amount of TRC cost-effective savings without a two-year payback screen using all of FPL's measure assumptions and the confidential analytical tool provided by the Company. I did not have such a tool for Duke, Orlando, or JEA, so I assumed that their TRC economic potential without a two-year payback screen would be approximately 80% higher than their own estimates of TRC economic potential with such a screen. The 80% increase is equivalent to Gulf Power's increase, the lowest of the three increases either made available by the utilities themselves or which I was able to compute.

Q: Why did you assume that half of the economic potential would be achievable?

A: That is a level consistent with several efficiency potential studies I have reviewed. For example, a recent efficiency potential study conducted for DTE, one of the two large investor-owned utilities in Michigan, estimated that the utility could achieve savings equal to 15.1% of its sales – about 46% of the estimated economic potential of 32.5% – over an 11-year period.[45] Similarly, a 2015 Arkansas efficiency potential study estimated that roughly 50% (2282 GWh out of 4594 GWh) of the savings the study found to be "economic" was achievable over the 2016 to 2025 period.[46] And a 2018 study for the city of New Orleans found that maximum achievable potential over ten years – 25% of sales – was 56% of the economic potential.[47]

Q: What would the utilities annual savings goals be if they were based on TRC cost-effective and achievable savings potential, as corrected for the two problems you just discussed (i.e. eliminating a two-year payback screen and assuming 50% of economic potential is achievable over ten years)?

A: Assuming that the utilities could ramp up energy savings at the pace of at least 0.3% of sales per year (e.g. a utility whose goals are to ramp up to 0.6% of sales per year would take two years to get to that point),[48] and assuming that the peak savings to energy savings ratios in the economic potential would be reflective of the ratios in achievable potential,[49] the savings would be as shown in Tables 7, 8, and 9 below. Comparable tables broken down into Residential and Non-Residential values are provided as Exhibit JMG-2 to my testimony.

Table 7: GWh Savings Based on Partially Corrected TRC Achievable

Utility	Annual Sales	Incremental Annual Energy Savings (GWh)										10-Year Total
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	108,514	326	445	445	445	445	445	445	445	445	445	4,333
Duke	38,024	114	228	280	280	280	280	280	280	280	280	2,582
TECO	19,187	58	89	89	89	89	89	89	89	89	89	861
Gulf	10,809	32	65	88	88	88	88	88	88	88	88	802
Orlando	6,568	20	39	42	42	42	42	42	42	42	42	393
JEA	11,825	35	71	92	92	92	92	92	92	92	92	842

Table 8: Summer MW Savings Based on Partially Corrected TRC Achievable

Utility	TRC kWh/kW	Summer Peak MW										10-Year Total
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	3889	84	115	115	115	115	115	115	115	115	115	1114
Duke	2935	39	78	95	95	95	95	95	95	95	95	880
TECO	5475	11	16	16	16	16	16	16	16	16	16	157
Gulf	5063	6	13	17	17	17	17	17	17	17	17	158
Orlando	5299	4	7	8	8	8	8	8	8	8	8	74
JEA	5381	7	13	17	17	17	17	17	17	17	17	156

Table 9: Winter MW Savings Based on Partially Corrected TRC Achievable

Utility	TRC kWh/kW	Winter Peak MW										10-Year Total
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	6650	49	67	67	67	67	67	67	67	67	67	652
Duke	5625	20	41	50	50	50	50	50	50	50	50	459
TECO	6736	9	13	13	13	13	13	13	13	13	13	128
Gulf	5933	5	11	15	15	15	15	15	15	15	15	135
Orlando	7802	3	5	5	5	5	5	5	5	5	5	50
JEA	7858	5	9	12	12	12	12	12	12	12	12	107

However, because these tables reflect savings estimates based on only partial corrections to the utilities' analyses, they significantly underestimate what is really cost-effectively achievable. Again, since it is not possible to make all the needed corrections to the utilities' analyses in this proceeding, I recommend that the PSC consider what the leading Southern utilities have achieved as being what is cost-effectively achievable – i.e. ramping up to energy savings equal to approximately 1.5% of sales per year.

Q: What would be a reasonable ramp up period for getting to a 1.50% per year savings goal?

A: Assuming (as above) that the utilities could ramp up at a rate of 0.3% energy savings as a percent of sales per year, it would be reasonable to ramp up to the 1.50% per year level over a five-year period. Table 10 shows the resulting trajectory of savings assuming a baseline level of sales consistent with 2017 sales levels. That may be conservatively low if sales increase over time.

Table 10: Proposed Energy Efficiency Savings Goals (GWh)

	Incremental Annual Energy Savings (GWh)										10-Year
Utility	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
All	0.30%	0.60%	0.90%	1.20%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	12.00%
FPL	326	651	977	1,302	1,628	1,628	1,628	1,628	1,628	1,628	13,022
Duke	114	228	342	456	570	570	570	570	570	570	4,563
TECO	58	115	173	230	288	288	288	288	288	288	2,302
Gulf	32	65	97	130	162	162	162	162	162	162	1,297
Orlando	20	39	59	79	99	99	99	99	99	99	788
JEA	35	71	106	142	177	177	177	177	177	177	1,419

Q: If the PSC adopted a 1.50% per year savings goal, what would you recommend with regards to summer and winter peak demand savings goals for energy efficiency programs for each utility?

A: I cannot recommend specific peak demand savings targets because I arrived at these energy savings targets from a "top down" perspective on what is reasonable rather than from a "bottom up" approach to estimating savings. As discussed above, this top down approach was necessitated by the numerous problems with the utilities' efficiency potential studies that rendered them completely insufficient as a reference for the magnitude of cost-effectively achievable savings potential. If the studies'

estimates of the ratios of TRC economic potential for summer and winter peak savings to TRC economic potential for energy savings would be applicable to the much more realistic and substantial 1.50% per year energy savings goals, the results would be as shown in Table 11 below. Comparable tables of peak savings by sector, as well as energy savings by sector, are provided in Exhibit JMG-3 of my testimony. However, I would suggest additional analysis be undertaken to determine whether those ratios would hold under an effective set of programs designed to achieve the energy savings goals. Thus, I would recommend that the PSC initiate a process to more carefully assess peak demand savings potential, perhaps even as part of the utilities' energy efficiency program plan filings, in order to establish such goals.

Table 11: Peak Savings Based on Florida Studies' TRC kW/kWh Ratios

Utility	TRC kWh/kW Ratio	Summer Peak MW										10-Year Total
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	3889	84	167	251	335	419	419	419	419	419	419	3349
Duke	2935	39	78	117	155	194	194	194	194	194	194	1555
TECO	5475	11	21	32	42	53	53	53	53	53	53	421
Gulf	5063	6	13	19	26	32	32	32	32	32	32	256
Orlando	5299	4	7	11	15	19	19	19	19	19	19	149
JEA	5381	7	13	20	26	33	33	33	33	33	33	264

Utility	TRC kWh/kW	Winter Peak MW										10-Year Total
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	6650	49	98	147	196	245	245	245	245	245	245	1958
Duke	5625	20	41	61	81	101	101	101	101	101	101	811
TECO	6736	9	17	26	34	43	43	43	43	43	43	342
Gulf	5933	5	11	16	22	27	27	27	27	27	27	219
Orlando	7802	3	5	8	10	13	13	13	13	13	13	101
JEA	7858	5	9	14	18	23	23	23	23	23	23	181

Q: Do you have any other recommendations?

A: Yes. To address concerns about equity, I would recommend that the PSC also adopt goals specifically for savings from low income customers. Mr. Wright's testimony has more specific suggestions in that regard.

Q: Does that conclude your testimony?

A: Yes, it does.

[1] Weston Berg, et al., "The 2018 State Energy Efficiency Scorecard," American Council for an Energy Efficient Economy, report U1808, (Oct. 2018), available at https://aceee.org/research-report/u1808.

[2] Woolf, Tim et al., *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources*, Edition 1, Spring 2017 (https://nationalefficiencyscreening.org/wp-content/uploads/2017/05/NSPM_May-2017_final.pdf)

[3] For example, if residential electricity rates do not include demand charges, residential customers who place disproportionately high demands on the system at the time of peak – and who therefore impose higher costs on the system – are effectively cross-subsidized by those who do not. That is not to say that residential demand charges are necessarily a good idea; there may be good reasons for not having them. I am simply making the point that rate design decisions can result in some level of cross-subsidization.

[4] CVPRR values are from Excel files provided by FPL in response to Staff Interrogatory 18. Levelized rates are from FPL Witness Whitley Exhibit AWW-10, attached as Exhibit JMG-4.

[5] Kushler, Martin, Seth Nowak and Patti White., *A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs*, ACEEE Report U122, February 2012 (pp. 59-60).

[6] Va. Code § 56-576 (2018).

[7] Order Number PSC-14-0696-FOF-EU in Docket Numbers 130199-EI, 130200-EI, 13201-EI, 130202-EI, 130203-EM, 130204-EM, and 130205-EI (issued December 16, 2014).

[8] Va. Code § 56-576 (2018).

[9] MidAmerican Energy Company Application for Energy Efficiency Plan 2019-2023, Application Exhibit 4: Budget Accounting for Costs, Iowa Utilities Board Docket EEP-2018-002.

[10] For example, see testimony of witness Herndon, p. 19, lines 8-10; FPL response to SACE Interrogatory 21, attached as exhibit JMG-7.

[11] Testimony of FPL witness Koch, p. 20, lines 20-21.

[12] Ironically, most of these are recognized by the utilities (*see* FPL response to SACE Interrogatory 23, attached as exhibit JMG-12).

[13] FPL response to SACE 1st Interrogatory No. 25, Attachment No. 1, attached as exhibit JMG-8.

[14] *ENERGY STAR Unit Shipment and Market Penetration Report Calendar Year 2017 Summary*, https://www.energystar.gov/ia/partners/downloads/unit_shipment_data/2017/2017%20Unit%20Shipment%20Data%20Summary%20Report.pdf?e685-3425.

[15] FPL Response to SACE PODs No. 3, attached as exhibit JMG-9.

[16] FPL response to SACE interrogatory 48, attached as exhibit JMG-10.

[17] Jim Herndon Deposition Transcript, pp. 47-48, attached as exhibit JMG-11.

[18] Response to SACE Interrogatory 17; Jim Herndon Deposition Transcript, p. 65, attached as exhibit JMG-11.

[19] FPL response to SACE POD 3, attached as exhibit JMG-9.

[20] For example, in small commercial direct install programs – a very common program nationally – it is quite common to find many T12 linear fluorescent light fixtures that can be replaced "early". If one were to wait several years until those T12s are replaced naturally, the baseline becomes a much more efficient T8. LED alternatives still provide substantial savings relative to T8s, but not nearly as much as relative to T12s. Thus, programs that promote early retirement of T12s with LEDs can produce very large savings for the first several years of the life of the LED replacement and then lower (though still substantial) savings in the remaining years of its life.

[21] Arkansas Public Service Commission, Arkansas Technical Reference Manual at 92-93, Version 8.0, Approved in Docket 10-100-R, applicable beginning January 1, 2019 (http://www.apscservices.info/EEInfo/TRMV8.0.pdf).

[22] 2019 Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 7.0, Volume 1: Overview and User Guide, Final, September 28, 2018, Effective January 1, 2019 (http://ilsagfiles.org/SAG_files/Technical_Reference_Manual/Version_7/Final_9-28-18/IL-TRM_Effective_010119_v7.0_Vol_1_Overview_092818_Final.pdf), attached as exhibit JMG-13.

[23] FPL response to SACE Interrogatory 39, attached as exhibit JMG-39.

[24] Excel file "20190015 – SACE's 1st PODs No. 2 – Economic Potential Calculations", see the "TP Table" tab, attached as exhibit JMG-5. The technical potential for variable speed pool pumps that I show are for measures RSFN505 (which refers to new homes) and RSFT505 (which refers to existing homes in which pump pumps "turnover"), the vast majority coming from the latter measure.

[25] *Id.*, "TRC Med Fuel no CO2" tab which lists all measures that passed cost-effectiveness screening and should be therefore contributing to economic potential, attached as exhibit JMG-6. Measures RSFN504 and RSFT504, which are the two-speed pool pumps in single family homes, are listed but show zero economic potential; measures RSFN505 and RSFT505 – the two variable speed pool pumps are not listed because they did not pass the cost-effectiveness test.

[26] Excel file "20190015 – SACE's 1st PODs No. 2 – Economic Potential Calculations", see the "TP Table" tab, attached as exhibit JMG-5. The technical potential for SEER 21 air source heat pumps displacing electric resistance heat is the sum of savings from measures RMON311, RMOT311, RFMN311, RFMT311, RSFN311 and RSFT311.

[27] *Id.*, "TRC Med Fuel no CO2" tab, attached as exhibit JMG-6, which lists all measures that passed cost-effectiveness screening and should be therefore contributing to economic potential. RMON311, RMOT311, RFMN311, RFMT311, RSFN311 and RSFT311 – the six SEER 14 air source heat pumps displacing electric resistance heat (both new construction and existing building turnover for three different residential building types) – are all shown as passing the TRC test, but all show zero economic potential. For TECO, Excel file "(BS 158) Final Rev – Residential Energy Efficiency – Economic Potential," tab "TRC EP," shows SEER 14 air source heat pumps

displacing electric resistance heat as passing the TRC test, but with zero economic potential, attached as exhibit JMG-20.

[28] FPL document produced in response to SACE POD 2, excel file "20190015 – SACE's 1st PODs No. 2 – Residential Batch File – Final.xlsx," attached as exhibits JMG-16 and JMG-17.

[29] For example, see Section 6.1.1 of the Nexant potential study reports and FPL witness Whitley's testimony on p. 25, lines 4-6.

[30] Itron, *ComEd Residential Lighting Discounts Program and Holiday Light Exchange Program Impact Evaluation Report*, April 10, 2019 (http://ilsagfiles.org/SAG_files/Evaluation_Documents/ComEd/ComEd_CY2018_Evaluation_Reports_Final/ComEd_Residential_Lighting_Discounts_CY2018_Impact_Evaluation_Report_2019-04-10_Final.pdf), attached as exhibit JMG-15.

[31] ComEd's 2018 4th quarter report (http://ilsagfiles.org/SAG_files/Quarterly_Reports/ComEd/2018/ComEd_2018_Q4_Report_Spreadsheet.pdf)

[32] "20190015 – SACE's 1st PODs No. 10 – Residential Measure Algorithm Extract.xlsx," attached as exhibit JMG-18.

[33] https://www.energystar.gov/productfinder/product/certified-water-heaters/

[34] "20190015 – SACE's 1st PODs No. 2 – Residential Batch File – FINAL.xlsx", 2019-RES Batch tab.

[35] "20190015 – SACE's 1st PODs No. 10 – Residential Measure Algorithm Extract.xlsx"

[36] See "20190015 – SACE's 1st PODs No. 2 – Residential Batch File – FINAL.xlsx" and 20190015 – SACE's 1st PODs No. 2 – Commercial Batch File – FINAL.xlsx". The only exception to this 20-year limit is for ground source heat pumps for which a life of 22 years is assumed.

[37] For example, see the commonly referenced measure life report GDS, *Residential and Commercial/Industrial Lighting and HVAC Measures*, prepared for the New England State Program Working Group (SPWG), June 2007 (https://www.iar.unicamp.br/lab/luz/ld/Arquitetural/interiores/ilumina%e7%e3o%20industrial/measure_life_GDS.pdf).

[38] For example, see FPL response to SACE Interrogatory 9, attached as exhibit JMG-19.

[39] Lazar, Jim and Xavier Baldwin, *Valuing the Contribution of Energy Efficiency to Avoided Marginal Line Losses and Reserve Requirements, published by the Regulator Assistance Project*, August 26, 2011 (https://www.raponline.org/knowledge-center/valuing-the-contribution-of-energy-efficiency-to-avoided-marginal-line-losses-and-reserve-requirements/?sf_data=results&_sf_s=lazar+line+loss).

[40] Woolf, Tim et al., *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources*, Edition 1, Spring 2017 (https://nationalefficiencyscreening.org/wp-content/uploads/2017/05/NSPM_May-2017_final.pdf)

[41] *Id.*

[42] DEC savings are divided by sales from non-opt out customers. Data are from DEC response to SACE data request 2-1 in North Carolina Docket 2019-89-E.

[43] Entergy Arkansas savings are divided by sales from non-self-direct customers. Data are from Entergy's Arkansas Energy Efficiency Program Portfolio Annual Report, filed in Docket No. 07-085-TF, May 1, 2019 (http://www.apscservices.info/pdf/07/07-085-TF_662_1.pdf).

[44] Florida utility annual sales values are for 2017, from the Energy Information Administration Annual Electric Power Industry Report, Form EIA-861 detailed data files (https://www.eia.gov/electricity/data/eia861/). This would result in modest overstating of 2020 to 2029 achievable savings as a percent of sales if future sales levels are likely to be higher than in 2017.

[45] GDS Associates, *DTE Energy Electric Efficiency Potential Study*, December 2018, filed as Exhibit A-20 in DTE's recent Integrated Resource Planning proceeding before the Michigan Public Service Commission, Docket U-20471.

[46] Navigant, Arkansas Efficiency Potential Study, Final Report, prepared for the Arkansas Public Service Commission, June 1, 2015.

[47] Optimal Energy, *Study of Potential for Energy Savings in New Orleans, Final* (August 31, 2018).

[48] This is consistent with the range of ramp up periods I have seen in other jurisdictions. For example, in Michigan, DTE ramped up from zero savings in 2008 to 0.42% of sales in 2009, 0.89% in 2010 and 1.15% in 2011 – or a little faster than the 0.3% per year pace I have assumed (*see* testimony of K.L. Bilyeu, DTE, in DTE's current IRP proceeding, Docket U-20471).

[49] The ratios that I use are based on economic potential with no payback screen for FPL, TECO and Gulf, because I had energy and peak savings estimates available for a no payback screen scenario for those utilities. For the other utilities I used energy to peak savings ratios that they reported for a one-year payback screen.

JIM GREVATT, MANAGING CONSULTANT

EDUCATION

B.F.A., University Honors, University of Illinois, 1982

EXPERIENCE

2013-present: Managing Consultant, Energy Futures Group, Hinesburg, VT
2012-2013: Director, Targeted Implementation, Vermont Energy Investment Corp., Burlington, VT
2011-2012: Director, Residential Energy Services, District of Columbia Sustainable Energy Utility for Vermont Energy Investment Corp., Washington, D.C. and Burlington, VT
2010-2012: Managing Consultant, Vermont Energy Investment Corporation, Burlington, VT
2005-2010: Director, Residential Services, Vermont Energy Investment Corp., Burlington, VT
2001-2005: Manager, Energy Services, Vermont Gas Systems, S. Burlington, VT
1998-2001: Manager, Residential Energy Services, Vermont Gas Systems, S. Burlington, VT
1996-1998: Manager, HomeBase Retrofit Program, Vermont Gas Systems, S. Burlington, VT
1994-1996: Technical Specialist, Vermont Gas Systems, S. Burlington, VT
1991-1994: Associate Director and Technical Specialist, Champlain Valley Weatherization Program, Burlington, VT

PROFESSIONAL SUMMARY

Jim Grevatt brings over 25 years' experience as a leadership professional in energy efficiency program operations to his consulting practice. At Energy Futures Group Jim has advised regulators, program implementers, and advocates in Colorado, Nevada, British Columbia, Maryland, Pennsylvania, Delaware, Virginia, New Jersey, Illinois, Iowa, Mississippi, North Carolina, California, Vermont, Maine, Kentucky, and New Hampshire, and has provided expert witness testimony in eight of those jurisdictions. Jim has hands-on experience with industry-leading markets-based approaches to designing and managing energy efficiency programs, including multi-family, low income, residential retrofit, new construction, HVAC, and efficient products programs. His in-depth knowledge of the nuts and bolts of program operations and clear understanding of strategic thinking and planning ensure that programs achieve their desired market impacts. Throughout his career, Jim has focused on building strong relationships with staff, peers, trade allies, regulators, and clients as the best way to understand the needs and challenges that each sector faces. In past leadership roles at Efficiency Vermont, the DCSEU, and Vermont Gas, Jim had overall responsibility both for program design and operations. He was responsible for finding successful consensus approaches among diverse groups of partners and stakeholders, and for policy interactions with regulators, assuring that program processes were efficient and effective.

SELECTED PROJECTS

- ***Natural Resources Defense Council and Sierra Club:*** Provided expert witness testimony in Public Service Company of Colorado's Strategic Issues and 2019-2020 DSM Plan proceedings. (2017-2019)
- ***Natural Resources Defense Council and Sierra Club:*** Provided expert witness testimony in Nevada Energy Company's 2019-2038 Triennial Integrated Resource Plan and 2019-2021 Energy Supply Plan and participate in stakeholder collaboratives. (2018-2019)

JIM GREVATT, MANAGING CONSULTANT

- ***Environmental Law & Policy Center and Iowa Environmental Council:*** Provided expert witness testimony in DSM proceedings regarding MidAmerican Energy Company's and Interstate Power and Light's 2019-2023 Energy Efficiency Plans (2018)
- ***Pueblo County Colorado:*** Provided expert witness testimony in DSM proceedings regarding Black Hills Energy Company's 2019-2021 DSM Plan (2018)
- ***Sierra Club:*** Provided expert witness testimony in proceedings regarding Kentucky Power Company's DSM programs and cost-effectiveness. (2017-2018)
- ***California Alternative Energy and Advance Transportation Financing Authority.*** Provide technical assistance on development of commercial energy efficiency financing pilot. (2017-2019)
- ***Coalition of Maryland Energy Efficiency Advocates*** Prepared written comments and multiple appearances before the Commission to present evidence regarding Maryland utilities' 2015-2017 and 2018-2020 EmPOWER Maryland energy efficiency plans, and in additional proceedings related to utility goal-setting, cost-effectiveness testing, best-practices in low-income programs, and energy efficiency financing (2014-2019)
- ***Sierra Club of British Columbia and British Columbia Sustainable Energy Association:*** Provided expert witness testimony in DSM proceedings with Fortis BC and BC Hydro. (2017-2018)
- ***New Jersey Clean Energy Program: Planning Team Lead for F2018-F2022 Strategic Plan*** Facilitated focus groups, worked with Board of Public Utilities Staff, program administrators, utility companies, and other stakeholders to identify opportunities to improve NJCEP strategic direction and increase benefits for ratepayers. Lead author drafting strategic plan (2015-2019)
- ***Energy Efficiency for All: Expert technical support for affordable multifamily energy efficiency advocacy in Pennsylvania and Virginia*** Worked with a coalition of energy efficiency and affordable housing advocates to shape advocacy efforts with utilities and regulators (2015-2019)
- ***Southern Environmental Law Center:*** Provided expert witness testimony in DSM proceedings with Duke Energy Progress and Dominion Virginia, as well as technical support for SELC staff regarding pre-pay programs and other policy issues. (2015-2019)
- ***Regulatory Assistance Project: Researched and co-authored with Chris Neme:*** *The Next Quantum Leap in Efficiency: 30 Percent Electric Savings in Ten Years,* addressing program and policy questions related to doubling the best efficiency program results (2016)
- ***Natural Resources Defense Council:*** Provided expert witness testimony in support of NRDC's intervention in Ameren Illinois' 2014-2016 energy efficiency plan. Testimony demonstrated that Ameren would be capable of capturing significantly greater efficiency savings than it had proposed (2013)
- ***Regulatory Assistance Project: Expert technical support for DSM in China*** Worked with various government agencies and grid companies, as well as advocacy organizations to provide technical support related to advancing DSM and energy efficiency in China (2015)

JIM GREVATT, MANAGING CONSULTANT

- ***Vermont Public Service Department: Evaluation of Clean Energy Development Fund*** Conducted interviews of staff and key stakeholders under contract to NMR and prepared memo outlining process findings and recommendations (2014-2015)
- ***Evaluation of Efficiency Maine Low-Income Multi-Family Weatherization Program-*** Responsible for program staff and building owner interviews and process evaluation under contract to NMR and Efficiency Maine (2014-2015)
- ***Northeast Energy Efficiency Partnerships-*** Researched and co-authored meta-study of the use of energy efficiency to defer T&D investments (2014)
- ***Northeast Energy Efficiency Partnerships-*** Researched and co-authored meta-study of ductless heat pump performance and market acceptance (2014)
- ***New Hampshire Electric Co-op-*** Conducted assessment of the co-op's environmental and social responsibility programs' promotion of whole building efficiency retrofits, cold climate heat pumps and renewable energy systems. Presented recommendations to the co-op Board. (2014)
- ***High Meadows Fund-*** Co-authored a study assessing the market viability of "High Performance Homes" in Vermont (2014)
- ***Energy Savings Potential Study, Delaware Department of Natural Resources-*** led narrative development for the residential programs for a study of the energy efficiency savings potential in Delaware (2013-2014)
- ***Regulatory Assistance Project-*** Provide technical support to energy efficiency advocates in proceedings in Maryland, Mississippi, and Missouri (2013-2017)
- ***Better Buildings Solutions Center, U. S. Department of Energy-*** Energy Futures Group's lead author in drafting and reviewing web content for ten how-to "handbooks" detailing proven approaches to designing and implementing residential retrofit efficiency programs (2013-2014)
- ***Utility Program Benchmarking-*** led research on behalf of a large IOU to compare the cost of saved energy across ~10 leading utility portfolios. The research sought to determine if there are discernable differences in the cost of saved energy related to utility spending in specific non-incentive categories, including administration, marketing, and EM&V (2013)
- ***Research on trends in multi-family, HVAC, and new construction programs-*** developed an analysis of emerging program trends on behalf of a leading energy efficiency industry firm (2013-2014)
- ***Efficiency Power Plant, Regulatory Assistance Project-*** Partnered with RAP to develop a demonstration tool to show how energy efficiency measures can be used to mitigate air quality impacts related to power production (2013)
- ***Natural Gas Energy Efficiency Analysis, the Green Energy Coalition-*** Provided analytical support to demonstrate in testimony that Enbridge Gas could reduce the scale of its proposed pipeline expansion by implementing aggressive energy efficiency programs (2013)

JIM GREVATT, MANAGING CONSULTANT

- ***Targeted Implementation, VEIC-*** Responsible for market analysis and strategic planning for a new division expanding VEIC's energy efficiency program implementation projects (2012-2013)
- ***DC Sustainable Energy Utility-*** Led the planning and startup implementation of Residential programs for the DC SEU, including single and multi-family and retail market programs. Led the development of the initial portfolio-level Annual Plan. Led client and partner interactions around planning and policy development. Member of DC SEU Senior Management Team (2011-2012)
- ***EmPOWER Maryland Critical Program Review-*** Expert consultant to the Maryland Office of Peoples' Counsel in EmPOWER Maryland hearings regarding utility energy efficiency planning and reporting. Represented the OPC in stakeholder meetings that informed the current 2012-2014 EmPOWER plans. Multiple appearances before the Maryland Public Service Commission. (2010-2012)
- ***Efficiency Vermont 20 year Forecast of Efficiency Potential-*** Senior Advisor in developing the forecast scenarios that led to significantly increased efficiency investment in Vermont (2010-2011)
- ***Efficiency Vermont Residential Programs-*** Directed 100% growth in program budgets to nearly $10M annually. Responsible for strategic direction, leadership, and results for Efficiency Vermont's award-winning residential retrofit, new construction, retail, and low income programs. Supported excellence in a staff of 30 (2005-2010).
- ***Vermont Gas Systems Efficiency Program Leader-*** Directed strategic planning and program operations that led to six programs and portfolio as a whole being recognized as exemplary in Responding to the Natural Gas Crisis: America's Best Natural Gas Energy Efficiency Programs (ACEEE, 2003). Built contractor infrastructure and internal support to consistently meet program objectives. Led development of Annual Reports, planning and budgeting. Collaborated with Efficiency Vermont staff to develop a fuel-blind, state-wide, jointly offered residential new construction program (2001-2005)
- ***Residential Retrofit Program Development-*** Enhanced design and performance of VGS' residential retrofit offerings by streamlining delivery and building strong relationships with contractors, homeowners, and property managers (1994-2005)
- ***Demonstrated Technical Excellence in Approaches to Residential Retrofits*** Conducted hundreds of residential energy audits and quality assurance inspections for natural gas and alternative-fueled homes. Trained and coached installers to obtain desired quality. Worked to satisfy homeowners through explanation, education, sound listening to concerns, and ultimately assuring that concerns were addressed. Trained new staff in auditing techniques. (1991-1998)

SELECTED PRESENTATIONS

Keys to the House: Unlocking Residential Savings with Program Models for Home Energy Upgrades-ACEEE 2016 Summer Study on Energy Efficiency in Buildings, August, 2016

Home Upgrade Program Design & Implementation Models for Acquiring Savings in Multiple Climate Zones- 2016 National Home Performance Conference, April, 2016

JIM GREVATT, MANAGING CONSULTANT

EERS Advancements in Maryland: EmPOWER After 2015- Presentation at ACEEE Energy Efficiency as a Resource Conference, September, 2015

Leveling the Playing Field for Distributed Energy Resources- Panelist discussing the use of energy efficiency to defer T&D investments, Acadia Center forum on Envisioning Our Energy Future, February, 2015

Residential Retrofit Programs: What's Working? Perspectives from National Program Leaders- Panelist at AESP National Conference 2012

Elements of Retrofit Program Incentive Design- DOE Technical Assistance Program Publication, April, 2011

Designing Effective Incentives to Drive Residential Retrofit Participation- DOE Technical Assistance Program Webinar, October, 2010

Quality Assurance for Residential Retrofit Programs- DOE Technical Assistance Program Webinar, October, 2010

Home Performance with ENERGY STAR, Quality Assurance in Vermont- Panelist at the ACI Home Energy Retrofit Summit, April 2010

Delivering on the Promise-Engaging Communities and the Public- Panelist at 2010 NEEP Summit, March, 2010

Home Performance with Energy Star in Vermont - Presentation at CEE Member meeting, June 2009

Leading by Example: Exemplary Low Income Energy Efficiency Programs –Presented on Efficiency Vermont's Residential low income services at California's Low Income Energy Efficiency Symposium, June 2006

"Natural Gas Efficiency Policies, Responding to the Natural Gas Crisis One Therm at a Time" - Co-presented with Dan York and Anna Monis Shipley of American Council for an Energy-Efficient Economy (ACEEE) -ACEEE/CEE Market Transformation Symposium, 2004

TRC Savings Goals by Sector When Just Removing Two-Year Payback Screen and Assuming 50% of Economic Potential is Achievable

Residential

	Incremental Annual Energy Savings (GWh)										10-Year
Utility	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	73	99	99	99	99	99	99	99	99	99	965
Duke	68	135	166	166	166	166	166	166	166	166	1,530
TECO	22	34	34	34	34	34	34	34	34	34	323
Gulf	15	31	42	42	42	42	42	42	42	42	381
Orlando	8	16	16	16	16	16	16	16	16	16	155
JEA	14	28	37	37	37	37	37	37	37	37	336

	Summer Peak MW										10-Year
Utility	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	28	39	39	39	39	39	39	39	39	39	377
Duke	29	59	72	72	72	72	72	72	72	72	663
TECO	4	7	7	7	7	7	7	7	7	7	64
Gulf	3	7	9	9	9	9	9	9	9	9	83
Orlando	2	4	4	4	4	4	4	4	4	4	37
JEA	3	7	9	9	9	9	9	9	9	9	80

	Winter Peak MW										10-Year
Utility	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	11	15	15	15	15	15	15	15	15	15	141
Duke	13	27	33	33	33	33	33	33	33	33	303
TECO	3	5	5	5	5	5	5	5	5	5	51
Gulf	3	6	9	9	9	9	9	9	9	9	79
Orlando	1	2	2	2	2	2	2	2	2	2	19
JEA	2	4	5	5	5	5	5	5	5	5	49

Non-Residential

Utility	Incremental Annual Energy Savings (GWh)										10-Year Total
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	253	346	346	346	346	346	346	346	346	346	3,367
Duke	46	93	114	114	114	114	114	114	114	114	1,052
TECO	36	56	56	56	56	56	56	56	56	56	538
Gulf	17	34	46	46	46	46	46	46	46	46	422
Orlando	12	24	25	25	25	25	25	25	25	25	238
JEA	21	43	55	55	55	55	55	55	55	55	507

Utility	Summer Peak MW										10-Year Total
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	55	76	76	76	76	76	76	76	76	76	738
Duke	10	19	24	24	24	24	24	24	24	24	217
TECO	6	10	10	10	10	10	10	10	10	10	93
Gulf	3	6	8	8	8	8	8	8	8	8	76
Orlando	2	4	4	4	4	4	4	4	4	4	38
JEA	3	6	8	8	8	8	8	8	8	8	76

Utility	Winter Peak MW										10-Year Total
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	38	52	52	52	52	52	52	52	52	52	510
Duke	7	14	17	17	17	17	17	17	17	17	156
TECO	5	8	8	8	8	8	8	8	8	8	77
Gulf	2	5	6	6	6	6	6	6	6	6	56
Orlando	2	3	3	3	3	3	3	3	3	3	31
JEA	2	5	6	6	6	6	6	6	6	6	57

TRC Savings Goals Based on Leading Southern Jurisdictions

Residential

Utility	Incremental Annual Energy Savings (GWh)										10-Year
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	73	145	218	290	363	363	363	363	363	363	2,901
Duke	68	135	203	270	338	338	338	338	338	338	2,704
TECO	22	43	65	86	108	108	108	108	108	108	864
Gulf	15	31	46	62	77	77	77	77	77	77	615
Orlando	8	16	23	31	39	39	39	39	39	39	311
JEA	14	28	42	57	71	71	71	71	71	71	565

Utility	Summer Peak MW										10-Year
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	28	57	85	113	141	141	141	141	141	141	1132
Duke	29	59	88	117	147	147	147	147	147	147	1172
TECO	4	9	13	17	21	21	21	21	21	21	172
Gulf	3	7	10	13	17	17	17	17	17	17	134
Orlando	2	4	5	7	9	9	9	9	9	9	73
JEA	3	7	10	14	17	17	17	17	17	17	135

Utility	Winter Peak MW										10-Year
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	11	21	32	42	53	53	53	53	53	53	424
Duke	13	27	40	54	67	67	67	67	67	67	536
TECO	3	7	10	14	17	17	17	17	17	17	136
Gulf	3	6	10	13	16	16	16	16	16	16	127
Orlando	1	2	3	4	5	5	5	5	5	5	39
JEA	2	4	6	8	10	10	10	10	10	10	83

Non-Residential

Utility	Incremental Annual Energy Savings (GWh)										10-Year
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	253	506	759	1,012	1,265	1,265	1,265	1,265	1,265	1,265	10,120
Duke	46	93	139	186	232	232	232	232	232	232	1,859
TECO	36	72	108	144	180	180	180	180	180	180	1,438
Gulf	17	34	51	68	85	85	85	85	85	85	682
Orlando	12	24	36	48	60	60	60	60	60	60	477
JEA	21	43	64	85	107	107	107	107	107	107	854

Utility	Summer Peak MW										10-Year
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	55	111	166	222	277	277	277	277	277	277	2217
Duke	10	19	29	38	48	48	48	48	48	48	383
TECO	6	12	19	25	31	31	31	31	31	31	249
Gulf	3	6	9	12	15	15	15	15	15	15	123
Orlando	2	4	6	8	9	9	9	9	9	9	75
JEA	3	6	10	13	16	16	16	16	16	16	128

Utility	Winter Peak MW										10-Year
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
FPL	38	77	115	153	192	192	192	192	192	192	1532
Duke	7	14	21	28	34	34	34	34	34	34	275
TECO	5	10	15	21	26	26	26	26	26	26	206
Gulf	2	5	7	9	11	11	11	11	11	11	91
Orlando	2	3	5	6	8	8	8	8	8	8	62
JEA	2	5	7	10	12	12	12	12	12	12	96

Florida Power & Light Company
Docket No. 20190015-EG
Staff's First Set of Interrogatories
Interrogatory No. 18
Page 1 of 1

QUESTION:
Please refer to witness Whitley's Exhibit AWW-9 and Exhibit AWW-11. Please provide a Cumulative Present Value Revenue Requirement calculation table (CPVRR) for the RIM Resource Plan, Supply Only Plan, and TRC Plan. Please provide this information in electronic (Excel) format with all formulas intact.

RESPONSE:
The requested information is provided in Attachment Nos. 1 through 3. Note that all three of these resource plans have different levels of DSM, therefore, a CPVRR analysis of fixed and variable costs is only part of the calculation to determine the resource plan with the lowest rate impact to the customer. Please refer to witness Whitley's direct testimony, page 9, lines 6-16.

DECLARATION

I sponsored the answers to Interrogatory Nos. 7, 11, 13, 16-19, 21-27, and 29 and co-sponsored the answers to Interrogatory Nos. 14-15 from Staff's First Set of Interrogatories to Florida Power & Light Company in Docket Nos. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Andrew R. Whitley

Date: 5/14/19

Technical Potential by Measure

FPL 000414
20190015-EG

		Summer MW	Winter MW	Annual GWh
	Total:	6,635.2	4,292.1	28,111.5
1	RM0N101	0.0018	0.0013	0.0136
2	RM0E101	0.1349	0.0973	1.0040
3	RMFN101	0.0100	0.0072	0.0744
4	RMFE101	0.7357	0.5309	5.4771
5	RSFN101	0.0176	0.0127	0.1310
6	RSFE101	1.2957	0.9350	9.6465
7	RM0N102	0.0000	0.0000	0.1825
8	RM0E102	0.0000	0.0000	13.4374
9	RMFN102	0.0000	0.0000	0.9950
10	RMFE102	0.0000	0.0000	73.2605
11	RSFN102	0.0000	0.0000	2.9223
12	RSFE102	0.0000	0.0000	215.1609
13	RM0N103	0.0400	0.0232	0.2508
14	RM0E103	2.9432	1.7094	18.4638
15	RMFN103	0.1653	0.0960	1.0370
16	RMFE103	12.1708	7.0689	76.3532
17	RSFN103	0.6279	0.3647	3.9393
18	RSFE103	46.2330	26.8524	290.0417
19	RM0N104	0.0090	0.0052	0.0562
20	RM0E104	0.6593	0.3829	4.1362
21	RMFN104	0.0372	0.0216	0.2333
22	RMFE104	2.7381	1.5903	17.1773
23	RSFN104	0.1462	0.0849	0.9170
24	RSFE104	10.7627	6.2510	67.5194
25	RM0N105	0.0011	0.0012	0.0100
26	RM0E105	0.0818	0.0889	0.7373
27	RMFN105	0.0074	0.0081	0.0670
28	RMFE105	0.5473	0.5950	4.9317
29	RSFN105	0.0237	0.0257	0.2133
30	RSFE105	1.7432	1.8950	15.7079
31	RM0N106	0.0075	0.0052	0.0567
32	RM0E106	0.5496	0.3804	4.1727
33	RMFN106	0.0192	0.0133	0.1458
34	RMFE106	1.4137	0.9784	10.7327
35	RSFN106	0.1314	0.0909	0.9973
36	RSFE106	9.6725	6.6938	73.4307
37	RM0N107	0.0001	0.0001	0.0012
38	RM0E107	0.0084	0.0049	0.0915

39	RMFN107	0.0007	0.0004	0.0071
40	RMFE107	0.0479	0.0280	0.5212
41	RSFN107	0.0020	0.0012	0.0221
42	RSFE107	0.1496	0.0874	1.6280
43	RM0N108	0.0084	0.0018	0.0525
44	RM0E108	0.6217	0.1333	3.8689
45	RMFN108	0.0481	0.0103	0.2994
46	RMFE108	3.5420	0.7593	22.0408
47	RSFN108	0.1503	0.0322	0.9350
48	RSFE108	11.0628	2.3717	68.8404
49	RM0N109	0.0520	0.0173	0.4915
50	RM0E109	3.7866	1.2616	35.7893
51	RMFN109	0.3626	0.1208	3.4268
52	RMFE109	26.3989	8.7955	249.5085
53	RSFN109	0.7963	0.2653	7.5259
54	RSFE109	56.6773	18.8835	535.6839
55	RM0N110	0.0062	0.0037	0.0307
56	RM0E110	0.4583	0.2742	2.2610
57	RMFN110	0.0354	0.0212	0.1746
58	RMFE110	2.6058	1.5588	12.8555
59	RSFN110	0.0956	0.0572	0.4715
60	RSFE110	7.0374	4.2099	34.7180
61	RM0N111	0.0834	0.0484	0.5231
62	RM0E111	6.1388	3.5654	38.5114
63	RMFN111	0.3448	0.2003	2.1630
64	RMFE111	25.3856	14.7441	159.2557
65	RSFN111	1.3097	0.7607	8.2166
66	RSFE111	96.4317	56.0080	604.9621
67	RM0N112	0.0047	0.0015	0.0187
68	RM0E112	0.3466	0.1140	1.3779
69	RMFN112	0.0026	0.0009	0.0104
70	RMFE112	0.1919	0.0631	0.7627
71	RSFN112	0.0332	0.0109	0.1319
72	RSFE112	2.4418	0.8029	9.7079
73	RM0N113	0.0172	0.0041	0.0714
74	RM0E113	1.2636	0.3032	5.2571
75	RMFN113	0.1205	0.0289	0.5014
76	RMFE113	8.8742	2.1291	36.9192
77	RSFN113	0.3053	0.0733	1.2702
78	RSFE113	22.4801	5.3935	93.5240
79	RM0E114	0.3574	0.1191	3.3781
80	RM0N114	0.0000	0.0000	0.0000
81	RMFE114	2.4917	0.8302	23.5506
82	RMFN114	0.0000	0.0000	0.0000
83	RSFE114	16.4170	5.4697	155.1646
84	RSFN114	0.0000	0.0000	0.0000
85	RM0E115	0.1757	0.1371	1.5733

86	RM0N115	0.0024	0.0019	0.0214
87	RMFE115	1.5675	1.2231	14.0399
88	RMFN115	0.0213	0.0166	0.1907
89	RSFE115	0.5916	0.4616	5.2984
90	RSFN115	0.0080	0.0063	0.0720
91	RM0E201	12.0960	2.5599	22.1667
92	RMFE201	62.9620	17.3418	119.8333
93	RSFE201	80.1504	26.7974	157.7780
94	RM0E202	0.1450	1.0787	1.4821
95	RM0N202	0.0000	0.0000	0.0000
96	RMFE202	1.2070	8.7894	11.2697
97	RMFN202	0.0000	0.0000	0.0000
98	RSFE202	3.0600	12.8833	20.3877
99	RSFN202	0.0000	0.0000	0.0000
100	RM0E203	0.0290	0.2670	0.3356
101	RM0N203	0.0000	0.0000	0.0000
102	RMFE203	0.2275	1.6178	2.0286
103	RMFN203	0.0000	0.0000	0.0000
104	RSFE203	0.6258	3.1187	4.5689
105	RSFN203	0.0000	0.0000	0.0000
106	RM0E204	0.8297	2.1649	4.3830
107	RM0N204	0.0000	0.0000	0.0000
108	RMFE204	5.2538	15.3532	27.1112
109	RMFN204	0.0000	0.0000	0.0000
110	RSFE204	12.7347	31.4876	63.0668
111	RSFN204	0.0000	0.0000	0.0000
112	RM0E205	0.0000	1.1081	1.0708
113	RM0N205	0.0000	0.0330	0.0319
114	RMFE205	0.0000	0.0000	0.0000
115	RMFN205	0.0000	0.0000	0.0000
116	RSFE205	0.0000	5.2071	5.1721
117	RSFN205	0.0000	0.0000	0.0000
118	RM0E206	0.0000	0.0000	0.0000
119	RMFE206	0.0000	0.0000	0.0000
120	RSFE206	0.0000	0.0000	0.0000
121	RM0E207	27.5703	5.6582	50.3291
122	RM0N207	0.4009	0.0167	0.6592
123	RMFE207	139.5707	40.0904	267.4656
124	RMFN207	1.9675	0.7409	3.9651
125	RSFE207	247.2011	82.2393	486.1676
126	RSFN207	3.5107	1.3454	7.1012
127	RM0E208	0.2664	1.4675	3.1032
128	RM0N208	0.0000	0.0000	0.0000
129	RMFE208	1.8902	18.5504	30.2615
130	RMFN208	0.0000	0.2386	0.2417
131	RSFE208	3.1226	55.0254	74.6846
132	RSFN208	0.0000	0.5889	0.5965

133	RM0E209	0.4369	2.7071	6.0909
134	RM0N209	0.0000	0.0000	0.0000
135	RMFE209	2.2246	47.7721	68.1950
136	RMFN209	0.0000	0.2662	0.4651
137	RSFE209	7.1899	46.3342	101.9629
138	RSFN209	0.0000	0.3454	0.6034
139	RM0E210	0.0000	0.0000	0.0000
140	RMFE210	0.0000	0.0005	0.0008
141	RSFE210	0.0000	0.0284	0.0455
142	RM0E211	0.1358	0.0276	0.2476
143	RM0N211	0.0236	0.0049	0.0431
144	RMFE211	0.6847	0.1959	1.3112
145	RMFN211	0.1158	0.0445	0.2343
146	RSFE211	0.6156	0.2009	1.2063
147	RSFN211	1.2525	0.4800	2.5335
148	RM0E212	0.1825	0.0591	0.5847
149	RM0N212	0.0000	0.0000	0.0000
150	RMFE212	0.9419	0.4533	3.1800
151	RMFN212	0.0141	0.0091	0.0503
152	RSFE212	5.9777	4.2871	20.7491
153	RSFN212	0.2841	0.2364	1.0153
154	RM0E213	0.0000	0.5963	0.0241
155	RMFE213	0.0000	0.1941	0.0068
156	RSFE213	0.0000	13.4925	0.2654
157	RM0E214	6.1579	20.6233	32.7194
158	RM0N214	0.0000	0.0000	0.0000
159	RMFE214	16.2171	44.9004	79.1633
160	RMFN214	0.0000	0.0000	0.0000
161	RSFE214	73.5328	125.7361	279.9670
162	RSFN214	0.0000	0.0000	0.0000
163	RM0E215	1.8898	7.5281	10.0394
164	RM0N215	0.0000	0.0000	0.0000
165	RMFE215	5.3420	8.3626	19.8491
166	RMFN215	0.0000	0.0000	0.0000
167	RSFE215	22.4469	24.4190	72.6381
168	RSFN215	0.0000	0.0000	0.0000
169	RM0E216	11.1504	26.9218	53.9892
170	RM0N216	0.0000	0.0000	0.0000
171	RMFE216	38.9656	71.8307	158.0376
172	RMFN216	0.0000	0.0000	0.0000
173	RSFE216	147.7386	291.5261	626.7938
174	RSFN216	0.0000	0.0000	0.0000
175	RM0E217	9.5518	44.3700	50.0038
176	RM0N217	0.1712	1.7594	1.4114
177	RMFE217	24.0324	0.0000	59.3969
178	RMFN217	0.7530	0.0000	1.8610
179	RSFE217	114.6274	0.0000	304.1356

180	RSFN217	2.4478	0.0000	6.4947
181	RM0E218	0.0000	0.0000	0.0000
182	RM0N218	0.0000	0.0000	0.0000
183	RMFE218	0.0000	0.0000	0.0000
184	RMFN218	0.0000	0.0000	0.0000
185	RSFE218	0.0000	0.0000	0.0000
186	RSFN218	0.0000	0.0000	0.0000
187	RM0E219	0.8156	4.7957	6.6166
188	RMFE219	5.2524	87.9508	105.8353
189	RSFE219	10.5423	52.2497	74.7356
190	RM0E220	4.5082	-2.0633	2.9570
191	RM0N220	0.0000	0.0000	0.0000
192	RMFE220	40.8219	-18.6832	26.7756
193	RMFN220	0.0000	0.0000	0.0000
194	RSFE220	51.9087	-23.7574	34.0476
195	RSFN220	0.0000	0.0000	0.0000
196	RM0N301	0.0000	0.0000	0.0000
197	RM0T301	0.0000	0.0000	0.0000
198	RMFN301	0.0000	0.0000	0.0000
199	RMFT301	0.0000	0.0000	0.0000
200	RSFN301	0.0000	0.0000	0.0000
201	RSFT301	0.0000	0.0000	0.0000
202	RM0N302	0.0000	0.0000	0.0000
203	RM0T302	0.0000	0.0000	0.0000
204	RMFN302	0.0000	0.0000	0.0000
205	RMFT302	0.0000	0.0000	0.0000
206	RSFN302	0.0000	0.0000	0.0000
207	RSFT302	0.0000	0.0000	0.0000
208	RM0N303	0.0000	0.0000	0.0000
209	RM0T303	0.0000	0.0000	0.0000
210	RMFN303	0.0000	0.0000	0.0000
211	RMFT303	0.0000	0.0000	0.0000
212	RSFN303	0.0000	0.0000	0.0000
213	RSFT303	0.0000	0.0000	0.0000
214	RM0N304	0.0000	0.0000	0.0000
215	RM0T304	0.0000	0.0000	0.0000
216	RMFN304	0.0000	0.0000	0.0000
217	RMFT304	0.0000	0.0000	0.0000
218	RSFN304	0.0000	0.0000	0.0000
219	RSFT304	0.0000	0.0000	0.0000
220	RM0N305	0.0000	0.0000	0.0000
221	RM0T305	0.0000	0.0000	0.0000
222	RMFN305	0.0000	0.0000	0.0000
223	RMFT305	0.0000	0.0000	0.0000
224	RSFN305	0.0000	0.0000	0.0000
225	RSFT305	0.0000	0.0000	0.0000
226	RM0N306	0.0000	0.0000	0.0000

227	RM0T306	0.0000	0.0000	0.0000
228	RMFN306	0.0000	0.0000	0.0000
229	RMFT306	0.0000	0.0000	0.0000
230	RSFN306	0.0000	0.0000	0.0000
231	RSFT306	0.0000	0.0000	0.0000
232	RM0N307	0.0000	0.0000	0.0000
233	RM0T307	0.0000	0.0000	0.0000
234	RMFN307	0.0000	0.0000	0.0000
235	RMFT307	0.0000	0.0000	0.0000
236	RSFN307	0.0000	0.0000	0.0000
237	RSFT307	0.0000	0.0000	0.0000
238	RM0N308	0.0000	0.0000	0.0000
239	RM0T308	0.0000	0.0000	0.0000
240	RMFN308	0.0000	0.0000	0.0000
241	RMFT308	0.0000	0.0000	0.0000
242	RSFN308	0.0000	0.0000	0.0000
243	RSFT308	0.0000	0.0000	0.0000
244	RM0N309	0.0000	0.0000	0.0000
245	RM0T309	0.0000	0.0000	0.0000
246	RMFN309	0.0000	0.0000	0.0000
247	RMFT309	0.0000	0.0000	0.0000
248	RSFN309	0.0000	0.0000	0.0000
249	RSFT309	0.0000	0.0000	0.0000
250	RM0N310	0.0302	0.0621	0.1093
251	RM0T310	2.1367	3.5981	7.6178
252	RMFN310	0.0815	0.5460	0.3905
253	RMFT310	6.0010	28.8240	27.0123
254	RSFN310	1.2170	4.2615	4.3422
255	RSFT310	90.2233	258.5409	314.6308
256	RM0N311	0.0184	0.0379	0.1907
257	RM0T311	1.3522	2.1405	12.7958
258	RMFN311	0.0495	0.1214	0.4271
259	RMFT311	3.6439	6.9095	27.5801
260	RSFN311	0.9684	1.1632	5.8322
261	RSFT311	71.3009	84.7176	427.6494
262	RM0N312	0.5112	0.0000	1.0756
263	RM0T312	35.2992	0.0000	74.2799
264	RMFN312	5.2042	0.0000	12.3619
265	RMFT312	375.0212	0.0000	890.8245
266	RSFN312	14.4457	0.0000	28.4561
267	RSFT312	1063.5913	0.0000	2095.1356
268	RM0E313	0.0000	0.0000	0.0000
269	RMFE313	0.0000	0.0000	0.0000
270	RSFE313	0.0000	0.0000	0.0000
271	RM0E314	28.4253	5.9924	52.0657
272	RMFE314	150.3952	43.1997	288.2090
273	RSFE314	98.9754	32.1499	193.7924

274	RM0N315	0.0000	0.0000	0.0155
275	RM0T315	0.0000	0.0001	1.1421
276	RMFN315	0.0000	0.0000	0.1569
277	RMFT315	0.0000	0.0013	11.5499
278	RSFN315	0.0000	0.0001	0.4961
279	RSFT315	0.0000	0.0042	36.5230
280	RM0N316	0.0003	0.0001	0.0020
281	RM0T316	0.0245	0.0046	0.1472
282	RMFN316	0.0033	0.0006	0.0197
283	RMFT316	0.2409	0.0456	1.4490
284	RSFN316	0.0059	0.0011	0.0355
285	RSFT316	0.4345	0.0823	2.6136
286	RM0N317	0.0217	0.0000	0.0456
287	RM0T317	1.3903	0.0000	2.9255
288	RMFN317	0.0563	0.0000	0.1338
289	RMFT317	3.7760	0.0000	8.9696
290	RSFN317	0.1303	0.0000	0.2566
291	RSFT317	9.1526	0.0000	18.0294
292	RM0N318	0.0015	0.0038	0.0067
293	RM0T318	0.0934	0.2064	0.3735
294	RMFN318	0.0013	0.0105	0.0139
295	RMFT318	0.0848	0.5958	0.8071
296	RSFN318	0.0000	0.0000	0.0000
297	RSFT318	0.0000	0.0000	0.0000
298	RM0E319	0.0000	0.0000	0.0000
299	RMFE319	0.0000	0.0000	0.0000
300	RSFE319	0.0000	0.0000	0.0000
301	RM0E320	0.0000	8.3841	2.9333
302	RM0N320	0.0000	0.0000	0.0000
303	RMFE320	0.0000	106.8234	37.3738
304	RMFN320	0.0000	0.1733	0.0606
305	RSFE320	0.0000	43.7553	15.3084
306	RSFN320	0.0000	1.2797	0.4477
307	RM0E321	0.1041	0.0000	0.2863
308	RM0N321	0.0000	0.0000	0.0000
309	RMFE321	0.5329	0.0000	1.5401
310	RMFN321	0.0000	0.0000	0.0000
311	RSFE321	1.8163	0.0000	5.4695
312	RSFN321	0.0000	0.0000	0.0000
313	RM0E322	11.6459	0.0000	32.1671
314	RM0N322	0.0000	0.0000	0.0000
315	RMFE322	60.3429	0.0000	173.7584
316	RMFN322	0.0358	0.0000	0.0866
317	RSFE322	48.6755	0.0000	146.2954
318	RSFN322	0.0000	0.0000	0.0000
319	RM0N323	0.0146	0.0251	0.0395
320	RM0T323	0.9909	1.5964	2.6027

321	RMFN323	0.0344	0.2901	0.2864
322	RMFT323	2.3348	14.0186	15.0487
323	RSFN323	0.0046	0.1132	0.0637
324	RSFT323	0.2878	6.1913	3.5588
325	RM0N401	0.0000	0.0000	0.0000
326	RM0T401	0.0000	0.0000	0.0000
327	RMFN401	0.0000	0.0000	0.0000
328	RMFT401	0.0000	0.0000	0.0000
329	RSFN401	0.0000	0.0000	0.0000
330	RSFT401	0.0000	0.0000	0.0000
331	RM0N402	0.0000	0.0000	0.0000
332	RM0T402	0.0000	0.0000	0.0000
333	RMFN402	0.0000	0.0000	0.0000
334	RMFT402	0.0000	0.0000	0.0000
335	RSFN402	0.0000	0.0000	0.0000
336	RSFT402	0.0000	0.0000	0.0000
337	RM0N403	0.0000	0.0000	0.0000
338	RM0T403	0.0000	0.0000	0.0000
339	RMFN403	0.0000	0.0000	0.0000
340	RMFT403	0.0000	0.0000	0.0000
341	RSFN403	0.0000	0.0000	0.0000
342	RSFT403	0.0000	0.0000	0.0000
343	RM0N404	0.0000	0.0000	0.0000
344	RM0T404	0.0000	0.0000	0.0000
345	RMFN404	0.0000	0.0000	0.0000
346	RMFT404	0.0000	0.0000	0.0000
347	RSFN404	0.0000	0.0000	0.0000
348	RSFT404	0.0000	0.0000	0.0000
349	RM0N405	0.0000	0.0000	0.0000
350	RM0T405	0.0000	0.0000	0.0000
351	RMFN405	0.0000	0.0000	0.0000
352	RMFT405	0.0000	0.0000	0.0000
353	RSFN405	0.0000	0.0000	0.1705
354	RSFT405	0.0000	0.0000	2.5106
355	RM0N406	0.1446	0.1092	1.0517
356	RM0T406	0.0000	0.0000	0.0000
357	RMFN406	0.7969	0.6017	5.7968
358	RMFT406	0.0000	0.0000	0.0000
359	RSFN406	2.3472	1.7723	17.0746
360	RSFT406	0.0000	0.0000	0.0000
361	RM0N407	0.0530	0.0556	0.5941
362	RM0T407	3.9000	4.0948	43.7426
363	RMFN407	0.2920	0.3065	3.2747
364	RMFT407	21.4964	22.5699	241.1048
365	RSFN407	0.8600	0.9029	9.6456
366	RSFT407	63.3177	66.4797	710.1742
367	RM0N408	0.0033	0.0035	0.0369

368	RM0T408	0.2421	0.2542	2.7154
369	RMFN408	0.0181	0.0190	0.2033
370	RMFT408	1.3348	1.4015	14.9711
371	RSFN408	0.0534	0.0561	0.5988
372	RSFT408	3.9309	4.1272	44.0887
373	RM0N409	0.0000	0.0000	0.0000
374	RM0T409	0.0000	0.0000	0.0000
375	RMFN409	0.0000	0.0000	0.0000
376	RMFT409	0.0000	0.0000	0.0000
377	RSFN409	0.0000	0.0000	0.0000
378	RSFT409	0.0000	0.0000	0.0000
379	RM0N410	0.0732	0.0768	0.8208
380	RM0T410	5.3882	5.6572	60.4338
381	RMFN410	0.4034	0.4235	4.5242
382	RMFT410	29.6990	31.1821	333.1054
383	RSFN410	1.1881	1.2475	13.3261
384	RSFT410	87.4784	91.8469	981.1618
385	RM0N411	0.0000	0.0000	0.0520
386	RM0T411	0.0000	0.0000	3.8272
387	RMFN411	0.0000	0.0000	0.2865
388	RMFT411	0.0000	0.0000	21.0920
389	RSFN411	0.0000	0.0000	0.8439
390	RSFT411	0.0000	0.0000	62.1322
391	RM0N412	0.0000	0.0000	0.2129
392	RM0T412	0.0000	0.0000	15.6785
393	RMFN412	0.0000	0.0000	1.1737
394	RMFT412	0.0000	0.0000	86.4170
395	RSFN412	0.0000	0.0000	3.4573
396	RSFT412	0.0000	0.0000	254.5514
397	RM0N413	0.0000	0.0000	0.0000
398	RM0T413	0.0000	0.0000	0.0000
399	RMFN413	0.0000	0.0000	0.0000
400	RMFT413	0.0000	0.0000	0.0000
401	RSFN413	0.0000	0.0000	0.0000
402	RSFT413	0.0000	0.0000	0.0000
403	RM0N501	0.0007	0.0030	0.0210
404	RM0T501	0.0600	0.2399	1.6906
405	RMFN501	0.0026	0.0103	0.0726
406	RMFT501	0.1896	0.7583	5.3429
407	RSFN501	0.0221	0.0886	0.6242
408	RSFT501	1.1509	4.6038	32.4388
409	RM0E502	0.0961	0.0000	0.2756
410	RM0N502	0.0000	0.0000	0.0000
411	RMFE502	0.4996	0.0000	1.4334
412	RMFN502	0.0000	0.0000	0.0000
413	RSFE502	3.5335	0.0000	10.1374
414	RSFN502	0.0000	0.0000	0.0000

415	RM0N503	0.0000	0.0000	0.0000
416	RM0T503	0.0000	0.0000	0.0000
417	RMFN503	0.0000	0.0000	0.0000
418	RMFT503	0.0000	0.0000	0.0000
419	RSFN503	0.0000	0.0000	0.0000
420	RSFT503	0.0000	0.0000	0.0000
421	RM0N504	0.0000	0.0000	0.0000
422	RM0T504	0.0000	0.0000	0.0000
423	RMFN504	0.0000	0.0000	0.0000
424	RMFT504	0.0000	0.0000	0.0000
425	RSFN504	0.0000	0.0000	0.0000
426	RSFT504	0.0000	0.0000	0.0000
427	RM0N505	0.0000	0.0000	0.0000
428	RM0T505	0.0000	0.0000	0.0000
429	RMFN505	0.0000	0.0000	0.0000
430	RMFT505	0.0000	0.0000	0.0000
431	RSFN505	0.7793	0.4395	3.7457
432	RSFT505	57.3774	32.3577	275.7831
433	RM0E601	0.2410	0.5187	2.6392
434	RM0N601	0.0033	0.0070	0.0358
435	RMFE601	1.3191	2.8395	14.4486
436	RMFN601	0.0181	0.0390	0.1984
437	RSFE601	3.9050	8.4059	42.7727
438	RSFN601	0.0478	0.1029	0.5234
439	RM0E602	0.1223	0.2633	1.3399
440	RM0N602	0.0000	0.0000	0.0000
441	RMFE602	0.9923	2.1361	10.8693
442	RMFN602	0.0000	0.0000	0.0000
443	RSFE602	0.2010	0.4328	2.2021
444	RSFN602	0.0000	0.0000	0.0000
445	RM0N603	0.0000	0.0000	0.0000
446	RM0T603	0.0000	0.0000	0.0000
447	RMFN603	0.0000	0.0000	0.0000
448	RMFT603	0.0000	0.0000	0.0000
449	RSFN603	0.0000	0.0000	1.9950
450	RSFT603	0.0000	0.0000	146.8842
451	RM0N604	0.0432	0.1615	0.6343
452	RM0T604	3.1826	11.8881	46.6989
453	RMFN604	0.3625	1.3539	5.3185
454	RMFT604	26.6871	99.6844	391.5809
455	RSFN604	0.7009	2.6180	10.2838
456	RSFT604	51.6027	192.7515	757.1671
457	RM0E605	0.0000	0.0000	0.0000
458	RM0N605	0.0000	0.0000	0.0000
459	RMFE605	1.5899	3.4223	17.4144
460	RMFN605	0.0000	0.0000	0.0000
461	RSFE605	0.3180	0.6845	3.4831

462	RSFN605	0.0000	0.0000	0.0000
463	RM0E606	0.5073	1.0920	5.5567
464	RM0N606	0.0018	0.0038	0.0194
465	RMFE606	2.7622	5.9459	30.2553
466	RMFN606	0.0095	0.0204	0.1039
467	RSFE606	0.4945	1.0645	5.4168
468	RSFN606	0.0275	0.0593	0.3017
469	RM0N607	0.0000	0.0001	0.0002
470	RM0T607	-0.0004	0.0048	0.0171
471	RMFN607	-0.0001	0.0011	0.0039
472	RMFT607	-0.0069	0.0815	0.2921
473	RSFN607	-0.0002	0.0026	0.0093
474	RSFT607	-0.0177	0.2109	0.7554
475	RM0E608	0.5666	1.2197	6.2061
476	RM0N608	0.0172	0.0371	0.1887
477	RMFE608	4.6709	10.0547	51.1625
478	RMFN608	0.1425	0.3068	1.5613
479	RSFE608	0.8958	1.9283	9.8122
480	RSFN608	0.4614	0.9932	5.0536
481	RM0N609	0.0000	0.0000	0.0000
482	RM0T609	0.0000	0.0000	0.0000
483	RMFN609	0.0000	0.0000	0.0000
484	RMFT609	0.0000	0.0000	0.0000
485	RSFN609	0.0000	0.0000	0.6790
486	RSFT609	0.0000	0.0000	49.9919
487	RM0N610	0.0555	0.0078	0.7322
488	RM0T610	4.0843	0.5734	53.9120
489	RMFN610	0.1519	0.0213	2.0055
490	RMFT610	11.1865	1.5705	147.6593
491	RSFN610	0.8994	0.1263	11.8723
492	RSFT610	66.2222	9.2972	874.1187
493	RM0E611	0.0000	0.0000	0.0000
494	RM0N611	0.0000	0.0000	0.0000
495	RMFE611	0.0000	0.0000	0.0000
496	RMFN611	0.0000	0.0000	0.0000
497	RSFE611	0.2705	0.5823	2.9628
498	RSFN611	0.0000	0.0000	0.0000
499	RM0E612	0.1798	0.3871	1.9698
500	RM0N612	0.0004	0.0009	0.0044
501	RMFE612	1.4945	3.2170	16.3697
502	RMFN612	0.0034	0.0072	0.0368
503	RSFE612	3.6963	7.9567	40.4872
504	RSFN612	0.0075	0.0161	0.0820
505	RM0E613	0.0000	0.0000	0.0000
506	RM0N613	0.0000	0.0000	0.0000
507	RMFE613	0.0000	0.0000	0.0000
508	RMFN613	0.0000	0.0000	0.0000

509	RSFE613	0.0964	0.2076	1.0563
510	RSFN613	0.0000	0.0000	0.0000
511	RM0E614	0.0000	0.0000	4.9864
512	RM0N614	0.0000	0.0000	0.0000
513	RMFE614	0.0000	0.0000	11.5708
514	RMFN614	0.0000	0.0000	0.0000
515	RSFE614	0.0000	0.0000	38.5297
516	RSFN614	0.0000	0.0000	0.0000
517	RM0E701	0.4042	1.4699	3.3839
518	RM0N701	0.0000	0.0252	0.0135
519	RMFE701	0.9321	5.3573	8.6196
520	RMFN701	0.0139	0.1173	0.1403
521	RSFE701	0.9483	10.4600	9.1653
522	RSFN701	0.0000	0.2009	0.0533
523	RM0N702	0.0000	0.0000	0.0000
524	RMFN702	0.0000	0.0000	0.0000
525	RSFN702	0.0000	0.0000	0.0000
526	IGSLD101	0.3331	0.3243	2.4406
527	IGSD101	0.7773	0.7568	5.6948
528	IGSLD102	0.8225	0.8007	6.0257
529	IGSD102	1.9191	1.8684	14.0599
530	IGSLD103	0.5467	0.5323	4.0056
531	IGSD103	1.2757	1.2420	9.3464
532	IGSLD201	0.7273	0.7096	5.0368
533	IGSD201	1.6970	1.6558	11.7525
534	IGSLD202	0.8647	0.8438	5.9888
535	IGSD202	2.0177	1.9688	13.9740
536	IGSLD203	0.6404	0.6249	4.4353
537	IGSD203	1.4943	1.4581	10.3491
538	IGSLD204	0.6406	0.6251	4.4367
539	IGSD204	1.4948	1.4585	10.3523
540	IGSLD301	0.0000	0.0000	0.3232
541	IGSD301	0.0000	0.0000	0.7542
542	IGSLD302	0.0000	0.0000	0.9294
543	IGSD302	0.0000	0.0000	2.1686
544	IGSLD303	1.3239	1.2869	9.1506
545	IGSD303	3.0891	3.0027	21.3513
546	IGSLD304	1.8647	1.8126	12.8888
547	IGSD304	4.3511	4.2293	30.0739
548	IGSLD305	0.4045	0.3932	2.7960
549	IGSD305	0.9439	0.9175	6.5241
550	IGSLD401	0.3425	0.3335	2.5094
551	IGSD401	0.7992	0.7781	5.8554
552	IGSLD402	0.9058	0.8819	6.6361
553	IGSD402	2.1135	2.0577	15.4842
554	IGSLD403	0.6089	0.5928	4.4607
555	IGSD403	1.4207	1.3832	10.4084

556	IGSLD501	0.2799	0.2725	2.0506
557	IGSD501	0.6531	0.6358	4.7848
558	IGSLD502	0.0902	0.0878	0.6609
559	IGSD502	0.2105	0.2049	1.5422
560	IGSLD503	0.8148	0.7933	5.9697
561	IGSD503	1.9013	1.8510	13.9293
562	IGSLD504	1.5322	1.4917	11.2254
563	IGSD504	3.5751	3.4807	26.1927
564	IGSLD505	0.1352	0.1317	0.9908
565	IGSD505	0.3156	0.3072	2.3119
566	IGSLD506	0.5639	0.5490	4.1315
567	IGSD506	1.3158	1.2811	9.6402
568	IGSLD601	0.0774	0.0755	0.5548
569	IGSD601	0.1807	0.1762	1.2946
570	IGSLD602	0.2904	0.2832	2.0808
571	IGSD602	0.6775	0.6608	4.8552
572	IGSLD603	0.3210	0.3131	2.3001
573	IGSD603	0.7489	0.7305	5.3669
574	IGSLD701	0.8488	0.8279	6.0825
575	IGSD701	1.9805	1.9317	14.1925
576	IGSLD702	0.0725	0.0707	0.5196
577	IGSD702	0.1692	0.1650	1.2124
578	IGSLD703	0.1598	0.1559	1.1454
579	IGSD703	0.3730	0.3638	2.6726
580	IGSLD801	0.0051	0.0050	0.0368
581	IGSD801	0.0120	0.0117	0.0859
582	IGSLD802	0.3639	0.3549	2.6076
583	IGSD802	0.8491	0.8281	6.0845
584	IGSLD901	3.5152	3.4365	25.4474
585	IGSD901	8.2020	8.0184	59.3773
586	CcoNgs101	0.0000	0.0000	0.0000
587	CcoTgs101	0.0009	0.0004	0.0042
588	CheNgs101	0.0002	0.0001	0.0010
589	CheTgs101	0.0210	0.0082	0.0948
590	ChoNgs101	0.0005	0.0002	0.0021
591	ChoTgs101	0.0429	0.0168	0.1934
592	CloNgs101	0.0012	0.0005	0.0053
593	CloTgs101	0.1097	0.0430	0.4948
594	CreNgs101	0.0096	0.0038	0.0432
595	CreTgs101	0.8935	0.3507	4.0320
596	CscNgs101	0.0002	0.0001	0.0011
597	CscTgs101	0.0218	0.0086	0.0985
598	CcoNgs102	0.0000	0.0000	0.0005
599	CcoTgs102	0.0033	0.0000	0.0444
600	CheNgs102	0.0002	0.0000	0.0032
601	CheTgs102	0.0218	0.0000	0.2958
602	ChoNgs102	0.0001	0.0000	0.0014

603	ChoTgs102	0.0095	0.0000	0.1297
604	CloNgs102	0.0004	0.0000	0.0056
605	CloTgs102	0.0386	0.0000	0.5253
606	CreNgs102	0.0010	0.0000	0.0132
607	CreTgs102	0.0904	0.0000	1.2292
608	CscNgs102	0.0003	0.0000	0.0034
609	CscTgs102	0.0258	0.0000	0.3514
610	CcoNgs103	0.0000	0.0000	0.0000
611	CcoTgs103	0.0005	0.0002	0.0028
612	CheNgs103	0.0001	0.0001	0.0007
613	CheTgs103	0.0104	0.0054	0.0630
614	ChoNgs103	0.0002	0.0001	0.0013
615	ChoTgs103	0.0205	0.0107	0.1245
616	CloNgs103	0.0004	0.0002	0.0023
617	CloTgs103	0.0356	0.0186	0.2162
618	CreNgs103	0.0029	0.0015	0.0174
619	CreTgs103	0.2679	0.1402	1.6277
620	CscNgs103	0.0001	0.0001	0.0007
621	CscTgs103	0.0108	0.0057	0.0658
622	CcoNgs104	0.0000	0.0000	0.0000
623	CcoTgs104	0.0000	0.0000	0.0001
624	CheNgs104	0.0000	0.0000	0.0000
625	CheTgs104	0.0005	0.0001	0.0029
626	ChoNgs104	0.0000	0.0000	0.0001
627	ChoTgs104	0.0011	0.0003	0.0065
628	CloNgs104	0.0001	0.0000	0.0004
629	CloTgs104	0.0058	0.0018	0.0352
630	CreNgs104	0.0009	0.0003	0.0057
631	CreTgs104	0.0877	0.0271	0.5335
632	CscNgs104	0.0000	0.0000	0.0000
633	CscTgs104	0.0005	0.0002	0.0031
634	CcoNgs105	0.0000	0.0000	0.0000
635	CcoTgs105	0.0007	0.0002	0.0042
636	CheNgs105	0.0002	0.0000	0.0010
637	CheTgs105	0.0156	0.0040	0.0933
638	ChoNgs105	0.0003	0.0001	0.0019
639	ChoTgs105	0.0301	0.0077	0.1795
640	CloNgs105	0.0007	0.0002	0.0040
641	CloTgs105	0.0630	0.0161	0.3763
642	CreNgs105	0.0015	0.0004	0.0088
643	CreTgs105	0.5228	0.1338	3.1217
644	CscNgs105	0.0002	0.0000	0.0011
645	CscTgs105	0.0166	0.0043	0.0992
646	CcoNgs106	0.0000	0.0000	0.0002
647	CcoTgs106	0.0028	0.0013	0.0149
648	CheNgs106	0.0007	0.0003	0.0036
649	CheTgs106	0.0627	0.0304	0.3360

650	ChoNgs106	0.0013	0.0006	0.0068
651	ChoTgs106	0.1189	0.0575	0.6370
652	CloNgs106	0.0027	0.0013	0.0147
653	CloTgs106	0.2563	0.1240	1.3732
654	CreNgs106	0.0224	0.0108	0.1199
655	CreTgs106	2.0886	1.0106	11.1891
656	CscNgs106	0.0007	0.0003	0.0038
657	CscTgs106	0.0655	0.0317	0.3507
658	CcoNgs107	0.0000	0.0000	0.0000
659	CcoTgs107	0.0000	0.0000	0.0001
660	CheNgs107	0.0000	0.0000	0.0000
661	CheTgs107	0.0005	0.0003	0.0033
662	ChoNgs107	0.0000	0.0000	0.0001
663	ChoTgs107	0.0009	0.0005	0.0063
664	CloNgs107	0.0000	0.0000	0.0000
665	CloTgs107	0.0005	0.0003	0.0030
666	CreNgs107	0.0000	0.0000	0.0001
667	CreTgs107	0.0011	0.0007	0.0075
668	CscNgs107	0.0000	0.0000	0.0000
669	CscTgs107	0.0005	0.0003	0.0035
670	CcoNgs108	0.0000	0.0000	0.0000
671	CcoTgs108	0.0002	0.0001	0.0008
672	CheNgs108	0.0001	0.0000	0.0006
673	CheTgs108	0.0113	0.0046	0.0516
674	ChoNgs108	0.0001	0.0000	0.0003
675	ChoTgs108	0.0071	0.0029	0.0325
676	CloNgs108	0.0005	0.0002	0.0022
677	CloTgs108	0.0455	0.0187	0.2080
678	CreNgs108	0.0133	0.0055	0.0607
679	CreTgs108	0.1237	0.0509	0.5661
680	CscNgs108	0.0000	0.0000	0.0002
681	CscTgs108	0.0039	0.0016	0.0180
682	CcoEgs109	0.0001	0.0003	0.0012
683	CcoNgs109	0.0000	0.0000	0.0000
684	CgrEgs109	0.0033	0.0088	0.0358
685	CgrNgs109	0.0000	0.0001	0.0004
686	ChoEgs109	0.0001	0.0003	0.0014
687	ChoNgs109	0.0000	0.0000	0.0000
688	CloEgs109	0.0023	0.0199	0.0434
689	CloNgs109	0.0000	0.0000	0.0000
690	CreEgs109	0.0461	0.0256	0.2889
691	CreNgs109	0.0000	0.0000	0.0000
692	CasNgs110	0.0001	0.0001	0.0008
693	CasTgs110	0.0107	0.0072	0.0759
694	CcoNgs110	0.0002	0.0002	0.0016
695	CcoTgs110	0.0209	0.0140	0.1484
696	CgrNgs110	0.0002	0.0001	0.0014

697	CgrTgs110	0.0184	0.0123	0.1307
698	CheNgs110	0.0006	0.0004	0.0043
699	CheTgs110	0.0563	0.0378	0.4004
700	ChoNgs110	0.0004	0.0003	0.0030
701	ChoTgs110	0.0396	0.0266	0.2815
702	CinNgs110	0.0011	0.0007	0.0075
703	CinTgs110	0.0989	0.0664	0.7038
704	CloNgs110	0.0015	0.0010	0.0107
705	CloTgs110	0.1398	0.0939	0.9948
706	CofNgs110	0.0025	0.0017	0.0175
707	CofTgs110	0.2296	0.1542	1.6334
708	CrtNgs110	0.0012	0.0008	0.0086
709	CrtTgs110	0.1124	0.0754	0.7993
710	CscNgs110	0.0004	0.0002	0.0026
711	CscTgs110	0.0344	0.0231	0.2448
712	CasNgs111	0.0000	0.0000	0.0003
713	CasTgs111	0.0045	0.0000	0.0315
714	CcoNgs111	0.0002	0.0002	0.0009
715	CcoTgs111	0.0170	0.0170	0.0875
716	CgrNgs111	0.0003	0.0001	0.0017
717	CgrTgs111	0.0234	0.0091	0.1623
718	CheNgs111	0.0003	0.0001	0.0021
719	CheTgs111	0.0283	0.0110	0.1958
720	ChoNgs111	0.0002	0.0002	0.0012
721	ChoTgs111	0.0220	0.0220	0.1133
722	CinNgs111	0.0004	0.0000	0.0031
723	CinTgs111	0.0418	0.0000	0.2896
724	CloNgs111	0.0007	0.0003	0.0047
725	CloTgs111	0.0637	0.0247	0.4414
726	CmiNgs111	0.0005	0.0000	0.0032
727	CmiTgs111	0.0426	0.0000	0.2951
728	CofNgs111	0.0011	0.0004	0.0075
729	CofTgs111	0.1010	0.0392	0.6998
730	CreNgs111	0.0005	0.0000	0.0036
731	CreTgs111	0.0491	0.0000	0.3400
732	CrtNgs111	0.0009	0.0003	0.0061
733	CrtTgs111	0.0815	0.0316	0.5647
734	CscNgs111	0.0002	0.0001	0.0017
735	CscTgs111	0.0229	0.0089	0.1588
736	CwaNgs111	0.0000	0.0000	0.0002
737	CwaTgs111	0.0027	0.0000	0.0190
738	CcoNgs112	0.0000	0.0000	0.0000
739	CcoTgs112	0.0000	0.0000	0.0000
740	CheNgs112	0.0000	0.0000	0.0003
741	CheTgs112	0.0036	0.0025	0.0241
742	ChoNgs112	0.0000	0.0000	0.0000
743	ChoTgs112	0.0000	0.0000	0.0000

744	CinNgs112	0.0000	0.0000	0.0000
745	CinTgs112	0.0000	0.0000	0.0000
746	CloNgs112	0.0001	0.0001	0.0005
747	CloTgs112	0.0072	0.0050	0.0478
748	CmiNgs112	0.0000	0.0000	0.0002
749	CmiTgs112	0.0034	0.0023	0.0222
750	CofNgs112	0.0002	0.0001	0.0011
751	CofTgs112	0.0170	0.0118	0.1128
752	CrtNgs112	0.0001	0.0000	0.0004
753	CrtTgs112	0.0063	0.0044	0.0418
754	CscNgs112	0.0000	0.0000	0.0000
755	CscTgs112	0.0000	0.0000	0.0000
756	CcoNgs113	0.0000	0.0000	0.0002
757	CcoTgs113	0.0019	0.0019	0.0167
758	CheNgs113	0.0000	0.0000	0.0002
759	CheTgs113	0.0026	0.0026	0.0225
760	ChoNgs113	0.0000	0.0000	0.0002
761	ChoTgs113	0.0019	0.0019	0.0161
762	CinNgs113	0.0001	0.0001	0.0006
763	CinTgs113	0.0061	0.0061	0.0529
764	CloNgs113	0.0001	0.0001	0.0008
765	CloTgs113	0.0084	0.0084	0.0726
766	CmiNgs113	0.0000	0.0000	0.0003
767	CmiTgs113	0.0032	0.0032	0.0274
768	CofNgs113	0.0001	0.0001	0.0012
769	CofTgs113	0.0134	0.0134	0.1158
770	CscNgs113	0.0000	0.0000	0.0003
771	CscTgs113	0.0028	0.0028	0.0242
772	CcoEgs114	0.0114	0.0098	0.0836
773	CcoNgs114	0.0001	0.0001	0.0009
774	CheEgs114	0.0282	0.0196	0.1870
775	CheNgs114	0.0003	0.0002	0.0020
776	ChoEgs114	0.0147	0.0127	0.1082
777	ChoNgs114	0.0002	0.0001	0.0012
778	CinEgs114	0.0417	0.0000	0.2766
779	CinNgs114	0.0004	0.0000	0.0030
780	CloEgs114	0.0636	0.0443	0.4215
781	CloNgs114	0.0007	0.0005	0.0045
782	CofEgs114	0.1008	0.0702	0.6683
783	CofNgs114	0.0011	0.0008	0.0072
784	CrtEgs114	0.0813	0.0566	0.5393
785	CrtNgs114	0.0009	0.0006	0.0058
786	CscEgs114	0.0229	0.0159	0.1516
787	CscNgs114	0.0002	0.0002	0.0016
788	CasEgs116	0.0018	0.0000	0.0118
789	CasNgs116	0.0000	0.0000	0.0001
790	CcoEgs116	0.0049	0.0034	0.0322

791	CcoNgs116	0.0001	0.0000	0.0003
792	CgrEgs116	0.0049	0.0034	0.0324
793	CgrNgs116	0.0001	0.0000	0.0003
794	CheEgs116	0.0088	0.0061	0.0585
795	CheNgs116	0.0001	0.0001	0.0006
796	ChoEgs116	0.0061	0.0042	0.0405
797	ChoNgs116	0.0001	0.0000	0.0004
798	CinEgs116	0.0175	0.0000	0.1163
799	CinNgs116	0.0002	0.0000	0.0012
800	CloEgs116	0.0248	0.0172	0.1644
801	CloNgs116	0.0003	0.0002	0.0018
802	CmiEgs116	0.0103	0.0000	0.0682
803	CmiNgs116	0.0001	0.0000	0.0007
804	CofEgs116	0.0402	0.0279	0.2664
805	CofNgs116	0.0004	0.0003	0.0029
806	CreEgs116	0.0126	0.0000	0.0838
807	CreNgs116	0.0001	0.0000	0.0009
808	CrtEgs116	0.0197	0.0137	0.1304
809	CrtNgs116	0.0002	0.0001	0.0014
810	CscEgs116	0.0075	0.0052	0.0495
811	CscNgs116	0.0001	0.0001	0.0005
812	CwaEgs116	0.0009	0.0000	0.0063
813	CwaNgs116	0.0000	0.0000	0.0001
814	CcoNgs117	0.0011	0.0013	0.0110
815	CcoTgs117	0.1069	0.1230	1.0368
816	CheNgs117	0.0023	0.0017	0.0262
817	CheTgs117	0.2199	0.1591	2.4773
818	ChoNgs117	0.0021	0.0024	0.0204
819	ChoTgs117	0.1989	0.2290	1.9300
820	CloNgs117	0.0025	0.0029	0.0244
821	CloTgs117	0.2380	0.2740	2.3090
822	CscNgs117	0.0027	0.0031	0.0261
823	CscTgs117	0.2510	0.2889	2.4349
824	CasNgs118	0.0001	0.0000	0.0003
825	CasTgs118	0.0048	0.0030	0.0301
826	CcoNgs118	0.0000	0.0000	0.0001
827	CcoTgs118	0.0012	0.0008	0.0076
828	CgrNgs118	0.0092	0.0057	0.0579
829	CgrTgs118	0.8563	0.5350	5.4016
830	CheNgs118	0.0000	0.0000	0.0002
831	CheTgs118	0.0035	0.0022	0.0221
832	ChoNgs118	0.0000	0.0000	0.0002
833	ChoTgs118	0.0037	0.0023	0.0232
834	CloNgs118	0.0002	0.0001	0.0011
835	CloTgs118	0.0169	0.0105	0.1064
836	CofNgs118	0.0002	0.0001	0.0012
837	CofTgs118	0.0176	0.0110	0.1110

838	CreNgs118	0.0007	0.0004	0.0043
839	CreTgs118	0.0640	0.0398	0.4025
840	CrtNgs118	0.0002	0.0001	0.0011
841	CrtTgs118	0.0169	0.0106	0.1066
842	CscNgs118	0.0001	0.0000	0.0004
843	CscTgs118	0.0056	0.0035	0.0350
844	CinNgs119	0.0063	0.0063	0.0357
845	CinTgs119	0.5872	0.5872	3.3313
846	CofNgs119	0.0145	0.0145	0.0821
847	CofTgs119	0.8109	0.8109	4.6002
848	CheEgs201	0.2072	0.0003	0.4022
849	CofEgs201	0.1199	0.0016	0.2405
850	CheEgs202	0.0627	0.0001	0.1217
851	CofEgs202	0.0000	0.0005	0.0027
852	CheEgs203	2.9800	0.0038	5.7810
853	CofEgs203	1.3794	0.0182	2.7629
854	CheEgs204	0.0000	0.0000	0.0001
855	CofEgs204	0.0000	0.0001	0.0004
856	CasEgs205	0.0041	0.0010	0.2056
857	CasNgs205	0.0000	0.0000	0.0000
858	CcoEgs205	0.0012	0.0000	0.0029
859	CcoNgs205	0.0000	0.0000	0.0000
860	CgrEgs205	0.0000	0.0003	0.0006
861	CgrNgs205	0.0000	0.0000	0.0000
862	CheEgs205	0.0004	0.0000	0.0194
863	CheNgs205	0.0000	0.0000	0.0000
864	ChoEgs205	0.0034	0.0000	0.0082
865	ChoNgs205	0.0000	0.0000	0.0000
866	CinEgs205	0.0000	0.0001	0.0001
867	CinNgs205	0.0000	0.0000	0.0000
868	CloEgs205	0.0000	0.0001	0.0002
869	CloNgs205	0.0000	0.0000	0.0000
870	CmiEgs205	0.0007	0.0002	0.0353
871	CmiNgs205	0.0000	0.0000	0.0000
872	CofEgs205	0.0000	0.0001	0.0003
873	CofNgs205	0.0000	0.0000	0.0000
874	CreEgs205	0.0000	0.0002	0.0004
875	CreNgs205	0.0000	0.0000	0.0000
876	CrtEgs205	0.0547	0.0014	0.2674
877	CrtNgs205	0.0000	0.0000	0.0000
878	CscEgs205	0.0012	0.0004	0.0591
879	CscNgs205	0.0000	0.0000	0.0000
880	CwaEgs205	0.0099	0.0002	0.0868
881	CwaNgs205	0.0000	0.0000	0.0000
882	CasEgs206	0.0839	0.0177	4.1730
883	CasNgs206	0.0000	0.0001	0.0002
884	CcoEgs206	0.0270	0.0001	0.0647

885	CcoNgs206	0.0000	0.0000	0.0000
886	CgrEgs206	0.0322	0.0033	0.1626
887	CgrNgs206	0.0000	0.0000	0.0000
888	CheEgs206	0.0109	0.0010	0.5413
889	CheNgs206	0.0000	0.0000	0.0000
890	ChoEgs206	0.0600	0.0000	0.1433
891	ChoNgs206	0.0000	0.0000	0.0000
892	CinEgs206	0.0130	0.0010	0.6433
893	CinNgs206	0.0000	0.0000	0.0000
894	CloEgs206	0.0697	0.0007	0.1693
895	CloNgs206	0.0000	0.0000	0.0000
896	CmiEgs206	0.0056	0.0019	0.2787
897	CmiNgs206	0.0000	0.0000	0.0000
898	CofEgs206	0.0063	0.0053	0.3218
899	CofNgs206	0.0000	0.0000	0.0000
900	CreEgs206	0.0595	0.0044	0.2970
901	CreNgs206	0.0000	0.0000	0.0000
902	CrtEgs206	1.1642	0.0262	5.6836
903	CrtNgs206	0.0000	0.0001	0.0001
904	CscEgs206	0.0279	0.0083	1.3949
905	CscNgs206	0.0000	0.0000	0.0001
906	CwaEgs206	0.1574	0.0029	1.3822
907	CwaNgs206	0.0000	0.0000	0.0000
908	CheEgs207	0.0318	0.0004	1.5709
909	CofEgs207	0.2412	0.0213	11.9371
910	CrtEgs207	1.4540	0.0039	7.0374
911	CasEgs208	1.3790	0.0000	3.2157
912	CasNgs208	0.0000	0.0000	0.0000
913	CcoEgs208	0.0334	0.0000	0.0778
914	CcoNgs208	0.0000	0.0000	0.0000
915	CgrEgs208	0.0542	0.0000	0.1284
916	CgrNgs208	0.0000	0.0000	0.0000
917	CheEgs208	0.2906	0.0000	0.6761
918	CheNgs208	0.0000	0.0000	0.0000
919	ChoEgs208	0.0501	0.0000	0.1163
920	ChoNgs208	0.0000	0.0000	0.0000
921	CinEgs208	0.2240	0.0000	0.5210
922	CinNgs208	0.0000	0.0000	0.0000
923	CloEgs208	0.1035	0.0000	0.1826
924	CloNgs208	0.0000	0.0000	0.0000
925	CmiEgs208	0.0341	0.0000	0.2621
926	CmiNgs208	0.0000	0.0000	0.0000
927	CofEgs208	0.1690	0.0000	0.3989
928	CofNgs208	0.0000	0.0000	0.0000
929	CreEgs208	0.1566	0.0000	0.3689
930	CreNgs208	0.0000	0.0000	0.0000
931	CrtEgs208	1.7827	0.0000	4.1593

932	CrtNgs208	0.0000	0.0000	0.0000
933	CscEgs208	0.7232	0.0000	1.6893
934	CscNgs208	0.0000	0.0000	0.0000
935	CwaEgs208	0.1223	0.0000	0.9394
936	CwaNgs208	0.0005	0.0000	0.0040
937	CasEgs209	0.0010	0.0000	0.0024
938	CasNgs209	0.0000	0.0000	0.0000
939	CcoEgs209	0.0001	0.0000	0.0001
940	CcoNgs209	0.0000	0.0000	0.0000
941	CgrEgs209	0.0001	0.0000	0.0002
942	CgrNgs209	0.0000	0.0000	0.0000
943	CheEgs209	0.0003	0.0000	0.0008
944	CheNgs209	0.0000	0.0000	0.0000
945	ChoEgs209	0.0000	0.0000	0.0001
946	ChoNgs209	0.0000	0.0000	0.0000
947	CinEgs209	0.0002	0.0000	0.0004
948	CinNgs209	0.0000	0.0000	0.0000
949	CloEgs209	0.0002	0.0000	0.0003
950	CloNgs209	0.0000	0.0000	0.0000
951	CmiEgs209	0.0001	0.0000	0.0011
952	CmiNgs209	0.0000	0.0000	0.0000
953	CofEgs209	0.0001	0.0000	0.0003
954	CofNgs209	0.0000	0.0000	0.0000
955	CreEgs209	0.0002	0.0000	0.0005
956	CreNgs209	0.0000	0.0000	0.0000
957	CrtEgs209	0.0012	0.0000	0.0029
958	CrtNgs209	0.0000	0.0000	0.0000
959	CscEgs209	0.0011	0.0000	0.0025
960	CscNgs209	0.0000	0.0000	0.0000
961	CwaEgs209	0.0001	0.0000	0.0006
962	CwaNgs209	0.0000	0.0000	0.0000
963	CheEgs210	0.0000	0.0002	0.0003
964	CofEgs210	0.0468	0.0052	0.2164
965	CrtEgs210	0.0000	0.0051	0.0076
966	CwaEgs211	0.0106	0.0002	0.0938
967	CwaNgs211	0.0000	0.0000	0.0000
968	CasEgs212	1.0028	0.0003	2.7334
969	CasNgs212	0.0046	0.0000	0.0126
970	CcoEgs212	0.1350	0.0000	0.3625
971	CcoNgs212	0.0002	0.0000	0.0006
972	CgrEgs212	0.4847	0.0007	1.4468
973	CgrNgs212	0.0000	0.0000	0.0009
974	CheEgs212	1.3745	0.0002	3.6895
975	CheNgs212	0.0027	0.0000	0.0075
976	ChoEgs212	0.7439	0.0000	1.9794
977	ChoNgs212	0.0037	0.0000	0.0098
978	CinEgs212	2.2107	0.0003	5.9272

979	CinNgs212	0.0103	0.0000	0.0276
980	CloEgs212	1.1995	-0.0145	2.8257
981	CloNgs212	0.0018	-0.0001	0.0049
982	CmiEgs212	5.9717	-0.0388	17.7720
983	CmiNgs212	0.0033	-0.0001	0.0110
984	CofEgs212	2.0559	0.0025	6.0398
985	CofNgs212	0.0011	0.0000	0.0057
986	CreEgs212	1.9507	0.0020	5.6472
987	CreNgs212	0.0000	0.0000	0.0026
988	CrtEgs212	1.9789	0.0007	5.4080
989	CrtNgs212	0.0000	0.0000	0.0008
990	CscEgs212	1.4563	0.0006	4.0134
991	CscNgs212	0.0000	0.0000	0.0008
992	CwaEgs212	0.0861	-0.0006	0.2562
993	CwaNgs212	0.0000	0.0000	0.0000
994	CasEgs213	0.2606	-0.0095	1.1417
995	CasNgs213	0.0053	-0.0002	0.0232
996	CcoEgs213	0.0389	-0.0014	0.1702
997	CcoNgs213	0.0004	0.0000	0.0017
998	CgrEgs213	0.1412	-0.0051	0.6185
999	CgrNgs213	0.0018	-0.0001	0.0080
1000	CheEgs213	0.4038	-0.0146	1.7690
1001	CheNgs213	0.0050	-0.0002	0.0218
1002	ChoEgs213	0.2107	-0.0076	0.9230
1003	ChoNgs213	0.0043	-0.0002	0.0188
1004	CinEgs213	0.5185	-0.0188	2.2714
1005	CinNgs213	0.0143	-0.0005	0.0625
1006	CloEgs213	0.2871	-0.0104	1.2576
1007	CloNgs213	0.0028	-0.0001	0.0122
1008	CmiEgs213	1.0507	-0.0381	4.6030
1009	CmiNgs213	0.0110	-0.0004	0.0483
1010	CofEgs213	0.5447	-0.0198	2.3861
1011	CofNgs213	0.0118	-0.0004	0.0516
1012	CreEgs213	0.4400	-0.0160	1.9277
1013	CreNgs213	0.0062	-0.0002	0.0272
1014	CrtEgs213	0.5702	-0.0207	2.4980
1015	CrtNgs213	0.0124	-0.0004	0.0543
1016	CscEgs213	0.3845	-0.0139	1.6844
1017	CscNgs213	0.0037	-0.0001	0.0163
1018	CwaEgs213	0.0240	-0.0009	0.1053
1019	CwaNgs213	0.0006	0.0000	0.0025
1020	CasEgs307	0.2682	0.0043	1.2911
1021	CasNgs307	0.0025	0.0001	0.0122
1022	CcoEgs307	0.0051	0.0031	0.0339
1023	CcoNgs307	0.0004	0.0002	0.0025
1024	CgrEgs307	0.3496	0.1115	1.3781
1025	CgrNgs307	0.0025	0.0008	0.0098

1026	CheEgs307	0.0323	0.0011	0.1532
1027	CheNgs307	0.0032	0.0001	0.0152
1028	ChoEgs307	0.1782	0.0505	1.1896
1029	ChoNgs307	0.0016	0.0005	0.0109
1030	CinEgs307	1.0047	0.0411	4.7551
1031	CinNgs307	0.0043	0.0002	0.0205
1032	CloEgs307	0.0313	0.0061	0.1222
1033	CloNgs307	0.0022	0.0005	0.0086
1034	CmiEgs307	3.2726	0.2267	15.5313
1035	CmiNgs307	0.0395	0.0028	0.1874
1036	CofEgs307	0.5568	0.0292	2.7461
1037	CofNgs307	0.0045	0.0002	0.0220
1038	CreEgs307	0.0421	0.0083	0.1680
1039	CreNgs307	0.0042	0.0009	0.0167
1040	CrtEgs307	1.0521	0.2578	4.0317
1041	CrtNgs307	0.0147	0.0043	0.0561
1042	CscEgs307	0.0361	0.0014	0.1738
1043	CscNgs307	0.0025	0.0001	0.0122
1044	CwaEgs307	0.0549	0.0034	0.2619
1045	CwaNgs307	0.0009	0.0001	0.0044
1046	CloEgs308	0.0062	-0.0013	0.8069
1047	CloNgs308	0.0000	0.0000	0.0003
1048	CasEgs309	0.0000	0.0000	0.0000
1049	CasNgs309	0.0000	0.0000	0.0000
1050	CcoEgs309	0.0000	0.0000	0.0000
1051	CcoNgs309	0.0000	0.0000	0.0000
1052	CgrEgs309	0.0000	0.0000	0.0000
1053	CgrNgs309	0.0000	0.0000	0.0000
1054	CheEgs309	0.0000	0.0000	0.0000
1055	CheNgs309	0.0000	0.0000	0.0000
1056	ChoEgs309	0.0000	0.0000	0.0000
1057	ChoNgs309	0.0000	0.0000	0.0000
1058	CinEgs309	0.0000	0.0000	0.0000
1059	CinNgs309	0.0000	0.0000	0.0000
1060	CloEgs309	0.0000	0.0000	0.0000
1061	CloNgs309	0.0000	0.0000	0.0000
1062	CmiEgs309	0.0000	0.0000	0.0000
1063	CmiNgs309	0.0000	0.0000	0.0000
1064	CofEgs309	0.0000	0.0000	0.0000
1065	CofNgs309	0.0000	0.0000	0.0000
1066	CreEgs309	0.0000	0.0000	0.0000
1067	CreNgs309	0.0000	0.0000	0.0000
1068	CrtEgs309	0.0000	0.0000	0.0000
1069	CrtNgs309	0.0000	0.0000	0.0000
1070	CscEgs309	0.0000	0.0000	0.0000
1071	CscNgs309	0.0000	0.0000	0.0000
1072	CwaEgs309	0.0000	0.0000	0.0000

1073	CwaNgs309	0.0000	0.0000	0.0000
1074	CasEgs310	1.1301	0.0752	2.8770
1075	CasNgs310	0.0113	0.0008	0.0289
1076	CcoEgs310	0.1208	0.0030	0.3019
1077	CcoNgs310	0.0000	0.0000	0.0000
1078	CgrEgs310	0.3728	0.1092	1.0424
1079	CgrNgs310	0.0033	0.0012	0.0094
1080	CheEgs310	1.4615	0.0404	3.6574
1081	CheNgs310	0.0000	0.0004	0.0005
1082	ChoEgs310	0.9073	0.0049	2.2482
1083	ChoNgs310	0.0091	0.0001	0.0225
1084	CinEgs310	2.7863	0.0659	6.9605
1085	CinNgs310	0.0286	0.0007	0.0716
1086	CloEgs310	0.8565	0.1065	2.2352
1087	CloNgs310	0.0000	0.0012	0.0013
1088	CmiEgs310	1.8855	0.1843	4.8650
1089	CmiNgs310	0.0199	0.0021	0.0514
1090	CofEgs310	3.2930	0.7797	9.0038
1091	CofNgs310	0.0373	0.0091	0.1022
1092	CreEgs310	1.5983	0.3428	4.3308
1093	CreNgs310	0.0031	0.0039	0.0121
1094	CrtEgs310	2.4082	0.1712	6.1426
1095	CrtNgs310	0.0220	0.0019	0.0565
1096	CscEgs310	1.1728	0.1089	3.0197
1097	CscNgs310	0.0022	0.0012	0.0068
1098	CwaEgs310	0.0961	0.0094	0.2480
1099	CwaNgs310	0.0000	0.0001	0.0001
1100	CasNgs311	0.0129	0.0000	0.0109
1101	CasTgs311	2.4379	0.0000	2.0080
1102	CcoNgs311	0.0001	0.0000	0.0001
1103	CcoTgs311	0.0097	0.0000	0.0105
1104	CgrNgs311	0.0141	0.0000	0.0073
1105	CgrTgs311	2.5601	0.0000	1.2317
1106	CheNgs311	0.0132	0.0000	0.0233
1107	CheTgs311	1.7334	0.0000	3.0529
1108	ChoNgs311	0.0030	0.0000	0.0051
1109	ChoTgs311	0.4653	0.0000	0.7724
1110	CinNgs311	0.0816	0.0000	0.0359
1111	CinTgs311	12.4736	0.0000	5.4599
1112	CloNgs311	0.0027	0.0000	0.0040
1113	CloTgs311	0.4795	0.0000	0.6817
1114	CmiNgs311	0.0790	0.0000	0.0382
1115	CmiTgs311	14.0085	0.0000	6.5304
1116	CofNgs311	0.0344	0.0000	0.0335
1117	CofTgs311	4.7286	0.0000	4.4898
1118	CreNgs311	0.0144	0.0000	0.0210
1119	CreTgs311	2.5140	0.0000	3.4708

1120	CrtNgs311	0.0384	0.0000	0.0407
1121	CrtTgs311	6.4753	0.0000	6.7395
1122	CscNgs311	0.0012	0.0000	0.0015
1123	CscTgs311	0.1632	0.0000	0.1888
1124	CwaNgs311	0.0062	0.0000	0.0013
1125	CwaTgs311	0.8897	0.0000	0.1789
1126	CasEgs312	0.0000	0.0000	0.0000
1127	CasNgs312	0.0000	0.0000	0.0000
1128	CcoEgs312	0.0000	0.0000	0.0000
1129	CcoNgs312	0.0000	0.0000	0.0000
1130	CgrEgs312	0.0000	0.0000	0.0000
1131	CgrNgs312	0.0000	0.0000	0.0000
1132	CheEgs312	0.0000	0.0000	0.0000
1133	CheNgs312	0.0000	0.0000	0.0000
1134	ChoEgs312	0.0000	0.0000	0.0000
1135	ChoNgs312	0.0000	0.0000	0.0000
1136	CinEgs312	0.0000	0.0000	0.0000
1137	CinNgs312	0.0000	0.0000	0.0000
1138	CloEgs312	0.0000	0.0000	0.0000
1139	CloNgs312	0.0000	0.0000	0.0000
1140	CmiEgs312	0.0000	0.0000	0.0000
1141	CmiNgs312	0.0000	0.0000	0.0000
1142	CofEgs312	0.0000	0.0000	0.0000
1143	CofNgs312	0.0000	0.0000	0.0000
1144	CreEgs312	0.0000	0.0000	0.0000
1145	CreNgs312	0.0000	0.0000	0.0000
1146	CrtEgs312	0.0000	0.0000	0.0000
1147	CrtNgs312	0.0000	0.0000	0.0000
1148	CscEgs312	0.0000	0.0000	0.0000
1149	CscNgs312	0.0000	0.0000	0.0000
1150	CwaEgs312	0.0000	0.0000	0.0000
1151	CwaNgs312	0.0000	0.0000	0.0000
1152	CasEgs313	0.0000	0.0000	0.0000
1153	CasNgs313	0.0000	0.0000	0.0000
1154	CcoEgs313	0.0000	0.0000	0.0000
1155	CcoNgs313	0.0000	0.0000	0.0000
1156	CgrEgs313	0.0000	0.0000	0.0000
1157	CgrNgs313	0.0000	0.0000	0.0000
1158	CheEgs313	0.0000	0.0000	0.0000
1159	CheNgs313	0.0000	0.0000	0.0000
1160	ChoEgs313	0.0000	0.0000	0.0000
1161	ChoNgs313	0.0000	0.0000	0.0000
1162	CinEgs313	0.0000	0.0000	0.0000
1163	CinNgs313	0.0000	0.0000	0.0000
1164	CloEgs313	0.0000	0.0000	0.0000
1165	CloNgs313	0.0000	0.0000	0.0000
1166	CmiEgs313	0.0000	0.0000	0.0000

1167	CmiNgs313	0.0000	0.0000	0.0000
1168	CofEgs313	0.0000	0.0000	0.0000
1169	CofNgs313	0.0000	0.0000	0.0000
1170	CreEgs313	0.0000	0.0000	0.0000
1171	CreNgs313	0.0000	0.0000	0.0000
1172	CrtEgs313	0.0000	0.0000	0.0000
1173	CrtNgs313	0.0000	0.0000	0.0000
1174	CscEgs313	0.0000	0.0000	0.0000
1175	CscNgs313	0.0000	0.0000	0.0000
1176	CwaEgs313	0.0000	0.0000	0.0000
1177	CwaNgs313	0.0000	0.0000	0.0000
1178	CasEgs316	0.0000	0.0000	0.0008
1179	CasNgs316	0.0000	0.0000	0.0000
1180	CcoEgs316	0.0000	0.0000	0.0000
1181	CcoNgs316	0.0000	0.0000	0.0000
1182	CgrEgs316	0.0000	0.0000	0.0003
1183	CgrNgs316	0.0000	0.0000	0.0000
1184	CheEgs316	0.0000	0.0000	0.0001
1185	CheNgs316	0.0000	0.0000	0.0000
1186	ChoEgs316	0.0000	0.0000	0.0000
1187	ChoNgs316	0.0000	0.0000	0.0000
1188	CinEgs316	0.0000	0.0000	0.0004
1189	CinNgs316	0.0000	0.0000	0.0000
1190	CloEgs316	0.0000	0.0000	0.0001
1191	CloNgs316	0.0000	0.0000	0.0000
1192	CmiEgs316	0.0000	0.0000	0.0046
1193	CmiNgs316	0.0000	0.0000	0.0001
1194	CofEgs316	0.0000	0.0000	0.0099
1195	CofNgs316	0.0000	0.0000	0.0001
1196	CreEgs316	0.0000	0.0001	0.0006
1197	CreNgs316	0.0000	0.0000	0.0000
1198	CrtEgs316	0.0000	0.0000	0.0003
1199	CrtNgs316	0.0000	0.0000	0.0000
1200	CscEgs316	0.0000	0.0000	0.0000
1201	CscNgs316	0.0000	0.0000	0.0000
1202	CwaEgs316	0.0000	0.0000	0.0001
1203	CwaNgs316	0.0000	0.0000	0.0000
1204	CasNgs317	0.0001	0.0000	0.0002
1205	CasTgs317	0.0076	0.0022	0.0240
1206	CcoNgs317	0.0000	0.0000	0.0000
1207	CcoTgs317	0.0001	0.0000	0.0006
1208	CgrNgs317	0.0000	0.0000	0.0000
1209	CgrTgs317	0.0000	0.0012	0.0035
1210	CheNgs317	0.0003	0.0000	0.0008
1211	CheTgs317	0.0302	0.0006	0.0712
1212	ChoNgs317	0.0000	0.0000	0.0001
1213	ChoTgs317	0.0010	0.0001	0.0066

1214	CinNgs317	0.0002	0.0000	0.0005
1215	CinTgs317	0.0179	0.0019	0.0470
1216	CloNgs317	0.0000	0.0000	0.0000
1217	CloTgs317	0.0000	0.0023	0.0068
1218	CmiNgs317	0.0008	0.0000	0.0017
1219	CmiTgs317	0.0654	0.0000	0.1501
1220	CofNgs317	0.0007	0.0000	0.0017
1221	CofTgs317	0.0621	0.0289	0.2289
1222	CreNgs317	0.0000	0.0000	0.0001
1223	CreTgs317	0.0035	0.0034	0.0183
1224	CrtNgs317	0.0000	0.0000	0.0000
1225	CrtTgs317	0.0006	0.0040	0.0132
1226	CscNgs317	0.0000	0.0000	0.0000
1227	CscTgs317	0.0004	0.0026	0.0087
1228	CwaNgs317	0.0000	0.0000	0.0000
1229	CwaTgs317	0.0000	0.0003	0.0009
1230	CofEgs318	0.2654	0.0640	1.0719
1231	CreEgs318	0.1326	0.0278	0.5286
1232	CrtEgs318	0.2777	0.0200	1.0422
1233	CofEgs319	1.3649	0.5383	7.5959
1234	CreEgs319	0.6625	0.2276	3.6392
1235	CrtEgs319	1.4374	0.1622	7.4272
1236	CasEgs320	0.0079	0.0144	0.0719
1237	CasNgs320	0.0000	0.0001	0.0006
1238	CcoEgs320	0.0002	0.0000	0.0011
1239	CcoNgs320	0.0000	0.0000	0.0000
1240	CgrEgs320	0.0000	0.0079	0.0255
1241	CgrNgs320	0.0000	0.0001	0.0002
1242	CheEgs320	0.0319	0.0041	0.1166
1243	CheNgs320	0.0001	0.0000	0.0005
1244	ChoEgs320	0.0026	0.0019	0.0146
1245	ChoNgs320	0.0000	0.0000	0.0001
1246	CinEgs320	0.0188	0.0126	0.1012
1247	CinNgs320	0.0001	0.0001	0.0006
1248	CloEgs320	0.0000	0.0076	0.0484
1249	CloNgs320	0.0000	0.0001	0.0005
1250	CmiEgs320	0.0682	0.0000	0.2211
1251	CmiNgs320	0.0003	0.0000	0.0009
1252	CofEgs320	0.0653	0.2000	0.8532
1253	CofNgs320	0.0003	0.0020	0.0072
1254	CreEgs320	0.0037	0.0232	0.0866
1255	CreNgs320	0.0000	0.0002	0.0007
1256	CrtEgs320	0.0006	0.0257	0.0844
1257	CrtNgs320	0.0000	0.0003	0.0008
1258	CscEgs320	0.0004	0.0170	0.0558
1259	CscNgs320	0.0000	0.0002	0.0005
1260	CwaEgs320	0.0000	0.0022	0.0069

1261	CwaNgs320	0.0000	0.0000	0.0001
1262	CasNgs322	0.0000	0.0000	0.0000
1263	CasTgs322	0.0000	0.0000	0.0000
1264	CcoNgs322	0.0000	0.0000	0.0000
1265	CcoTgs322	0.0000	0.0000	0.0000
1266	CgrNgs322	0.0000	0.0000	0.0000
1267	CgrTgs322	0.0000	0.0000	0.0000
1268	CheNgs322	0.0000	0.0000	0.0000
1269	CheTgs322	0.0000	0.0000	0.0000
1270	ChoNgs322	0.0000	0.0000	0.0000
1271	ChoTgs322	0.0000	0.0000	0.0000
1272	CinNgs322	0.0000	0.0000	0.0000
1273	CinTgs322	0.0000	0.0000	0.0000
1274	CloNgs322	0.0000	0.0000	0.0000
1275	CloTgs322	0.0000	0.0000	0.0000
1276	CmiNgs322	0.0000	0.0000	0.0000
1277	CmiTgs322	0.0000	0.0000	0.0000
1278	CofNgs322	0.0000	0.0000	0.0000
1279	CofTgs322	0.0000	0.0000	0.0000
1280	CreNgs322	0.0000	0.0000	0.0000
1281	CreTgs322	0.0000	0.0000	0.0000
1282	CrtNgs322	0.0000	0.0000	0.0000
1283	CrtTgs322	0.0000	0.0000	0.0000
1284	CscNgs322	0.0000	0.0000	0.0000
1285	CscTgs322	0.0000	0.0000	0.0000
1286	CwaNgs322	0.0000	0.0000	0.0000
1287	CwaTgs322	0.0000	0.0000	0.0000
1288	CasNgs323	0.0000	0.0000	0.0000
1289	CasTgs323	0.0000	0.0000	0.0000
1290	CcoNgs323	0.0000	0.0000	0.0000
1291	CcoTgs323	0.0000	0.0000	0.0000
1292	CgrNgs323	0.0000	0.0000	0.0000
1293	CgrTgs323	0.0000	0.0000	0.0000
1294	CheNgs323	0.0000	0.0000	0.0000
1295	CheTgs323	0.0000	0.0000	0.0000
1296	ChoNgs323	0.0000	0.0000	0.0000
1297	ChoTgs323	0.0000	0.0000	0.0000
1298	CinNgs323	0.0000	0.0000	0.0000
1299	CinTgs323	0.0000	0.0000	0.0000
1300	CloNgs323	0.0000	0.0000	0.0000
1301	CloTgs323	0.0000	0.0000	0.0000
1302	CmiNgs323	0.0000	0.0000	0.0000
1303	CmiTgs323	0.0000	0.0000	0.0000
1304	CofNgs323	0.0000	0.0000	0.0000
1305	CofTgs323	0.0000	0.0000	0.0000
1306	CreNgs323	0.0000	0.0000	0.0000
1307	CreTgs323	0.0000	0.0000	0.0000

1308	CrtNgs323	0.0000	0.0000	0.0000
1309	CrtTgs323	0.0000	0.0000	0.0000
1310	CscNgs323	0.0000	0.0000	0.0000
1311	CscTgs323	0.0000	0.0000	0.0000
1312	CwaNgs323	0.0000	0.0000	0.0000
1313	CwaTgs323	0.0000	0.0000	0.0000
1314	CasNgs324	0.0002	0.0005	0.0023
1315	CasTgs324	0.0184	0.0463	0.2080
1316	CcoNgs324	0.0000	0.0000	0.0000
1317	CcoTgs324	0.0004	0.0001	0.0027
1318	CgrNgs324	0.0000	0.0003	0.0009
1319	CgrTgs324	0.0000	0.0248	0.0795
1320	CheNgs324	0.0008	0.0001	0.0031
1321	CheTgs324	0.0732	0.0132	0.2797
1322	ChoNgs324	0.0001	0.0001	0.0004
1323	ChoTgs324	0.0060	0.0065	0.0405
1324	CinNgs324	0.0005	0.0005	0.0030
1325	CinTgs324	0.0435	0.0411	0.2727
1326	CloNgs324	0.0000	0.0003	0.0018
1327	CloTgs324	0.0000	0.0247	0.1561
1328	CmiNgs324	0.0018	0.0000	0.0059
1329	CmiTgs324	0.1585	0.0000	0.5138
1330	CofNgs324	0.0017	0.0071	0.0283
1331	CofTgs324	0.1593	0.6425	2.5775
1332	CreNgs324	0.0001	0.0008	0.0030
1333	CreTgs324	0.0085	0.0742	0.2658
1334	CrtNgs324	0.0000	0.0009	0.0031
1335	CrtTgs324	0.0014	0.0855	0.2790
1336	CscNgs324	0.0000	0.0006	0.0020
1337	CscTgs324	0.0009	0.0548	0.1788
1338	CwaNgs324	0.0000	0.0001	0.0003
1339	CwaTgs324	0.0000	0.0075	0.0241
1340	CasEgs325	0.0000	0.0003	0.0081
1341	CasNgs325	0.0000	0.0000	0.0000
1342	CcoEgs325	0.0000	0.0000	0.0000
1343	CcoNgs325	0.0000	0.0000	0.0000
1344	CgrEgs325	0.0000	0.0002	0.0042
1345	CgrNgs325	0.0000	0.0000	0.0001
1346	CheEgs325	0.0000	0.0001	0.0007
1347	CheNgs325	0.0000	0.0000	0.0000
1348	ChoEgs325	0.0000	0.0000	0.0000
1349	ChoNgs325	0.0000	0.0000	0.0000
1350	CloEgs325	0.0000	0.0002	0.0020
1351	CloNgs325	0.0000	0.0000	0.0000
1352	CreEgs325	0.0000	0.0011	0.0098
1353	CreNgs325	0.0000	0.0000	0.0001
1354	CrtEgs325	0.0000	0.0007	0.0169

1355	CrtNgs325	0.0000	0.0000	0.0002
1356	CscEgs325	0.0000	0.0002	0.0020
1357	CscNgs325	0.0000	0.0000	0.0000
1358	CasEgs328	0.3300	1.8579	0.6726
1359	CasNgs328	0.0033	0.0187	0.0068
1360	CcoEgs328	0.5596	3.1503	1.1405
1361	CcoNgs328	0.0060	0.0338	0.0122
1362	CgrEgs328	0.1567	0.8823	0.3194
1363	CgrNgs328	0.0017	0.0098	0.0035
1364	CheEgs328	1.0898	6.1358	2.2214
1365	CheNgs328	0.0117	0.0657	0.0238
1366	ChoEgs328	0.4147	2.3349	0.8453
1367	ChoNgs328	0.0033	0.0185	0.0067
1368	CinEgs328	0.6856	3.8601	1.3975
1369	CinNgs328	0.0054	0.0305	0.0110
1370	CloEgs328	1.1827	6.6589	2.4108
1371	CloNgs328	0.0127	0.0713	0.0258
1372	CmiEgs328	0.5119	2.8820	1.0434
1373	CmiNgs328	0.0057	0.0320	0.0116
1374	CofEgs328	4.0608	22.8621	8.2769
1375	CofNgs328	0.0321	0.1807	0.0654
1376	CreEgs328	0.4269	2.4033	0.8701
1377	CreNgs328	0.0047	0.0267	0.0097
1378	CrtEgs328	3.7086	20.8795	7.5592
1379	CrtNgs328	0.0397	0.2237	0.0810
1380	CscEgs328	0.9132	5.1413	1.8614
1381	CscNgs328	0.0098	0.0551	0.0199
1382	CwaEgs328	0.1213	0.6830	0.2473
1383	CwaNgs328	0.0013	0.0073	0.0026
1384	CwaEgs326	0.0000	0.0085	0.0413
1385	CwaNgs326	0.0000	0.0001	0.0005
1386	CasEgs327	4.0434	0.5482	6.3286
1387	CasNgs327	0.0455	0.0062	0.0712
1388	CcoEgs327	0.0063	0.0009	0.0098
1389	CcoNgs327	0.0001	0.0000	0.0001
1390	CgrEgs327	1.1397	0.1545	1.7839
1391	CgrNgs327	0.0116	0.0016	0.0182
1392	CheEgs327	2.1974	0.2979	3.4394
1393	CheNgs327	0.0229	0.0031	0.0358
1394	ChoEgs327	0.5970	0.0809	0.9344
1395	ChoNgs327	0.0062	0.0008	0.0097
1396	CinEgs327	4.1941	0.5686	6.5645
1397	CinNgs327	0.0436	0.0059	0.0682
1398	CloEgs327	0.6476	0.0878	1.0136
1399	CloNgs327	0.0064	0.0009	0.0100
1400	CmiEgs327	6.2475	0.8470	9.7785
1401	CmiNgs327	0.0656	0.0089	0.1026

1402	CofEgs327	1.8796	0.2548	2.9420
1403	CofNgs327	0.0214	0.0029	0.0335
1404	CreEgs327	4.0243	0.5456	6.2988
1405	CreNgs327	0.0396	0.0054	0.0621
1406	CrtEgs327	8.8841	1.2045	13.9052
1407	CrtNgs327	0.0908	0.0123	0.1422
1408	CscEgs327	0.1071	0.0145	0.1676
1409	CscNgs327	0.0011	0.0001	0.0017
1410	CwaEgs327	0.1783	0.0242	0.2790
1411	CwaNgs327	0.0022	0.0003	0.0034
1412	CasNgs401	0.0000	0.0000	0.0000
1413	CasTgs401	0.0000	0.0000	0.0000
1414	CcoNgs401	0.0000	0.0000	0.0000
1415	CcoTgs401	0.0000	0.0000	0.0000
1416	CgrNgs401	0.0000	0.0000	0.0000
1417	CgrTgs401	0.0000	0.0000	0.0000
1418	CheNgs401	0.0000	0.0000	0.0000
1419	CheTgs401	0.0000	0.0000	0.0000
1420	ChoNgs401	0.0000	0.0000	0.0000
1421	ChoTgs401	0.0000	0.0000	0.0000
1422	CinNgs401	0.0000	0.0000	0.0000
1423	CinTgs401	0.0000	0.0000	0.0000
1424	CloNgs401	0.0000	0.0000	0.0000
1425	CloTgs401	0.0000	0.0000	0.0000
1426	CmiNgs401	0.0000	0.0000	0.0000
1427	CmiTgs401	0.0000	0.0000	0.0000
1428	CofNgs401	0.0000	0.0000	0.0000
1429	CofTgs401	0.0000	0.0000	0.0000
1430	CreNgs401	0.0000	0.0000	0.0000
1431	CreTgs401	0.0000	0.0000	0.0000
1432	CrtNgs401	0.0000	0.0000	0.0000
1433	CrtTgs401	0.0000	0.0000	0.0000
1434	CscNgs401	0.0000	0.0000	0.0000
1435	CscTgs401	0.0000	0.0000	0.0000
1436	CwaNgs401	0.0000	0.0000	0.0000
1437	CwaTgs401	0.0000	0.0000	0.0000
1438	CasEgs402	0.0000	0.0000	0.1559
1439	CasNgs402	0.0000	0.0000	0.0002
1440	CcoEgs402	0.0000	0.0000	0.1703
1441	CcoNgs402	0.0000	0.0000	0.0018
1442	CgrEgs402	0.0000	0.0000	0.3577
1443	CgrNgs402	0.0000	0.0000	0.0005
1444	CheEgs402	0.0000	0.0000	0.6089
1445	CheNgs402	0.0000	0.0000	0.0065
1446	ChoEgs402	0.0000	0.0000	0.3699
1447	ChoNgs402	0.0000	0.0000	0.0003
1448	CinEgs402	0.0000	0.0000	1.2732

1449	CinNgs402	0.0000	0.0000	0.0136
1450	CloEgs402	0.0000	0.0000	0.3283
1451	CloNgs402	0.0000	0.0000	0.0003
1452	CmiEgs402	0.0000	0.0000	5.2965
1453	CmiNgs402	0.0000	0.0000	0.0567
1454	CofEgs402	0.0000	0.0000	2.5024
1455	CofNgs402	0.0000	0.0000	0.0021
1456	CreEgs402	0.0000	0.0000	0.1398
1457	CreNgs402	0.0000	0.0000	0.0003
1458	CrtEgs402	0.0000	0.0000	3.2314
1459	CrtNgs402	0.0000	0.0000	0.0027
1460	CscEgs402	0.0000	0.0000	0.3188
1461	CscNgs402	0.0000	0.0000	0.0034
1462	CwaEgs402	0.0000	0.0000	0.3037
1463	CwaNgs402	0.0000	0.0000	0.0033
1464	CasEgs403	0.0000	0.0000	0.4943
1465	CasNgs403	0.0000	0.0000	0.0000
1466	CcoEgs403	0.0000	0.0000	0.3314
1467	CcoNgs403	0.0000	0.0000	0.0035
1468	CgrEgs403	0.0000	0.0000	1.1346
1469	CgrNgs403	0.0000	0.0000	0.0000
1470	CheEgs403	0.0000	0.0000	1.1847
1471	CheNgs403	0.0000	0.0000	0.0127
1472	ChoEgs403	0.0000	0.0000	0.7197
1473	ChoNgs403	0.0000	0.0000	0.0000
1474	CinEgs403	0.0000	0.0000	4.0381
1475	CinNgs403	0.0000	0.0000	0.0433
1476	CloEgs403	0.0000	0.0000	0.6387
1477	CloNgs403	0.0000	0.0000	0.0000
1478	CmiEgs403	0.0000	0.0000	16.7976
1479	CmiNgs403	0.0000	0.0000	0.1800
1480	CofEgs403	0.0000	0.0000	4.8688
1481	CofNgs403	0.0000	0.0000	0.0000
1482	CreEgs403	0.0000	0.0000	1.1245
1483	CreNgs403	0.0000	0.0000	0.0001
1484	CrtEgs403	0.0000	0.0000	6.2870
1485	CrtNgs403	0.0000	0.0000	0.0000
1486	CscEgs403	0.0000	0.0000	1.0110
1487	CscNgs403	0.0000	0.0000	0.0108
1488	CwaEgs403	0.0000	0.0000	0.5908
1489	CwaNgs403	0.0000	0.0000	0.0063
1490	CasNgs404	0.0000	0.0000	0.0000
1491	CasTgs404	0.0000	0.0000	0.0000
1492	CcoNgs404	0.0000	0.0000	0.0000
1493	CcoTgs404	0.0000	0.0000	0.0000
1494	CgrNgs404	0.0000	0.0000	0.0000
1495	CgrTgs404	0.0000	0.0000	0.0000

1496	CheNgs404	0.0000	0.0000	0.0000
1497	CheTgs404	0.0000	0.0000	0.0000
1498	ChoNgs404	0.0000	0.0000	0.0000
1499	ChoTgs404	0.0000	0.0000	0.0000
1500	CinNgs404	0.0000	0.0000	0.0000
1501	CinTgs404	0.0000	0.0000	0.0000
1502	CloNgs404	0.0000	0.0000	0.0000
1503	CloTgs404	0.0000	0.0000	0.0000
1504	CmiNgs404	0.0000	0.0000	0.0000
1505	CmiTgs404	0.0000	0.0000	0.0000
1506	CofNgs404	0.0000	0.0000	0.0000
1507	CofTgs404	0.0000	0.0000	0.0000
1508	CreNgs404	0.0000	0.0000	0.0000
1509	CreTgs404	0.0000	0.0000	0.0000
1510	CrtNgs404	0.0000	0.0000	0.0000
1511	CrtTgs404	0.0000	0.0000	0.0000
1512	CscNgs404	0.0000	0.0000	0.0000
1513	CscTgs404	0.0000	0.0000	0.0000
1514	CwaNgs404	0.0000	0.0000	0.0000
1515	CwaTgs404	0.0000	0.0000	0.0000
1516	CasNgs405	0.0000	0.0000	0.0000
1517	CasTgs405	0.0000	0.0000	0.0000
1518	CcoNgs405	0.0000	0.0000	0.0002
1519	CcoTgs405	0.0000	0.0000	0.0028
1520	CgrNgs405	0.0000	0.0000	0.0005
1521	CgrTgs405	0.0000	0.0000	0.0078
1522	CheNgs405	0.0000	0.0000	0.0006
1523	CheTgs405	0.0000	0.0000	0.0090
1524	ChoNgs405	0.0000	0.0000	0.0002
1525	ChoTgs405	0.0000	0.0000	0.0033
1526	CinNgs405	0.0000	0.0000	0.0000
1527	CinTgs405	0.0000	0.0000	0.0000
1528	CloNgs405	0.0000	0.0000	0.0000
1529	CloTgs405	0.0000	0.0000	0.0000
1530	CmiNgs405	0.0000	0.0000	0.0011
1531	CmiTgs405	0.0000	0.0000	0.1004
1532	CofNgs405	0.0000	0.0000	0.0024
1533	CofTgs405	0.0000	0.0000	0.0340
1534	CreNgs405	0.0000	0.0000	0.0003
1535	CreTgs405	0.0000	0.0000	0.0061
1536	CrtNgs405	0.0000	0.0000	0.0000
1537	CrtTgs405	0.0000	0.0000	0.0000
1538	CscNgs405	0.0000	0.0000	0.0006
1539	CscTgs405	0.0000	0.0000	0.0083
1540	CwaNgs405	0.0000	0.0000	0.0003
1541	CwaTgs405	0.0000	0.0000	0.0050
1542	CasNgs406	0.0000	0.0000	0.0000

1543	CasTgs406	0.0000	0.0000	0.0000
1544	CcoNgs406	0.0000	0.0000	0.0000
1545	CcoTgs406	0.0000	0.0000	0.0010
1546	CgrNgs406	0.0000	0.0000	0.0000
1547	CgrTgs406	0.0000	0.0000	0.0025
1548	CheNgs406	0.0000	0.0000	0.0000
1549	CheTgs406	0.0000	0.0000	0.0032
1550	ChoNgs406	0.0000	0.0000	0.0000
1551	ChoTgs406	0.0000	0.0000	0.0011
1552	CinNgs406	0.0000	0.0000	0.0000
1553	CinTgs406	0.0000	0.0000	0.0000
1554	CloNgs406	0.0000	0.0000	0.0000
1555	CloTgs406	0.0000	0.0000	0.0000
1556	CmiNgs406	0.0000	0.0000	0.0004
1557	CmiTgs406	0.0000	0.0000	0.0348
1558	CofNgs406	0.0000	0.0000	0.0001
1559	CofTgs406	0.0000	0.0000	0.0110
1560	CreNgs406	0.0000	0.0000	0.0000
1561	CreTgs406	0.0000	0.0000	0.0020
1562	CrtNgs406	0.0000	0.0000	0.0000
1563	CrtTgs406	0.0000	0.0000	0.0000
1564	CscNgs406	0.0000	0.0000	0.0000
1565	CscTgs406	0.0000	0.0000	0.0029
1566	CwaNgs406	0.0000	0.0000	0.0000
1567	CwaTgs406	0.0000	0.0000	0.0018
1568	CasNgs407	0.0000	0.0000	0.0000
1569	CasTgs407	0.0000	0.0000	0.0000
1570	CcoNgs407	0.0000	0.0000	0.0000
1571	CcoTgs407	0.0000	0.0000	0.0013
1572	CgrNgs407	0.0000	0.0000	0.0000
1573	CgrTgs407	0.0000	0.0000	0.0032
1574	CheNgs407	0.0000	0.0000	0.0000
1575	CheTgs407	0.0000	0.0000	0.0041
1576	ChoNgs407	0.0000	0.0000	0.0000
1577	ChoTgs407	0.0000	0.0000	0.0014
1578	CinNgs407	0.0000	0.0000	0.0000
1579	CinTgs407	0.0000	0.0000	0.0000
1580	CloNgs407	0.0000	0.0000	0.0000
1581	CloTgs407	0.0000	0.0000	0.0000
1582	CmiNgs407	0.0000	0.0000	0.0005
1583	CmiTgs407	0.0000	0.0000	0.0446
1584	CofNgs407	0.0000	0.0000	0.0001
1585	CofTgs407	0.0000	0.0000	0.0141
1586	CreNgs407	0.0000	0.0000	0.0000
1587	CreTgs407	0.0000	0.0000	0.0025
1588	CrtNgs407	0.0000	0.0000	0.0000
1589	CrtTgs407	0.0000	0.0000	0.0000

1590	CscNgs407	0.0000	0.0000	0.0000
1591	CscTgs407	0.0000	0.0000	0.0038
1592	CwaNgs407	0.0000	0.0000	0.0000
1593	CwaTgs407	0.0000	0.0000	0.0023
1594	CasNgs408	0.0000	0.0000	0.0531
1595	CasTgs408	0.0000	0.0000	0.3511
1596	CcoNgs408	0.0000	0.0000	0.0027
1597	CcoTgs408	0.0000	0.0000	0.2527
1598	CgrNgs408	0.0000	0.0000	0.1218
1599	CgrTgs408	0.0000	0.0000	0.8057
1600	CheNgs408	0.0000	0.0000	0.0097
1601	CheTgs408	0.0000	0.0000	0.9035
1602	ChoNgs408	0.0000	0.0000	0.0786
1603	ChoTgs408	0.0000	0.0000	0.5197
1604	CinNgs408	0.0000	0.0000	0.0325
1605	CinTgs408	0.0000	0.0000	3.0289
1606	CloNgs408	0.0000	0.0000	0.0697
1607	CloTgs408	0.0000	0.0000	0.4612
1608	CmiNgs408	0.0000	0.0000	0.1350
1609	CmiTgs408	0.0000	0.0000	12.5998
1610	CofNgs408	0.0000	0.0000	0.5315
1611	CofTgs408	0.0000	0.0000	3.5156
1612	CreNgs408	0.0000	0.0000	0.1188
1613	CreTgs408	0.0000	0.0000	0.7857
1614	CrtNgs408	0.0000	0.0000	0.6863
1615	CrtTgs408	0.0000	0.0000	4.5397
1616	CscNgs408	0.0000	0.0000	0.0081
1617	CscTgs408	0.0000	0.0000	0.7583
1618	CwaNgs408	0.0000	0.0000	0.0055
1619	CwaTgs408	0.0000	0.0000	0.5115
1620	CinNgs410	0.0000	0.0000	0.0000
1621	CinTgs410	0.0000	0.0000	0.0000
1622	CasNgs501	0.0000	0.0000	0.0000
1623	CasTgs501	0.0000	0.0000	0.0000
1624	CcoNgs501	0.0000	0.0000	0.0000
1625	CcoTgs501	0.0000	0.0000	0.0000
1626	CgrNgs501	0.0000	0.0000	0.0000
1627	CgrTgs501	0.0000	0.0000	0.0000
1628	CheNgs501	0.0000	0.0000	0.0000
1629	CheTgs501	0.0000	0.0000	0.0000
1630	ChoNgs501	0.0000	0.0000	0.0000
1631	ChoTgs501	0.0000	0.0000	0.0000
1632	CinNgs501	0.0000	0.0000	0.0000
1633	CinTgs501	0.0000	0.0000	0.0000
1634	CloNgs501	0.0000	0.0000	0.0000
1635	CloTgs501	0.0000	0.0000	0.0000
1636	CmiNgs501	0.0000	0.0000	0.0000

1637	CmiTgs501	0.0000	0.0000	0.0000
1638	CofNgs501	0.0000	0.0000	0.0000
1639	CofTgs501	0.0000	0.0000	0.0000
1640	CreNgs501	0.0000	0.0000	0.0000
1641	CreTgs501	0.0000	0.0000	0.0000
1642	CrtNgs501	0.0000	0.0000	0.0000
1643	CrtTgs501	0.0000	0.0000	0.0000
1644	CscNgs501	0.0000	0.0000	0.0000
1645	CscTgs501	0.0000	0.0000	0.0000
1646	CwaNgs501	0.0000	0.0000	0.0000
1647	CwaTgs501	0.0000	0.0000	0.0000
1648	CasEgs502	0.0020	0.0000	0.7180
1649	CasNgs502	0.0000	0.0000	0.0088
1650	CcoEgs502	0.0022	0.0000	0.7988
1651	CcoNgs502	0.0000	0.0000	0.0097
1652	CgrEgs502	0.0175	0.0000	1.3956
1653	CgrNgs502	0.0002	0.0000	0.0170
1654	CheEgs502	0.0080	0.0000	2.8579
1655	CheNgs502	0.0001	0.0000	0.0348
1656	ChoEgs502	0.0048	0.0000	1.7188
1657	ChoNgs502	0.0001	0.0000	0.0210
1658	CinEgs502	0.0164	0.0000	5.8835
1659	CinNgs502	0.0002	0.0000	0.0717
1660	CloEgs502	0.0198	0.0000	1.5848
1661	CloNgs502	0.0002	0.0000	0.0193
1662	CmiEgs502	0.0656	0.0000	23.5560
1663	CmiNgs502	0.0008	0.0000	0.2872
1664	CofEgs502	0.0342	0.0000	12.2882
1665	CofNgs502	0.0004	0.0000	0.1498
1666	CreEgs502	0.0082	0.0000	0.6567
1667	CreNgs502	0.0001	0.0000	0.0080
1668	CrtEgs502	0.1812	0.0000	14.4720
1669	CrtNgs502	0.0022	0.0000	0.1764
1670	CscEgs502	0.0042	0.0000	1.4951
1671	CscNgs502	0.0001	0.0000	0.0182
1672	CwaEgs502	0.0022	0.0000	0.7743
1673	CwaNgs502	0.0000	0.0000	0.0094
1674	CasEgs503	0.0000	0.0000	0.4054
1675	CasNgs503	0.0000	0.0000	0.0049
1676	CcoEgs503	0.0000	0.0000	0.6716
1677	CcoNgs503	0.0000	0.0000	0.0082
1678	CgrEgs503	0.0000	0.0000	0.3940
1679	CgrNgs503	0.0000	0.0000	0.0048
1680	CheEgs503	0.0000	0.0000	2.4027
1681	CheNgs503	0.0000	0.0000	0.0293
1682	ChoEgs503	0.0000	0.0000	1.4450
1683	ChoNgs503	0.0000	0.0000	0.0176

1684	CinEgs503	0.0000	0.0000	3.3219
1685	CinNgs503	0.0000	0.0000	0.0405
1686	CloEgs503	0.0000	0.0000	0.5329
1687	CloNgs503	0.0000	0.0000	0.0065
1688	CmiEgs503	0.0000	0.0000	13.3000
1689	CmiNgs503	0.0000	0.0000	0.1621
1690	CofEgs503	0.0000	0.0000	8.2647
1691	CofNgs503	0.0000	0.0000	0.1008
1692	CreEgs503	0.0000	0.0000	0.4833
1693	CreNgs503	0.0000	0.0000	0.0059
1694	CrtEgs503	0.0000	0.0000	2.4334
1695	CrtNgs503	0.0000	0.0000	0.0297
1696	CscEgs503	0.0000	0.0000	2.1104
1697	CscNgs503	0.0000	0.0000	0.0257
1698	CwaEgs503	0.0000	0.0000	0.6510
1699	CwaNgs503	0.0000	0.0000	0.0079
1700	CasNgs504	0.0000	0.0000	0.0000
1701	CasTgs504	0.0000	0.0000	0.0000
1702	CrtNgs504	0.0000	0.0000	0.0000
1703	CrtTgs504	0.0000	0.0000	0.0000
1704	CwaNgs504	0.0000	0.0000	0.0000
1705	CwaTgs504	0.0000	0.0000	0.0000
1706	CasNgs505	0.0000	0.0000	0.0000
1707	CasTgs505	0.0000	0.0000	0.0000
1708	CcoNgs505	0.0000	0.0000	0.0000
1709	CcoTgs505	0.0000	0.0000	0.0000
1710	CgrNgs505	0.0000	0.0000	0.0000
1711	CgrTgs505	0.0000	0.0000	0.0000
1712	CheNgs505	0.0000	0.0000	0.0000
1713	CheTgs505	0.0000	0.0000	0.0000
1714	ChoNgs505	0.0000	0.0000	0.0000
1715	ChoTgs505	0.0000	0.0000	0.0000
1716	CinNgs505	0.0000	0.0000	0.0000
1717	CinTgs505	0.0000	0.0000	0.0000
1718	CloNgs505	0.0000	0.0000	0.0000
1719	CloTgs505	0.0000	0.0000	0.0000
1720	CmiNgs505	0.0000	0.0000	0.0000
1721	CmiTgs505	0.0000	0.0000	0.0000
1722	CofNgs505	0.0000	0.0000	0.0000
1723	CofTgs505	0.0000	0.0000	0.0000
1724	CreNgs505	0.0000	0.0000	0.0000
1725	CreTgs505	0.0000	0.0000	0.0000
1726	CrtNgs505	0.0000	0.0000	0.0000
1727	CrtTgs505	0.0000	0.0000	0.0000
1728	CscNgs505	0.0000	0.0000	0.0000
1729	CscTgs505	0.0000	0.0000	0.0000
1730	CwaNgs505	0.0000	0.0000	0.0000

1731	CwaTgs505	0.0000	0.0000	0.0000
1732	CasNgs506	0.0000	0.0000	0.0000
1733	CasTgs506	0.0000	0.0000	0.0000
1734	CcoNgs506	0.0000	0.0000	0.0000
1735	CcoTgs506	0.0000	0.0000	0.0000
1736	CgrNgs506	0.0000	0.0000	0.0000
1737	CgrTgs506	0.0000	0.0000	0.0000
1738	CheNgs506	0.0000	0.0000	0.0000
1739	CheTgs506	0.0000	0.0000	0.0000
1740	ChoNgs506	0.0000	0.0000	0.0000
1741	ChoTgs506	0.0000	0.0000	0.0000
1742	CinNgs506	0.0000	0.0000	0.0000
1743	CinTgs506	0.0000	0.0000	0.0000
1744	CloNgs506	0.0000	0.0000	0.0000
1745	CloTgs506	0.0000	0.0000	0.0000
1746	CmiNgs506	0.0000	0.0000	0.0000
1747	CmiTgs506	0.0000	0.0000	0.0000
1748	CofNgs506	0.0000	0.0000	0.0000
1749	CofTgs506	0.0000	0.0000	0.0000
1750	CreNgs506	0.0000	0.0000	0.0000
1751	CreTgs506	0.0000	0.0000	0.0000
1752	CrtNgs506	0.0000	0.0000	0.0000
1753	CrtTgs506	0.0000	0.0000	0.0000
1754	CscNgs506	0.0000	0.0000	0.0000
1755	CscTgs506	0.0000	0.0000	0.0000
1756	CwaNgs506	0.0000	0.0000	0.0000
1757	CwaTgs506	0.0000	0.0000	0.0000
1758	CasTgs507	1.1267	0.7346	6.0110
1759	CrtTgs507	14.9747	9.7635	79.8880
1760	CwaTgs507	1.9553	1.2749	10.4313
1761	CasTgs508	0.0037	0.0009	0.0153
1762	CcoTgs508	0.0011	0.0011	0.0106
1763	CgrTgs508	0.0003	0.0000	0.0011
1764	CheTgs508	0.0094	0.0022	0.0386
1765	ChoTgs508	0.0024	0.0024	0.0233
1766	CinTgs508	0.0305	0.0070	0.1253
1767	CloTgs508	0.0001	0.0000	0.0004
1768	CmiTgs508	0.0069	0.0016	0.0285
1769	CofTgs508	0.0010	0.0002	0.0040
1770	CreTgs508	0.0004	0.0000	0.0016
1771	CrtTgs508	0.0009	0.0000	0.0038
1772	CscTgs508	0.0077	0.0018	0.0318
1773	CwaTgs508	0.0013	0.0003	0.0052
1774	CasTgs509	0.0002	0.0000	0.0006
1775	CcoTgs509	0.0000	0.0000	0.0004
1776	CgrTgs509	0.0000	0.0000	0.0000
1777	CheTgs509	0.0004	0.0001	0.0016

1778	ChoTgs509	0.0001	0.0001	0.0010
1779	CinTgs509	0.0013	0.0003	0.0051
1780	CloTgs509	0.0000	0.0000	0.0000
1781	CmiTgs509	0.0003	0.0001	0.0013
1782	CofTgs509	0.0000	0.0000	0.0002
1783	CreTgs509	0.0000	0.0000	0.0001
1784	CrtTgs509	0.0001	0.0000	0.0002
1785	CscTgs509	0.0003	0.0001	0.0013
1786	CwaTgs509	0.0001	0.0000	0.0002
1787	CasTgs510	0.5897	0.1349	2.4001
1788	CcoTgs510	0.2311	0.2144	2.1757
1789	CgrTgs510	1.8049	0.0001	7.3015
1790	CheTgs510	1.9082	0.4365	7.7662
1791	ChoTgs510	0.4966	0.4606	4.6749
1792	CinTgs510	6.2991	1.4410	25.6373
1793	CloTgs510	1.0185	0.0001	4.1204
1794	CmiTgs510	26.5897	6.0827	108.2196
1795	CofTgs510	7.8277	1.7907	31.8585
1796	CreTgs510	1.7549	0.0001	7.0996
1797	CrtTgs510	7.6326	0.0004	30.8775
1798	CscTgs510	1.6041	0.3670	6.5287
1799	CwaTgs510	0.6520	0.1492	2.6536
1800	CasTgs511	0.1277	0.0293	0.5215
1801	CcoTgs511	0.0366	0.0351	0.3485
1802	CgrTgs511	0.2736	0.0000	1.1189
1803	CheTgs511	0.2827	0.0649	1.1545
1804	ChoTgs511	0.0787	0.0756	0.7499
1805	CinTgs511	1.1300	0.2594	4.6152
1806	CloTgs511	0.1810	0.0000	0.7404
1807	CmiTgs511	0.5027	0.1154	2.0531
1808	CofTgs511	1.3437	0.3085	5.4880
1809	CreTgs511	0.3356	0.0001	1.3726
1810	CrtTgs511	1.6897	0.0003	6.9106
1811	CscTgs511	0.2682	0.0616	1.0952
1812	CwaTgs511	0.0827	0.0190	0.3378
1813	CasEgs601	0.0019	0.0005	0.0138
1814	CasNgs601	0.0000	0.0000	0.0001
1815	CcoEgs601	0.0003	0.0002	0.0021
1816	CcoNgs601	0.0000	0.0000	0.0001
1817	CgrEgs601	0.0031	0.0008	0.0222
1818	CgrNgs601	0.0000	0.0000	0.0002
1819	CheEgs601	0.0006	0.0005	0.0049
1820	CheNgs601	0.0000	0.0000	0.0002
1821	ChoEgs601	0.0005	0.0004	0.0039
1822	ChoNgs601	0.0000	0.0000	0.0002
1823	CinEgs601	0.0099	0.0024	0.0712
1824	CinNgs601	0.0001	0.0000	0.0008

1825	CloEgs601	0.0006	0.0005	0.0046
1826	CloNgs601	0.0000	0.0000	0.0002
1827	CmiEgs601	0.0752	0.0186	0.5412
1828	CmiNgs601	0.0008	0.0002	0.0060
1829	CofEgs601	0.0152	0.0038	0.1095
1830	CofNgs601	0.0002	0.0000	0.0011
1831	CreEgs601	0.0006	0.0005	0.0043
1832	CreNgs601	0.0000	0.0000	0.0002
1833	CrtEgs601	0.0020	0.0005	0.0145
1834	CrtNgs601	0.0001	0.0000	0.0006
1835	CscEgs601	0.0007	0.0005	0.0050
1836	CscNgs601	0.0000	0.0000	0.0002
1837	CwaEgs601	0.0011	0.0003	0.0080
1838	CwaNgs601	0.0000	0.0000	0.0001
1839	CcoEgs602	0.0000	0.0000	0.0000
1840	CcoNgs602	0.0000	0.0000	0.0000
1841	CheEgs602	0.0030	0.0030	0.0738
1842	CheNgs602	0.0000	0.0000	0.0008
1843	ChoEgs602	0.0178	0.0178	0.4361
1844	ChoNgs602	0.0002	0.0002	0.0047
1845	CinEgs602	0.0000	0.0000	0.0000
1846	CinNgs602	0.0000	0.0000	0.0000
1847	CofEgs602	0.0025	0.0025	0.0616
1848	CofNgs602	0.0000	0.0000	0.0007
1849	CrtEgs602	0.0039	0.0039	0.0966
1850	CrtNgs602	0.0000	0.0000	0.0010
1851	CasEgs603	0.0494	0.0231	0.3229
1852	CasNgs603	0.0026	0.0012	0.0173
1853	CcoEgs603	0.0327	0.0274	0.2492
1854	CcoNgs603	0.0017	0.0014	0.0132
1855	CgrEgs603	0.1671	0.0782	1.0936
1856	CgrNgs603	0.0018	0.0008	0.0117
1857	CheEgs603	0.0783	0.0655	0.5955
1858	CheNgs603	0.0041	0.0035	0.0315
1859	ChoEgs603	0.0457	0.0383	0.3479
1860	ChoNgs603	0.0024	0.0020	0.0184
1861	CinEgs603	0.2547	0.1192	1.6665
1862	CinNgs603	0.0136	0.0064	0.0893
1863	CloEgs603	0.0729	0.0611	0.5550
1864	CloNgs603	0.0039	0.0032	0.0293
1865	CmiEgs603	8.2665	3.8691	54.0876
1866	CmiNgs603	0.0886	0.0415	0.5795
1867	CofEgs603	0.3917	0.1833	2.5628
1868	CofNgs603	0.0207	0.0097	0.1354
1869	CreEgs603	0.0660	0.0552	0.5019
1870	CreNgs603	0.0035	0.0030	0.0269
1871	CrtEgs603	0.2678	0.1253	1.7521

1872	CrtNgs603	0.0143	0.0067	0.0939
1873	CscEgs603	0.0769	0.0644	0.5853
1874	CscNgs603	0.0041	0.0035	0.0314
1875	CwaEgs603	0.0381	0.0178	0.2492
1876	CwaNgs603	0.0020	0.0010	0.0134
1877	CasNgs605	0.0000	0.0000	0.0000
1878	CasTgs605	0.0000	0.0000	0.0000
1879	CcoNgs605	0.0000	0.0000	0.0000
1880	CcoTgs605	0.0000	0.0000	0.0000
1881	CgrNgs605	0.0000	0.0000	0.0000
1882	CgrTgs605	0.0001	0.0000	0.0010
1883	CheNgs605	0.0000	0.0000	0.0000
1884	CheTgs605	0.0004	0.0004	0.0033
1885	ChoNgs605	0.0000	0.0000	0.0002
1886	ChoTgs605	0.0028	0.0023	0.0211
1887	CinNgs605	0.0000	0.0000	0.0000
1888	CinTgs605	0.0000	0.0000	0.0000
1889	CloNgs605	0.0000	0.0000	0.0000
1890	CloTgs605	0.0002	0.0002	0.0016
1891	CmiNgs605	0.0000	0.0000	0.0000
1892	CmiTgs605	0.0002	0.0000	0.0017
1893	CofNgs605	0.0000	0.0000	0.0000
1894	CofTgs605	0.0004	0.0000	0.0030
1895	CreNgs605	0.0000	0.0000	0.0000
1896	CreTgs605	0.0003	0.0002	0.0021
1897	CrtNgs605	0.0000	0.0000	0.0001
1898	CrtTgs605	0.0007	0.0001	0.0048
1899	CscNgs605	0.0000	0.0000	0.0000
1900	CscTgs605	0.0002	0.0002	0.0015
1901	CwaNgs605	0.0000	0.0000	0.0000
1902	CwaTgs605	0.0000	0.0000	0.0000
1903	CasEgs606	0.0008	0.0001	0.0056
1904	CasNgs606	0.0000	0.0000	0.0001
1905	CcoEgs606	0.0010	0.0009	0.0077
1906	CcoNgs606	0.0000	0.0000	0.0001
1907	CheEgs606	0.0044	0.0037	0.0338
1908	CheNgs606	0.0001	0.0000	0.0004
1909	ChoEgs606	0.0023	0.0020	0.0179
1910	ChoNgs606	0.0000	0.0000	0.0002
1911	CinEgs606	0.0073	0.0007	0.0519
1912	CinNgs606	0.0001	0.0000	0.0006
1913	CloEgs606	0.0064	0.0054	0.0489
1914	CloNgs606	0.0001	0.0001	0.0006
1915	CofEgs606	0.0241	0.0022	0.1708
1916	CofNgs606	0.0003	0.0000	0.0020
1917	CreEgs606	0.0000	0.0000	0.0000
1918	CreNgs606	0.0000	0.0000	0.0000

1919	CrtEgs606	0.0000	0.0000	0.0003
1920	CrtNgs606	0.0000	0.0000	0.0000
1921	CscEgs606	0.0013	0.0011	0.0099
1922	CscNgs606	0.0000	0.0000	0.0001
1923	CwaEgs606	0.0000	0.0000	0.0000
1924	CwaNgs606	0.0000	0.0000	0.0000
1925	CasTgs607	0.0000	0.0000	0.0000
1926	CcoTgs607	0.0000	0.0000	0.0000
1927	CloTgs607	0.0000	0.0000	0.0000
1928	CasNgs608	0.0000	0.0000	0.0000
1929	CasTgs608	0.0009	0.0005	0.0042
1930	CcoNgs608	0.0000	0.0000	0.0000
1931	CcoTgs608	0.0000	0.0000	0.0000
1932	CloNgs608	0.0001	0.0001	0.0006
1933	CloTgs608	0.0348	0.0196	0.1674
1934	CasNgs609	0.0000	0.0000	0.0000
1935	CasTgs609	0.0000	0.0000	0.0000
1936	CcoNgs609	0.0000	0.0000	0.0000
1937	CcoTgs609	0.0000	0.0000	0.0000
1938	CloNgs609	0.0000	0.0000	0.0000
1939	CloTgs609	0.0000	0.0000	0.0000
1940	CasNgs701	0.0038	0.0000	0.0069
1941	CasTgs701	0.3766	0.0000	0.6781
1942	CgrNgs701	0.0031	0.0000	0.0056
1943	CgrTgs701	0.2915	0.0000	0.5248
1944	CheNgs701	0.0051	0.0000	0.0093
1945	CheTgs701	0.5188	0.0000	0.9342
1946	ChoNgs701	0.0041	0.0000	0.0074
1947	ChoTgs701	0.4058	0.0000	0.7306
1948	CinNgs701	0.0199	0.0000	0.0357
1949	CinTgs701	1.9436	0.0000	3.4994
1950	CloNgs701	0.0048	0.0000	0.0086
1951	CloTgs701	0.4836	0.0000	0.8707
1952	CofNgs701	0.0301	0.0000	0.0542
1953	CofTgs701	2.9889	0.0000	5.3816
1954	CrtNgs701	0.0153	0.0000	0.0276
1955	CrtTgs701	1.5266	0.0000	2.7487
1956	CwaNgs701	0.0022	0.0000	0.0039
1957	CwaTgs701	0.2172	0.0000	0.3910
1958	CcoEgs702	0.0098	0.0098	0.0776
1959	CcoNgs702	0.0004	0.0004	0.0033
1960	ChoEgs702	0.0182	0.0182	0.1444
1961	ChoNgs702	0.0008	0.0008	0.0062
1962	CinEgs702	0.1223	0.1285	2.5365
1963	CinNgs702	0.0013	0.0014	0.0272
1964	CofEgs702	0.1880	0.1975	3.9007
1965	CofNgs702	0.0020	0.0021	0.0412

1966	CasEgs801	0.0004	0.0004	0.0048
1967	CcoEgs801	0.0001	0.0001	0.0010
1968	CgrEgs801	0.5209	0.5237	6.4298
1969	CheEgs801	0.0006	0.0005	0.0044
1970	ChoEgs801	0.0035	0.0030	0.0268
1971	CloEgs801	0.0109	0.0091	0.0826
1972	CreEgs801	0.1890	0.1583	1.4382
1973	CrtEgs801	0.0342	0.0344	0.4225
1974	CscEgs801	0.0035	0.0029	0.0263
1975	CasEgs802	0.0001	0.0000	0.0008
1976	CasNgs802	0.0000	0.0000	0.0000
1977	CcoEgs802	0.0000	0.0000	0.0000
1978	CcoNgs802	0.0000	0.0000	0.0000
1979	CgrEgs802	0.0351	0.0078	0.2492
1980	CgrNgs802	0.0002	0.0000	0.0015
1981	CheEgs802	0.0000	0.0000	0.0000
1982	CheNgs802	0.0000	0.0000	0.0000
1983	ChoEgs802	0.0007	0.0006	0.0050
1984	ChoNgs802	0.0000	0.0000	0.0000
1985	CloEgs802	0.0014	0.0011	0.0104
1986	CloNgs802	0.0000	0.0000	0.0001
1987	CreEgs802	0.0294	0.0246	0.2235
1988	CreNgs802	0.0002	0.0001	0.0014
1989	CrtEgs802	0.0032	0.0007	0.0230
1990	CrtNgs802	0.0000	0.0000	0.0001
1991	CscEgs802	0.0007	0.0006	0.0050
1992	CscNgs802	0.0000	0.0000	0.0000
1993	CasEgs803	0.0010	0.0001	0.0071
1994	CasNgs803	0.0000	0.0000	0.0000
1995	CcoEgs803	0.0000	0.0000	0.0001
1996	CgrEgs803	0.5224	0.0479	3.7033
1997	CheEgs803	0.0000	0.0000	0.0000
1998	ChoEgs803	0.0093	0.0078	0.0708
1999	CloEgs803	0.0194	0.0163	0.1478
2000	CreEgs803	0.4097	0.3431	3.1171
2001	CrtEgs803	0.0453	0.0041	0.3209
2002	CscEgs803	0.0094	0.0078	0.0712
2003	CcoEgs804	0.0018	0.0015	0.0138
2004	CcoNgs804	0.0000	0.0000	0.0002
2005	CheEgs804	0.0091	0.0076	0.0691
2006	CheNgs804	0.0001	0.0001	0.0008
2007	ChoEgs804	0.0049	0.0041	0.0375
2008	ChoNgs804	0.0001	0.0000	0.0004
2009	CloEgs804	0.0214	0.0180	0.1631
2010	CloNgs804	0.0002	0.0002	0.0018
2011	CscEgs804	0.0097	0.0081	0.0736
2012	CscNgs804	0.0001	0.0001	0.0008

2013	CgrEgs805	0.0282	0.0264	0.2028
2014	CgrNgs805	0.0000	0.0000	0.0000
2015	CgrEgs806	0.5881	0.2023	3.9731
2016	CrtEgs806	0.0184	0.0063	0.1240
2017	CgrTgs807	0.0000	0.0000	0.0000
2018	CasEgs808	0.0005	0.0000	0.0036
2019	CasNgs808	0.0000	0.0000	0.0002
2020	CcoEgs808	0.0001	0.0001	0.0007
2021	CcoNgs808	0.0000	0.0000	0.0000
2022	CgrEgs808	0.2128	0.0195	1.5081
2023	CgrNgs808	0.0000	0.0000	0.0000
2024	CheEgs808	0.0004	0.0004	0.0033
2025	CheNgs808	0.0000	0.0000	0.0002
2026	ChoEgs808	0.0027	0.0022	0.0203
2027	ChoNgs808	0.0001	0.0001	0.0009
2028	CloEgs808	0.0082	0.0069	0.0626
2029	CloNgs808	0.0004	0.0003	0.0029
2030	CreEgs808	0.1433	0.1200	1.0903
2031	CreNgs808	0.0067	0.0056	0.0507
2032	CrtEgs808	0.0140	0.0013	0.0991
2033	CrtNgs808	0.0000	0.0000	0.0000
2034	CscEgs808	0.0026	0.0022	0.0200
2035	CscNgs808	0.0001	0.0001	0.0009
2036	CasEgs809	0.0005	0.0000	0.0038
2037	CasNgs809	0.0000	0.0000	0.0002
2038	CcoEgs809	0.0000	0.0000	0.0000
2039	CcoNgs809	0.0000	0.0000	0.0000
2040	CgrEgs809	0.1790	0.0164	1.2688
2041	CgrNgs809	0.0077	0.0007	0.0544
2042	CheEgs809	0.0000	0.0000	0.0000
2043	CheNgs809	0.0000	0.0000	0.0000
2044	ChoEgs809	0.0034	0.0028	0.0255
2045	ChoNgs809	0.0001	0.0001	0.0011
2046	CloEgs809	0.0070	0.0059	0.0533
2047	CloNgs809	0.0003	0.0003	0.0023
2048	CreEgs809	0.1477	0.1237	1.1242
2049	CreNgs809	0.0063	0.0053	0.0482
2050	CrtEgs809	0.0163	0.0015	0.1157
2051	CrtNgs809	0.0007	0.0001	0.0050
2052	CscEgs809	0.0034	0.0028	0.0257
2053	CscNgs809	0.0001	0.0001	0.0011
2054	CasEgs810	0.0001	0.0000	0.0007
2055	CcoEgs810	0.0000	0.0000	0.0002
2056	CgrEgs810	0.0508	0.0165	0.3441
2057	CheEgs810	0.0001	0.0001	0.0009
2058	ChoEgs810	0.0007	0.0006	0.0055
2059	CloEgs810	0.0022	0.0019	0.0170

2060	CreEgs810	0.0396	0.0332	0.3014
2061	CrtEgs810	0.0037	0.0012	0.0250
2062	CscEgs810	0.0007	0.0006	0.0054
2063	CgrEgs811	0.0192	0.0086	0.1260
2064	CgrNgs811	0.0000	0.0000	0.0000
2065	CrtEgs811	0.0012	0.0005	0.0078
2066	CrtNgs811	0.0000	0.0000	0.0000
2067	CasEgs812	0.0000	0.0000	0.0000
2068	CasNgs812	0.0000	0.0000	0.0000
2069	CcoEgs812	0.0000	0.0000	0.0000
2070	CcoNgs812	0.0000	0.0000	0.0000
2071	CgrEgs812	0.0086	0.0024	0.0588
2072	CgrNgs812	0.0000	0.0000	0.0000
2073	CheEgs812	0.0000	0.0000	0.0000
2074	CheNgs812	0.0000	0.0000	0.0000
2075	ChoEgs812	0.0000	0.0000	0.0002
2076	ChoNgs812	0.0000	0.0000	0.0000
2077	CloEgs812	0.0001	0.0001	0.0005
2078	CloNgs812	0.0000	0.0000	0.0000
2079	CreEgs812	0.0013	0.0011	0.0100
2080	CreNgs812	0.0000	0.0000	0.0000
2081	CrtEgs812	0.0002	0.0000	0.0010
2082	CrtNgs812	0.0000	0.0000	0.0000
2083	CscEgs812	0.0000	0.0000	0.0002
2084	CscNgs812	0.0000	0.0000	0.0000
2085	CgrNgs813	0.0000	0.0000	0.0000
2086	CgrTgs813	0.0000	0.0000	0.0000
2087	CrtNgs813	0.0000	0.0000	0.0000
2088	CrtTgs813	0.0000	0.0000	0.0000
2089	CgrNgs814	0.0000	0.0000	0.0000
2090	CgrTgs814	0.0000	0.0000	0.0000
2091	CrtNgs814	0.0000	0.0000	0.0000
2092	CrtTgs814	0.0000	0.0000	0.0000
2093	CgrNgs815	0.0084	0.0038	0.0555
2094	CgrTgs815	1.3819	0.6175	9.1281
2095	CrtNgs815	0.0006	0.0002	0.0036
2096	CrtTgs815	0.0908	0.0406	0.5997
2097	CgrNgs816	0.0301	0.0134	0.1986
2098	CgrTgs816	2.4804	1.1084	16.3834
2099	CrtNgs816	0.0020	0.0009	0.0130
2100	CrtTgs816	0.1630	0.0728	1.0764
2101	CasNgs817	0.0000	0.0000	0.0003
2102	CasTgs817	0.0045	0.0028	0.0285
2103	CcoNgs817	0.0000	0.0000	0.0002
2104	CcoTgs817	0.0024	0.0021	0.0186
2105	CgrNgs817	0.0012	0.0008	0.0077
2106	CgrTgs817	0.1135	0.0717	0.7224

2107	CheNgs817	0.0001	0.0001	0.0006
2108	CheTgs817	0.0071	0.0060	0.0543
2109	ChoNgs817	0.0001	0.0001	0.0006
2110	ChoTgs817	0.0075	0.0063	0.0569
2111	CloNgs817	0.0004	0.0003	0.0028
2112	CloTgs817	0.0343	0.0287	0.2612
2113	CreNgs817	0.0014	0.0012	0.0110
2114	CreTgs817	0.1347	0.1128	1.0251
2115	CrtNgs817	0.0004	0.0003	0.0028
2116	CrtTgs817	0.0411	0.0260	0.2617
2117	CscNgs817	0.0001	0.0001	0.0009
2118	CscTgs817	0.0113	0.0095	0.0859
2119	CasNgs818	0.0002	0.0001	0.0015
2120	CasTgs818	0.0147	0.0049	0.1388
2121	CcoNgs818	0.0001	0.0000	0.0005
2122	CcoTgs818	0.0044	0.0014	0.0411
2123	CgrNgs818	0.0000	0.0000	0.0004
2124	CgrTgs818	0.0038	0.0013	0.0355
2125	CheNgs818	0.0003	0.0001	0.0027
2126	CheTgs818	0.0271	0.0090	0.2557
2127	ChoNgs818	0.0001	0.0000	0.0007
2128	ChoTgs818	0.0063	0.0021	0.0593
2129	CinNgs818	0.0008	0.0003	0.0073
2130	CinTgs818	0.0617	0.0206	0.5833
2131	CloNgs818	0.0003	0.0001	0.0027
2132	CloTgs818	0.0227	0.0076	0.2143
2133	CmiNgs818	0.0035	0.0012	0.0328
2134	CmiTgs818	0.2775	0.0925	2.6227
2135	CofNgs818	0.0012	0.0004	0.0109
2136	CofTgs818	0.0923	0.0307	0.8721
2137	CreNgs818	0.0005	0.0002	0.0047
2138	CreTgs818	0.0402	0.0134	0.3796
2139	CrtNgs818	0.0035	0.0012	0.0331
2140	CrtTgs818	0.2803	0.0934	2.6495
2141	CscNgs818	0.0003	0.0001	0.0025
2142	CscTgs818	0.0212	0.0071	0.2002
2143	CwaNgs818	0.0003	0.0001	0.0031
2144	CwaTgs818	0.0261	0.0087	0.2464
2145	CasEgs819	0.0001	0.0000	0.0006
2146	CasNgs819	0.0000	0.0000	0.0000
2147	CcoEgs819	0.0000	0.0000	0.0001
2148	CcoNgs819	0.0000	0.0000	0.0000
2149	CgrEgs819	0.1367	0.0640	0.8945
2150	CgrNgs819	0.0000	0.0000	0.0000
2151	CheEgs819	0.0001	0.0001	0.0005
2152	CheNgs819	0.0000	0.0000	0.0000
2153	ChoEgs819	0.0004	0.0003	0.0029

2154	ChoNgs819	0.0000	0.0000	0.0000
2155	CloEgs819	0.0012	0.0010	0.0089
2156	CloNgs819	0.0000	0.0000	0.0000
2157	CreEgs819	0.0204	0.0171	0.1552
2158	CreNgs819	0.0004	0.0003	0.0032
2159	CrtEgs819	0.0019	0.0009	0.0124
2160	CrtNgs819	0.0000	0.0000	0.0000
2161	CscEgs819	0.0004	0.0003	0.0028
2162	CscNgs819	0.0000	0.0000	0.0000
2163	CcoEgs820	0.0000	0.0005	0.0043
2164	CcoNgs820	0.0000	0.0000	0.0000
2165	ChoEgs820	0.0000	0.0010	0.0093
2166	ChoNgs820	0.0000	0.0000	0.0000
2167	CinEgs820	0.0000	0.0025	0.0363
2168	CinNgs820	0.0000	0.0000	0.0004
2169	CofEgs820	0.0000	0.0202	0.2980
2170	CofNgs820	0.0000	0.0002	0.0033
2171	CasEgs901	0.0002	0.0001	0.0009
2172	CasNgs901	0.0000	0.0000	0.0001
2173	CcoEgs901	0.0001	0.0003	0.0011
2174	CcoNgs901	0.0000	0.0000	0.0001
2175	CgrEgs901	0.0001	0.0010	0.0024
2176	CgrNgs901	0.0000	0.0001	0.0002
2177	CheEgs901	0.0022	0.0010	0.0088
2178	CheNgs901	0.0000	0.0000	0.0000
2179	ChoEgs901	0.0003	0.0006	0.0026
2180	ChoNgs901	0.0000	0.0001	0.0002
2181	CinEgs901	0.0247	0.0117	0.1005
2182	CinNgs901	0.0023	0.0011	0.0095
2183	CloEgs901	0.0009	0.0064	0.0150
2184	CloNgs901	0.0001	0.0007	0.0016
2185	CmiEgs901	0.0003	0.0001	0.0013
2186	CmiNgs901	0.0000	0.0000	0.0001
2187	CofEgs901	0.0038	0.0018	0.0157
2188	CofNgs901	0.0004	0.0002	0.0015
2189	CreEgs901	0.0024	0.0164	0.0386
2190	CreNgs901	0.0000	0.0001	0.0001
2191	CrtEgs901	0.0005	0.0034	0.0080
2192	CrtNgs901	0.0000	0.0003	0.0007
2193	CscEgs901	0.0022	0.0010	0.0090
2194	CscNgs901	0.0000	0.0000	0.0000
2195	CwaEgs901	0.0002	0.0001	0.0010
2196	CwaNgs901	0.0000	0.0000	0.0001
2197	CasEgs902	0.0004	0.0003	0.0021
2198	CasNgs902	0.0000	0.0000	0.0000
2199	CcoEgs902	0.0001	0.0003	0.0013
2200	CcoNgs902	0.0000	0.0000	0.0000

2201	CgrEgs902	0.0002	0.0014	0.0030
2202	CgrNgs902	0.0000	0.0000	0.0000
2203	CheEgs902	0.0032	0.0019	0.0152
2204	CheNgs902	0.0000	0.0000	0.0000
2205	ChoEgs902	0.0002	0.0005	0.0019
2206	ChoNgs902	0.0000	0.0000	0.0000
2207	CinEgs902	0.0365	0.0220	0.1727
2208	CinNgs902	0.0000	0.0000	0.0000
2209	CloEgs902	0.0005	0.0047	0.0102
2210	CloNgs902	0.0000	0.0000	0.0000
2211	CmiEgs902	0.0001	0.0001	0.0004
2212	CmiNgs902	0.0000	0.0000	0.0000
2213	CofEgs902	0.0010	0.0006	0.0047
2214	CofNgs902	0.0000	0.0000	0.0000
2215	CreEgs902	0.0005	0.0043	0.0093
2216	CreNgs902	0.0000	0.0000	0.0000
2217	CrtEgs902	0.0001	0.0010	0.0022
2218	CrtNgs902	0.0000	0.0000	0.0000
2219	CscEgs902	0.0039	0.0024	0.0187
2220	CscNgs902	0.0000	0.0000	0.0000
2221	CwaEgs902	0.0001	0.0001	0.0004
2222	CwaNgs902	0.0000	0.0000	0.0000
2223	CcoEgs903	0.0008	0.0040	0.0108
2224	CcoNgs903	0.0000	0.0000	0.0000
2225	CheEgs903	0.0031	0.0081	0.0334
2226	CheNgs903	0.0000	0.0000	0.0000
2227	ChoEgs903	0.0008	0.0021	0.0088
2228	ChoNgs903	0.0000	0.0000	0.0000
2229	CloEgs903	0.0052	0.0444	0.0969
2230	CloNgs903	0.0000	0.0000	0.0000
2231	CasEgs904	0.0008	0.0009	0.0175
2232	CcoEgs904	0.0012	0.0012	0.0094
2233	CheEgs904	0.0061	0.0064	0.1264
2234	ChoEgs904	0.0023	0.0023	0.0183
2235	CinEgs904	0.0150	0.0157	0.3108
2236	CinNgs904	0.0000	0.0000	0.0008
2237	CmiEgs904	0.0002	0.0002	0.0041
2238	CmiNgs904	0.0000	0.0000	0.0000
2239	CofEgs904	0.0056	0.0058	0.1154
2240	CscEgs904	0.0264	0.0277	0.5477
2241	CwaEgs904	0.0005	0.0005	0.0101
2242	CasEgs905	0.0003	0.0003	0.0023
2243	CasNgs905	0.0000	0.0000	0.0001
2244	CcoEgs905	0.0001	0.0001	0.0013
2245	CcoNgs905	0.0000	0.0000	0.0000
2246	CgrEgs905	0.0002	0.0004	0.0031
2247	CgrNgs905	0.0000	0.0000	0.0000

2248	CheEgs905	0.0020	0.0022	0.0175
2249	CheNgs905	0.0001	0.0001	0.0011
2250	ChoEgs905	0.0003	0.0003	0.0023
2251	ChoNgs905	0.0000	0.0000	0.0000
2252	CinEgs905	0.0490	0.0551	0.4329
2253	CinNgs905	0.0006	0.0006	0.0049
2254	CloEgs905	0.0010	0.0017	0.0123
2255	CloNgs905	0.0000	0.0000	0.0000
2256	CmiEgs905	0.0007	0.0007	0.0058
2257	CmiNgs905	0.0000	0.0000	0.0001
2258	CofEgs905	0.0017	0.0019	0.0148
2259	CofNgs905	0.0001	0.0001	0.0009
2260	CreEgs905	0.0048	0.0084	0.0607
2261	CreNgs905	0.0003	0.0005	0.0037
2262	CrtEgs905	0.0008	0.0015	0.0105
2263	CrtNgs905	0.0000	0.0001	0.0006
2264	CscEgs905	0.0089	0.0100	0.0782
2265	CscNgs905	0.0005	0.0006	0.0046
2266	CwaEgs905	0.0001	0.0002	0.0013
2267	CwaNgs905	0.0000	0.0000	0.0001
2268	CasEgs906	0.0005	0.0005	0.0047
2269	CasNgs906	0.0000	0.0000	0.0000
2270	CcoEgs906	0.0000	0.0000	0.0000
2271	CcoNgs906	0.0000	0.0000	0.0000
2272	CgrEgs906	0.0007	0.0007	0.0067
2273	CgrNgs906	0.0000	0.0000	0.0000
2274	CheEgs906	0.0035	0.0036	0.0345
2275	CheNgs906	0.0000	0.0000	0.0000
2276	ChoEgs906	0.0005	0.0005	0.0051
2277	ChoNgs906	0.0000	0.0000	0.0000
2278	CinEgs906	0.0184	0.0188	0.1812
2279	CinNgs906	0.0000	0.0000	0.0000
2280	CloEgs906	0.0027	0.0027	0.0264
2281	CloNgs906	0.0000	0.0000	0.0000
2282	CmiEgs906	0.0002	0.0003	0.0024
2283	CmiNgs906	0.0000	0.0000	0.0000
2284	CofEgs906	0.0033	0.0034	0.0326
2285	CofNgs906	0.0000	0.0000	0.0001
2286	CreEgs906	0.0130	0.0133	0.1284
2287	CreNgs906	0.0000	0.0000	0.0000
2288	CrtEgs906	0.0023	0.0024	0.0230
2289	CrtNgs906	0.0000	0.0000	0.0000
2290	CscEgs906	0.0000	0.0000	0.0000
2291	CscNgs906	0.0000	0.0000	0.0000
2292	CwaEgs906	0.0003	0.0003	0.0028
2293	CwaNgs906	0.0000	0.0000	0.0000
2294	CcoEgs907	0.0047	0.0248	0.0664

2295	CheEgs907	0.0178	0.0466	0.1907
2296	ChoEgs907	0.0044	0.0116	0.0476
2297	CloEgs907	0.0299	0.2548	0.5567
2298	CasNgs908	0.0000	0.0000	0.0000
2299	CasTgs908	0.0000	0.0001	0.0031
2300	CcoNgs908	0.0000	0.0000	0.0000
2301	CcoTgs908	0.0000	0.0000	0.0000
2302	CloNgs908	0.0000	0.0000	0.0006
2303	CloTgs908	0.0000	0.0019	0.0525
2304	CscNgs908	0.0000	0.0000	0.0000
2305	CscTgs908	0.0000	0.0000	0.0000
2306	CasNgs909	0.0000	0.0000	0.0004
2307	CasTgs909	0.0030	0.0004	0.0395
2308	CcoNgs909	0.0001	0.0000	0.0010
2309	CcoTgs909	0.0071	0.0010	0.0941
2310	CgrNgs909	0.0002	0.0000	0.0027
2311	CgrTgs909	0.0188	0.0026	0.2478
2312	CheNgs909	0.0002	0.0000	0.0031
2313	CheTgs909	0.0218	0.0031	0.2874
2314	ChoNgs909	0.0000	0.0000	0.0005
2315	ChoTgs909	0.0035	0.0005	0.0462
2316	CinNgs909	0.0037	0.0005	0.0493
2317	CinTgs909	0.3489	0.0490	4.6052
2318	CloNgs909	0.0003	0.0000	0.0039
2319	CloTgs909	0.0275	0.0039	0.3632
2320	CmiNgs909	0.0000	0.0000	0.0006
2321	CmiTgs909	0.0044	0.0006	0.0575
2322	CofNgs909	0.0003	0.0000	0.0039
2323	CofTgs909	0.0272	0.0038	0.3596
2324	CreNgs909	0.0033	0.0005	0.0438
2325	CreTgs909	0.3098	0.0435	4.0888
2326	CrtNgs909	0.0007	0.0001	0.0088
2327	CrtTgs909	0.0624	0.0088	0.8242
2328	CscNgs909	0.0006	0.0001	0.0084
2329	CscTgs909	0.0595	0.0084	0.7855
2330	CwaNgs909	0.0001	0.0000	0.0010
2331	CwaTgs909	0.0072	0.0010	0.0949
2332	CasNgs910	0.0000	0.0000	0.0002
2333	CasTgs910	0.0000	0.0006	0.0152
2334	CcoNgs910	0.0000	0.0000	0.0000
2335	CcoTgs910	0.0000	0.0000	0.0000
2336	CloNgs910	0.0000	0.0003	0.0074
2337	CloTgs910	0.0000	0.0256	0.6921
2338	CscNgs910	0.0000	0.0000	0.0000
2339	CscTgs910	0.0000	0.0000	0.0000
2340	CasNgs911	0.0002	0.0001	0.0008
2341	CasTgs911	0.0182	0.0112	0.0771

2342	CcoNgs911	0.0003	0.0002	0.0011
2343	CcoTgs911	0.0240	0.0148	0.1017
2344	CgrNgs911	0.0003	0.0002	0.0012
2345	CgrTgs911	0.0255	0.0158	0.1084
2346	CheNgs911	0.0026	0.0016	0.0111
2347	CheTgs911	0.2438	0.1508	1.0345
2348	ChoNgs911	0.0009	0.0005	0.0036
2349	ChoTgs911	0.0799	0.0494	0.3390
2350	CinNgs911	0.0227	0.0140	0.0963
2351	CinTgs911	2.1178	1.3100	8.9852
2352	CloNgs911	0.0054	0.0034	0.0231
2353	CloTgs911	0.5079	0.3142	2.1551
2354	CmiNgs911	0.0003	0.0002	0.0012
2355	CmiTgs911	0.0264	0.0164	0.1122
2356	CofNgs911	0.0045	0.0028	0.0190
2357	CofTgs911	0.4179	0.2585	1.7733
2358	CreNgs911	0.0050	0.0031	0.0210
2359	CreTgs911	0.4624	0.2860	1.9621
2360	CrtNgs911	0.0008	0.0005	0.0035
2361	CrtTgs911	0.0773	0.0478	0.3281
2362	CscNgs911	0.0021	0.0013	0.0091
2363	CscTgs911	0.2002	0.1238	0.8492
2364	CwaNgs911	0.0001	0.0001	0.0005
2365	CwaTgs911	0.0107	0.0066	0.0455
2366	CasNgs912	0.0000	0.0000	0.0000
2367	CasTgs912	0.0000	0.0000	0.0001
2368	CcoNgs912	0.0000	0.0000	0.0000
2369	CcoTgs912	0.0003	0.0006	0.0027
2370	CgrNgs912	0.0000	0.0000	0.0000
2371	CgrTgs912	0.0002	0.0002	0.0020
2372	CheNgs912	0.0000	0.0000	0.0001
2373	CheTgs912	0.0017	0.0019	0.0148
2374	ChoNgs912	0.0000	0.0001	0.0002
2375	ChoTgs912	0.0029	0.0069	0.0299
2376	CinNgs912	0.0000	0.0000	0.0003
2377	CinTgs912	0.0028	0.0032	0.0250
2378	CloNgs912	0.0000	0.0000	0.0001
2379	CloTgs912	0.0009	0.0010	0.0082
2380	CmiNgs912	0.0000	0.0000	0.0001
2381	CmiTgs912	0.0007	0.0008	0.0062
2382	CofNgs912	0.0001	0.0001	0.0006
2383	CofTgs912	0.0061	0.0071	0.0547
2384	CreNgs912	0.0000	0.0000	0.0003
2385	CreTgs912	0.0036	0.0037	0.0318
2386	CrtNgs912	0.0001	0.0001	0.0008
2387	CrtTgs912	0.0085	0.0088	0.0752
2388	CscNgs912	0.0000	0.0000	0.0001

2389	CscTgs912	0.0017	0.0020	0.0155
2390	CwaNgs912	0.0000	0.0000	0.0000
2391	CwaTgs912	0.0000	0.0000	0.0000
2392	CasEgs921	0.7697	1.1174	4.8122
2393	CcoEgs921	0.7102	0.0078	1.7893
2394	CgrEgs921	1.8157	3.2731	6.3571
2395	CheEgs921	1.2956	2.9441	8.1242
2396	ChoEgs921	2.2128	0.0154	5.4527
2397	CinEgs921	3.5207	7.9630	22.3505
2398	CloEgs921	1.6939	2.5018	5.7324
2399	CmiEgs921	12.8955	39.8638	82.7194
2400	CofEgs921	4.6268	12.6170	29.7749
2401	CreEgs921	2.9854	4.5003	10.2366
2402	CrtEgs921	6.3323	10.1046	22.7637
2403	CscEgs921	0.9464	2.1517	6.0527
2404	CwaEgs921	0.2769	0.8407	1.8684
2405	CcoNgsd101	0.0000	0.0000	0.0002
2406	CcoTgsd101	0.0037	0.0015	0.0167
2407	CheNgsd101	0.0009	0.0004	0.0041
2408	CheTgsd101	0.0840	0.0330	0.3792
2409	ChoNgsd101	0.0018	0.0007	0.0083
2410	ChoTgsd101	0.1715	0.0673	0.7738
2411	CloNgsd101	0.0047	0.0018	0.0212
2412	CloTgsd101	0.4386	0.1722	1.9794
2413	CreNgsd101	0.0383	0.0150	0.1728
2414	CreTgsd101	3.5738	1.4027	16.1278
2415	CscNgsd101	0.0009	0.0004	0.0042
2416	CscTgsd101	0.0873	0.0343	0.3938
2417	CcoNgsd102	0.0001	0.0000	0.0019
2418	CcoTgsd102	0.0131	0.0000	0.1775
2419	CheNgsd102	0.0009	0.0000	0.0127
2420	CheTgsd102	0.0870	0.0000	1.1833
2421	ChoNgsd102	0.0004	0.0000	0.0056
2422	ChoTgsd102	0.0382	0.0000	0.5189
2423	CloNgsd102	0.0017	0.0000	0.0225
2424	CloTgsd102	0.1545	0.0000	2.1011
2425	CreNgsd102	0.0039	0.0000	0.0527
2426	CreTgsd102	0.3616	0.0000	4.9169
2427	CscNgsd102	0.0010	0.0000	0.0138
2428	CscTgsd102	0.1034	0.0000	1.4057
2429	CcoNgsd103	0.0000	0.0000	0.0001
2430	CcoTgsd103	0.0018	0.0010	0.0112
2431	CheNgsd103	0.0004	0.0002	0.0027
2432	CheTgsd103	0.0415	0.0217	0.2522
2433	ChoNgsd103	0.0009	0.0005	0.0053
2434	ChoTgsd103	0.0820	0.0429	0.4980
2435	CloNgsd103	0.0015	0.0008	0.0093

2436	CloTgsd103	0.1424	0.0745	0.8650
2437	CreNgsd103	0.0115	0.0060	0.0698
2438	CreTgsd103	1.0716	0.5608	6.5107
2439	CscNgsd103	0.0005	0.0002	0.0028
2440	CscTgsd103	0.0433	0.0227	0.2632
2441	CcoNgsd104	0.0000	0.0000	0.0000
2442	CcoTgsd104	0.0001	0.0000	0.0005
2443	CheNgsd104	0.0000	0.0000	0.0001
2444	CheTgsd104	0.0019	0.0006	0.0117
2445	ChoNgsd104	0.0000	0.0000	0.0003
2446	ChoTgsd104	0.0043	0.0013	0.0260
2447	CloNgsd104	0.0002	0.0001	0.0015
2448	CloTgsd104	0.0232	0.0072	0.1409
2449	CreNgsd104	0.0038	0.0012	0.0229
2450	CreTgsd104	0.3507	0.1084	2.1342
2451	CscNgsd104	0.0000	0.0000	0.0001
2452	CscTgsd104	0.0020	0.0006	0.0123
2453	CcoNgsd105	0.0000	0.0000	0.0002
2454	CcoTgsd105	0.0028	0.0007	0.0169
2455	CheNgsd105	0.0007	0.0002	0.0040
2456	CheTgsd105	0.0625	0.0160	0.3734
2457	ChoNgsd105	0.0013	0.0003	0.0077
2458	ChoTgsd105	0.1202	0.0308	0.7179
2459	CloNgsd105	0.0027	0.0007	0.0161
2460	CloTgsd105	0.2521	0.0645	1.5051
2461	CreNgsd105	0.0059	0.0015	0.0352
2462	CreTgsd105	2.0914	0.5352	12.4869
2463	CscNgsd105	0.0007	0.0002	0.0043
2464	CscTgsd105	0.0665	0.0170	0.3969
2465	CcoNgsd106	0.0001	0.0001	0.0006
2466	CcoTgsd106	0.0111	0.0054	0.0596
2467	CheNgsd106	0.0027	0.0013	0.0144
2468	CheTgsd106	0.2509	0.1214	1.3441
2469	ChoNgsd106	0.0051	0.0025	0.0273
2470	ChoTgsd106	0.4756	0.2301	2.5479
2471	CloNgsd106	0.0110	0.0053	0.0588
2472	CloTgsd106	1.0254	0.4961	5.4930
2473	CreNgsd106	0.0895	0.0433	0.4795
2474	CreTgsd106	8.3545	4.0425	44.7562
2475	CscNgsd106	0.0028	0.0014	0.0150
2476	CscTgsd106	0.2619	0.1267	1.4029
2477	CcoNgsd107	0.0000	0.0000	0.0000
2478	CcoTgsd107	0.0001	0.0001	0.0006
2479	CheNgsd107	0.0000	0.0000	0.0001
2480	CheTgsd107	0.0020	0.0012	0.0134
2481	ChoNgsd107	0.0000	0.0000	0.0003
2482	ChoTgsd107	0.0038	0.0022	0.0254

2483	CloNgsd107	0.0000	0.0000	0.0001
2484	CloTgsd107	0.0018	0.0010	0.0121
2485	CreNgsd107	0.0000	0.0000	0.0003
2486	CreTgsd107	0.0045	0.0026	0.0301
2487	CscNgsd107	0.0000	0.0000	0.0001
2488	CscTgsd107	0.0021	0.0012	0.0140
2489	CcoNgsd108	0.0000	0.0000	0.0000
2490	CcoTgsd108	0.0007	0.0003	0.0031
2491	CheNgsd108	0.0005	0.0002	0.0022
2492	CheTgsd108	0.0451	0.0186	0.2064
2493	ChoNgsd108	0.0003	0.0001	0.0014
2494	ChoTgsd108	0.0285	0.0117	0.1302
2495	CloNgsd108	0.0019	0.0008	0.0089
2496	CloTgsd108	0.1818	0.0749	0.8320
2497	CreNgsd108	0.0530	0.0218	0.2426
2498	CreTgsd108	0.4949	0.2038	2.2645
2499	CscNgsd108	0.0002	0.0001	0.0008
2500	CscTgsd108	0.0157	0.0065	0.0720
2501	CcoEgsd109	0.0005	0.0012	0.0049
2502	CcoNgsd109	0.0000	0.0000	0.0000
2503	CgrEgsd109	0.0134	0.0350	0.1433
2504	CgrNgsd109	0.0002	0.0004	0.0016
2505	ChoEgsd109	0.0005	0.0014	0.0057
2506	ChoNgsd109	0.0000	0.0000	0.0000
2507	CloEgsd109	0.0093	0.0796	0.1735
2508	CloNgsd109	0.0000	0.0000	0.0000
2509	CreEgsd109	0.1844	0.1024	1.1557
2510	CreNgsd109	0.0000	0.0000	0.0000
2511	CasNgsd110	0.0005	0.0003	0.0033
2512	CasTgsd110	0.0427	0.0287	0.3036
2513	CcoNgsd110	0.0009	0.0006	0.0064
2514	CcoTgsd110	0.0834	0.0560	0.5935
2515	CgrNgsd110	0.0008	0.0005	0.0056
2516	CgrTgsd110	0.0735	0.0493	0.5228
2517	CheNgsd110	0.0024	0.0016	0.0172
2518	CheTgsd110	0.2251	0.1512	1.6017
2519	ChoNgsd110	0.0017	0.0011	0.0121
2520	ChoTgsd110	0.1583	0.1063	1.1261
2521	CinNgsd110	0.0042	0.0028	0.0302
2522	CinTgsd110	0.3957	0.2657	2.8153
2523	CloNgsd110	0.0060	0.0040	0.0426
2524	CloTgsd110	0.5593	0.3756	3.9792
2525	CofNgsd110	0.0098	0.0066	0.0700
2526	CofTgsd110	0.9184	0.6167	6.5335
2527	CrtNgsd110	0.0048	0.0032	0.0343
2528	CrtTgsd110	0.4494	0.3018	3.1973
2529	CscNgsd110	0.0015	0.0010	0.0105

2530	CscTgsd110	0.1376	0.0924	0.9791
2531	CasNgsd111	0.0002	0.0000	0.0013
2532	CasTgsd111	0.0182	0.0000	0.1260
2533	CcoNgsd111	0.0007	0.0007	0.0037
2534	CcoTgsd111	0.0681	0.0681	0.3500
2535	CgrNgsd111	0.0010	0.0004	0.0070
2536	CgrTgsd111	0.0937	0.0364	0.6493
2537	CheNgsd111	0.0012	0.0005	0.0084
2538	CheTgsd111	0.1131	0.0439	0.7833
2539	ChoNgsd111	0.0009	0.0009	0.0049
2540	ChoTgsd111	0.0881	0.0881	0.4530
2541	CinNgsd111	0.0018	0.0000	0.0124
2542	CinTgsd111	0.1672	0.0000	1.1586
2543	CloNgsd111	0.0027	0.0011	0.0189
2544	CloTgsd111	0.2549	0.0989	1.7656
2545	CmiNgsd111	0.0018	0.0000	0.0126
2546	CmiTgsd111	0.1704	0.0000	1.1803
2547	CofNgsd111	0.0043	0.0017	0.0300
2548	CofTgsd111	0.4041	0.1567	2.7991
2549	CreNgsd111	0.0021	0.0000	0.0146
2550	CreTgsd111	0.1963	0.0000	1.3601
2551	CrtNgsd111	0.0035	0.0014	0.0242
2552	CrtTgsd111	0.3261	0.1265	2.2589
2553	CscNgsd111	0.0010	0.0004	0.0068
2554	CscTgsd111	0.0917	0.0356	0.6351
2555	CwaNgsd111	0.0001	0.0000	0.0008
2556	CwaTgsd111	0.0109	0.0000	0.0758
2557	CcoNgsd112	0.0000	0.0000	0.0000
2558	CcoTgsd112	0.0000	0.0000	0.0000
2559	CheNgsd112	0.0002	0.0001	0.0010
2560	CheTgsd112	0.0146	0.0101	0.0966
2561	ChoNgsd112	0.0000	0.0000	0.0000
2562	ChoTgsd112	0.0000	0.0000	0.0000
2563	CinNgsd112	0.0000	0.0000	0.0000
2564	CinTgsd112	0.0000	0.0000	0.0000
2565	CloNgsd112	0.0003	0.0002	0.0020
2566	CloTgsd112	0.0288	0.0201	0.1912
2567	CmiNgsd112	0.0001	0.0001	0.0010
2568	CmiTgsd112	0.0134	0.0093	0.0888
2569	CofNgsd112	0.0007	0.0005	0.0046
2570	CofTgsd112	0.0681	0.0473	0.4512
2571	CrtNgsd112	0.0003	0.0002	0.0018
2572	CrtTgsd112	0.0252	0.0175	0.1671
2573	CscNgsd112	0.0000	0.0000	0.0000
2574	CscTgsd112	0.0000	0.0000	0.0000
2575	CcoNgsd113	0.0001	0.0001	0.0007
2576	CcoTgsd113	0.0077	0.0077	0.0668

2577	CheNgsd113	0.0001	0.0001	0.0010
2578	CheTgsd113	0.0104	0.0104	0.0898
2579	ChoNgsd113	0.0001	0.0001	0.0007
2580	ChoTgsd113	0.0074	0.0074	0.0643
2581	CinNgsd113	0.0003	0.0003	0.0023
2582	CinTgsd113	0.0245	0.0245	0.2116
2583	CloNgsd113	0.0004	0.0004	0.0031
2584	CloTgsd113	0.0336	0.0336	0.2906
2585	CmiNgsd113	0.0001	0.0001	0.0012
2586	CmiTgsd113	0.0127	0.0127	0.1095
2587	CofNgsd113	0.0006	0.0006	0.0050
2588	CofTgsd113	0.0536	0.0536	0.4633
2589	CscNgsd113	0.0001	0.0001	0.0010
2590	CscTgsd113	0.0112	0.0112	0.0968
2591	CcoEgsd114	0.0455	0.0393	0.3342
2592	CcoNgsd114	0.0005	0.0004	0.0036
2593	CheEgsd114	0.1128	0.0786	0.7481
2594	CheNgsd114	0.0012	0.0008	0.0080
2595	ChoEgsd114	0.0589	0.0509	0.4326
2596	ChoNgsd114	0.0006	0.0005	0.0046
2597	CinEgsd114	0.1668	0.0000	1.1064
2598	CinNgsd114	0.0018	0.0000	0.0119
2599	CloEgsd114	0.2542	0.1771	1.6862
2600	CloNgsd114	0.0027	0.0019	0.0181
2601	CofEgsd114	0.4030	0.2807	2.6731
2602	CofNgsd114	0.0043	0.0030	0.0286
2603	CrtEgsd114	0.3252	0.2265	2.1572
2604	CrtNgsd114	0.0035	0.0024	0.0231
2605	CscEgsd114	0.0915	0.0637	0.6066
2606	CscNgsd114	0.0010	0.0007	0.0065
2607	CcoNgsd115	0.0008	0.0005	0.0051
2608	CcoTgsd115	0.0722	0.0502	0.4783
2609	CheNgsd115	0.0008	0.0006	0.0056
2610	CheTgsd115	0.0763	0.0531	0.5060
2611	ChoNgsd115	0.0022	0.0016	0.0148
2612	ChoTgsd115	0.2081	0.1447	1.3792
2613	CinNgsd115	0.0012	0.0008	0.0079
2614	CinTgsd115	0.1118	0.0778	0.7411
2615	CloNgsd115	0.0016	0.0011	0.0106
2616	CloTgsd115	0.1451	0.1009	0.9619
2617	CmiNgsd115	0.0008	0.0005	0.0051
2618	CmiTgsd115	0.0720	0.0501	0.4774
2619	CofNgsd115	0.0040	0.0028	0.0263
2620	CofTgsd115	0.3585	0.2493	2.3760
2621	CrtNgsd115	0.0014	0.0010	0.0093
2622	CrtTgsd115	0.1268	0.0882	0.8406
2623	CscNgsd115	0.0014	0.0010	0.0092

2624	CscTgsd115	0.1289	0.0896	0.8542
2625	CasEgsd116	0.0071	0.0000	0.0471
2626	CasNgsd116	0.0001	0.0000	0.0005
2627	CcoEgsd116	0.0194	0.0135	0.1289
2628	CcoNgsd116	0.0002	0.0001	0.0014
2629	CgrEgsd116	0.0195	0.0136	0.1297
2630	CgrNgsd116	0.0002	0.0001	0.0014
2631	CheEgsd116	0.0353	0.0245	0.2342
2632	CheNgsd116	0.0004	0.0003	0.0025
2633	ChoEgsd116	0.0244	0.0170	0.1619
2634	ChoNgsd116	0.0003	0.0002	0.0017
2635	CinEgsd116	0.0701	0.0000	0.4652
2636	CinNgsd116	0.0008	0.0000	0.0050
2637	CloEgsd116	0.0991	0.0689	0.6577
2638	CloNgsd116	0.0011	0.0007	0.0070
2639	CmiEgsd116	0.0411	0.0000	0.2728
2640	CmiNgsd116	0.0004	0.0000	0.0029
2641	CofEgsd116	0.1606	0.1116	1.0657
2642	CofNgsd116	0.0017	0.0012	0.0114
2643	CreEgsd116	0.0505	0.0000	0.3353
2644	CreNgsd116	0.0005	0.0000	0.0036
2645	CrtEgsd116	0.0786	0.0546	0.5217
2646	CrtNgsd116	0.0008	0.0006	0.0056
2647	CscEgsd116	0.0298	0.0207	0.1979
2648	CscNgsd116	0.0003	0.0002	0.0021
2649	CwaEgsd116	0.0038	0.0000	0.0250
2650	CwaNgsd116	0.0000	0.0000	0.0003
2651	CcoNgsd117	0.0045	0.0052	0.0438
2652	CcoTgsd117	0.4275	0.4920	4.1470
2653	CheNgsd117	0.0093	0.0067	0.1047
2654	CheTgsd117	0.8796	0.6364	9.9092
2655	ChoNgsd117	0.0084	0.0097	0.0816
2656	ChoTgsd117	0.7958	0.9160	7.7201
2657	CloNgsd117	0.0101	0.0116	0.0976
2658	CloTgsd117	0.9520	1.0958	9.2358
2659	CscNgsd117	0.0108	0.0124	0.1043
2660	CscTgsd117	1.0040	1.1556	9.7396
2661	CasNgsd118	0.0002	0.0001	0.0013
2662	CasTgsd118	0.0191	0.0119	0.1205
2663	CcoNgsd118	0.0001	0.0000	0.0003
2664	CcoTgsd118	0.0048	0.0030	0.0304
2665	CgrNgsd118	0.0367	0.0229	0.2315
2666	CgrTgsd118	3.4253	2.1398	21.6065
2667	CheNgsd118	0.0002	0.0001	0.0009
2668	CheTgsd118	0.0141	0.0087	0.0885
2669	ChoNgsd118	0.0002	0.0001	0.0010
2670	ChoTgsd118	0.0147	0.0092	0.0927

2671	CloNgsd118	0.0007	0.0005	0.0046
2672	CloTgsd118	0.0677	0.0421	0.4256
2673	CofNgsd118	0.0008	0.0005	0.0048
2674	CofTgsd118	0.0704	0.0440	0.4439
2675	CreNgsd118	0.0027	0.0017	0.0172
2676	CreTgsd118	0.2561	0.1592	1.6099
2677	CrtNgsd118	0.0007	0.0005	0.0046
2678	CrtTgsd118	0.0676	0.0422	0.4265
2679	CscNgsd118	0.0002	0.0001	0.0015
2680	CscTgsd118	0.0223	0.0138	0.1400
2681	CinNgsd119	0.0252	0.0252	0.1428
2682	CinTgsd119	2.3490	2.3490	13.3250
2683	CofNgsd119	0.0579	0.0579	0.3286
2684	CofTgsd119	3.2438	3.2438	18.4010
2685	CheEgsd201	0.8287	0.0013	1.6086
2686	CofEgsd201	0.4797	0.0065	0.9619
2687	CheEgsd202	0.2508	0.0004	0.4869
2688	CofEgsd202	0.0000	0.0020	0.0106
2689	CheEgsd203	11.9200	0.0152	23.1239
2690	CofEgsd203	5.5177	0.0727	11.0517
2691	CheEgsd204	0.0000	0.0001	0.0003
2692	CofEgsd204	0.0000	0.0003	0.0014
2693	CasEgsd205	0.0165	0.0040	0.8225
2694	CasNgsd205	0.0000	0.0000	0.0000
2695	CcoEgsd205	0.0048	0.0000	0.0114
2696	CcoNgsd205	0.0000	0.0000	0.0000
2697	CgrEgsd205	0.0000	0.0012	0.0025
2698	CgrNgsd205	0.0000	0.0000	0.0000
2699	CheEgsd205	0.0016	0.0001	0.0775
2700	CheNgsd205	0.0000	0.0000	0.0000
2701	ChoEgsd205	0.0138	0.0000	0.0328
2702	ChoNgsd205	0.0000	0.0000	0.0000
2703	CinEgsd205	0.0000	0.0002	0.0005
2704	CinNgsd205	0.0000	0.0000	0.0000
2705	CloEgsd205	0.0000	0.0002	0.0009
2706	CloNgsd205	0.0000	0.0000	0.0000
2707	CmiEgsd205	0.0028	0.0009	0.1412
2708	CmiNgsd205	0.0000	0.0000	0.0000
2709	CofEgsd205	0.0000	0.0005	0.0011
2710	CofNgsd205	0.0000	0.0000	0.0000
2711	CreEgsd205	0.0000	0.0008	0.0018
2712	CreNgsd205	0.0000	0.0000	0.0000
2713	CrtEgsd205	0.2188	0.0055	1.0696
2714	CrtNgsd205	0.0000	0.0000	0.0000
2715	CscEgsd205	0.0047	0.0015	0.2365
2716	CscNgsd205	0.0000	0.0000	0.0000
2717	CwaEgsd205	0.0394	0.0009	0.3473

2718	CwaNgsd205	0.0000	0.0000	0.0000
2719	CasEgsd206	0.3354	0.0707	16.6919
2720	CasNgsd206	0.0000	0.0003	0.0007
2721	CcoEgsd206	0.1082	0.0002	0.2590
2722	CcoNgsd206	0.0000	0.0000	0.0000
2723	CgrEgsd206	0.1288	0.0131	0.6505
2724	CgrNgsd206	0.0000	0.0000	0.0000
2725	CheEgsd206	0.0437	0.0041	2.1651
2726	CheNgsd206	0.0000	0.0000	0.0000
2727	ChoEgsd206	0.2401	0.0001	0.5731
2728	ChoNgsd206	0.0000	0.0000	0.0000
2729	CinEgsd206	0.0520	0.0042	2.5732
2730	CinNgsd206	0.0000	0.0000	0.0000
2731	CloEgsd206	0.2788	0.0029	0.6771
2732	CloNgsd206	0.0000	0.0000	0.0000
2733	CmiEgsd206	0.0223	0.0075	1.1149
2734	CmiNgsd206	0.0000	0.0000	0.0001
2735	CofEgsd206	0.0252	0.0211	1.2870
2736	CofNgsd206	0.0000	0.0001	0.0002
2737	CreEgsd206	0.2380	0.0178	1.1882
2738	CreNgsd206	0.0000	0.0000	0.0000
2739	CrtEgsd206	4.6567	0.1047	22.7342
2740	CrtNgsd206	0.0000	0.0002	0.0005
2741	CscEgsd206	0.1117	0.0332	5.5798
2742	CscNgsd206	0.0000	0.0001	0.0002
2743	CwaEgsd206	0.6295	0.0115	5.5289
2744	CwaNgsd206	0.0000	0.0000	0.0000
2745	CheEgsd207	0.1274	0.0016	6.2835
2746	CofEgsd207	0.9647	0.0850	47.7486
2747	CrtEgsd207	5.8158	0.0157	28.1497
2748	CasEgsd208	5.5158	0.0000	12.8629
2749	CasNgsd208	0.0000	0.0000	0.0000
2750	CcoEgsd208	0.1338	0.0000	0.3112
2751	CcoNgsd208	0.0000	0.0000	0.0000
2752	CgrEgsd208	0.2169	0.0000	0.5135
2753	CgrNgsd208	0.0000	0.0000	0.0000
2754	CheEgsd208	1.1624	0.0000	2.7045
2755	CheNgsd208	0.0000	0.0000	0.0000
2756	ChoEgsd208	0.2003	0.0000	0.4653
2757	ChoNgsd208	0.0000	0.0000	0.0000
2758	CinEgsd208	0.8959	0.0000	2.0838
2759	CinNgsd208	0.0000	0.0000	0.0000
2760	CloEgsd208	0.4140	0.0000	0.7304
2761	CloNgsd208	0.0000	0.0000	0.0000
2762	CmiEgsd208	0.1362	0.0000	1.0483
2763	CmiNgsd208	0.0000	0.0000	0.0000
2764	CofEgsd208	0.6762	0.0000	1.5956

2765	CofNgsd208	0.0000	0.0000	0.0000
2766	CreEgsd208	0.6265	0.0000	1.4756
2767	CreNgsd208	0.0000	0.0000	0.0000
2768	CrtEgsd208	7.1310	0.0000	16.6373
2769	CrtNgsd208	0.0000	0.0000	0.0000
2770	CscEgsd208	2.8926	0.0000	6.7572
2771	CscNgsd208	0.0000	0.0000	0.0000
2772	CwaEgsd208	0.4891	0.0000	3.7577
2773	CwaNgsd208	0.0021	0.0000	0.0160
2774	CasEgsd209	0.0041	0.0000	0.0096
2775	CasNgsd209	0.0000	0.0000	0.0000
2776	CcoEgsd209	0.0002	0.0000	0.0005
2777	CcoNgsd209	0.0000	0.0000	0.0000
2778	CgrEgsd209	0.0003	0.0000	0.0006
2779	CgrNgsd209	0.0000	0.0000	0.0000
2780	CheEgsd209	0.0014	0.0000	0.0032
2781	CheNgsd209	0.0000	0.0000	0.0000
2782	ChoEgsd209	0.0002	0.0000	0.0004
2783	ChoNgsd209	0.0000	0.0000	0.0000
2784	CinEgsd209	0.0007	0.0000	0.0016
2785	CinNgsd209	0.0000	0.0000	0.0000
2786	CloEgsd209	0.0006	0.0000	0.0011
2787	CloNgsd209	0.0000	0.0000	0.0000
2788	CmiEgsd209	0.0006	0.0000	0.0043
2789	CmiNgsd209	0.0000	0.0000	0.0000
2790	CofEgsd209	0.0005	0.0000	0.0013
2791	CofNgsd209	0.0000	0.0000	0.0000
2792	CreEgsd209	0.0007	0.0000	0.0018
2793	CreNgsd209	0.0000	0.0000	0.0000
2794	CrtEgsd209	0.0050	0.0000	0.0117
2795	CrtNgsd209	0.0000	0.0000	0.0000
2796	CscEgsd209	0.0043	0.0000	0.0102
2797	CscNgsd209	0.0000	0.0000	0.0000
2798	CwaEgsd209	0.0003	0.0000	0.0024
2799	CwaNgsd209	0.0000	0.0000	0.0000
2800	CheEgsd210	0.0000	0.0009	0.0013
2801	CofEgsd210	0.1871	0.0208	0.8656
2802	CrtEgsd210	0.0000	0.0204	0.0306
2803	CwaEgsd211	0.0426	0.0010	0.3751
2804	CwaNgsd211	0.0000	0.0000	0.0000
2805	CasEgsd212	4.0112	0.0012	10.9336
2806	CasNgsd212	0.0184	0.0000	0.0505
2807	CcoEgsd212	0.5401	0.0001	1.4500
2808	CcoNgsd212	0.0009	0.0000	0.0024
2809	CgrEgsd212	1.9389	0.0027	5.7874
2810	CgrNgsd212	0.0000	0.0000	0.0036
2811	CheEgsd212	5.4980	0.0007	14.7580

2812	CheNgsd212	0.0109	0.0000	0.0298
2813	ChoEgsd212	2.9755	0.0001	7.9175
2814	ChoNgsd212	0.0148	0.0000	0.0394
2815	CinEgsd212	8.8429	0.0010	23.7087
2816	CinNgsd212	0.0412	0.0000	0.1106
2817	CloEgsd212	4.7978	-0.0580	11.3028
2818	CloNgsd212	0.0074	-0.0003	0.0195
2819	CmiEgsd212	23.8868	-0.1552	71.0882
2820	CmiNgsd212	0.0132	-0.0004	0.0439
2821	CofEgsd212	8.2236	0.0098	24.1590
2822	CofNgsd212	0.0044	0.0000	0.0230
2823	CreEgsd212	7.8029	0.0079	22.5889
2824	CreNgsd212	0.0000	0.0000	0.0106
2825	CrtEgsd212	7.9156	0.0026	21.6320
2826	CrtNgsd212	0.0000	0.0000	0.0033
2827	CscEgsd212	5.8253	0.0025	16.0534
2828	CscNgsd212	0.0000	0.0000	0.0032
2829	CwaEgsd212	0.3442	-0.0023	1.0249
2830	CwaNgsd212	0.0000	0.0000	0.0000
2831	CasEgsd213	1.0425	-0.0378	4.5669
2832	CasNgsd213	0.0212	-0.0008	0.0927
2833	CcoEgsd213	0.1554	-0.0056	0.6809
2834	CcoNgsd213	0.0015	-0.0001	0.0066
2835	CgrEgsd213	0.5647	-0.0205	2.4740
2836	CgrNgsd213	0.0073	-0.0003	0.0319
2837	CheEgsd213	1.6152	-0.0586	7.0759
2838	CheNgsd213	0.0199	-0.0007	0.0873
2839	ChoEgsd213	0.8428	-0.0306	3.6921
2840	ChoNgsd213	0.0171	-0.0006	0.0750
2841	CinEgsd213	2.0740	-0.0752	9.0857
2842	CinNgsd213	0.0570	-0.0021	0.2499
2843	CloEgsd213	1.1483	-0.0416	5.0304
2844	CloNgsd213	0.0111	-0.0004	0.0488
2845	CmiEgsd213	4.2030	-0.1524	18.4120
2846	CmiNgsd213	0.0441	-0.0016	0.1934
2847	CofEgsd213	2.1788	-0.0790	9.5446
2848	CofNgsd213	0.0471	-0.0017	0.2062
2849	CreEgsd213	1.7602	-0.0638	7.7109
2850	CreNgsd213	0.0248	-0.0009	0.1086
2851	CrtEgsd213	2.2809	-0.0827	9.9921
2852	CrtNgsd213	0.0496	-0.0018	0.2172
2853	CscEgsd213	1.5381	-0.0558	6.7378
2854	CscNgsd213	0.0149	-0.0005	0.0653
2855	CwaEgsd213	0.0961	-0.0035	0.4211
2856	CwaNgsd213	0.0023	-0.0001	0.0102
2857	CasEgsd301	1.6505	0.0001	4.1977
2858	CasNgsd301	0.0172	0.0000	0.0438

2859	CcoEgsd301	0.0177	0.0004	0.0778
2860	CcoNgsd301	0.0001	0.0000	0.0006
2861	CheEgsd301	0.0000	0.0000	0.0000
2862	CheNgsd301	0.0000	0.0000	0.0000
2863	ChoEgsd301	0.5106	0.0112	2.2410
2864	ChoNgsd301	0.0053	0.0001	0.0234
2865	CinEgsd301	3.9157	0.0002	9.9584
2866	CinNgsd301	0.0409	0.0000	0.1040
2867	CloEgsd301	0.4549	0.0000	1.1570
2868	CloNgsd301	0.0034	0.0000	0.0088
2869	CmiEgsd301	4.0052	0.0002	10.1860
2870	CmiNgsd301	0.0316	0.0000	0.0805
2871	CofEgsd301	2.6552	0.0001	6.7529
2872	CofNgsd301	0.0294	0.0000	0.0746
2873	CreEgsd301	0.1782	0.0000	0.4531
2874	CreNgsd301	0.0013	0.0000	0.0034
2875	CrtEgsd301	0.0000	0.0000	0.0000
2876	CrtNgsd301	0.0000	0.0000	0.0000
2877	CscEgsd301	2.3905	0.0001	6.0796
2878	CscNgsd301	0.0181	0.0000	0.0460
2879	CwaEgsd301	0.0000	0.0000	0.0000
2880	CwaNgsd301	0.0000	0.0000	0.0000
2881	CasEgsd302	3.3379	0.1529	30.1692
2882	CasNgsd302	0.0367	0.0017	0.3314
2883	CcoEgsd302	0.0466	0.0021	0.4210
2884	CcoNgsd302	0.0005	0.0000	0.0047
2885	CgrEgsd302	0.0000	0.0000	0.0000
2886	CgrNgsd302	0.0000	0.0000	0.0000
2887	CheEgsd302	0.0000	0.0000	0.0000
2888	CheNgsd302	0.0000	0.0000	0.0000
2889	ChoEgsd302	1.7820	0.0816	16.1065
2890	ChoNgsd302	0.0196	0.0009	0.1769
2891	CinEgsd302	7.8975	0.3617	71.3797
2892	CinNgsd302	0.0866	0.0040	0.7828
2893	CloEgsd302	0.6924	0.0317	6.2578
2894	CloNgsd302	0.0078	0.0004	0.0705
2895	CmiEgsd302	6.1830	0.2832	55.8838
2896	CmiNgsd302	0.0710	0.0033	0.6414
2897	CofEgsd302	5.3440	0.2448	48.3004
2898	CofNgsd302	0.0621	0.0028	0.5617
2899	CreEgsd302	0.2695	0.0123	2.4357
2900	CreNgsd302	0.0030	0.0001	0.0275
2901	CrtEgsd302	0.0000	0.0000	0.0000
2902	CrtNgsd302	0.0000	0.0000	0.0000
2903	CscEgsd302	3.6382	0.1666	32.8828
2904	CscNgsd302	0.0410	0.0019	0.3706
2905	CwaEgsd302	0.0000	0.0000	0.0000

2906	CwaNgsd302	0.0000	0.0000	0.0000
2907	CasNgsd303	0.0013	0.0000	0.0014
2908	CasTgsd303	3.1447	0.0310	3.5887
2909	CcoNgsd303	0.0054	0.0001	0.0068
2910	CcoTgsd303	0.5535	0.0055	0.7007
2911	CgrNgsd303	0.0000	0.0000	0.0000
2912	CgrTgsd303	0.0000	0.0000	0.0000
2913	CheNgsd303	0.0000	0.0000	0.0000
2914	CheTgsd303	0.0000	0.0000	0.0000
2915	ChoNgsd303	0.0202	0.0002	0.0476
2916	ChoTgsd303	2.7832	0.0274	6.5467
2917	CinNgsd303	0.0055	0.0001	0.0034
2918	CinTgsd303	13.8111	0.1360	8.5136
2919	CloNgsd303	0.0000	0.0000	0.0000
2920	CloTgsd303	0.3276	0.0032	0.6175
2921	CmiNgsd303	0.0000	0.0000	0.0000
2922	CmiTgsd303	8.7341	0.0860	5.5670
2923	CofNgsd303	0.0069	0.0001	0.0089
2924	CofTgsd303	4.7156	0.0464	6.0566
2925	CreNgsd303	0.0002	0.0000	0.0004
2926	CreTgsd303	0.1486	0.0015	0.2748
2927	CrtNgsd303	0.0000	0.0000	0.0000
2928	CrtTgsd303	0.0000	0.0000	0.0000
2929	CscNgsd303	0.0270	0.0003	0.0340
2930	CscTgsd303	5.1951	0.0512	6.5454
2931	CwaNgsd303	0.0000	0.0000	0.0000
2932	CwaTgsd303	0.0000	0.0000	0.0000
2933	CasNgsd304	0.0003	0.0000	0.0007
2934	CasTgsd304	0.5785	0.0057	1.5877
2935	CcoNgsd304	0.0011	0.0000	0.0033
2936	CcoTgsd304	0.1118	0.0011	0.3403
2937	CgrNgsd304	0.0000	0.0000	0.0000
2938	CgrTgsd304	0.0000	0.0000	0.0000
2939	CheNgsd304	0.0000	0.0000	0.0000
2940	CheTgsd304	0.0000	0.0000	0.0000
2941	ChoNgsd304	0.0041	0.0000	0.0231
2942	ChoTgsd304	0.5603	0.0055	3.1694
2943	CinNgsd304	0.0011	0.0000	0.0016
2944	CinTgsd304	2.7802	0.0274	4.1216
2945	CloNgsd304	0.0000	0.0000	0.0000
2946	CloTgsd304	0.0662	0.0007	0.2999
2947	CmiNgsd304	0.0000	0.0000	0.0000
2948	CmiTgsd304	1.7638	0.0174	2.7037
2949	CofNgsd304	0.0014	0.0000	0.0043
2950	CofTgsd304	0.9493	0.0093	2.9321
2951	CreNgsd304	0.0000	0.0000	0.0002
2952	CreTgsd304	0.0300	0.0003	0.1335

2953	CrtNgsd304	0.0000	0.0000	0.0000
2954	CrtTgsd304	0.0000	0.0000	0.0000
2955	CscNgsd304	0.0054	0.0001	0.0165
2956	CscTgsd304	1.0249	0.0101	3.1055
2957	CwaNgsd304	0.0000	0.0000	0.0000
2958	CwaTgsd304	0.0000	0.0000	0.0000
2959	CasNgsd305	0.0001	0.0000	0.0004
2960	CasTgsd305	0.1674	0.0016	0.9629
2961	CcoNgsd305	0.0003	0.0000	0.0020
2962	CcoTgsd305	0.0320	0.0003	0.2045
2963	CgrNgsd305	0.0000	0.0000	0.0000
2964	CgrTgsd305	0.0000	0.0000	0.0000
2965	CheNgsd305	0.0000	0.0000	0.0000
2966	CheTgsd305	0.0000	0.0000	0.0000
2967	ChoNgsd305	0.0012	0.0000	0.0140
2968	ChoTgsd305	0.1621	0.0016	1.9221
2969	CinNgsd305	0.0003	0.0000	0.0010
2970	CinTgsd305	0.8044	0.0079	2.4995
2971	CloNgsd305	0.0000	0.0000	0.0000
2972	CloTgsd305	0.0188	0.0002	0.1790
2973	CmiNgsd305	0.0000	0.0000	0.0000
2974	CmiTgsd305	0.5111	0.0050	1.6422
2975	CofNgsd305	0.0004	0.0000	0.0026
2976	CofTgsd305	0.2700	0.0027	1.7483
2977	CreNgsd305	0.0000	0.0000	0.0001
2978	CreTgsd305	0.0087	0.0001	0.0811
2979	CrtNgsd305	0.0000	0.0000	0.0000
2980	CrtTgsd305	0.0000	0.0000	0.0000
2981	CscNgsd305	0.0016	0.0000	0.0100
2982	CscTgsd305	0.2883	0.0028	1.8310
2983	CwaNgsd305	0.0000	0.0000	0.0000
2984	CwaTgsd305	0.0000	0.0000	0.0000
2985	CasNgsd306	0.0558	0.0003	0.2678
2986	CcoNgsd306	0.0073	0.0003	0.0406
2987	CgrNgsd306	0.0295	0.0001	0.1417
2988	CheNgsd306	0.1119	0.0005	0.5371
2989	ChoNgsd306	0.0389	0.0015	0.2168
2990	CinNgsd306	0.1383	0.0006	0.6640
2991	CloNgsd306	0.0625	0.0003	0.3002
2992	CmiNgsd306	0.2138	0.0010	1.0264
2993	CofNgsd306	0.1241	0.0006	0.5959
2994	CreNgsd306	0.1202	0.0006	0.5772
2995	CrtNgsd306	0.2008	0.0009	0.9640
2996	CscNgsd306	0.0837	0.0004	0.4021
2997	CwaNgsd306	0.0094	0.0000	0.0453
2998	CasEgsd307	1.0727	0.0170	5.1644
2999	CasNgsd307	0.0102	0.0002	0.0488

3000	CcoEgsd307	0.0203	0.0125	0.1357
3001	CcoNgsd307	0.0015	0.0009	0.0098
3002	CgrEgsd307	1.3985	0.4461	5.5123
3003	CgrNgsd307	0.0100	0.0033	0.0394
3004	CheEgsd307	0.1294	0.0045	0.6130
3005	CheNgsd307	0.0128	0.0005	0.0606
3006	ChoEgsd307	0.7129	0.2021	4.7583
3007	ChoNgsd307	0.0065	0.0020	0.0435
3008	CinEgsd307	4.0190	0.1645	19.0203
3009	CinNgsd307	0.0173	0.0008	0.0820
3010	CloEgsd307	0.1253	0.0244	0.4888
3011	CloNgsd307	0.0088	0.0018	0.0343
3012	CmiEgsd307	13.0905	0.9069	62.1254
3013	CmiNgsd307	0.1580	0.0111	0.7498
3014	CofEgsd307	2.2272	0.1166	10.9844
3015	CofNgsd307	0.0179	0.0010	0.0879
3016	CreEgsd307	0.1683	0.0332	0.6719
3017	CreNgsd307	0.0168	0.0035	0.0667
3018	CrtEgsd307	4.2083	1.0311	16.1269
3019	CrtNgsd307	0.0588	0.0172	0.2245
3020	CscEgsd307	0.1444	0.0057	0.6950
3021	CscNgsd307	0.0102	0.0004	0.0489
3022	CwaEgsd307	0.2197	0.0134	1.0476
3023	CwaNgsd307	0.0037	0.0002	0.0176
3024	CloEgsd308	0.0248	-0.0053	3.2277
3025	CloNgsd308	0.0000	0.0000	0.0011
3026	CasEgsd309	0.0000	0.0000	0.0000
3027	CasNgsd309	0.0000	0.0000	0.0000
3028	CcoEgsd309	0.0000	0.0000	0.0000
3029	CcoNgsd309	0.0000	0.0000	0.0000
3030	CgrEgsd309	0.0000	0.0000	0.0000
3031	CgrNgsd309	0.0000	0.0000	0.0000
3032	CheEgsd309	0.0000	0.0000	0.0000
3033	CheNgsd309	0.0000	0.0000	0.0000
3034	ChoEgsd309	0.0000	0.0000	0.0000
3035	ChoNgsd309	0.0000	0.0000	0.0000
3036	CinEgsd309	0.0000	0.0000	0.0000
3037	CinNgsd309	0.0000	0.0000	0.0000
3038	CloEgsd309	0.0000	0.0000	0.0000
3039	CloNgsd309	0.0000	0.0000	0.0000
3040	CmiEgsd309	0.0000	0.0000	0.0000
3041	CmiNgsd309	0.0000	0.0000	0.0000
3042	CofEgsd309	0.0000	0.0000	0.0000
3043	CofNgsd309	0.0000	0.0000	0.0000
3044	CreEgsd309	0.0000	0.0000	0.0000
3045	CreNgsd309	0.0000	0.0000	0.0000
3046	CrtEgsd309	0.0000	0.0000	0.0000

3047	CrtNgsd309	0.0000	0.0000	0.0000
3048	CscEgsd309	0.0000	0.0000	0.0000
3049	CscNgsd309	0.0000	0.0000	0.0000
3050	CwaEgsd309	0.0000	0.0000	0.0000
3051	CwaNgsd309	0.0000	0.0000	0.0000
3052	CasEgsd310	4.5206	0.3008	11.5079
3053	CasNgsd310	0.0452	0.0033	0.1154
3054	CcoEgsd310	0.4832	0.0120	1.2077
3055	CcoNgsd310	0.0000	0.0001	0.0002
3056	CgrEgsd310	1.4910	0.4370	4.1698
3057	CgrNgsd310	0.0130	0.0048	0.0376
3058	CheEgsd310	5.8458	0.1616	14.6295
3059	CheNgsd310	0.0000	0.0018	0.0020
3060	ChoEgsd310	3.6292	0.0196	8.9928
3061	ChoNgsd310	0.0363	0.0002	0.0899
3062	CinEgsd310	11.1452	0.2636	27.8421
3063	CinNgsd310	0.1145	0.0029	0.2864
3064	CloEgsd310	3.4259	0.4262	8.9407
3065	CloNgsd310	0.0000	0.0048	0.0053
3066	CmiEgsd310	7.5419	0.7373	19.4598
3067	CmiNgsd310	0.0794	0.0084	0.2057
3068	CofEgsd310	13.1719	3.1189	36.0154
3069	CofNgsd310	0.1490	0.0364	0.4088
3070	CreEgsd310	6.3934	1.3714	17.3233
3071	CreNgsd310	0.0126	0.0156	0.0484
3072	CrtEgsd310	9.6329	0.6849	24.5705
3073	CrtNgsd310	0.0879	0.0077	0.2259
3074	CscEgsd310	4.6912	0.4356	12.0788
3075	CscNgsd310	0.0090	0.0047	0.0274
3076	CwaEgsd310	0.3844	0.0376	0.9919
3077	CwaNgsd310	0.0000	0.0003	0.0003
3078	CasNgsd311	0.0514	0.0000	0.0434
3079	CasTgsd311	9.7517	0.0000	8.0321
3080	CcoNgsd311	0.0003	0.0000	0.0003
3081	CcoTgsd311	0.0390	0.0000	0.0421
3082	CgrNgsd311	0.0566	0.0000	0.0293
3083	CgrTgsd311	10.2402	0.0000	4.9269
3084	CheNgsd311	0.0528	0.0000	0.0932
3085	CheTgsd311	6.9336	0.0000	12.2118
3086	ChoNgsd311	0.0122	0.0000	0.0202
3087	ChoTgsd311	1.8613	0.0000	3.0895
3088	CinNgsd311	0.3263	0.0000	0.1436
3089	CinTgsd311	49.8944	0.0000	21.8396
3090	CloNgsd311	0.0106	0.0000	0.0161
3091	CloTgsd311	1.9180	0.0000	2.7266
3092	CmiNgsd311	0.3159	0.0000	0.1527
3093	CmiTgsd311	56.0342	0.0000	26.1218

3094	CofNgsd311	0.1374	0.0000	0.1339
3095	CofTgsd311	18.9145	0.0000	17.9592
3096	CreNgsd311	0.0576	0.0000	0.0839
3097	CreTgsd311	10.0561	0.0000	13.8831
3098	CrtNgsd311	0.1537	0.0000	0.1627
3099	CrtTgsd311	25.9013	0.0000	26.9580
3100	CscNgsd311	0.0047	0.0000	0.0061
3101	CscTgsd311	0.6527	0.0000	0.7553
3102	CwaNgsd311	0.0249	0.0000	0.0051
3103	CwaTgsd311	3.5588	0.0000	0.7155
3104	CasEgsd312	0.0000	0.0000	0.0000
3105	CasNgsd312	0.0000	0.0000	0.0000
3106	CcoEgsd312	0.0000	0.0000	0.0000
3107	CcoNgsd312	0.0000	0.0000	0.0000
3108	CgrEgsd312	0.0000	0.0000	0.0000
3109	CgrNgsd312	0.0000	0.0000	0.0000
3110	CheEgsd312	0.0000	0.0000	0.0000
3111	CheNgsd312	0.0000	0.0000	0.0000
3112	ChoEgsd312	0.0000	0.0000	0.0000
3113	ChoNgsd312	0.0000	0.0000	0.0000
3114	CinEgsd312	0.0000	0.0000	0.0000
3115	CinNgsd312	0.0000	0.0000	0.0000
3116	CloEgsd312	0.0000	0.0000	0.0000
3117	CloNgsd312	0.0000	0.0000	0.0000
3118	CmiEgsd312	0.0000	0.0000	0.0000
3119	CmiNgsd312	0.0000	0.0000	0.0000
3120	CofEgsd312	0.0000	0.0000	0.0000
3121	CofNgsd312	0.0000	0.0000	0.0000
3122	CreEgsd312	0.0000	0.0000	0.0000
3123	CreNgsd312	0.0000	0.0000	0.0000
3124	CrtEgsd312	0.0000	0.0000	0.0000
3125	CrtNgsd312	0.0000	0.0000	0.0000
3126	CscEgsd312	0.0000	0.0000	0.0000
3127	CscNgsd312	0.0000	0.0000	0.0000
3128	CwaEgsd312	0.0000	0.0000	0.0000
3129	CwaNgsd312	0.0000	0.0000	0.0000
3130	CasEgsd313	0.0000	0.0000	0.0000
3131	CasNgsd313	0.0000	0.0000	0.0000
3132	CcoEgsd313	0.0000	0.0000	0.0000
3133	CcoNgsd313	0.0000	0.0000	0.0000
3134	CgrEgsd313	0.0000	0.0000	0.0000
3135	CgrNgsd313	0.0000	0.0000	0.0000
3136	CheEgsd313	0.0000	0.0000	0.0000
3137	CheNgsd313	0.0000	0.0000	0.0000
3138	ChoEgsd313	0.0000	0.0000	0.0000
3139	ChoNgsd313	0.0000	0.0000	0.0000
3140	CinEgsd313	0.0000	0.0000	0.0000

3141	CinNgsd313	0.0000	0.0000	0.0000
3142	CloEgsd313	0.0000	0.0000	0.0000
3143	CloNgsd313	0.0000	0.0000	0.0000
3144	CmiEgsd313	0.0000	0.0000	0.0000
3145	CmiNgsd313	0.0000	0.0000	0.0000
3146	CofEgsd313	0.0000	0.0000	0.0000
3147	CofNgsd313	0.0000	0.0000	0.0000
3148	CreEgsd313	0.0000	0.0000	0.0000
3149	CreNgsd313	0.0000	0.0000	0.0000
3150	CrtEgsd313	0.0000	0.0000	0.0000
3151	CrtNgsd313	0.0000	0.0000	0.0000
3152	CscEgsd313	0.0000	0.0000	0.0000
3153	CscNgsd313	0.0000	0.0000	0.0000
3154	CwaEgsd313	0.0000	0.0000	0.0000
3155	CwaNgsd313	0.0000	0.0000	0.0000
3156	CasEgsd314	-0.0243	0.0000	0.1217
3157	CasNgsd314	0.0000	0.0000	0.0000
3158	CcoEgsd314	-0.0001	0.0000	0.0005
3159	CcoNgsd314	0.0000	0.0000	0.0000
3160	CgrEgsd314	-0.0153	0.0000	0.0708
3161	CgrNgsd314	0.0000	0.0000	0.0000
3162	CheEgsd314	-0.0368	0.0000	0.1845
3163	CheNgsd314	0.0000	0.0000	0.0000
3164	ChoEgsd314	-0.0055	0.0003	0.0480
3165	ChoNgsd314	0.0000	0.0000	0.0000
3166	CinEgsd314	-0.0672	0.0000	0.3374
3167	CinNgsd314	0.0000	0.0000	0.0000
3168	CloEgsd314	-0.0084	0.0000	0.0390
3169	CloNgsd314	0.0000	0.0000	0.0000
3170	CmiEgsd314	-0.0521	0.0000	0.2612
3171	CmiNgsd314	0.0000	0.0000	0.0000
3172	CofEgsd314	-0.0346	0.0000	0.1736
3173	CofNgsd314	0.0000	0.0000	0.0000
3174	CreEgsd314	-0.0439	0.0001	0.2027
3175	CreNgsd314	0.0000	0.0000	0.0000
3176	CrtEgsd314	-0.0862	0.0001	0.3984
3177	CrtNgsd314	0.0000	0.0000	0.0000
3178	CscEgsd314	-0.0017	0.0000	0.0087
3179	CscNgsd314	0.0000	0.0000	0.0000
3180	CwaEgsd314	0.0000	0.0000	0.0000
3181	CwaNgsd314	0.0000	0.0000	0.0000
3182	CcoEgsd315	0.0231	0.0000	0.0586
3183	CcoNgsd315	0.0000	0.0000	0.0000
3184	ChoEgsd315	0.1937	0.0000	0.4922
3185	ChoNgsd315	0.0000	0.0000	0.0000
3186	CinEgsd315	0.6002	0.0000	1.5255
3187	CinNgsd315	0.0014	0.0000	0.0036

3188	CasEgsd316	0.0000	0.0000	0.0032
3189	CasNgsd316	0.0000	0.0000	0.0000
3190	CcoEgsd316	0.0000	0.0000	0.0000
3191	CcoNgsd316	0.0000	0.0000	0.0000
3192	CgrEgsd316	0.0000	0.0001	0.0011
3193	CgrNgsd316	0.0000	0.0000	0.0000
3194	CheEgsd316	0.0000	0.0000	0.0005
3195	CheNgsd316	0.0000	0.0000	0.0000
3196	ChoEgsd316	0.0000	0.0000	0.0001
3197	ChoNgsd316	0.0000	0.0000	0.0000
3198	CinEgsd316	0.0000	0.0000	0.0017
3199	CinNgsd316	0.0000	0.0000	0.0000
3200	CloEgsd316	0.0000	0.0000	0.0004
3201	CloNgsd316	0.0000	0.0000	0.0000
3202	CmiEgsd316	0.0000	0.0000	0.0183
3203	CmiNgsd316	0.0000	0.0000	0.0002
3204	CofEgsd316	0.0000	0.0000	0.0396
3205	CofNgsd316	0.0000	0.0000	0.0005
3206	CreEgsd316	0.0000	0.0003	0.0023
3207	CreNgsd316	0.0000	0.0000	0.0000
3208	CrtEgsd316	0.0000	0.0002	0.0013
3209	CrtNgsd316	0.0000	0.0000	0.0000
3210	CscEgsd316	0.0000	0.0000	0.0000
3211	CscNgsd316	0.0000	0.0000	0.0000
3212	CwaEgsd316	0.0000	0.0000	0.0005
3213	CwaNgsd316	0.0000	0.0000	0.0000
3214	CasNgsd317	0.0003	0.0000	0.0008
3215	CasTgsd317	0.0303	0.0089	0.0961
3216	CcoNgsd317	0.0000	0.0000	0.0000
3217	CcoTgsd317	0.0004	0.0000	0.0023
3218	CgrNgsd317	0.0000	0.0000	0.0000
3219	CgrTgsd317	0.0000	0.0047	0.0141
3220	CheNgsd317	0.0013	0.0000	0.0031
3221	CheTgsd317	0.1209	0.0025	0.2848
3222	ChoNgsd317	0.0000	0.0000	0.0003
3223	ChoTgsd317	0.0041	0.0006	0.0264
3224	CinNgsd317	0.0008	0.0000	0.0018
3225	CinTgsd317	0.0718	0.0078	0.1878
3226	CloNgsd317	0.0000	0.0000	0.0000
3227	CloTgsd317	0.0000	0.0091	0.0272
3228	CmiNgsd317	0.0030	0.0000	0.0069
3229	CmiTgsd317	0.2617	0.0000	0.6004
3230	CofNgsd317	0.0029	0.0000	0.0066
3231	CofTgsd317	0.2485	0.1157	0.9158
3232	CreNgsd317	0.0002	0.0000	0.0004
3233	CreTgsd317	0.0141	0.0136	0.0731
3234	CrtNgsd317	0.0000	0.0000	0.0001

3235	CrtTgsd317	0.0024	0.0158	0.0527
3236	CscNgsd317	0.0000	0.0000	0.0000
3237	CscTgsd317	0.0015	0.0105	0.0346
3238	CwaNgsd317	0.0000	0.0000	0.0000
3239	CwaTgsd317	0.0000	0.0012	0.0037
3240	CofEgsd318	1.0614	0.2561	4.2874
3241	CreEgsd318	0.5304	0.1113	2.1144
3242	CrtEgsd318	1.1106	0.0802	4.1687
3243	CofEgsd319	5.4596	2.1533	30.3834
3244	CreEgsd319	2.6500	0.9103	14.5568
3245	CrtEgsd319	5.7497	0.6489	29.7089
3246	CasEgsd320	0.0317	0.0576	0.2877
3247	CasNgsd320	0.0001	0.0006	0.0022
3248	CcoEgsd320	0.0007	0.0002	0.0043
3249	CcoNgsd320	0.0000	0.0000	0.0000
3250	CgrEgsd320	0.0000	0.0317	0.1018
3251	CgrNgsd320	0.0000	0.0003	0.0010
3252	CheEgsd320	0.1277	0.0163	0.4663
3253	CheNgsd320	0.0005	0.0002	0.0021
3254	ChoEgsd320	0.0104	0.0076	0.0584
3255	ChoNgsd320	0.0000	0.0001	0.0004
3256	CinEgsd320	0.0750	0.0504	0.4049
3257	CinNgsd320	0.0003	0.0005	0.0025
3258	CloEgsd320	0.0000	0.0306	0.1935
3259	CloNgsd320	0.0000	0.0003	0.0018
3260	CmiEgsd320	0.2727	0.0000	0.8843
3261	CmiNgsd320	0.0011	0.0000	0.0035
3262	CofEgsd320	0.2610	0.8001	3.4126
3263	CofNgsd320	0.0011	0.0079	0.0288
3264	CreEgsd320	0.0149	0.0929	0.3463
3265	CreNgsd320	0.0001	0.0009	0.0030
3266	CrtEgsd320	0.0024	0.1029	0.3378
3267	CrtNgsd320	0.0000	0.0010	0.0034
3268	CscEgsd320	0.0016	0.0680	0.2231
3269	CscNgsd320	0.0000	0.0007	0.0022
3270	CwaEgsd320	0.0000	0.0086	0.0277
3271	CwaNgsd320	0.0000	0.0001	0.0003
3272	CcoNgsd321	0.0000	0.0000	0.0000
3273	CcoTgsd321	0.0012	0.0007	0.0051
3274	CheNgsd321	0.0001	0.0001	0.0005
3275	CheTgsd321	0.0099	0.0057	0.0427
3276	ChoNgsd321	0.0000	0.0000	0.0001
3277	ChoTgsd321	0.0038	0.0022	0.0165
3278	CinNgsd321	0.0000	0.0000	0.0000
3279	CinTgsd321	0.0021	0.0012	0.0089
3280	CofNgsd321	0.0006	0.0003	0.0024
3281	CofTgsd321	0.0524	0.0303	0.2256

3282	CscNgsd321	0.0000	0.0000	0.0001
3283	CscTgsd321	0.0021	0.0012	0.0091
3284	CasNgsd322	0.0000	0.0000	0.0000
3285	CasTgsd322	0.0000	0.0000	0.0000
3286	CcoNgsd322	0.0000	0.0000	0.0000
3287	CcoTgsd322	0.0000	0.0000	0.0000
3288	CgrNgsd322	0.0000	0.0000	0.0000
3289	CgrTgsd322	0.0000	0.0000	0.0000
3290	CheNgsd322	0.0000	0.0000	0.0000
3291	CheTgsd322	0.0000	0.0000	0.0000
3292	ChoNgsd322	0.0000	0.0000	0.0000
3293	ChoTgsd322	0.0000	0.0000	0.0000
3294	CinNgsd322	0.0000	0.0000	0.0000
3295	CinTgsd322	0.0000	0.0000	0.0000
3296	CloNgsd322	0.0000	0.0000	0.0000
3297	CloTgsd322	0.0000	0.0000	0.0000
3298	CmiNgsd322	0.0000	0.0000	0.0000
3299	CmiTgsd322	0.0000	0.0000	0.0000
3300	CofNgsd322	0.0000	0.0000	0.0000
3301	CofTgsd322	0.0000	0.0000	0.0000
3302	CreNgsd322	0.0000	0.0000	0.0000
3303	CreTgsd322	0.0000	0.0000	0.0000
3304	CrtNgsd322	0.0000	0.0000	0.0000
3305	CrtTgsd322	0.0000	0.0000	0.0000
3306	CscNgsd322	0.0000	0.0000	0.0000
3307	CscTgsd322	0.0000	0.0000	0.0000
3308	CwaNgsd322	0.0000	0.0000	0.0000
3309	CwaTgsd322	0.0000	0.0000	0.0000
3310	CasNgsd323	0.0000	0.0000	0.0000
3311	CasTgsd323	0.0000	0.0000	0.0000
3312	CcoNgsd323	0.0000	0.0000	0.0000
3313	CcoTgsd323	0.0000	0.0000	0.0000
3314	CgrNgsd323	0.0000	0.0000	0.0000
3315	CgrTgsd323	0.0000	0.0000	0.0000
3316	CheNgsd323	0.0000	0.0000	0.0000
3317	CheTgsd323	0.0000	0.0000	0.0000
3318	ChoNgsd323	0.0000	0.0000	0.0000
3319	ChoTgsd323	0.0000	0.0000	0.0000
3320	CinNgsd323	0.0000	0.0000	0.0000
3321	CinTgsd323	0.0000	0.0000	0.0000
3322	CloNgsd323	0.0000	0.0000	0.0000
3323	CloTgsd323	0.0000	0.0000	0.0000
3324	CmiNgsd323	0.0000	0.0000	0.0000
3325	CmiTgsd323	0.0000	0.0000	0.0000
3326	CofNgsd323	0.0000	0.0000	0.0000
3327	CofTgsd323	0.0000	0.0000	0.0000
3328	CreNgsd323	0.0000	0.0000	0.0000

3329	CreTgsd323	0.0000	0.0000	0.0000
3330	CrtNgsd323	0.0000	0.0000	0.0000
3331	CrtTgsd323	0.0000	0.0000	0.0000
3332	CscNgsd323	0.0000	0.0000	0.0000
3333	CscTgsd323	0.0000	0.0000	0.0000
3334	CwaNgsd323	0.0000	0.0000	0.0000
3335	CwaTgsd323	0.0000	0.0000	0.0000
3336	CasNgsd324	0.0008	0.0020	0.0091
3337	CasTgsd324	0.0735	0.1851	0.8319
3338	CcoNgsd324	0.0000	0.0000	0.0001
3339	CcoTgsd324	0.0016	0.0006	0.0108
3340	CgrNgsd324	0.0000	0.0011	0.0035
3341	CgrTgsd324	0.0000	0.0991	0.3178
3342	CheNgsd324	0.0033	0.0006	0.0125
3343	CheTgsd324	0.2929	0.0527	1.1187
3344	ChoNgsd324	0.0003	0.0003	0.0018
3345	ChoTgsd324	0.0242	0.0260	0.1619
3346	CinNgsd324	0.0019	0.0018	0.0120
3347	CinTgsd324	0.1739	0.1643	1.0907
3348	CloNgsd324	0.0000	0.0011	0.0070
3349	CloTgsd324	0.0000	0.0986	0.6243
3350	CmiNgsd324	0.0073	0.0000	0.0236
3351	CmiTgsd324	0.6338	0.0000	2.0550
3352	CofNgsd324	0.0070	0.0282	0.1133
3353	CofTgsd324	0.6371	2.5701	10.3100
3354	CreNgsd324	0.0004	0.0033	0.0120
3355	CreTgsd324	0.0342	0.2970	1.0633
3356	CrtNgsd324	0.0001	0.0038	0.0122
3357	CrtTgsd324	0.0058	0.3421	1.1159
3358	CscNgsd324	0.0000	0.0025	0.0081
3359	CscTgsd324	0.0036	0.2194	0.7152
3360	CwaNgsd324	0.0000	0.0003	0.0011
3361	CwaTgsd324	0.0000	0.0301	0.0964
3362	CasEgsd325	0.0000	0.0013	0.0323
3363	CasNgsd325	0.0000	0.0000	0.0000
3364	CcoEgsd325	0.0000	0.0000	0.0002
3365	CcoNgsd325	0.0000	0.0000	0.0000
3366	CgrEgsd325	0.0000	0.0007	0.0170
3367	CgrNgsd325	0.0000	0.0000	0.0003
3368	CheEgsd325	0.0000	0.0003	0.0028
3369	CheNgsd325	0.0000	0.0000	0.0000
3370	ChoEgsd325	0.0000	0.0000	0.0000
3371	ChoNgsd325	0.0000	0.0000	0.0000
3372	CloEgsd325	0.0000	0.0009	0.0079
3373	CloNgsd325	0.0000	0.0000	0.0000
3374	CreEgsd325	0.0000	0.0043	0.0392
3375	CreNgsd325	0.0000	0.0000	0.0003

3376	CrtEgsd325	0.0000	0.0027	0.0674
3377	CrtNgsd325	0.0000	0.0000	0.0007
3378	CscEgsd325	0.0000	0.0009	0.0079
3379	CscNgsd325	0.0000	0.0000	0.0000
3380	CasEgsd328	1.3200	7.4316	2.6905
3381	CasNgsd328	0.0133	0.0746	0.0270
3382	CcoEgsd328	2.2382	12.6013	4.5622
3383	CcoNgsd328	0.0240	0.1350	0.0489
3384	CgrEgsd328	0.6269	3.5293	1.2778
3385	CgrNgsd328	0.0070	0.0392	0.0142
3386	CheEgsd328	4.3594	24.5433	8.8856
3387	CheNgsd328	0.0467	0.2629	0.0952
3388	ChoEgsd328	1.6589	9.3397	3.3813
3389	ChoNgsd328	0.0131	0.0738	0.0267
3390	CinEgsd328	2.7426	15.4406	5.5901
3391	CinNgsd328	0.0217	0.1220	0.0442
3392	CloEgsd328	4.7310	26.6354	9.6430
3393	CloNgsd328	0.0507	0.2854	0.1033
3394	CmiEgsd328	2.0476	11.5282	4.1736
3395	CmiNgsd328	0.0227	0.1280	0.0463
3396	CofEgsd328	16.2430	91.4483	33.1077
3397	CofNgsd328	0.1284	0.7227	0.2616
3398	CreEgsd328	1.7075	9.6132	3.4803
3399	CreNgsd328	0.0190	0.1067	0.0386
3400	CrtEgsd328	14.8345	83.5181	30.2367
3401	CrtNgsd328	0.1589	0.8948	0.3239
3402	CscEgsd328	3.6528	20.5653	7.4454
3403	CscNgsd328	0.0391	0.2203	0.0798
3404	CwaEgsd328	0.4853	2.7320	0.9891
3405	CwaNgsd328	0.0052	0.0293	0.0106
3406	CwaEgsd326	0.0000	0.0339	0.1654
3407	CwaNgsd326	0.0000	0.0004	0.0018
3408	CasEgsd327	16.1735	2.1927	25.3146
3409	CasNgsd327	0.1819	0.0247	0.2848
3410	CcoEgsd327	0.0251	0.0034	0.0393
3411	CcoNgsd327	0.0002	0.0000	0.0004
3412	CgrEgsd327	4.5589	0.6181	7.1355
3413	CgrNgsd327	0.0465	0.0063	0.0728
3414	CheEgsd327	8.7896	1.1917	13.7574
3415	CheNgsd327	0.0915	0.0124	0.1433
3416	ChoEgsd327	2.3881	0.3238	3.7378
3417	ChoNgsd327	0.0248	0.0034	0.0388
3418	CinEgsd327	16.7763	2.2744	26.2580
3419	CinNgsd327	0.1744	0.0236	0.2730
3420	CloEgsd327	2.5904	0.3512	4.0545
3421	CloNgsd327	0.0257	0.0035	0.0402
3422	CmiEgsd327	24.9898	3.3880	39.1138

3423	CmiNgsd327	0.2623	0.0356	0.4106
3424	CofEgsd327	7.5185	1.0193	11.7679
3425	CofNgsd327	0.0857	0.0116	0.1342
3426	CreEgsd327	16.0974	2.1824	25.1954
3427	CreNgsd327	0.1586	0.0215	0.2482
3428	CrtEgsd327	35.5363	4.8178	55.6210
3429	CrtNgsd327	0.3634	0.0493	0.5688
3430	CscEgsd327	0.4282	0.0581	0.6702
3431	CscNgsd327	0.0042	0.0006	0.0066
3432	CwaEgsd327	0.7130	0.0967	1.1160
3433	CwaNgsd327	0.0087	0.0012	0.0137
3434	CcoEgsd329	0.4933	0.5006	1.7100
3435	CcoNgsd329	0.0053	0.0054	0.0183
3436	CheEgsd329	2.4619	2.4984	8.5339
3437	CheNgsd329	0.0264	0.0268	0.0914
3438	ChoEgsd329	0.6949	0.7052	2.4089
3439	ChoNgsd329	0.0112	0.0113	0.0387
3440	CinEgsd329	1.2953	1.3145	4.4900
3441	CinNgsd329	0.0208	0.0211	0.0722
3442	CofEgsd329	7.0207	7.1248	24.3363
3443	CofNgsd329	0.1128	0.1145	0.3911
3444	CscEgsd329	0.8051	0.8170	2.7907
3445	CscNgsd329	0.0086	0.0088	0.0299
3446	CasNgsd401	0.0000	0.0000	0.0000
3447	CasTgsd401	0.0000	0.0000	0.0000
3448	CcoNgsd401	0.0000	0.0000	0.0000
3449	CcoTgsd401	0.0000	0.0000	0.0000
3450	CgrNgsd401	0.0000	0.0000	0.0000
3451	CgrTgsd401	0.0000	0.0000	0.0000
3452	CheNgsd401	0.0000	0.0000	0.0000
3453	CheTgsd401	0.0000	0.0000	0.0000
3454	ChoNgsd401	0.0000	0.0000	0.0000
3455	ChoTgsd401	0.0000	0.0000	0.0000
3456	CinNgsd401	0.0000	0.0000	0.0000
3457	CinTgsd401	0.0000	0.0000	0.0000
3458	CloNgsd401	0.0000	0.0000	0.0000
3459	CloTgsd401	0.0000	0.0000	0.0000
3460	CmiNgsd401	0.0000	0.0000	0.0000
3461	CmiTgsd401	0.0000	0.0000	0.0000
3462	CofNgsd401	0.0000	0.0000	0.0000
3463	CofTgsd401	0.0000	0.0000	0.0000
3464	CreNgsd401	0.0000	0.0000	0.0000
3465	CreTgsd401	0.0000	0.0000	0.0000
3466	CrtNgsd401	0.0000	0.0000	0.0000
3467	CrtTgsd401	0.0000	0.0000	0.0000
3468	CscNgsd401	0.0000	0.0000	0.0000
3469	CscTgsd401	0.0000	0.0000	0.0000

3470	CwaNgsd401	0.0000	0.0000	0.0000
3471	CwaTgsd401	0.0000	0.0000	0.0000
3472	CasEgsd402	0.0000	0.0000	0.6235
3473	CasNgsd402	0.0000	0.0000	0.0008
3474	CcoEgsd402	0.0000	0.0000	0.6812
3475	CcoNgsd402	0.0000	0.0000	0.0073
3476	CgrEgsd402	0.0000	0.0000	1.4310
3477	CgrNgsd402	0.0000	0.0000	0.0019
3478	CheEgsd402	0.0000	0.0000	2.4356
3479	CheNgsd402	0.0000	0.0000	0.0261
3480	ChoEgsd402	0.0000	0.0000	1.4796
3481	ChoNgsd402	0.0000	0.0000	0.0013
3482	CinEgsd402	0.0000	0.0000	5.0930
3483	CinNgsd402	0.0000	0.0000	0.0546
3484	CloEgsd402	0.0000	0.0000	1.3131
3485	CloNgsd402	0.0000	0.0000	0.0011
3486	CmiEgsd402	0.0000	0.0000	21.1858
3487	CmiNgsd402	0.0000	0.0000	0.2270
3488	CofEgsd402	0.0000	0.0000	10.0098
3489	CofNgsd402	0.0000	0.0000	0.0085
3490	CreEgsd402	0.0000	0.0000	0.5593
3491	CreNgsd402	0.0000	0.0000	0.0013
3492	CrtEgsd402	0.0000	0.0000	12.9255
3493	CrtNgsd402	0.0000	0.0000	0.0109
3494	CscEgsd402	0.0000	0.0000	1.2751
3495	CscNgsd402	0.0000	0.0000	0.0137
3496	CwaEgsd402	0.0000	0.0000	1.2146
3497	CwaNgsd402	0.0000	0.0000	0.0130
3498	CasEgsd403	0.0000	0.0000	1.9773
3499	CasNgsd403	0.0000	0.0000	0.0000
3500	CcoEgsd403	0.0000	0.0000	1.3254
3501	CcoNgsd403	0.0000	0.0000	0.0142
3502	CgrEgsd403	0.0000	0.0000	4.5383
3503	CgrNgsd403	0.0000	0.0000	0.0000
3504	CheEgsd403	0.0000	0.0000	4.7387
3505	CheNgsd403	0.0000	0.0000	0.0508
3506	ChoEgsd403	0.0000	0.0000	2.8788
3507	ChoNgsd403	0.0000	0.0000	0.0000
3508	CinEgsd403	0.0000	0.0000	16.1522
3509	CinNgsd403	0.0000	0.0000	0.1730
3510	CloEgsd403	0.0000	0.0000	2.5547
3511	CloNgsd403	0.0000	0.0000	0.0000
3512	CmiEgsd403	0.0000	0.0000	67.1904
3513	CmiNgsd403	0.0000	0.0000	0.7198
3514	CofEgsd403	0.0000	0.0000	19.4751
3515	CofNgsd403	0.0000	0.0000	0.0000
3516	CreEgsd403	0.0000	0.0000	4.4981

3517	CreNgsd403	0.0000	0.0000	0.0005
3518	CrtEgsd403	0.0000	0.0000	25.1480
3519	CrtNgsd403	0.0000	0.0000	0.0000
3520	CscEgsd403	0.0000	0.0000	4.0439
3521	CscNgsd403	0.0000	0.0000	0.0433
3522	CwaEgsd403	0.0000	0.0000	2.3631
3523	CwaNgsd403	0.0000	0.0000	0.0253
3524	CasNgsd404	0.0000	0.0000	0.0000
3525	CasTgsd404	0.0000	0.0000	0.0000
3526	CcoNgsd404	0.0000	0.0000	0.0000
3527	CcoTgsd404	0.0000	0.0000	0.0000
3528	CgrNgsd404	0.0000	0.0000	0.0000
3529	CgrTgsd404	0.0000	0.0000	0.0000
3530	CheNgsd404	0.0000	0.0000	0.0000
3531	CheTgsd404	0.0000	0.0000	0.0000
3532	ChoNgsd404	0.0000	0.0000	0.0000
3533	ChoTgsd404	0.0000	0.0000	0.0000
3534	CinNgsd404	0.0000	0.0000	0.0000
3535	CinTgsd404	0.0000	0.0000	0.0000
3536	CloNgsd404	0.0000	0.0000	0.0000
3537	CloTgsd404	0.0000	0.0000	0.0000
3538	CmiNgsd404	0.0000	0.0000	0.0000
3539	CmiTgsd404	0.0000	0.0000	0.0000
3540	CofNgsd404	0.0000	0.0000	0.0000
3541	CofTgsd404	0.0000	0.0000	0.0000
3542	CreNgsd404	0.0000	0.0000	0.0000
3543	CreTgsd404	0.0000	0.0000	0.0000
3544	CrtNgsd404	0.0000	0.0000	0.0000
3545	CrtTgsd404	0.0000	0.0000	0.0000
3546	CscNgsd404	0.0000	0.0000	0.0000
3547	CscTgsd404	0.0000	0.0000	0.0000
3548	CwaNgsd404	0.0000	0.0000	0.0000
3549	CwaTgsd404	0.0000	0.0000	0.0000
3550	CasNgsd405	0.0000	0.0000	0.0000
3551	CasTgsd405	0.0000	0.0000	0.0000
3552	CcoNgsd405	0.0000	0.0000	0.0008
3553	CcoTgsd405	0.0000	0.0000	0.0111
3554	CgrNgsd405	0.0000	0.0000	0.0022
3555	CgrTgsd405	0.0000	0.0000	0.0311
3556	CheNgsd405	0.0000	0.0000	0.0025
3557	CheTgsd405	0.0000	0.0000	0.0362
3558	ChoNgsd405	0.0000	0.0000	0.0009
3559	ChoTgsd405	0.0000	0.0000	0.0134
3560	CinNgsd405	0.0000	0.0000	0.0000
3561	CinTgsd405	0.0000	0.0000	0.0000
3562	CloNgsd405	0.0000	0.0000	0.0000
3563	CloTgsd405	0.0000	0.0000	0.0000

3564	CmiNgsd405	0.0000	0.0000	0.0043
3565	CmiTgsd405	0.0000	0.0000	0.4017
3566	CofNgsd405	0.0000	0.0000	0.0095
3567	CofTgsd405	0.0000	0.0000	0.1359
3568	CreNgsd405	0.0000	0.0000	0.0012
3569	CreTgsd405	0.0000	0.0000	0.0243
3570	CrtNgsd405	0.0000	0.0000	0.0000
3571	CrtTgsd405	0.0000	0.0000	0.0000
3572	CscNgsd405	0.0000	0.0000	0.0023
3573	CscTgsd405	0.0000	0.0000	0.0334
3574	CwaNgsd405	0.0000	0.0000	0.0014
3575	CwaTgsd405	0.0000	0.0000	0.0200
3576	CasNgsd406	0.0000	0.0000	0.0000
3577	CasTgsd406	0.0000	0.0000	0.0000
3578	CcoNgsd406	0.0000	0.0000	0.0000
3579	CcoTgsd406	0.0000	0.0000	0.0039
3580	CgrNgsd406	0.0000	0.0000	0.0001
3581	CgrTgsd406	0.0000	0.0000	0.0101
3582	CheNgsd406	0.0000	0.0000	0.0001
3583	CheTgsd406	0.0000	0.0000	0.0127
3584	ChoNgsd406	0.0000	0.0000	0.0001
3585	ChoTgsd406	0.0000	0.0000	0.0043
3586	CinNgsd406	0.0000	0.0000	0.0000
3587	CinTgsd406	0.0000	0.0000	0.0000
3588	CloNgsd406	0.0000	0.0000	0.0000
3589	CloTgsd406	0.0000	0.0000	0.0000
3590	CmiNgsd406	0.0000	0.0000	0.0015
3591	CmiTgsd406	0.0000	0.0000	0.1391
3592	CofNgsd406	0.0000	0.0000	0.0005
3593	CofTgsd406	0.0000	0.0000	0.0440
3594	CreNgsd406	0.0000	0.0000	0.0001
3595	CreTgsd406	0.0000	0.0000	0.0079
3596	CrtNgsd406	0.0000	0.0000	0.0000
3597	CrtTgsd406	0.0000	0.0000	0.0000
3598	CscNgsd406	0.0000	0.0000	0.0001
3599	CscTgsd406	0.0000	0.0000	0.0117
3600	CwaNgsd406	0.0000	0.0000	0.0001
3601	CwaTgsd406	0.0000	0.0000	0.0070
3602	CasNgsd407	0.0000	0.0000	0.0000
3603	CasTgsd407	0.0000	0.0000	0.0000
3604	CcoNgsd407	0.0000	0.0000	0.0000
3605	CcoTgsd407	0.0000	0.0000	0.0050
3606	CgrNgsd407	0.0000	0.0000	0.0001
3607	CgrTgsd407	0.0000	0.0000	0.0130
3608	CheNgsd407	0.0000	0.0000	0.0001
3609	CheTgsd407	0.0000	0.0000	0.0163
3610	ChoNgsd407	0.0000	0.0000	0.0000

3611	ChoTgsd407	0.0000	0.0000	0.0056
3612	CinNgsd407	0.0000	0.0000	0.0000
3613	CinTgsd407	0.0000	0.0000	0.0000
3614	CloNgsd407	0.0000	0.0000	0.0000
3615	CloTgsd407	0.0000	0.0000	0.0000
3616	CmiNgsd407	0.0000	0.0000	0.0019
3617	CmiTgsd407	0.0000	0.0000	0.1783
3618	CofNgsd407	0.0000	0.0000	0.0004
3619	CofTgsd407	0.0000	0.0000	0.0566
3620	CreNgsd407	0.0000	0.0000	0.0001
3621	CreTgsd407	0.0000	0.0000	0.0101
3622	CrtNgsd407	0.0000	0.0000	0.0000
3623	CrtTgsd407	0.0000	0.0000	0.0000
3624	CscNgsd407	0.0000	0.0000	0.0001
3625	CscTgsd407	0.0000	0.0000	0.0150
3626	CwaNgsd407	0.0000	0.0000	0.0001
3627	CwaTgsd407	0.0000	0.0000	0.0090
3628	CasNgsd408	0.0000	0.0000	0.2123
3629	CasTgsd408	0.0000	0.0000	1.4042
3630	CcoNgsd408	0.0000	0.0000	0.0108
3631	CcoTgsd408	0.0000	0.0000	1.0108
3632	CgrNgsd408	0.0000	0.0000	0.4872
3633	CgrTgsd408	0.0000	0.0000	3.2230
3634	CheNgsd408	0.0000	0.0000	0.0387
3635	CheTgsd408	0.0000	0.0000	3.6140
3636	ChoNgsd408	0.0000	0.0000	0.3143
3637	ChoTgsd408	0.0000	0.0000	2.0787
3638	CinNgsd408	0.0000	0.0000	0.1298
3639	CinTgsd408	0.0000	0.0000	12.1157
3640	CloNgsd408	0.0000	0.0000	0.2789
3641	CloTgsd408	0.0000	0.0000	1.8447
3642	CmiNgsd408	0.0000	0.0000	0.5400
3643	CmiTgsd408	0.0000	0.0000	50.3990
3644	CofNgsd408	0.0000	0.0000	2.1259
3645	CofTgsd408	0.0000	0.0000	14.0625
3646	CreNgsd408	0.0000	0.0000	0.4751
3647	CreTgsd408	0.0000	0.0000	3.1430
3648	CrtNgsd408	0.0000	0.0000	2.7452
3649	CrtTgsd408	0.0000	0.0000	18.1587
3650	CscNgsd408	0.0000	0.0000	0.0325
3651	CscTgsd408	0.0000	0.0000	3.0333
3652	CwaNgsd408	0.0000	0.0000	0.0219
3653	CwaTgsd408	0.0000	0.0000	2.0462
3654	CinNgsd409	0.0000	0.0000	0.0000
3655	CinTgsd409	0.0000	0.0000	0.0000
3656	CinNgsd410	0.0000	0.0000	0.0000
3657	CinTgsd410	0.0000	0.0000	0.0000

3658	CasNgsd501	0.0000	0.0000	0.0000
3659	CasTgsd501	0.0000	0.0000	0.0000
3660	CcoNgsd501	0.0000	0.0000	0.0000
3661	CcoTgsd501	0.0000	0.0000	0.0000
3662	CgrNgsd501	0.0000	0.0000	0.0000
3663	CgrTgsd501	0.0000	0.0000	0.0000
3664	CheNgsd501	0.0000	0.0000	0.0000
3665	CheTgsd501	0.0000	0.0000	0.0000
3666	ChoNgsd501	0.0000	0.0000	0.0000
3667	ChoTgsd501	0.0000	0.0000	0.0000
3668	CinNgsd501	0.0000	0.0000	0.0000
3669	CinTgsd501	0.0000	0.0000	0.0000
3670	CloNgsd501	0.0000	0.0000	0.0000
3671	CloTgsd501	0.0000	0.0000	0.0000
3672	CmiNgsd501	0.0000	0.0000	0.0000
3673	CmiTgsd501	0.0000	0.0000	0.0000
3674	CofNgsd501	0.0000	0.0000	0.0000
3675	CofTgsd501	0.0000	0.0000	0.0000
3676	CreNgsd501	0.0000	0.0000	0.0000
3677	CreTgsd501	0.0000	0.0000	0.0000
3678	CrtNgsd501	0.0000	0.0000	0.0000
3679	CrtTgsd501	0.0000	0.0000	0.0000
3680	CscNgsd501	0.0000	0.0000	0.0000
3681	CscTgsd501	0.0000	0.0000	0.0000
3682	CwaNgsd501	0.0000	0.0000	0.0000
3683	CwaTgsd501	0.0000	0.0000	0.0000
3684	CasEgsd502	0.0080	0.0000	2.8718
3685	CasNgsd502	0.0001	0.0000	0.0350
3686	CcoEgsd502	0.0089	0.0000	3.1952
3687	CcoNgsd502	0.0001	0.0000	0.0390
3688	CgrEgsd502	0.0699	0.0000	5.5822
3689	CgrNgsd502	0.0009	0.0000	0.0681
3690	CheEgsd502	0.0319	0.0000	11.4316
3691	CheNgsd502	0.0004	0.0000	0.1394
3692	ChoEgsd502	0.0192	0.0000	6.8752
3693	ChoNgsd502	0.0002	0.0000	0.0838
3694	CinEgsd502	0.0656	0.0000	23.5339
3695	CinNgsd502	0.0008	0.0000	0.2869
3696	CloEgsd502	0.0794	0.0000	6.3391
3697	CloNgsd502	0.0010	0.0000	0.0773
3698	CmiEgsd502	0.2626	0.0000	94.2240
3699	CmiNgsd502	0.0032	0.0000	1.1487
3700	CofEgsd502	0.1370	0.0000	49.1529
3701	CofNgsd502	0.0017	0.0000	0.5992
3702	CreEgsd502	0.0329	0.0000	2.6269
3703	CreNgsd502	0.0004	0.0000	0.0320
3704	CrtEgsd502	0.7249	0.0000	57.8881

3705	CrtNgsd502	0.0088	0.0000	0.7057
3706	CscEgsd502	0.0167	0.0000	5.9805
3707	CscNgsd502	0.0002	0.0000	0.0729
3708	CwaEgsd502	0.0086	0.0000	3.0973
3709	CwaNgsd502	0.0001	0.0000	0.0378
3710	CasEgsd503	0.0000	0.0000	1.6215
3711	CasNgsd503	0.0000	0.0000	0.0198
3712	CcoEgsd503	0.0000	0.0000	2.6862
3713	CcoNgsd503	0.0000	0.0000	0.0327
3714	CgrEgsd503	0.0000	0.0000	1.5759
3715	CgrNgsd503	0.0000	0.0000	0.0192
3716	CheEgsd503	0.0000	0.0000	9.6107
3717	CheNgsd503	0.0000	0.0000	0.1172
3718	ChoEgsd503	0.0000	0.0000	5.7800
3719	ChoNgsd503	0.0000	0.0000	0.0705
3720	CinEgsd503	0.0000	0.0000	13.2875
3721	CinNgsd503	0.0000	0.0000	0.1620
3722	CloEgsd503	0.0000	0.0000	2.1317
3723	CloNgsd503	0.0000	0.0000	0.0260
3724	CmiEgsd503	0.0000	0.0000	53.2002
3725	CmiNgsd503	0.0000	0.0000	0.6486
3726	CofEgsd503	0.0000	0.0000	33.0586
3727	CofNgsd503	0.0000	0.0000	0.4030
3728	CreEgsd503	0.0000	0.0000	1.9332
3729	CreNgsd503	0.0000	0.0000	0.0236
3730	CrtEgsd503	0.0000	0.0000	9.7334
3731	CrtNgsd503	0.0000	0.0000	0.1187
3732	CscEgsd503	0.0000	0.0000	8.4417
3733	CscNgsd503	0.0000	0.0000	0.1029
3734	CwaEgsd503	0.0000	0.0000	2.6040
3735	CwaNgsd503	0.0000	0.0000	0.0317
3736	CasNgsd504	0.0000	0.0000	0.0000
3737	CasTgsd504	0.0000	0.0000	0.0000
3738	CrtNgsd504	0.0000	0.0000	0.0000
3739	CrtTgsd504	0.0000	0.0000	0.0000
3740	CwaNgsd504	0.0000	0.0000	0.0000
3741	CwaTgsd504	0.0000	0.0000	0.0000
3742	CasNgsd505	0.0000	0.0000	0.0000
3743	CasTgsd505	0.0000	0.0000	0.0000
3744	CcoNgsd505	0.0000	0.0000	0.0000
3745	CcoTgsd505	0.0000	0.0000	0.0000
3746	CgrNgsd505	0.0000	0.0000	0.0000
3747	CgrTgsd505	0.0000	0.0000	0.0000
3748	CheNgsd505	0.0000	0.0000	0.0000
3749	CheTgsd505	0.0000	0.0000	0.0000
3750	ChoNgsd505	0.0000	0.0000	0.0000
3751	ChoTgsd505	0.0000	0.0000	0.0000

3752	CinNgsd505	0.0000	0.0000	0.0000
3753	CinTgsd505	0.0000	0.0000	0.0000
3754	CloNgsd505	0.0000	0.0000	0.0000
3755	CloTgsd505	0.0000	0.0000	0.0000
3756	CmiNgsd505	0.0000	0.0000	0.0000
3757	CmiTgsd505	0.0000	0.0000	0.0000
3758	CofNgsd505	0.0000	0.0000	0.0000
3759	CofTgsd505	0.0000	0.0000	0.0000
3760	CreNgsd505	0.0000	0.0000	0.0000
3761	CreTgsd505	0.0000	0.0000	0.0000
3762	CrtNgsd505	0.0000	0.0000	0.0000
3763	CrtTgsd505	0.0000	0.0000	0.0000
3764	CscNgsd505	0.0000	0.0000	0.0000
3765	CscTgsd505	0.0000	0.0000	0.0000
3766	CwaNgsd505	0.0000	0.0000	0.0000
3767	CwaTgsd505	0.0000	0.0000	0.0000
3768	CasNgsd506	0.0000	0.0000	0.0000
3769	CasTgsd506	0.0000	0.0000	0.0000
3770	CcoNgsd506	0.0000	0.0000	0.0000
3771	CcoTgsd506	0.0000	0.0000	0.0000
3772	CgrNgsd506	0.0000	0.0000	0.0000
3773	CgrTgsd506	0.0000	0.0000	0.0000
3774	CheNgsd506	0.0000	0.0000	0.0000
3775	CheTgsd506	0.0000	0.0000	0.0000
3776	ChoNgsd506	0.0000	0.0000	0.0000
3777	ChoTgsd506	0.0000	0.0000	0.0000
3778	CinNgsd506	0.0000	0.0000	0.0000
3779	CinTgsd506	0.0000	0.0000	0.0000
3780	CloNgsd506	0.0000	0.0000	0.0000
3781	CloTgsd506	0.0000	0.0000	0.0000
3782	CmiNgsd506	0.0000	0.0000	0.0000
3783	CmiTgsd506	0.0000	0.0000	0.0000
3784	CofNgsd506	0.0000	0.0000	0.0000
3785	CofTgsd506	0.0000	0.0000	0.0000
3786	CreNgsd506	0.0000	0.0000	0.0000
3787	CreTgsd506	0.0000	0.0000	0.0000
3788	CrtNgsd506	0.0000	0.0000	0.0000
3789	CrtTgsd506	0.0000	0.0000	0.0000
3790	CscNgsd506	0.0000	0.0000	0.0000
3791	CscTgsd506	0.0000	0.0000	0.0000
3792	CwaNgsd506	0.0000	0.0000	0.0000
3793	CwaTgsd506	0.0000	0.0000	0.0000
3794	CasTgsd507	4.5069	2.9385	24.0439
3795	CrtTgsd507	59.8987	39.0540	319.5521
3796	CwaTgsd507	7.8212	5.0994	41.7251
3797	CasTgsd508	0.0149	0.0034	0.0611
3798	CcoTgsd508	0.0044	0.0043	0.0423

3799	CgrTgsd508	0.0010	0.0000	0.0042
3800	CheTgsd508	0.0375	0.0087	0.1543
3801	ChoTgsd508	0.0096	0.0094	0.0933
3802	CinTgsd508	0.1219	0.0282	0.5011
3803	CloTgsd508	0.0004	0.0000	0.0017
3804	CmiTgsd508	0.0278	0.0064	0.1142
3805	CofTgsd508	0.0039	0.0009	0.0159
3806	CreTgsd508	0.0016	0.0000	0.0065
3807	CrtTgsd508	0.0037	0.0000	0.0153
3808	CscTgsd508	0.0309	0.0071	0.1271
3809	CwaTgsd508	0.0051	0.0012	0.0209
3810	CasTgsd509	0.0006	0.0001	0.0025
3811	CcoTgsd509	0.0002	0.0002	0.0017
3812	CgrTgsd509	0.0000	0.0000	0.0002
3813	CheTgsd509	0.0016	0.0004	0.0063
3814	ChoTgsd509	0.0004	0.0004	0.0038
3815	CinTgsd509	0.0051	0.0012	0.0205
3816	CloTgsd509	0.0000	0.0000	0.0001
3817	CmiTgsd509	0.0013	0.0003	0.0051
3818	CofTgsd509	0.0002	0.0000	0.0007
3819	CreTgsd509	0.0001	0.0000	0.0004
3820	CrtTgsd509	0.0002	0.0000	0.0009
3821	CscTgsd509	0.0013	0.0003	0.0052
3822	CwaTgsd509	0.0002	0.0000	0.0009
3823	CasTgsd510	2.3588	0.5396	9.6003
3824	CcoTgsd510	0.9244	0.8574	8.7027
3825	CgrTgsd510	7.2194	0.0004	29.2061
3826	CheTgsd510	7.6327	1.7461	31.0649
3827	ChoTgsd510	1.9862	1.8423	18.6997
3828	CinTgsd510	25.1965	5.7640	102.5491
3829	CloTgsd510	4.0741	0.0002	16.4816
3830	CmiTgsd510	106.3590	24.3310	432.8783
3831	CofTgsd510	31.3108	7.1627	127.4340
3832	CreTgsd510	7.0197	0.0004	28.3982
3833	CrtTgsd510	30.5302	0.0017	123.5099
3834	CscTgsd510	6.4164	1.4678	26.1147
3835	CwaTgsd510	2.6080	0.5966	10.6144
3836	CasTgsd511	0.5107	0.1173	2.0859
3837	CcoTgsd511	0.1463	0.1405	1.3941
3838	CgrTgsd511	1.0943	0.0002	4.4755
3839	CheTgsd511	1.1307	0.2596	4.6182
3840	ChoTgsd511	0.3149	0.3024	2.9996
3841	CinTgsd511	4.5200	1.0378	18.4608
3842	CloTgsd511	0.7242	0.0001	2.9617
3843	CmiTgsd511	2.0108	0.4617	8.2125
3844	CofTgsd511	5.3748	1.2340	21.9519
3845	CreTgsd511	1.3424	0.0002	5.4902

3846	CrtTgsd511	6.7587	0.0011	27.6424
3847	CscTgsd511	1.0726	0.2463	4.3809
3848	CwaTgsd511	0.3309	0.0760	1.3514
3849	CasEgsd601	0.0077	0.0019	0.0552
3850	CasNgsd601	0.0001	0.0000	0.0006
3851	CcoEgsd601	0.0011	0.0009	0.0085
3852	CcoNgsd601	0.0000	0.0000	0.0003
3853	CgrEgsd601	0.0123	0.0030	0.0887
3854	CgrNgsd601	0.0001	0.0000	0.0010
3855	CheEgsd601	0.0026	0.0022	0.0197
3856	CheNgsd601	0.0001	0.0001	0.0008
3857	ChoEgsd601	0.0020	0.0017	0.0154
3858	ChoNgsd601	0.0001	0.0001	0.0006
3859	CinEgsd601	0.0396	0.0098	0.2847
3860	CinNgsd601	0.0004	0.0001	0.0030
3861	CloEgsd601	0.0024	0.0020	0.0184
3862	CloNgsd601	0.0001	0.0001	0.0008
3863	CmiEgsd601	0.3008	0.0743	2.1649
3864	CmiNgsd601	0.0033	0.0008	0.0240
3865	CofEgsd601	0.0608	0.0150	0.4378
3866	CofNgsd601	0.0006	0.0002	0.0046
3867	CreEgsd601	0.0022	0.0019	0.0170
3868	CreNgsd601	0.0001	0.0001	0.0007
3869	CrtEgsd601	0.0081	0.0020	0.0581
3870	CrtNgsd601	0.0003	0.0001	0.0024
3871	CscEgsd601	0.0026	0.0022	0.0199
3872	CscNgsd601	0.0001	0.0001	0.0008
3873	CwaEgsd601	0.0044	0.0011	0.0318
3874	CwaNgsd601	0.0000	0.0000	0.0003
3875	CcoEgsd602	0.0000	0.0000	0.0000
3876	CcoNgsd602	0.0000	0.0000	0.0000
3877	CheEgsd602	0.0120	0.0120	0.2950
3878	CheNgsd602	0.0001	0.0001	0.0032
3879	ChoEgsd602	0.0712	0.0712	1.7446
3880	ChoNgsd602	0.0008	0.0008	0.0187
3881	CinEgsd602	0.0000	0.0000	0.0000
3882	CinNgsd602	0.0000	0.0000	0.0000
3883	CofEgsd602	0.0100	0.0100	0.2462
3884	CofNgsd602	0.0001	0.0001	0.0026
3885	CrtEgsd602	0.0158	0.0158	0.3866
3886	CrtNgsd602	0.0002	0.0002	0.0041
3887	CasEgsd603	0.1974	0.0924	1.2917
3888	CasNgsd603	0.0106	0.0049	0.0692
3889	CcoEgsd603	0.1310	0.1097	0.9968
3890	CcoNgsd603	0.0069	0.0058	0.0527
3891	CgrEgsd603	0.6685	0.3129	4.3742
3892	CgrNgsd603	0.0072	0.0034	0.0469

3893	CheEgsd603	0.3130	0.2622	2.3819
3894	CheNgsd603	0.0165	0.0139	0.1259
3895	ChoEgsd603	0.1829	0.1532	1.3918
3896	ChoNgsd603	0.0097	0.0081	0.0735
3897	CinEgsd603	1.0188	0.4768	6.6659
3898	CinNgsd603	0.0546	0.0255	0.3571
3899	CloEgsd603	0.2918	0.2444	2.2200
3900	CloNgsd603	0.0154	0.0129	0.1173
3901	CmiEgsd603	33.0660	15.4763	216.3505
3902	CmiNgsd603	0.3543	0.1658	2.3179
3903	CofEgsd603	1.5667	0.7333	10.2512
3904	CofNgsd603	0.0828	0.0387	0.5417
3905	CreEgsd603	0.2638	0.2210	2.0075
3906	CreNgsd603	0.0141	0.0118	0.1075
3907	CrtEgsd603	1.0711	0.5013	7.0085
3908	CrtNgsd603	0.0574	0.0269	0.3754
3909	CscEgsd603	0.3077	0.2577	2.3411
3910	CscNgsd603	0.0165	0.0138	0.1254
3911	CwaEgsd603	0.1524	0.0713	0.9969
3912	CwaNgsd603	0.0082	0.0038	0.0534
3913	CasNgsd604	0.0000	0.0000	0.0000
3914	CasTgsd604	0.0000	0.0000	0.0000
3915	CcoNgsd604	0.0000	0.0000	0.0000
3916	CcoTgsd604	0.0000	0.0000	0.0000
3917	CgrNgsd604	0.0000	0.0000	0.0000
3918	CgrTgsd604	0.0002	0.0000	0.0014
3919	CheNgsd604	0.0000	0.0000	0.0000
3920	CheTgsd604	0.0005	0.0004	0.0040
3921	ChoNgsd604	0.0000	0.0000	0.0002
3922	ChoTgsd604	0.0032	0.0026	0.0240
3923	CloNgsd604	0.0000	0.0000	0.0000
3924	CloTgsd604	0.0002	0.0002	0.0015
3925	CreNgsd604	0.0000	0.0000	0.0000
3926	CreTgsd604	0.0003	0.0002	0.0020
3927	CrtNgsd604	0.0000	0.0000	0.0001
3928	CrtTgsd604	0.0008	0.0002	0.0058
3929	CscNgsd604	0.0000	0.0000	0.0000
3930	CscTgsd604	0.0002	0.0002	0.0019
3931	CasNgsd605	0.0000	0.0000	0.0000
3932	CasTgsd605	0.0000	0.0000	0.0001
3933	CcoNgsd605	0.0000	0.0000	0.0000
3934	CcoTgsd605	0.0000	0.0000	0.0000
3935	CgrNgsd605	0.0000	0.0000	0.0000
3936	CgrTgsd605	0.0006	0.0001	0.0041
3937	CheNgsd605	0.0000	0.0000	0.0001
3938	CheTgsd605	0.0017	0.0014	0.0131
3939	ChoNgsd605	0.0001	0.0001	0.0009

3940	ChoTgsd605	0.0111	0.0093	0.0845
3941	CinNgsd605	0.0000	0.0000	0.0000
3942	CinTgsd605	0.0000	0.0000	0.0000
3943	CloNgsd605	0.0000	0.0000	0.0001
3944	CloTgsd605	0.0008	0.0007	0.0064
3945	CmiNgsd605	0.0000	0.0000	0.0001
3946	CmiTgsd605	0.0010	0.0001	0.0068
3947	CofNgsd605	0.0000	0.0000	0.0001
3948	CofTgsd605	0.0017	0.0002	0.0120
3949	CreNgsd605	0.0000	0.0000	0.0001
3950	CreTgsd605	0.0011	0.0009	0.0085
3951	CrtNgsd605	0.0000	0.0000	0.0002
3952	CrtTgsd605	0.0027	0.0002	0.0191
3953	CscNgsd605	0.0000	0.0000	0.0001
3954	CscTgsd605	0.0008	0.0007	0.0061
3955	CwaNgsd605	0.0000	0.0000	0.0000
3956	CwaTgsd605	0.0000	0.0000	0.0000
3957	CasEgsd606	0.0032	0.0003	0.0225
3958	CasNgsd606	0.0000	0.0000	0.0003
3959	CcoEgsd606	0.0041	0.0034	0.0310
3960	CcoNgsd606	0.0000	0.0000	0.0004
3961	CheEgsd606	0.0178	0.0149	0.1352
3962	CheNgsd606	0.0002	0.0002	0.0016
3963	ChoEgsd606	0.0094	0.0079	0.0715
3964	ChoNgsd606	0.0001	0.0001	0.0008
3965	CinEgsd606	0.0293	0.0027	0.2075
3966	CinNgsd606	0.0003	0.0000	0.0025
3967	CloEgsd606	0.0257	0.0215	0.1954
3968	CloNgsd606	0.0003	0.0003	0.0023
3969	CofEgsd606	0.0964	0.0088	0.6834
3970	CofNgsd606	0.0011	0.0001	0.0081
3971	CreEgsd606	0.0000	0.0000	0.0000
3972	CreNgsd606	0.0000	0.0000	0.0000
3973	CrtEgsd606	0.0002	0.0000	0.0013
3974	CrtNgsd606	0.0000	0.0000	0.0001
3975	CscEgsd606	0.0052	0.0043	0.0395
3976	CscNgsd606	0.0001	0.0001	0.0005
3977	CwaEgsd606	0.0000	0.0000	0.0001
3978	CwaNgsd606	0.0000	0.0000	0.0000
3979	CasTgsd607	0.0000	0.0000	0.0000
3980	CcoTgsd607	0.0000	0.0000	0.0000
3981	CloTgsd607	0.0000	0.0000	0.0000
3982	CasNgsd608	0.0000	0.0000	0.0001
3983	CasTgsd608	0.0035	0.0020	0.0167
3984	CcoNgsd608	0.0000	0.0000	0.0000
3985	CcoTgsd608	0.0000	0.0000	0.0000
3986	CloNgsd608	0.0005	0.0003	0.0024

3987	CloTgsd608	0.1393	0.0786	0.6696
3988	CasNgsd609	0.0000	0.0000	0.0000
3989	CasTgsd609	0.0000	0.0000	0.0000
3990	CcoNgsd609	0.0000	0.0000	0.0000
3991	CcoTgsd609	0.0000	0.0000	0.0000
3992	CloNgsd609	0.0000	0.0000	0.0000
3993	CloTgsd609	0.0000	0.0000	0.0000
3994	CasNgsd701	0.0154	0.0000	0.0277
3995	CasTgsd701	1.5065	0.0000	2.7124
3996	CgrNgsd701	0.0125	0.0000	0.0225
3997	CgrTgsd701	1.1659	0.0000	2.0992
3998	CheNgsd701	0.0206	0.0000	0.0370
3999	CheTgsd701	2.0753	0.0000	3.7366
4000	ChoNgsd701	0.0164	0.0000	0.0294
4001	ChoTgsd701	1.6232	0.0000	2.9225
4002	CinNgsd701	0.0794	0.0000	0.1430
4003	CinTgsd701	7.7744	0.0000	13.9978
4004	CloNgsd701	0.0192	0.0000	0.0345
4005	CloTgsd701	1.9343	0.0000	3.4827
4006	CofNgsd701	0.1205	0.0000	0.2169
4007	CofTgsd701	11.9558	0.0000	21.5264
4008	CrtNgsd701	0.0613	0.0000	0.1104
4009	CrtTgsd701	6.1066	0.0000	10.9949
4010	CwaNgsd701	0.0087	0.0000	0.0157
4011	CwaTgsd701	0.8686	0.0000	1.5639
4012	CcoEgsd702	0.0392	0.0392	0.3103
4013	CcoNgsd702	0.0017	0.0017	0.0133
4014	ChoEgsd702	0.0729	0.0729	0.5776
4015	ChoNgsd702	0.0031	0.0031	0.0248
4016	CinEgsd702	0.4891	0.5138	10.1459
4017	CinNgsd702	0.0052	0.0055	0.1087
4018	CofEgsd702	0.7522	0.7902	15.6028
4019	CofNgsd702	0.0079	0.0084	0.1649
4020	CasEgsd801	0.0016	0.0016	0.0192
4021	CcoEgsd801	0.0005	0.0004	0.0039
4022	CgrEgsd801	2.0834	2.0946	25.7193
4023	CheEgsd801	0.0023	0.0019	0.0175
4024	ChoEgsd801	0.0141	0.0118	0.1073
4025	CloEgsd801	0.0434	0.0364	0.3303
4026	CreEgsd801	0.7560	0.6333	5.7527
4027	CrtEgsd801	0.1369	0.1376	1.6898
4028	CscEgsd801	0.0138	0.0116	0.1053
4029	CasEgsd802	0.0005	0.0001	0.0033
4030	CasNgsd802	0.0000	0.0000	0.0000
4031	CcoEgsd802	0.0000	0.0000	0.0000
4032	CcoNgsd802	0.0000	0.0000	0.0000
4033	CgrEgsd802	0.1404	0.0313	0.9967

4034	CgrNgsd802	0.0009	0.0002	0.0061
4035	CheEgsd802	0.0000	0.0000	0.0000
4036	CheNgsd802	0.0000	0.0000	0.0000
4037	ChoEgsd802	0.0026	0.0022	0.0200
4038	ChoNgsd802	0.0000	0.0000	0.0001
4039	CloEgsd802	0.0055	0.0046	0.0417
4040	CloNgsd802	0.0000	0.0000	0.0003
4041	CreEgsd802	0.1175	0.0984	0.8942
4042	CreNgsd802	0.0007	0.0006	0.0054
4043	CrtEgsd802	0.0130	0.0029	0.0920
4044	CrtNgsd802	0.0001	0.0000	0.0006
4045	CscEgsd802	0.0026	0.0022	0.0201
4046	CscNgsd802	0.0000	0.0000	0.0001
4047	CasEgsd803	0.0040	0.0004	0.0284
4048	CasNgsd803	0.0000	0.0000	0.0002
4049	CcoEgsd803	0.0000	0.0000	0.0003
4050	CgrEgsd803	2.0898	0.1914	14.8132
4051	CheEgsd803	0.0000	0.0000	0.0000
4052	ChoEgsd803	0.0372	0.0312	0.2831
4053	CloEgsd803	0.0777	0.0651	0.5914
4054	CreEgsd803	1.6386	1.3725	12.4686
4055	CrtEgsd803	0.1811	0.0166	1.2835
4056	CscEgsd803	0.0374	0.0314	0.2849
4057	CcoEgsd804	0.0072	0.0061	0.0551
4058	CcoNgsd804	0.0001	0.0001	0.0006
4059	CheEgsd804	0.0363	0.0304	0.2765
4060	CheNgsd804	0.0004	0.0003	0.0031
4061	ChoEgsd804	0.0197	0.0165	0.1500
4062	ChoNgsd804	0.0002	0.0002	0.0016
4063	CloEgsd804	0.0857	0.0718	0.6523
4064	CloNgsd804	0.0009	0.0008	0.0071
4065	CscEgsd804	0.0387	0.0324	0.2946
4066	CscNgsd804	0.0004	0.0004	0.0032
4067	CgrEgsd805	0.1129	0.1055	0.8111
4068	CgrNgsd805	0.0000	0.0000	0.0000
4069	CgrEgsd806	2.3525	0.8091	15.8923
4070	CrtEgsd806	0.0734	0.0253	0.4960
4071	CgrTgsd807	0.0000	0.0000	0.0000
4072	CasEgsd808	0.0021	0.0002	0.0146
4073	CasNgsd808	0.0001	0.0000	0.0007
4074	CcoEgsd808	0.0004	0.0003	0.0029
4075	CcoNgsd808	0.0000	0.0000	0.0001
4076	CgrEgsd808	0.8510	0.0780	6.0325
4077	CgrNgsd808	0.0000	0.0000	0.0000
4078	CheEgsd808	0.0017	0.0015	0.0133
4079	CheNgsd808	0.0001	0.0001	0.0006
4080	ChoEgsd808	0.0107	0.0090	0.0814

4081	ChoNgsd808	0.0005	0.0004	0.0038
4082	CloEgsd808	0.0329	0.0276	0.2504
4083	CloNgsd808	0.0015	0.0013	0.0116
4084	CreEgsd808	0.5731	0.4801	4.3611
4085	CreNgsd808	0.0266	0.0223	0.2028
4086	CrtEgsd808	0.0559	0.0051	0.3964
4087	CrtNgsd808	0.0000	0.0000	0.0000
4088	CscEgsd808	0.0105	0.0088	0.0798
4089	CscNgsd808	0.0005	0.0004	0.0037
4090	CasEgsd809	0.0022	0.0002	0.0154
4091	CasNgsd809	0.0001	0.0000	0.0007
4092	CcoEgsd809	0.0000	0.0000	0.0001
4093	CcoNgsd809	0.0000	0.0000	0.0000
4094	CgrEgsd809	0.7160	0.0656	5.0751
4095	CgrNgsd809	0.0307	0.0028	0.2175
4096	CheEgsd809	0.0000	0.0000	0.0000
4097	CheNgsd809	0.0000	0.0000	0.0000
4098	ChoEgsd809	0.0134	0.0112	0.1021
4099	ChoNgsd809	0.0006	0.0005	0.0044
4100	CloEgsd809	0.0280	0.0235	0.2133
4101	CloNgsd809	0.0012	0.0010	0.0091
4102	CreEgsd809	0.5910	0.4950	4.4967
4103	CreNgsd809	0.0253	0.0212	0.1927
4104	CrtEgsd809	0.0653	0.0060	0.4629
4105	CrtNgsd809	0.0028	0.0003	0.0198
4106	CscEgsd809	0.0135	0.0113	0.1027
4107	CscNgsd809	0.0006	0.0005	0.0044
4108	CasEgsd810	0.0004	0.0001	0.0027
4109	CcoEgsd810	0.0001	0.0001	0.0008
4110	CgrEgsd810	0.2032	0.0662	1.3764
4111	CheEgsd810	0.0005	0.0004	0.0036
4112	ChoEgsd810	0.0029	0.0024	0.0222
4113	CloEgsd810	0.0089	0.0075	0.0681
4114	CreEgsd810	0.1584	0.1327	1.2056
4115	CrtEgsd810	0.0148	0.0048	0.1001
4116	CscEgsd810	0.0029	0.0024	0.0217
4117	CgrEgsd811	0.0767	0.0343	0.5039
4118	CgrNgsd811	0.0000	0.0000	0.0000
4119	CrtEgsd811	0.0048	0.0021	0.0313
4120	CrtNgsd811	0.0000	0.0000	0.0000
4121	CasEgsd812	0.0000	0.0000	0.0001
4122	CasNgsd812	0.0000	0.0000	0.0000
4123	CcoEgsd812	0.0000	0.0000	0.0000
4124	CcoNgsd812	0.0000	0.0000	0.0000
4125	CgrEgsd812	0.0345	0.0095	0.2352
4126	CgrNgsd812	0.0000	0.0000	0.0000
4127	CheEgsd812	0.0000	0.0000	0.0000

4128	CheNgsd812	0.0000	0.0000	0.0000
4129	ChoEgsd812	0.0001	0.0001	0.0009
4130	ChoNgsd812	0.0000	0.0000	0.0000
4131	CloEgsd812	0.0002	0.0002	0.0019
4132	CloNgsd812	0.0000	0.0000	0.0000
4133	CreEgsd812	0.0052	0.0044	0.0399
4134	CreNgsd812	0.0000	0.0000	0.0000
4135	CrtEgsd812	0.0006	0.0002	0.0041
4136	CrtNgsd812	0.0000	0.0000	0.0000
4137	CscEgsd812	0.0001	0.0001	0.0009
4138	CscNgsd812	0.0000	0.0000	0.0000
4139	CgrNgsd813	0.0000	0.0000	0.0000
4140	CgrTgsd813	0.0000	0.0000	0.0000
4141	CrtNgsd813	0.0000	0.0000	0.0000
4142	CrtTgsd813	0.0000	0.0000	0.0000
4143	CgrNgsd814	0.0000	0.0000	0.0000
4144	CgrTgsd814	0.0000	0.0000	0.0000
4145	CrtNgsd814	0.0000	0.0000	0.0000
4146	CrtTgsd814	0.0000	0.0000	0.0000
4147	CgrNgsd815	0.0336	0.0150	0.2220
4148	CgrTgsd815	5.5277	2.4701	36.5122
4149	CrtNgsd815	0.0022	0.0010	0.0146
4150	CrtTgsd815	0.3632	0.1623	2.3989
4151	CgrNgsd816	0.1203	0.0537	0.7944
4152	CgrTgsd816	9.9214	4.4335	65.5335
4153	CrtNgsd816	0.0079	0.0035	0.0522
4154	CrtTgsd816	0.6519	0.2913	4.3057
4155	CasNgsd817	0.0002	0.0001	0.0012
4156	CasTgsd817	0.0179	0.0113	0.1140
4157	CcoNgsd817	0.0001	0.0001	0.0008
4158	CcoTgsd817	0.0098	0.0082	0.0746
4159	CgrNgsd817	0.0049	0.0031	0.0310
4160	CgrTgsd817	0.4539	0.2866	2.8897
4161	CheNgsd817	0.0003	0.0003	0.0023
4162	CheTgsd817	0.0285	0.0239	0.2171
4163	ChoNgsd817	0.0003	0.0003	0.0024
4164	ChoTgsd817	0.0299	0.0250	0.2275
4165	CloNgsd817	0.0015	0.0012	0.0112
4166	CloTgsd817	0.1373	0.1150	1.0446
4167	CreNgsd817	0.0058	0.0048	0.0439
4168	CreTgsd817	0.5389	0.4514	4.1004
4169	CrtNgsd817	0.0018	0.0011	0.0112
4170	CrtTgsd817	0.1644	0.1038	1.0466
4171	CscNgsd817	0.0005	0.0004	0.0037
4172	CscTgsd817	0.0451	0.0378	0.3435
4173	CasNgsd818	0.0006	0.0002	0.0059
4174	CasTgsd818	0.0588	0.0196	0.5553

4175	CcoNgsd818	0.0002	0.0001	0.0021
4176	CcoTgsd818	0.0174	0.0058	0.1645
4177	CgrNgsd818	0.0002	0.0001	0.0018
4178	CgrTgsd818	0.0150	0.0050	0.1420
4179	CheNgsd818	0.0012	0.0004	0.0110
4180	CheTgsd818	0.1082	0.0361	1.0229
4181	ChoNgsd818	0.0003	0.0001	0.0030
4182	ChoTgsd818	0.0251	0.0084	0.2372
4183	CinNgsd818	0.0031	0.0010	0.0292
4184	CinTgsd818	0.2469	0.0823	2.3333
4185	CloNgsd818	0.0011	0.0004	0.0107
4186	CloTgsd818	0.0907	0.0302	0.8573
4187	CmiNgsd818	0.0139	0.0046	0.1311
4188	CmiTgsd818	1.1099	0.3698	10.4906
4189	CofNgsd818	0.0046	0.0015	0.0436
4190	CofTgsd818	0.3691	0.1230	3.4886
4191	CreNgsd818	0.0020	0.0007	0.0190
4192	CreTgsd818	0.1607	0.0535	1.5185
4193	CrtNgsd818	0.0140	0.0047	0.1325
4194	CrtTgsd818	1.1213	0.3736	10.5982
4195	CscNgsd818	0.0011	0.0004	0.0100
4196	CscTgsd818	0.0847	0.0282	0.8008
4197	CwaNgsd818	0.0013	0.0004	0.0123
4198	CwaTgsd818	0.1043	0.0347	0.9857
4199	CasEgsd819	0.0003	0.0002	0.0023
4200	CasNgsd819	0.0000	0.0000	0.0000
4201	CcoEgsd819	0.0001	0.0000	0.0004
4202	CcoNgsd819	0.0000	0.0000	0.0000
4203	CgrEgsd819	0.5468	0.2559	3.5780
4204	CgrNgsd819	0.0000	0.0000	0.0000
4205	CheEgsd819	0.0002	0.0002	0.0019
4206	CheNgsd819	0.0000	0.0000	0.0000
4207	ChoEgsd819	0.0015	0.0013	0.0116
4208	ChoNgsd819	0.0000	0.0000	0.0000
4209	CloEgsd819	0.0047	0.0039	0.0356
4210	CloNgsd819	0.0000	0.0000	0.0001
4211	CreEgsd819	0.0816	0.0683	0.6208
4212	CreNgsd819	0.0017	0.0014	0.0127
4213	CrtEgsd819	0.0076	0.0036	0.0497
4214	CrtNgsd819	0.0000	0.0000	0.0000
4215	CscEgsd819	0.0015	0.0013	0.0114
4216	CscNgsd819	0.0000	0.0000	0.0000
4217	CcoEgsd820	0.0000	0.0019	0.0174
4218	CcoNgsd820	0.0000	0.0000	0.0000
4219	ChoEgsd820	0.0000	0.0041	0.0373
4220	ChoNgsd820	0.0000	0.0000	0.0000
4221	CinEgsd820	0.0000	0.0098	0.1451

4222	CinNgsd820	0.0000	0.0001	0.0015
4223	CofEgsd820	0.0000	0.0808	1.1922
4224	CofNgsd820	0.0000	0.0009	0.0131
4225	CasEgsd901	0.0008	0.0004	0.0034
4226	CasNgsd901	0.0001	0.0000	0.0003
4227	CcoEgsd901	0.0005	0.0010	0.0044
4228	CcoNgsd901	0.0001	0.0001	0.0005
4229	CgrEgsd901	0.0006	0.0040	0.0094
4230	CgrNgsd901	0.0001	0.0004	0.0009
4231	CheEgsd901	0.0087	0.0041	0.0353
4232	CheNgsd901	0.0000	0.0000	0.0001
4233	ChoEgsd901	0.0011	0.0024	0.0103
4234	ChoNgsd901	0.0001	0.0002	0.0010
4235	CinEgsd901	0.0986	0.0469	0.4019
4236	CinNgsd901	0.0093	0.0044	0.0378
4237	CloEgsd901	0.0037	0.0255	0.0600
4238	CloNgsd901	0.0004	0.0027	0.0063
4239	CmiEgsd901	0.0012	0.0006	0.0050
4240	CmiNgsd901	0.0001	0.0001	0.0005
4241	CofEgsd901	0.0154	0.0073	0.0626
4242	CofNgsd901	0.0014	0.0007	0.0058
4243	CreEgsd901	0.0095	0.0658	0.1546
4244	CreNgsd901	0.0000	0.0002	0.0005
4245	CrtEgsd901	0.0019	0.0135	0.0318
4246	CrtNgsd901	0.0002	0.0013	0.0030
4247	CscEgsd901	0.0088	0.0042	0.0358
4248	CscNgsd901	0.0000	0.0000	0.0001
4249	CwaEgsd901	0.0010	0.0005	0.0039
4250	CwaNgsd901	0.0001	0.0000	0.0004
4251	CasEgsd902	0.0018	0.0011	0.0083
4252	CasNgsd902	0.0000	0.0000	0.0000
4253	CcoEgsd902	0.0005	0.0013	0.0053
4254	CcoNgsd902	0.0000	0.0000	0.0000
4255	CgrEgsd902	0.0006	0.0054	0.0119
4256	CgrNgsd902	0.0000	0.0000	0.0000
4257	CheEgsd902	0.0129	0.0078	0.0610
4258	CheNgsd902	0.0000	0.0000	0.0000
4259	ChoEgsd902	0.0007	0.0019	0.0077
4260	ChoNgsd902	0.0000	0.0000	0.0000
4261	CinEgsd902	0.1459	0.0879	0.6908
4262	CinNgsd902	0.0000	0.0000	0.0000
4263	CloEgsd902	0.0022	0.0188	0.0409
4264	CloNgsd902	0.0000	0.0000	0.0000
4265	CmiEgsd902	0.0004	0.0002	0.0017
4266	CmiNgsd902	0.0000	0.0000	0.0000
4267	CofEgsd902	0.0040	0.0024	0.0189
4268	CofNgsd902	0.0000	0.0000	0.0000

4269	CreEgsd902	0.0020	0.0170	0.0371
4270	CreNgsd902	0.0000	0.0000	0.0000
4271	CrtEgsd902	0.0005	0.0041	0.0089
4272	CrtNgsd902	0.0000	0.0000	0.0000
4273	CscEgsd902	0.0158	0.0095	0.0748
4274	CscNgsd902	0.0000	0.0000	0.0000
4275	CwaEgsd902	0.0003	0.0002	0.0016
4276	CwaNgsd902	0.0000	0.0000	0.0000
4277	CcoEgsd903	0.0031	0.0161	0.0433
4278	CcoNgsd903	0.0000	0.0000	0.0000
4279	CheEgsd903	0.0125	0.0326	0.1334
4280	CheNgsd903	0.0000	0.0000	0.0000
4281	ChoEgsd903	0.0033	0.0086	0.0352
4282	ChoNgsd903	0.0000	0.0000	0.0000
4283	CloEgsd903	0.0208	0.1774	0.3877
4284	CloNgsd903	0.0000	0.0000	0.0000
4285	CasEgsd904	0.0034	0.0036	0.0702
4286	CcoEgsd904	0.0048	0.0048	0.0378
4287	CheEgsd904	0.0244	0.0256	0.5056
4288	ChoEgsd904	0.0093	0.0093	0.0733
4289	CinEgsd904	0.0599	0.0630	1.2433
4290	CinNgsd904	0.0002	0.0002	0.0032
4291	CmiEgsd904	0.0008	0.0008	0.0165
4292	CmiNgsd904	0.0000	0.0000	0.0000
4293	CofEgsd904	0.0223	0.0234	0.4617
4294	CscEgsd904	0.1056	0.1109	2.1908
4295	CwaEgsd904	0.0019	0.0020	0.0402
4296	CasEgsd905	0.0011	0.0012	0.0094
4297	CasNgsd905	0.0001	0.0001	0.0005
4298	CcoEgsd905	0.0006	0.0006	0.0050
4299	CcoNgsd905	0.0000	0.0000	0.0000
4300	CgrEgsd905	0.0010	0.0017	0.0124
4301	CgrNgsd905	0.0000	0.0000	0.0001
4302	CheEgsd905	0.0079	0.0089	0.0701
4303	CheNgsd905	0.0005	0.0005	0.0043
4304	ChoEgsd905	0.0011	0.0011	0.0094
4305	ChoNgsd905	0.0000	0.0000	0.0000
4306	CinEgsd905	0.1961	0.2203	1.7314
4307	CinNgsd905	0.0022	0.0025	0.0196
4308	CloEgsd905	0.0039	0.0068	0.0491
4309	CloNgsd905	0.0000	0.0000	0.0001
4310	CmiEgsd905	0.0026	0.0029	0.0231
4311	CmiNgsd905	0.0000	0.0000	0.0003
4312	CofEgsd905	0.0067	0.0075	0.0591
4313	CofNgsd905	0.0004	0.0004	0.0035
4314	CreEgsd905	0.0194	0.0335	0.2430
4315	CreNgsd905	0.0012	0.0020	0.0148

4316	CrtEgsd905	0.0034	0.0058	0.0421
4317	CrtNgsd905	0.0002	0.0003	0.0025
4318	CscEgsd905	0.0354	0.0398	0.3128
4319	CscNgsd905	0.0021	0.0023	0.0183
4320	CwaEgsd905	0.0006	0.0007	0.0052
4321	CwaNgsd905	0.0000	0.0000	0.0003
4322	CasEgsd906	0.0019	0.0019	0.0188
4323	CasNgsd906	0.0000	0.0000	0.0000
4324	CcoEgsd906	0.0000	0.0000	0.0000
4325	CcoNgsd906	0.0000	0.0000	0.0000
4326	CgrEgsd906	0.0027	0.0028	0.0269
4327	CgrNgsd906	0.0000	0.0000	0.0000
4328	CheEgsd906	0.0140	0.0143	0.1382
4329	CheNgsd906	0.0000	0.0000	0.0000
4330	ChoEgsd906	0.0021	0.0021	0.0205
4331	ChoNgsd906	0.0000	0.0000	0.0000
4332	CinEgsd906	0.0736	0.0751	0.7249
4333	CinNgsd906	0.0000	0.0000	0.0000
4334	CloEgsd906	0.0107	0.0109	0.1055
4335	CloNgsd906	0.0000	0.0000	0.0000
4336	CmiEgsd906	0.0010	0.0010	0.0097
4337	CmiNgsd906	0.0000	0.0000	0.0000
4338	CofEgsd906	0.0132	0.0135	0.1305
4339	CofNgsd906	0.0000	0.0000	0.0002
4340	CreEgsd906	0.0522	0.0532	0.5137
4341	CreNgsd906	0.0000	0.0000	0.0000
4342	CrtEgsd906	0.0093	0.0095	0.0919
4343	CrtNgsd906	0.0000	0.0000	0.0001
4344	CscEgsd906	0.0000	0.0000	0.0000
4345	CscNgsd906	0.0000	0.0000	0.0000
4346	CwaEgsd906	0.0011	0.0012	0.0113
4347	CwaNgsd906	0.0000	0.0000	0.0000
4348	CcoEgsd907	0.0189	0.0990	0.2654
4349	CheEgsd907	0.0713	0.1863	0.7627
4350	ChoEgsd907	0.0178	0.0465	0.1904
4351	CloEgsd907	0.1194	1.0191	2.2266
4352	CasNgsd908	0.0000	0.0000	0.0001
4353	CasTgsd908	0.0000	0.0005	0.0126
4354	CcoNgsd908	0.0000	0.0000	0.0000
4355	CcoTgsd908	0.0000	0.0000	0.0000
4356	CloNgsd908	0.0000	0.0001	0.0023
4357	CloTgsd908	0.0000	0.0078	0.2101
4358	CscNgsd908	0.0000	0.0000	0.0000
4359	CscTgsd908	0.0000	0.0000	0.0000
4360	CasNgsd909	0.0001	0.0000	0.0017
4361	CasTgsd909	0.0120	0.0017	0.1580
4362	CcoNgsd909	0.0003	0.0000	0.0040

4363	CcoTgsd909	0.0285	0.0040	0.3765
4364	CgrNgsd909	0.0008	0.0001	0.0106
4365	CgrTgsd909	0.0751	0.0105	0.9911
4366	CheNgsd909	0.0009	0.0001	0.0123
4367	CheTgsd909	0.0871	0.0122	1.1494
4368	ChoNgsd909	0.0001	0.0000	0.0020
4369	ChoTgsd909	0.0140	0.0020	0.1848
4370	CinNgsd909	0.0150	0.0021	0.1974
4371	CinTgsd909	1.3955	0.1959	18.4209
4372	CloNgsd909	0.0012	0.0002	0.0156
4373	CloTgsd909	0.1101	0.0155	1.4529
4374	CmiNgsd909	0.0002	0.0000	0.0025
4375	CmiTgsd909	0.0174	0.0024	0.2300
4376	CofNgsd909	0.0012	0.0002	0.0154
4377	CofTgsd909	0.1090	0.0153	1.4384
4378	CreNgsd909	0.0133	0.0019	0.1752
4379	CreTgsd909	1.2391	0.1740	16.3553
4380	CrtNgsd909	0.0027	0.0004	0.0353
4381	CrtTgsd909	0.2498	0.0351	3.2967
4382	CscNgsd909	0.0026	0.0004	0.0337
4383	CscTgsd909	0.2380	0.0334	3.1421
4384	CwaNgsd909	0.0003	0.0000	0.0041
4385	CwaTgsd909	0.0288	0.0040	0.3797
4386	CasNgsd910	0.0000	0.0000	0.0007
4387	CasTgsd910	0.0000	0.0022	0.0607
4388	CcoNgsd910	0.0000	0.0000	0.0000
4389	CcoTgsd910	0.0000	0.0000	0.0000
4390	CloNgsd910	0.0000	0.0011	0.0297
4391	CloTgsd910	0.0000	0.1025	2.7685
4392	CscNgsd910	0.0000	0.0000	0.0000
4393	CscTgsd910	0.0000	0.0000	0.0000
4394	CasNgsd911	0.0008	0.0005	0.0033
4395	CasTgsd911	0.0726	0.0449	0.3082
4396	CcoNgsd911	0.0010	0.0006	0.0044
4397	CcoTgsd911	0.0959	0.0593	0.4070
4398	CgrNgsd911	0.0011	0.0007	0.0046
4399	CgrTgsd911	0.1022	0.0632	0.4335
4400	CheNgsd911	0.0104	0.0065	0.0443
4401	CheTgsd911	0.9753	0.6033	4.1378
4402	ChoNgsd911	0.0034	0.0021	0.0145
4403	ChoTgsd911	0.3196	0.1977	1.3559
4404	CinNgsd911	0.0908	0.0561	0.3851
4405	CinTgsd911	8.4710	5.2398	35.9407
4406	CloNgsd911	0.0218	0.0135	0.0924
4407	CloTgsd911	2.0318	1.2568	8.6203
4408	CmiNgsd911	0.0011	0.0007	0.0048
4409	CmiTgsd911	0.1058	0.0654	0.4488

4410	CofNgsd911	0.0179	0.0111	0.0760
4411	CofTgsd911	1.6718	1.0341	7.0930
4412	CreNgsd911	0.0198	0.0123	0.0841
4413	CreTgsd911	1.8498	1.1442	7.8483
4414	CrtNgsd911	0.0033	0.0020	0.0141
4415	CrtTgsd911	0.3093	0.1913	1.3122
4416	CscNgsd911	0.0086	0.0053	0.0364
4417	CscTgsd911	0.8006	0.4952	3.3969
4418	CwaNgsd911	0.0005	0.0003	0.0020
4419	CwaTgsd911	0.0429	0.0266	0.1822
4420	CasNgsd912	0.0000	0.0000	0.0000
4421	CasTgsd912	0.0001	0.0001	0.0006
4422	CcoNgsd912	0.0000	0.0000	0.0001
4423	CcoTgsd912	0.0010	0.0025	0.0108
4424	CgrNgsd912	0.0000	0.0000	0.0001
4425	CgrTgsd912	0.0009	0.0009	0.0079
4426	CheNgsd912	0.0001	0.0001	0.0005
4427	CheTgsd912	0.0067	0.0077	0.0594
4428	ChoNgsd912	0.0001	0.0002	0.0010
4429	ChoTgsd912	0.0115	0.0276	0.1197
4430	CinNgsd912	0.0001	0.0001	0.0011
4431	CinTgsd912	0.0112	0.0130	0.1002
4432	CloNgsd912	0.0000	0.0000	0.0003
4433	CloTgsd912	0.0037	0.0038	0.0326
4434	CmiNgsd912	0.0000	0.0000	0.0003
4435	CmiTgsd912	0.0028	0.0032	0.0247
4436	CofNgsd912	0.0003	0.0003	0.0023
4437	CofTgsd912	0.0246	0.0283	0.2187
4438	CreNgsd912	0.0001	0.0001	0.0010
4439	CreTgsd912	0.0143	0.0150	0.1272
4440	CrtNgsd912	0.0004	0.0004	0.0032
4441	CrtTgsd912	0.0339	0.0354	0.3008
4442	CscNgsd912	0.0001	0.0001	0.0005
4443	CscTgsd912	0.0069	0.0080	0.0618
4444	CwaNgsd912	0.0000	0.0000	0.0000
4445	CwaTgsd912	0.0000	0.0000	0.0000
4446	CasEgsd921	3.0786	4.4696	19.2488
4447	CcoEgsd921	2.8406	0.0310	7.1572
4448	CgrEgsd921	7.2629	13.0924	25.4284
4449	CheEgsd921	5.1825	11.7763	32.4969
4450	ChoEgsd921	8.8514	0.0617	21.8109
4451	CinEgsd921	14.0829	31.8520	89.4018
4452	CloEgsd921	6.7757	10.0070	22.9297
4453	CmiEgsd921	51.5822	159.4553	330.8777
4454	CofEgsd921	18.5074	50.4679	119.0995
4455	CreEgsd921	11.9418	18.0011	40.9464
4456	CrtEgsd921	25.3292	40.4184	91.0550

4457	CscEgsd921	3.7855	8.6068	24.2108
4458	CwaEgsd921	1.1078	3.3629	7.4737
4459	CcoNgsld101	0.0000	0.0000	0.0001
4460	CcoTgsld101	0.0015	0.0006	0.0070
4461	CheNgsld101	0.0004	0.0001	0.0017
4462	CheTgsld101	0.0350	0.0137	0.1580
4463	ChoNgsld101	0.0008	0.0003	0.0035
4464	ChoTgsld101	0.0714	0.0280	0.3224
4465	CloNgsld101	0.0020	0.0008	0.0088
4466	CloTgsld101	0.1828	0.0717	0.8247
4467	CreNgsld101	0.0160	0.0063	0.0720
4468	CreTgsld101	1.4891	0.5845	6.7199
4469	CscNgsld101	0.0004	0.0002	0.0018
4470	CscTgsld101	0.0364	0.0143	0.1641
4471	CcoNgsld102	0.0001	0.0000	0.0008
4472	CcoTgsld102	0.0054	0.0000	0.0740
4473	CheNgsld102	0.0004	0.0000	0.0053
4474	CheTgsld102	0.0363	0.0000	0.4931
4475	ChoNgsld102	0.0002	0.0000	0.0023
4476	ChoTgsld102	0.0159	0.0000	0.2162
4477	CloNgsld102	0.0007	0.0000	0.0094
4478	CloTgsld102	0.0644	0.0000	0.8754
4479	CreNgsld102	0.0016	0.0000	0.0219
4480	CreTgsld102	0.1507	0.0000	2.0487
4481	CscNgsld102	0.0004	0.0000	0.0057
4482	CscTgsld102	0.0431	0.0000	0.5857
4483	CcoNgsld103	0.0000	0.0000	0.0000
4484	CcoTgsld103	0.0008	0.0004	0.0047
4485	CheNgsld103	0.0002	0.0001	0.0011
4486	CheTgsld103	0.0173	0.0091	0.1051
4487	ChoNgsld103	0.0004	0.0002	0.0022
4488	ChoTgsld103	0.0342	0.0179	0.2075
4489	CloNgsld103	0.0006	0.0003	0.0039
4490	CloTgsld103	0.0593	0.0310	0.3604
4491	CreNgsld103	0.0048	0.0025	0.0291
4492	CreTgsld103	0.4465	0.2337	2.7128
4493	CscNgsld103	0.0002	0.0001	0.0012
4494	CscTgsld103	0.0181	0.0094	0.1097
4495	CcoNgsld104	0.0000	0.0000	0.0000
4496	CcoTgsld104	0.0000	0.0000	0.0002
4497	CheNgsld104	0.0000	0.0000	0.0001
4498	CheTgsld104	0.0008	0.0002	0.0049
4499	ChoNgsld104	0.0000	0.0000	0.0001
4500	ChoTgsld104	0.0018	0.0005	0.0108
4501	CloNgsld104	0.0001	0.0000	0.0006
4502	CloTgsld104	0.0096	0.0030	0.0587
4503	CreNgsld104	0.0016	0.0005	0.0095

4504	CreTgsld104	0.1461	0.0452	0.8892
4505	CscNgsld104	0.0000	0.0000	0.0001
4506	CscTgsld104	0.0008	0.0003	0.0051
4507	CcoNgsld105	0.0000	0.0000	0.0001
4508	CcoTgsld105	0.0012	0.0003	0.0070
4509	CheNgsld105	0.0003	0.0001	0.0017
4510	CheTgsld105	0.0261	0.0067	0.1556
4511	ChoNgsld105	0.0005	0.0001	0.0032
4512	ChoTgsld105	0.0501	0.0128	0.2991
4513	CloNgsld105	0.0011	0.0003	0.0067
4514	CloTgsld105	0.1050	0.0269	0.6271
4515	CreNgsld105	0.0025	0.0006	0.0147
4516	CreTgsld105	0.8714	0.2230	5.2029
4517	CscNgsld105	0.0003	0.0001	0.0018
4518	CscTgsld105	0.0277	0.0071	0.1654
4519	CcoNgsld106	0.0000	0.0000	0.0003
4520	CcoTgsld106	0.0046	0.0022	0.0248
4521	CheNgsld106	0.0011	0.0005	0.0060
4522	CheTgsld106	0.1045	0.0506	0.5601
4523	ChoNgsld106	0.0021	0.0010	0.0114
4524	ChoTgsld106	0.1982	0.0959	1.0616
4525	CloNgsld106	0.0046	0.0022	0.0245
4526	CloTgsld106	0.4272	0.2067	2.2887
4527	CreNgsld106	0.0373	0.0180	0.1998
4528	CreTgsld106	3.4811	1.6844	18.6484
4529	CscNgsld106	0.0012	0.0006	0.0063
4530	CscTgsld106	0.1091	0.0528	0.5845
4531	CcoNgsld107	0.0000	0.0000	0.0000
4532	CcoTgsld107	0.0000	0.0000	0.0002
4533	CheNgsld107	0.0000	0.0000	0.0001
4534	CheTgsld107	0.0008	0.0005	0.0056
4535	ChoNgsld107	0.0000	0.0000	0.0001
4536	ChoTgsld107	0.0016	0.0009	0.0106
4537	CloNgsld107	0.0000	0.0000	0.0001
4538	CloTgsld107	0.0008	0.0004	0.0050
4539	CreNgsld107	0.0000	0.0000	0.0001
4540	CreTgsld107	0.0019	0.0011	0.0125
4541	CscNgsld107	0.0000	0.0000	0.0001
4542	CscTgsld107	0.0009	0.0005	0.0058
4543	CcoNgsld108	0.0000	0.0000	0.0000
4544	CcoTgsld108	0.0003	0.0001	0.0013
4545	CheNgsld108	0.0002	0.0001	0.0009
4546	CheTgsld108	0.0188	0.0077	0.0860
4547	ChoNgsld108	0.0001	0.0001	0.0006
4548	ChoTgsld108	0.0119	0.0049	0.0542
4549	CloNgsld108	0.0008	0.0003	0.0037
4550	CloTgsld108	0.0758	0.0312	0.3466

4551	CreNgsld108	0.0221	0.0091	0.1011
4552	CreTgsld108	0.2062	0.0849	0.9436
4553	CscNgsld108	0.0001	0.0000	0.0003
4554	CscTgsld108	0.0066	0.0027	0.0300
4555	CcoEgsld109	0.0002	0.0005	0.0021
4556	CcoNgsld109	0.0000	0.0000	0.0000
4557	CgrEgsld109	0.0056	0.0146	0.0597
4558	CgrNgsld109	0.0001	0.0002	0.0007
4559	ChoEgsld109	0.0002	0.0006	0.0024
4560	ChoNgsld109	0.0000	0.0000	0.0000
4561	CloEgsld109	0.0039	0.0332	0.0723
4562	CloNgsld109	0.0000	0.0000	0.0000
4563	CreEgsld109	0.0768	0.0427	0.4815
4564	CreNgsld109	0.0000	0.0000	0.0000
4565	CasNgsld110	0.0002	0.0001	0.0014
4566	CasTgsld110	0.0178	0.0119	0.1265
4567	CcoNgsld110	0.0004	0.0003	0.0026
4568	CcoTgsld110	0.0348	0.0233	0.2473
4569	CgrNgsld110	0.0003	0.0002	0.0023
4570	CgrTgsld110	0.0306	0.0206	0.2178
4571	CheNgsld110	0.0010	0.0007	0.0071
4572	CheTgsld110	0.0938	0.0630	0.6674
4573	ChoNgsld110	0.0007	0.0005	0.0050
4574	ChoTgsld110	0.0660	0.0443	0.4692
4575	CinNgsld110	0.0018	0.0012	0.0126
4576	CinTgsld110	0.1649	0.1107	1.1731
4577	CloNgsld110	0.0025	0.0017	0.0178
4578	CloTgsld110	0.2331	0.1565	1.6580
4579	CofNgsld110	0.0041	0.0028	0.0292
4580	CofTgsld110	0.3827	0.2570	2.7223
4581	CrtNgsld110	0.0020	0.0013	0.0143
4582	CrtTgsld110	0.1873	0.1257	1.3322
4583	CscNgsld110	0.0006	0.0004	0.0044
4584	CscTgsld110	0.0573	0.0385	0.4080
4585	CasNgsld111	0.0001	0.0000	0.0006
4586	CasTgsld111	0.0076	0.0000	0.0525
4587	CcoNgsld111	0.0003	0.0003	0.0016
4588	CcoTgsld111	0.0284	0.0284	0.1458
4589	CgrNgsld111	0.0004	0.0002	0.0029
4590	CgrTgsld111	0.0391	0.0151	0.2705
4591	CheNgsld111	0.0005	0.0002	0.0035
4592	CheTgsld111	0.0471	0.0183	0.3264
4593	ChoNgsld111	0.0004	0.0004	0.0020
4594	ChoTgsld111	0.0367	0.0367	0.1888
4595	CinNgsld111	0.0007	0.0000	0.0052
4596	CinTgsld111	0.0697	0.0000	0.4827
4597	CloNgsld111	0.0011	0.0004	0.0079

4598	CloTgsld111	0.1062	0.0412	0.7357
4599	CmiNgsld111	0.0008	0.0000	0.0053
4600	CmiTgsld111	0.0710	0.0000	0.4918
4601	CofNgsld111	0.0018	0.0007	0.0125
4602	CofTgsld111	0.1684	0.0653	1.1663
4603	CreNgsld111	0.0009	0.0000	0.0061
4604	CreTgsld111	0.0818	0.0000	0.5667
4605	CrtNgsld111	0.0015	0.0006	0.0101
4606	CrtTgsld111	0.1359	0.0527	0.9412
4607	CscNgsld111	0.0004	0.0002	0.0028
4608	CscTgsld111	0.0382	0.0148	0.2646
4609	CwaNgsld111	0.0000	0.0000	0.0003
4610	CwaTgsld111	0.0046	0.0000	0.0316
4611	CcoNgsld112	0.0000	0.0000	0.0000
4612	CcoTgsld112	0.0000	0.0000	0.0000
4613	CheNgsld112	0.0001	0.0000	0.0004
4614	CheTgsld112	0.0061	0.0042	0.0402
4615	ChoNgsld112	0.0000	0.0000	0.0000
4616	ChoTgsld112	0.0000	0.0000	0.0000
4617	CinNgsld112	0.0000	0.0000	0.0000
4618	CinTgsld112	0.0000	0.0000	0.0000
4619	CloNgsld112	0.0001	0.0001	0.0008
4620	CloTgsld112	0.0120	0.0084	0.0797
4621	CmiNgsld112	0.0001	0.0000	0.0004
4622	CmiTgsld112	0.0056	0.0039	0.0370
4623	CofNgsld112	0.0003	0.0002	0.0019
4624	CofTgsld112	0.0284	0.0197	0.1880
4625	CrtNgsld112	0.0001	0.0001	0.0007
4626	CrtTgsld112	0.0105	0.0073	0.0696
4627	CscNgsld112	0.0000	0.0000	0.0000
4628	CscTgsld112	0.0000	0.0000	0.0000
4629	CcoNgsld113	0.0000	0.0000	0.0003
4630	CcoTgsld113	0.0032	0.0032	0.0278
4631	CheNgsld113	0.0000	0.0000	0.0004
4632	CheTgsld113	0.0043	0.0043	0.0374
4633	ChoNgsld113	0.0000	0.0000	0.0003
4634	ChoTgsld113	0.0031	0.0031	0.0268
4635	CinNgsld113	0.0001	0.0001	0.0009
4636	CinTgsld113	0.0102	0.0102	0.0882
4637	CloNgsld113	0.0002	0.0002	0.0013
4638	CloTgsld113	0.0140	0.0140	0.1211
4639	CmiNgsld113	0.0001	0.0001	0.0005
4640	CmiTgsld113	0.0053	0.0053	0.0456
4641	CofNgsld113	0.0002	0.0002	0.0021
4642	CofTgsld113	0.0223	0.0223	0.1930
4643	CscNgsld113	0.0001	0.0001	0.0004
4644	CscTgsld113	0.0047	0.0047	0.0403

4645	CcoEgsld114	0.0190	0.0164	0.1393
4646	CcoNgsld114	0.0002	0.0002	0.0015
4647	CheEgsld114	0.0470	0.0327	0.3117
4648	CheNgsld114	0.0005	0.0004	0.0033
4649	ChoEgsld114	0.0246	0.0212	0.1803
4650	ChoNgsld114	0.0003	0.0002	0.0019
4651	CinEgsld114	0.0695	0.0000	0.4610
4652	CinNgsld114	0.0007	0.0000	0.0049
4653	CloEgsld114	0.1059	0.0738	0.7026
4654	CloNgsld114	0.0011	0.0008	0.0075
4655	CofEgsld114	0.1679	0.1170	1.1138
4656	CofNgsld114	0.0018	0.0013	0.0119
4657	CrtEgsld114	0.1355	0.0944	0.8988
4658	CrtNgsld114	0.0015	0.0010	0.0096
4659	CscEgsld114	0.0381	0.0265	0.2527
4660	CscNgsld114	0.0004	0.0003	0.0027
4661	CcoNgsld115	0.0003	0.0002	0.0022
4662	CcoTgsld115	0.0309	0.0215	0.2050
4663	CheNgsld115	0.0004	0.0003	0.0024
4664	CheTgsld115	0.0327	0.0228	0.2169
4665	ChoNgsld115	0.0010	0.0007	0.0063
4666	ChoTgsld115	0.0892	0.0620	0.5911
4667	CinNgsld115	0.0005	0.0004	0.0034
4668	CinTgsld115	0.0479	0.0333	0.3176
4669	CloNgsld115	0.0007	0.0005	0.0046
4670	CloTgsld115	0.0622	0.0433	0.4122
4671	CmiNgsld115	0.0003	0.0002	0.0022
4672	CmiTgsld115	0.0309	0.0215	0.2046
4673	CofNgsld115	0.0017	0.0012	0.0113
4674	CofTgsld115	0.1536	0.1068	1.0183
4675	CrtNgsld115	0.0006	0.0004	0.0040
4676	CrtTgsld115	0.0543	0.0378	0.3603
4677	CscNgsld115	0.0006	0.0004	0.0039
4678	CscTgsld115	0.0552	0.0384	0.3661
4679	CasEgsld116	0.0030	0.0000	0.0196
4680	CasNgsld116	0.0000	0.0000	0.0002
4681	CcoEgsld116	0.0081	0.0056	0.0537
4682	CcoNgsld116	0.0001	0.0001	0.0006
4683	CgrEgsld116	0.0081	0.0057	0.0540
4684	CgrNgsld116	0.0001	0.0001	0.0006
4685	CheEgsld116	0.0147	0.0102	0.0976
4686	CheNgsld116	0.0002	0.0001	0.0010
4687	ChoEgsld116	0.0102	0.0071	0.0675
4688	ChoNgsld116	0.0001	0.0001	0.0007
4689	CinEgsld116	0.0292	0.0000	0.1938
4690	CinNgsld116	0.0003	0.0000	0.0021
4691	CloEgsld116	0.0413	0.0287	0.2740

4692	CloNgsld116	0.0004	0.0003	0.0029
4693	CmiEgsld116	0.0171	0.0000	0.1137
4694	CmiNgsld116	0.0002	0.0000	0.0012
4695	CofEgsld116	0.0669	0.0465	0.4440
4696	CofNgsld116	0.0007	0.0005	0.0048
4697	CreEgsld116	0.0211	0.0000	0.1397
4698	CreNgsld116	0.0002	0.0000	0.0015
4699	CrtEgsld116	0.0328	0.0228	0.2174
4700	CrtNgsld116	0.0004	0.0002	0.0023
4701	CscEgsld116	0.0124	0.0086	0.0824
4702	CscNgsld116	0.0001	0.0001	0.0009
4703	CwaEgsld116	0.0016	0.0000	0.0104
4704	CwaNgsld116	0.0000	0.0000	0.0001
4705	CcoNgsld117	0.0019	0.0022	0.0183
4706	CcoTgsld117	0.1781	0.2050	1.7279
4707	CheNgsld117	0.0039	0.0028	0.0436
4708	CheTgsld117	0.3665	0.2651	4.1288
4709	ChoNgsld117	0.0035	0.0040	0.0340
4710	ChoTgsld117	0.3316	0.3817	3.2167
4711	CloNgsld117	0.0042	0.0048	0.0407
4712	CloTgsld117	0.3967	0.4566	3.8483
4713	CscNgsld117	0.0045	0.0052	0.0435
4714	CscTgsld117	0.4183	0.4815	4.0582
4715	CasNgsld118	0.0001	0.0001	0.0005
4716	CasTgsld118	0.0080	0.0050	0.0502
4717	CcoNgsld118	0.0000	0.0000	0.0001
4718	CcoTgsld118	0.0020	0.0013	0.0127
4719	CgrNgsld118	0.0153	0.0096	0.0965
4720	CgrTgsld118	1.4272	0.8916	9.0027
4721	CheNgsld118	0.0001	0.0000	0.0004
4722	CheTgsld118	0.0059	0.0036	0.0369
4723	ChoNgsld118	0.0001	0.0000	0.0004
4724	ChoTgsld118	0.0061	0.0038	0.0386
4725	CloNgsld118	0.0003	0.0002	0.0019
4726	CloTgsld118	0.0282	0.0175	0.1773
4727	CofNgsld118	0.0003	0.0002	0.0020
4728	CofTgsld118	0.0293	0.0183	0.1850
4729	CreNgsld118	0.0011	0.0007	0.0072
4730	CreTgsld118	0.1067	0.0663	0.6708
4731	CrtNgsld118	0.0003	0.0002	0.0019
4732	CrtTgsld118	0.0282	0.0176	0.1777
4733	CscNgsld118	0.0001	0.0001	0.0006
4734	CscTgsld118	0.0093	0.0058	0.0583
4735	CinNgsld119	0.0105	0.0105	0.0595
4736	CinTgsld119	0.9787	0.9787	5.5521
4737	CofNgsld119	0.0241	0.0241	0.1369
4738	CofTgsld119	1.3516	1.3516	7.6671

4739	CheEgsld201	0.3453	0.0005	0.6703
4740	CofEgsld201	0.1999	0.0027	0.4008
4741	CheEgsld202	0.1045	0.0002	0.2029
4742	CofEgsld202	0.0000	0.0008	0.0044
4743	CheEgsld203	4.9667	0.0063	9.6350
4744	CofEgsld203	2.2990	0.0303	4.6049
4745	CheEgsld204	0.0000	0.0000	0.0001
4746	CofEgsld204	0.0000	0.0001	0.0006
4747	CasEgsld205	0.0069	0.0017	0.3427
4748	CasNgsld205	0.0000	0.0000	0.0000
4749	CcoEgsld205	0.0020	0.0000	0.0048
4750	CcoNgsld205	0.0000	0.0000	0.0000
4751	CgrEgsld205	0.0000	0.0005	0.0010
4752	CgrNgsld205	0.0000	0.0000	0.0000
4753	CheEgsld205	0.0007	0.0001	0.0323
4754	CheNgsld205	0.0000	0.0000	0.0000
4755	ChoEgsld205	0.0057	0.0000	0.0137
4756	ChoNgsld205	0.0000	0.0000	0.0000
4757	CinEgsld205	0.0000	0.0001	0.0002
4758	CinNgsld205	0.0000	0.0000	0.0000
4759	CloEgsld205	0.0000	0.0001	0.0004
4760	CloNgsld205	0.0000	0.0000	0.0000
4761	CmiEgsld205	0.0012	0.0004	0.0588
4762	CmiNgsld205	0.0000	0.0000	0.0000
4763	CofEgsld205	0.0000	0.0002	0.0005
4764	CofNgsld205	0.0000	0.0000	0.0000
4765	CreEgsld205	0.0000	0.0003	0.0007
4766	CreNgsld205	0.0000	0.0000	0.0000
4767	CrtEgsld205	0.0912	0.0023	0.4456
4768	CrtNgsld205	0.0000	0.0000	0.0000
4769	CscEgsld205	0.0020	0.0006	0.0985
4770	CscNgsld205	0.0000	0.0000	0.0000
4771	CwaEgsld205	0.0164	0.0004	0.1447
4772	CwaNgsld205	0.0000	0.0000	0.0000
4773	CasEgsld206	0.1398	0.0294	6.9550
4774	CasNgsld206	0.0000	0.0001	0.0003
4775	CcoEgsld206	0.0451	0.0001	0.1079
4776	CcoNgsld206	0.0000	0.0000	0.0000
4777	CgrEgsld206	0.0537	0.0055	0.2710
4778	CgrNgsld206	0.0000	0.0000	0.0000
4779	CheEgsld206	0.0182	0.0017	0.9021
4780	CheNgsld206	0.0000	0.0000	0.0000
4781	ChoEgsld206	0.1000	0.0000	0.2388
4782	ChoNgsld206	0.0000	0.0000	0.0000
4783	CinEgsld206	0.0217	0.0017	1.0722
4784	CinNgsld206	0.0000	0.0000	0.0000
4785	CloEgsld206	0.1162	0.0012	0.2821

4786	CloNgsld206	0.0000	0.0000	0.0000
4787	CmiEgsld206	0.0093	0.0031	0.4645
4788	CmiNgsld206	0.0000	0.0000	0.0000
4789	CofEgsld206	0.0105	0.0088	0.5363
4790	CofNgsld206	0.0000	0.0000	0.0001
4791	CreEgsld206	0.0992	0.0074	0.4951
4792	CreNgsld206	0.0000	0.0000	0.0000
4793	CrtEgsld206	1.9403	0.0436	9.4726
4794	CrtNgsld206	0.0000	0.0001	0.0002
4795	CscEgsld206	0.0465	0.0138	2.3249
4796	CscNgsld206	0.0000	0.0000	0.0001
4797	CwaEgsld206	0.2623	0.0048	2.3037
4798	CwaNgsld206	0.0000	0.0000	0.0000
4799	CheEgsld207	0.0531	0.0007	2.6181
4800	CofEgsld207	0.4020	0.0354	19.8952
4801	CrtEgsld207	2.4233	0.0065	11.7290
4802	CasEgsld208	2.2983	0.0000	5.3595
4803	CasNgsld208	0.0000	0.0000	0.0000
4804	CcoEgsld208	0.0557	0.0000	0.1297
4805	CcoNgsld208	0.0000	0.0000	0.0000
4806	CgrEgsld208	0.0904	0.0000	0.2139
4807	CgrNgsld208	0.0000	0.0000	0.0000
4808	CheEgsld208	0.4843	0.0000	1.1269
4809	CheNgsld208	0.0000	0.0000	0.0000
4810	ChoEgsld208	0.0835	0.0000	0.1939
4811	ChoNgsld208	0.0000	0.0000	0.0000
4812	CinEgsld208	0.3733	0.0000	0.8683
4813	CinNgsld208	0.0000	0.0000	0.0000
4814	CloEgsld208	0.1725	0.0000	0.3043
4815	CloNgsld208	0.0000	0.0000	0.0000
4816	CmiEgsld208	0.0568	0.0000	0.4368
4817	CmiNgsld208	0.0000	0.0000	0.0000
4818	CofEgsld208	0.2817	0.0000	0.6648
4819	CofNgsld208	0.0000	0.0000	0.0000
4820	CreEgsld208	0.2611	0.0000	0.6148
4821	CreNgsld208	0.0000	0.0000	0.0000
4822	CrtEgsld208	2.9712	0.0000	6.9322
4823	CrtNgsld208	0.0000	0.0000	0.0000
4824	CscEgsld208	1.2053	0.0000	2.8155
4825	CscNgsld208	0.0000	0.0000	0.0000
4826	CwaEgsld208	0.2038	0.0000	1.5657
4827	CwaNgsld208	0.0009	0.0000	0.0067
4828	CasEgsld209	0.0017	0.0000	0.0040
4829	CasNgsld209	0.0000	0.0000	0.0000
4830	CcoEgsld209	0.0001	0.0000	0.0002
4831	CcoNgsld209	0.0000	0.0000	0.0000
4832	CgrEgsld209	0.0001	0.0000	0.0003

4833	CgrNgsld209	0.0000	0.0000	0.0000
4834	CheEgsld209	0.0006	0.0000	0.0013
4835	CheNgsld209	0.0000	0.0000	0.0000
4836	ChoEgsld209	0.0001	0.0000	0.0001
4837	ChoNgsld209	0.0000	0.0000	0.0000
4838	CinEgsld209	0.0003	0.0000	0.0007
4839	CinNgsld209	0.0000	0.0000	0.0000
4840	CloEgsld209	0.0003	0.0000	0.0005
4841	CloNgsld209	0.0000	0.0000	0.0000
4842	CmiEgsld209	0.0002	0.0000	0.0018
4843	CmiNgsld209	0.0000	0.0000	0.0000
4844	CofEgsld209	0.0002	0.0000	0.0005
4845	CofNgsld209	0.0000	0.0000	0.0000
4846	CreEgsld209	0.0003	0.0000	0.0008
4847	CreNgsld209	0.0000	0.0000	0.0000
4848	CrtEgsld209	0.0021	0.0000	0.0049
4849	CrtNgsld209	0.0000	0.0000	0.0000
4850	CscEgsld209	0.0018	0.0000	0.0042
4851	CscNgsld209	0.0000	0.0000	0.0000
4852	CwaEgsld209	0.0001	0.0000	0.0010
4853	CwaNgsld209	0.0000	0.0000	0.0000
4854	CheEgsld210	0.0000	0.0004	0.0005
4855	CofEgsld210	0.0780	0.0087	0.3607
4856	CrtEgsld210	0.0000	0.0085	0.0127
4857	CwaEgsld211	0.0177	0.0004	0.1563
4858	CwaNgsld211	0.0000	0.0000	0.0000
4859	CasEgsld212	1.6714	0.0005	4.5557
4860	CasNgsld212	0.0077	0.0000	0.0210
4861	CcoEgsld212	0.2250	0.0000	0.6042
4862	CcoNgsld212	0.0004	0.0000	0.0010
4863	CgrEgsld212	0.8079	0.0011	2.4114
4864	CgrNgsld212	0.0000	0.0000	0.0015
4865	CheEgsld212	2.2909	0.0003	6.1491
4866	CheNgsld212	0.0045	0.0000	0.0124
4867	ChoEgsld212	1.2398	0.0000	3.2990
4868	ChoNgsld212	0.0062	0.0000	0.0164
4869	CinEgsld212	3.6845	0.0004	9.8786
4870	CinNgsld212	0.0172	0.0000	0.0461
4871	CloEgsld212	1.9991	-0.0242	4.7095
4872	CloNgsld212	0.0031	-0.0001	0.0081
4873	CmiEgsld212	9.9529	-0.0647	29.6201
4874	CmiNgsld212	0.0055	-0.0001	0.0183
4875	CofEgsld212	3.4265	0.0041	10.0663
4876	CofNgsld212	0.0018	0.0000	0.0096
4877	CreEgsld212	3.2512	0.0033	9.4120
4878	CreNgsld212	0.0000	0.0000	0.0044
4879	CrtEgsld212	3.2982	0.0011	9.0133

4880	CrtNgsld212	0.0000	0.0000	0.0014
4881	CscEgsld212	2.4272	0.0010	6.6889
4882	CscNgsld212	0.0000	0.0000	0.0013
4883	CwaEgsld212	0.1434	-0.0009	0.4270
4884	CwaNgsld212	0.0000	0.0000	0.0000
4885	CasEgsld213	0.4344	-0.0158	1.9029
4886	CasNgsld213	0.0088	-0.0003	0.0386
4887	CcoEgsld213	0.0648	-0.0023	0.2837
4888	CcoNgsld213	0.0006	0.0000	0.0028
4889	CgrEgsld213	0.2353	-0.0085	1.0308
4890	CgrNgsld213	0.0030	-0.0001	0.0133
4891	CheEgsld213	0.6730	-0.0244	2.9483
4892	CheNgsld213	0.0083	-0.0003	0.0364
4893	ChoEgsld213	0.3512	-0.0127	1.5384
4894	ChoNgsld213	0.0071	-0.0003	0.0313
4895	CinEgsld213	0.8642	-0.0313	3.7857
4896	CinNgsld213	0.0238	-0.0009	0.1041
4897	CloEgsld213	0.4785	-0.0173	2.0960
4898	CloNgsld213	0.0046	-0.0002	0.0203
4899	CmiEgsld213	1.7512	-0.0635	7.6716
4900	CmiNgsld213	0.0184	-0.0007	0.0806
4901	CofEgsld213	0.9078	-0.0329	3.9769
4902	CofNgsld213	0.0196	-0.0007	0.0859
4903	CreEgsld213	0.7334	-0.0266	3.2129
4904	CreNgsld213	0.0103	-0.0004	0.0453
4905	CrtEgsld213	0.9504	-0.0345	4.1634
4906	CrtNgsld213	0.0207	-0.0007	0.0905
4907	CscEgsld213	0.6409	-0.0232	2.8074
4908	CscNgsld213	0.0062	-0.0002	0.0272
4909	CwaEgsld213	0.0401	-0.0015	0.1755
4910	CwaNgsld213	0.0010	0.0000	0.0042
4911	CasEgsld301	0.7074	0.0000	1.7990
4912	CasNgsld301	0.0074	0.0000	0.0188
4913	CcoEgsld301	0.0076	0.0002	0.0334
4914	CcoNgsld301	0.0001	0.0000	0.0003
4915	CheEgsld301	0.0000	0.0000	0.0000
4916	CheNgsld301	0.0000	0.0000	0.0000
4917	ChoEgsld301	0.2188	0.0048	0.9604
4918	ChoNgsld301	0.0023	0.0000	0.0100
4919	CinEgsld301	1.6781	0.0001	4.2679
4920	CinNgsld301	0.0175	0.0000	0.0446
4921	CloEgsld301	0.1950	0.0000	0.4958
4922	CloNgsld301	0.0015	0.0000	0.0038
4923	CmiEgsld301	1.7165	0.0001	4.3654
4924	CmiNgsld301	0.0136	0.0000	0.0345
4925	CofEgsld301	1.1380	0.0001	2.8941
4926	CofNgsld301	0.0126	0.0000	0.0320

4927	CreEgsld301	0.0764	0.0000	0.1942
4928	CreNgsld301	0.0006	0.0000	0.0015
4929	CrtEgsld301	0.0000	0.0000	0.0000
4930	CrtNgsld301	0.0000	0.0000	0.0000
4931	CscEgsld301	1.0245	0.0000	2.6055
4932	CscNgsld301	0.0078	0.0000	0.0197
4933	CwaEgsld301	0.0000	0.0000	0.0000
4934	CwaNgsld301	0.0000	0.0000	0.0000
4935	CasEgsld302	1.4305	0.0655	12.9297
4936	CasNgsld302	0.0157	0.0007	0.1420
4937	CcoEgsld302	0.0200	0.0009	0.1804
4938	CcoNgsld302	0.0002	0.0000	0.0020
4939	CgrEgsld302	0.0000	0.0000	0.0000
4940	CgrNgsld302	0.0000	0.0000	0.0000
4941	CheEgsld302	0.0000	0.0000	0.0000
4942	CheNgsld302	0.0000	0.0000	0.0000
4943	ChoEgsld302	0.7637	0.0350	6.9028
4944	ChoNgsld302	0.0084	0.0004	0.0758
4945	CinEgsld302	3.3846	0.1550	30.5913
4946	CinNgsld302	0.0371	0.0017	0.3355
4947	CloEgsld302	0.2967	0.0136	2.6819
4948	CloNgsld302	0.0033	0.0002	0.0302
4949	CmiEgsld302	2.6499	0.1214	23.9502
4950	CmiNgsld302	0.0304	0.0014	0.2749
4951	CofEgsld302	2.2903	0.1049	20.7002
4952	CofNgsld302	0.0266	0.0012	0.2407
4953	CreEgsld302	0.1155	0.0053	1.0439
4954	CreNgsld302	0.0013	0.0001	0.0118
4955	CrtEgsld302	0.0000	0.0000	0.0000
4956	CrtNgsld302	0.0000	0.0000	0.0000
4957	CscEgsld302	1.5592	0.0714	14.0926
4958	CscNgsld302	0.0176	0.0008	0.1588
4959	CwaEgsld302	0.0000	0.0000	0.0000
4960	CwaNgsld302	0.0000	0.0000	0.0000
4961	CasNgsld303	0.0005	0.0000	0.0006
4962	CasTgsld303	1.3477	0.0133	1.5380
4963	CcoNgsld303	0.0023	0.0000	0.0029
4964	CcoTgsld303	0.2372	0.0023	0.3003
4965	CgrNgsld303	0.0000	0.0000	0.0000
4966	CgrTgsld303	0.0000	0.0000	0.0000
4967	CheNgsld303	0.0000	0.0000	0.0000
4968	CheTgsld303	0.0000	0.0000	0.0000
4969	ChoNgsld303	0.0087	0.0001	0.0204
4970	ChoTgsld303	1.1928	0.0117	2.8057
4971	CinNgsld303	0.0024	0.0000	0.0015
4972	CinTgsld303	5.9190	0.0583	3.6487
4973	CloNgsld303	0.0000	0.0000	0.0000

4974	CloTgsld303	0.1404	0.0014	0.2647
4975	CmiNgsld303	0.0000	0.0000	0.0000
4976	CmiTgsld303	3.7432	0.0369	2.3859
4977	CofNgsld303	0.0030	0.0000	0.0038
4978	CofTgsld303	2.0210	0.0199	2.5957
4979	CreNgsld303	0.0001	0.0000	0.0002
4980	CreTgsld303	0.0637	0.0006	0.1178
4981	CrtNgsld303	0.0000	0.0000	0.0000
4982	CrtTgsld303	0.0000	0.0000	0.0000
4983	CscNgsld303	0.0116	0.0001	0.0146
4984	CscTgsld303	2.2265	0.0219	2.8052
4985	CwaNgsld303	0.0000	0.0000	0.0000
4986	CwaTgsld303	0.0000	0.0000	0.0000
4987	CasNgsld304	0.0001	0.0000	0.0003
4988	CasTgsld304	0.2479	0.0024	0.6804
4989	CcoNgsld304	0.0005	0.0000	0.0014
4990	CcoTgsld304	0.0479	0.0005	0.1458
4991	CgrNgsld304	0.0000	0.0000	0.0000
4992	CgrTgsld304	0.0000	0.0000	0.0000
4993	CheNgsld304	0.0000	0.0000	0.0000
4994	CheTgsld304	0.0000	0.0000	0.0000
4995	ChoNgsld304	0.0017	0.0000	0.0099
4996	ChoTgsld304	0.2401	0.0024	1.3583
4997	CinNgsld304	0.0005	0.0000	0.0007
4998	CinTgsld304	1.1915	0.0117	1.7664
4999	CloNgsld304	0.0000	0.0000	0.0000
5000	CloTgsld304	0.0284	0.0003	0.1285
5001	CmiNgsld304	0.0000	0.0000	0.0000
5002	CmiTgsld304	0.7559	0.0074	1.1587
5003	CofNgsld304	0.0006	0.0000	0.0018
5004	CofTgsld304	0.4068	0.0040	1.2566
5005	CreNgsld304	0.0000	0.0000	0.0001
5006	CreTgsld304	0.0129	0.0001	0.0572
5007	CrtNgsld304	0.0000	0.0000	0.0000
5008	CrtTgsld304	0.0000	0.0000	0.0000
5009	CscNgsld304	0.0023	0.0000	0.0071
5010	CscTgsld304	0.4393	0.0043	1.3309
5011	CwaNgsld304	0.0000	0.0000	0.0000
5012	CwaTgsld304	0.0000	0.0000	0.0000
5013	CasNgsld305	0.0000	0.0000	0.0002
5014	CasTgsld305	0.0717	0.0007	0.4127
5015	CcoNgsld305	0.0001	0.0000	0.0009
5016	CcoTgsld305	0.0137	0.0001	0.0876
5017	CgrNgsld305	0.0000	0.0000	0.0000
5018	CgrTgsld305	0.0000	0.0000	0.0000
5019	CheNgsld305	0.0000	0.0000	0.0000
5020	CheTgsld305	0.0000	0.0000	0.0000

5021	ChoNgsld305	0.0005	0.0000	0.0060
5022	ChoTgsld305	0.0695	0.0007	0.8237
5023	CinNgsld305	0.0001	0.0000	0.0004
5024	CinTgsld305	0.3448	0.0034	1.0712
5025	CloNgsld305	0.0000	0.0000	0.0000
5026	CloTgsld305	0.0081	0.0001	0.0767
5027	CmiNgsld305	0.0000	0.0000	0.0000
5028	CmiTgsld305	0.2191	0.0022	0.7038
5029	CofNgsld305	0.0002	0.0000	0.0011
5030	CofTgsld305	0.1157	0.0011	0.7493
5031	CreNgsld305	0.0000	0.0000	0.0001
5032	CreTgsld305	0.0037	0.0000	0.0347
5033	CrtNgsld305	0.0000	0.0000	0.0000
5034	CrtTgsld305	0.0000	0.0000	0.0000
5035	CscNgsld305	0.0007	0.0000	0.0043
5036	CscTgsld305	0.1236	0.0012	0.7847
5037	CwaNgsld305	0.0000	0.0000	0.0000
5038	CwaTgsld305	0.0000	0.0000	0.0000
5039	CasNgsld306	0.0239	0.0001	0.1148
5040	CcoNgsld306	0.0031	0.0001	0.0174
5041	CgrNgsld306	0.0126	0.0001	0.0607
5042	CheNgsld306	0.0479	0.0002	0.2302
5043	ChoNgsld306	0.0167	0.0006	0.0929
5044	CinNgsld306	0.0593	0.0003	0.2846
5045	CloNgsld306	0.0268	0.0001	0.1287
5046	CmiNgsld306	0.0916	0.0004	0.4399
5047	CofNgsld306	0.0532	0.0002	0.2554
5048	CreNgsld306	0.0515	0.0002	0.2474
5049	CrtNgsld306	0.0860	0.0004	0.4131
5050	CscNgsld306	0.0359	0.0002	0.1723
5051	CwaNgsld306	0.0040	0.0000	0.0194
5052	CasEgsld307	0.4469	0.0071	2.1518
5053	CasNgsld307	0.0042	0.0001	0.0203
5054	CcoEgsld307	0.0085	0.0052	0.0565
5055	CcoNgsld307	0.0006	0.0004	0.0041
5056	CgrEgsld307	0.5827	0.1859	2.2968
5057	CgrNgsld307	0.0042	0.0014	0.0164
5058	CheEgsld307	0.0539	0.0019	0.2554
5059	CheNgsld307	0.0053	0.0002	0.0253
5060	ChoEgsld307	0.2970	0.0842	1.9826
5061	ChoNgsld307	0.0027	0.0008	0.0181
5062	CinEgsld307	1.6746	0.0685	7.9251
5063	CinNgsld307	0.0072	0.0003	0.0342
5064	CloEgsld307	0.0522	0.0102	0.2036
5065	CloNgsld307	0.0037	0.0008	0.0143
5066	CmiEgsld307	5.4544	0.3779	25.8856
5067	CmiNgsld307	0.0659	0.0046	0.3124

5068	CofEgsld307	0.9280	0.0486	4.5769
5069	CofNgsld307	0.0075	0.0004	0.0366
5070	CreEgsld307	0.0701	0.0138	0.2800
5071	CreNgsld307	0.0070	0.0014	0.0278
5072	CrtEgsld307	1.7535	0.4296	6.7196
5073	CrtNgsld307	0.0245	0.0072	0.0935
5074	CscEgsld307	0.0602	0.0024	0.2896
5075	CscNgsld307	0.0042	0.0002	0.0204
5076	CwaEgsld307	0.0916	0.0056	0.4365
5077	CwaNgsld307	0.0015	0.0001	0.0073
5078	CloEgsld308	0.0103	-0.0022	1.3449
5079	CloNgsld308	0.0000	0.0000	0.0004
5080	CasEgsld309	0.0000	0.0000	0.0000
5081	CasNgsld309	0.0000	0.0000	0.0000
5082	CcoEgsld309	0.0000	0.0000	0.0000
5083	CcoNgsld309	0.0000	0.0000	0.0000
5084	CgrEgsld309	0.0000	0.0000	0.0000
5085	CgrNgsld309	0.0000	0.0000	0.0000
5086	CheEgsld309	0.0000	0.0000	0.0000
5087	CheNgsld309	0.0000	0.0000	0.0000
5088	ChoEgsld309	0.0000	0.0000	0.0000
5089	ChoNgsld309	0.0000	0.0000	0.0000
5090	CinEgsld309	0.0000	0.0000	0.0000
5091	CinNgsld309	0.0000	0.0000	0.0000
5092	CloEgsld309	0.0000	0.0000	0.0000
5093	CloNgsld309	0.0000	0.0000	0.0000
5094	CmiEgsld309	0.0000	0.0000	0.0000
5095	CmiNgsld309	0.0000	0.0000	0.0000
5096	CofEgsld309	0.0000	0.0000	0.0000
5097	CofNgsld309	0.0000	0.0000	0.0000
5098	CreEgsld309	0.0000	0.0000	0.0000
5099	CreNgsld309	0.0000	0.0000	0.0000
5100	CrtEgsld309	0.0000	0.0000	0.0000
5101	CrtNgsld309	0.0000	0.0000	0.0000
5102	CscEgsld309	0.0000	0.0000	0.0000
5103	CscNgsld309	0.0000	0.0000	0.0000
5104	CwaEgsld309	0.0000	0.0000	0.0000
5105	CwaNgsld309	0.0000	0.0000	0.0000
5106	CasEgsld310	1.8836	0.1253	4.7950
5107	CasNgsld310	0.0188	0.0014	0.0481
5108	CcoEgsld310	0.2013	0.0050	0.5032
5109	CcoNgsld310	0.0000	0.0001	0.0001
5110	CgrEgsld310	0.6213	0.1821	1.7374
5111	CgrNgsld310	0.0054	0.0020	0.0156
5112	CheEgsld310	2.4358	0.0673	6.0956
5113	CheNgsld310	0.0000	0.0007	0.0008
5114	ChoEgsld310	1.5122	0.0081	3.7470

5115	ChoNgsld310	0.0151	0.0001	0.0375
5116	CinEgsld310	4.6438	0.1098	11.6009
5117	CinNgsld310	0.0477	0.0012	0.1193
5118	CloEgsld310	1.4274	0.1776	3.7253
5119	CloNgsld310	0.0000	0.0020	0.0022
5120	CmiEgsld310	3.1424	0.3072	8.1083
5121	CmiNgsld310	0.0331	0.0035	0.0857
5122	CofEgsld310	5.4883	1.2995	15.0064
5123	CofNgsld310	0.0621	0.0152	0.1703
5124	CreEgsld310	2.6639	0.5714	7.2180
5125	CreNgsld310	0.0052	0.0065	0.0202
5126	CrtEgsld310	4.0137	0.2854	10.2377
5127	CrtNgsld310	0.0366	0.0032	0.0941
5128	CscEgsld310	1.9547	0.1815	5.0328
5129	CscNgsld310	0.0037	0.0019	0.0114
5130	CwaEgsld310	0.1602	0.0156	0.4133
5131	CwaNgsld310	0.0000	0.0001	0.0001
5132	CasNgsld311	0.0214	0.0000	0.0181
5133	CasTgsld311	4.0632	0.0000	3.3467
5134	CcoNgsld311	0.0001	0.0000	0.0001
5135	CcoTgsld311	0.0162	0.0000	0.0176
5136	CgrNgsld311	0.0236	0.0000	0.0122
5137	CgrTgsld311	4.2668	0.0000	2.0529
5138	CheNgsld311	0.0220	0.0000	0.0388
5139	CheTgsld311	2.8890	0.0000	5.0882
5140	ChoNgsld311	0.0051	0.0000	0.0084
5141	ChoTgsld311	0.7755	0.0000	1.2873
5142	CinNgsld311	0.1360	0.0000	0.0598
5143	CinTgsld311	20.7893	0.0000	9.0998
5144	CloNgsld311	0.0044	0.0000	0.0067
5145	CloTgsld311	0.7992	0.0000	1.1361
5146	CmiNgsld311	0.1316	0.0000	0.0636
5147	CmiTgsld311	23.3476	0.0000	10.8841
5148	CofNgsld311	0.0573	0.0000	0.0558
5149	CofTgsld311	7.8810	0.0000	7.4830
5150	CreNgsld311	0.0240	0.0000	0.0349
5151	CreTgsld311	4.1901	0.0000	5.7846
5152	CrtNgsld311	0.0641	0.0000	0.0678
5153	CrtTgsld311	10.7922	0.0000	11.2325
5154	CscNgsld311	0.0020	0.0000	0.0026
5155	CscTgsld311	0.2720	0.0000	0.3147
5156	CwaNgsld311	0.0104	0.0000	0.0021
5157	CwaTgsld311	1.4828	0.0000	0.2981
5158	CasEgsld312	0.0000	0.0000	0.0000
5159	CasNgsld312	0.0000	0.0000	0.0000
5160	CcoEgsld312	0.0000	0.0000	0.0000
5161	CcoNgsld312	0.0000	0.0000	0.0000

5162	CgrEgsld312	0.0000	0.0000	0.0000
5163	CgrNgsld312	0.0000	0.0000	0.0000
5164	CheEgsld312	0.0000	0.0000	0.0000
5165	CheNgsld312	0.0000	0.0000	0.0000
5166	ChoEgsld312	0.0000	0.0000	0.0000
5167	ChoNgsld312	0.0000	0.0000	0.0000
5168	CinEgsld312	0.0000	0.0000	0.0000
5169	CinNgsld312	0.0000	0.0000	0.0000
5170	CloEgsld312	0.0000	0.0000	0.0000
5171	CloNgsld312	0.0000	0.0000	0.0000
5172	CmiEgsld312	0.0000	0.0000	0.0000
5173	CmiNgsld312	0.0000	0.0000	0.0000
5174	CofEgsld312	0.0000	0.0000	0.0000
5175	CofNgsld312	0.0000	0.0000	0.0000
5176	CreEgsld312	0.0000	0.0000	0.0000
5177	CreNgsld312	0.0000	0.0000	0.0000
5178	CrtEgsld312	0.0000	0.0000	0.0000
5179	CrtNgsld312	0.0000	0.0000	0.0000
5180	CscEgsld312	0.0000	0.0000	0.0000
5181	CscNgsld312	0.0000	0.0000	0.0000
5182	CwaEgsld312	0.0000	0.0000	0.0000
5183	CwaNgsld312	0.0000	0.0000	0.0000
5184	CasEgsld313	0.0000	0.0000	0.0000
5185	CasNgsld313	0.0000	0.0000	0.0000
5186	CcoEgsld313	0.0000	0.0000	0.0000
5187	CcoNgsld313	0.0000	0.0000	0.0000
5188	CgrEgsld313	0.0000	0.0000	0.0000
5189	CgrNgsld313	0.0000	0.0000	0.0000
5190	CheEgsld313	0.0000	0.0000	0.0000
5191	CheNgsld313	0.0000	0.0000	0.0000
5192	ChoEgsld313	0.0000	0.0000	0.0000
5193	ChoNgsld313	0.0000	0.0000	0.0000
5194	CinEgsld313	0.0000	0.0000	0.0000
5195	CinNgsld313	0.0000	0.0000	0.0000
5196	CloEgsld313	0.0000	0.0000	0.0000
5197	CloNgsld313	0.0000	0.0000	0.0000
5198	CmiEgsld313	0.0000	0.0000	0.0000
5199	CmiNgsld313	0.0000	0.0000	0.0000
5200	CofEgsld313	0.0000	0.0000	0.0000
5201	CofNgsld313	0.0000	0.0000	0.0000
5202	CreEgsld313	0.0000	0.0000	0.0000
5203	CreNgsld313	0.0000	0.0000	0.0000
5204	CrtEgsld313	0.0000	0.0000	0.0000
5205	CrtNgsld313	0.0000	0.0000	0.0000
5206	CscEgsld313	0.0000	0.0000	0.0000
5207	CscNgsld313	0.0000	0.0000	0.0000
5208	CwaEgsld313	0.0000	0.0000	0.0000

5209	CwaNgsld313	0.0000	0.0000	0.0000
5210	CasEgsld314	-0.0104	0.0000	0.0522
5211	CasNgsld314	0.0000	0.0000	0.0000
5212	CcoEgsld314	0.0000	0.0000	0.0002
5213	CcoNgsld314	0.0000	0.0000	0.0000
5214	CgrEgsld314	-0.0066	0.0000	0.0304
5215	CgrNgsld314	0.0000	0.0000	0.0000
5216	CheEgsld314	-0.0158	0.0000	0.0791
5217	CheNgsld314	0.0000	0.0000	0.0000
5218	ChoEgsld314	-0.0024	0.0001	0.0206
5219	ChoNgsld314	0.0000	0.0000	0.0000
5220	CinEgsld314	-0.0288	0.0000	0.1446
5221	CinNgsld314	0.0000	0.0000	0.0000
5222	CloEgsld314	-0.0036	0.0000	0.0167
5223	CloNgsld314	0.0000	0.0000	0.0000
5224	CmiEgsld314	-0.0223	0.0000	0.1120
5225	CmiNgsld314	0.0000	0.0000	0.0000
5226	CofEgsld314	-0.0148	0.0000	0.0744
5227	CofNgsld314	0.0000	0.0000	0.0000
5228	CreEgsld314	-0.0188	0.0000	0.0869
5229	CreNgsld314	0.0000	0.0000	0.0000
5230	CrtEgsld314	-0.0370	0.0001	0.1707
5231	CrtNgsld314	0.0000	0.0000	0.0000
5232	CscEgsld314	-0.0007	0.0000	0.0037
5233	CscNgsld314	0.0000	0.0000	0.0000
5234	CwaEgsld314	0.0000	0.0000	0.0000
5235	CwaNgsld314	0.0000	0.0000	0.0000
5236	CcoEgsld315	0.0099	0.0000	0.0251
5237	CcoNgsld315	0.0000	0.0000	0.0000
5238	ChoEgsld315	0.0830	0.0000	0.2110
5239	ChoNgsld315	0.0000	0.0000	0.0000
5240	CinEgsld315	0.2572	0.0000	0.6538
5241	CinNgsld315	0.0006	0.0000	0.0016
5242	CasEgsld316	0.0000	0.0000	0.0013
5243	CasNgsld316	0.0000	0.0000	0.0000
5244	CcoEgsld316	0.0000	0.0000	0.0000
5245	CcoNgsld316	0.0000	0.0000	0.0000
5246	CgrEgsld316	0.0000	0.0001	0.0005
5247	CgrNgsld316	0.0000	0.0000	0.0000
5248	CheEgsld316	0.0000	0.0000	0.0002
5249	CheNgsld316	0.0000	0.0000	0.0000
5250	ChoEgsld316	0.0000	0.0000	0.0000
5251	ChoNgsld316	0.0000	0.0000	0.0000
5252	CinEgsld316	0.0000	0.0000	0.0007
5253	CinNgsld316	0.0000	0.0000	0.0000
5254	CloEgsld316	0.0000	0.0000	0.0002
5255	CloNgsld316	0.0000	0.0000	0.0000

5256	CmiEgsld316	0.0000	0.0000	0.0076
5257	CmiNgsld316	0.0000	0.0000	0.0001
5258	CofEgsld316	0.0000	0.0000	0.0165
5259	CofNgsld316	0.0000	0.0000	0.0002
5260	CreEgsld316	0.0000	0.0001	0.0010
5261	CreNgsld316	0.0000	0.0000	0.0000
5262	CrtEgsld316	0.0000	0.0001	0.0006
5263	CrtNgsld316	0.0000	0.0000	0.0000
5264	CscEgsld316	0.0000	0.0000	0.0000
5265	CscNgsld316	0.0000	0.0000	0.0000
5266	CwaEgsld316	0.0000	0.0000	0.0002
5267	CwaNgsld316	0.0000	0.0000	0.0000
5268	CasNgsld317	0.0001	0.0000	0.0003
5269	CasTgsld317	0.0126	0.0037	0.0400
5270	CcoNgsld317	0.0000	0.0000	0.0000
5271	CcoTgsld317	0.0002	0.0000	0.0009
5272	CgrNgsld317	0.0000	0.0000	0.0000
5273	CgrTgsld317	0.0000	0.0020	0.0059
5274	CheNgsld317	0.0006	0.0000	0.0013
5275	CheTgsld317	0.0504	0.0010	0.1187
5276	ChoNgsld317	0.0000	0.0000	0.0001
5277	ChoTgsld317	0.0017	0.0002	0.0110
5278	CinNgsld317	0.0003	0.0000	0.0008
5279	CinTgsld317	0.0299	0.0032	0.0783
5280	CloNgsld317	0.0000	0.0000	0.0000
5281	CloTgsld317	0.0000	0.0038	0.0113
5282	CmiNgsld317	0.0013	0.0000	0.0029
5283	CmiTgsld317	0.1090	0.0000	0.2502
5284	CofNgsld317	0.0012	0.0000	0.0028
5285	CofTgsld317	0.1035	0.0482	0.3816
5286	CreNgsld317	0.0001	0.0000	0.0002
5287	CreTgsld317	0.0059	0.0057	0.0305
5288	CrtNgsld317	0.0000	0.0000	0.0000
5289	CrtTgsld317	0.0010	0.0066	0.0220
5290	CscNgsld317	0.0000	0.0000	0.0000
5291	CscTgsld317	0.0006	0.0044	0.0144
5292	CwaNgsld317	0.0000	0.0000	0.0000
5293	CwaTgsld317	0.0000	0.0005	0.0015
5294	CofEgsld318	0.4423	0.1067	1.7864
5295	CreEgsld318	0.2210	0.0464	0.8810
5296	CrtEgsld318	0.4628	0.0334	1.7370
5297	CofEgsld319	2.2749	0.8972	12.6598
5298	CreEgsld319	1.1042	0.3793	6.0654
5299	CrtEgsld319	2.3957	0.2704	12.3787
5300	CasEgsld320	0.0132	0.0240	0.1199
5301	CasNgsld320	0.0001	0.0002	0.0009
5302	CcoEgsld320	0.0003	0.0001	0.0018

5303	CcoNgsld320	0.0000	0.0000	0.0000
5304	CgrEgsld320	0.0000	0.0132	0.0424
5305	CgrNgsld320	0.0000	0.0001	0.0004
5306	CheEgsld320	0.0532	0.0068	0.1943
5307	CheNgsld320	0.0002	0.0001	0.0009
5308	ChoEgsld320	0.0043	0.0032	0.0243
5309	ChoNgsld320	0.0000	0.0000	0.0002
5310	CinEgsld320	0.0313	0.0210	0.1687
5311	CinNgsld320	0.0001	0.0002	0.0010
5312	CloEgsld320	0.0000	0.0127	0.0806
5313	CloNgsld320	0.0000	0.0001	0.0008
5314	CmiEgsld320	0.1136	0.0000	0.3684
5315	CmiNgsld320	0.0005	0.0000	0.0015
5316	CofEgsld320	0.1088	0.3334	1.4219
5317	CofNgsld320	0.0004	0.0033	0.0120
5318	CreEgsld320	0.0062	0.0387	0.1443
5319	CreNgsld320	0.0000	0.0004	0.0012
5320	CrtEgsld320	0.0010	0.0429	0.1407
5321	CrtNgsld320	0.0000	0.0004	0.0014
5322	CscEgsld320	0.0006	0.0283	0.0930
5323	CscNgsld320	0.0000	0.0003	0.0009
5324	CwaEgsld320	0.0000	0.0036	0.0115
5325	CwaNgsld320	0.0000	0.0000	0.0001
5326	CcoNgsld321	0.0000	0.0000	0.0000
5327	CcoTgsld321	0.0005	0.0003	0.0022
5328	CheNgsld321	0.0000	0.0000	0.0002
5329	CheTgsld321	0.0043	0.0025	0.0183
5330	ChoNgsld321	0.0000	0.0000	0.0000
5331	ChoTgsld321	0.0016	0.0010	0.0071
5332	CinNgsld321	0.0000	0.0000	0.0000
5333	CinTgsld321	0.0009	0.0005	0.0038
5334	CofNgsld321	0.0002	0.0001	0.0010
5335	CofTgsld321	0.0225	0.0130	0.0967
5336	CscNgsld321	0.0000	0.0000	0.0000
5337	CscTgsld321	0.0009	0.0005	0.0039
5338	CasNgsld322	0.0000	0.0000	0.0000
5339	CasTgsld322	0.0000	0.0000	0.0000
5340	CcoNgsld322	0.0000	0.0000	0.0000
5341	CcoTgsld322	0.0000	0.0000	0.0000
5342	CgrNgsld322	0.0000	0.0000	0.0000
5343	CgrTgsld322	0.0000	0.0000	0.0000
5344	CheNgsld322	0.0000	0.0000	0.0000
5345	CheTgsld322	0.0000	0.0000	0.0000
5346	ChoNgsld322	0.0000	0.0000	0.0000
5347	ChoTgsld322	0.0000	0.0000	0.0000
5348	CinNgsld322	0.0000	0.0000	0.0000
5349	CinTgsld322	0.0000	0.0000	0.0000

5350	CloNgsld322	0.0000	0.0000	0.0000
5351	CloTgsld322	0.0000	0.0000	0.0000
5352	CmiNgsld322	0.0000	0.0000	0.0000
5353	CmiTgsld322	0.0000	0.0000	0.0000
5354	CofNgsld322	0.0000	0.0000	0.0000
5355	CofTgsld322	0.0000	0.0000	0.0000
5356	CreNgsld322	0.0000	0.0000	0.0000
5357	CreTgsld322	0.0000	0.0000	0.0000
5358	CrtNgsld322	0.0000	0.0000	0.0000
5359	CrtTgsld322	0.0000	0.0000	0.0000
5360	CscNgsld322	0.0000	0.0000	0.0000
5361	CscTgsld322	0.0000	0.0000	0.0000
5362	CwaNgsld322	0.0000	0.0000	0.0000
5363	CwaTgsld322	0.0000	0.0000	0.0000
5364	CasNgsld323	0.0000	0.0000	0.0000
5365	CasTgsld323	0.0000	0.0000	0.0000
5366	CcoNgsld323	0.0000	0.0000	0.0000
5367	CcoTgsld323	0.0000	0.0000	0.0000
5368	CgrNgsld323	0.0000	0.0000	0.0000
5369	CgrTgsld323	0.0000	0.0000	0.0000
5370	CheNgsld323	0.0000	0.0000	0.0000
5371	CheTgsld323	0.0000	0.0000	0.0000
5372	ChoNgsld323	0.0000	0.0000	0.0000
5373	ChoTgsld323	0.0000	0.0000	0.0000
5374	CinNgsld323	0.0000	0.0000	0.0000
5375	CinTgsld323	0.0000	0.0000	0.0000
5376	CloNgsld323	0.0000	0.0000	0.0000
5377	CloTgsld323	0.0000	0.0000	0.0000
5378	CmiNgsld323	0.0000	0.0000	0.0000
5379	CmiTgsld323	0.0000	0.0000	0.0000
5380	CofNgsld323	0.0000	0.0000	0.0000
5381	CofTgsld323	0.0000	0.0000	0.0000
5382	CreNgsld323	0.0000	0.0000	0.0000
5383	CreTgsld323	0.0000	0.0000	0.0000
5384	CrtNgsld323	0.0000	0.0000	0.0000
5385	CrtTgsld323	0.0000	0.0000	0.0000
5386	CscNgsld323	0.0000	0.0000	0.0000
5387	CscTgsld323	0.0000	0.0000	0.0000
5388	CwaNgsld323	0.0000	0.0000	0.0000
5389	CwaTgsld323	0.0000	0.0000	0.0000
5390	CasNgsld324	0.0003	0.0008	0.0038
5391	CasTgsld324	0.0306	0.0771	0.3466
5392	CcoNgsld324	0.0000	0.0000	0.0001
5393	CcoTgsld324	0.0006	0.0002	0.0045
5394	CgrNgsld324	0.0000	0.0005	0.0015
5395	CgrTgsld324	0.0000	0.0413	0.1324
5396	CheNgsld324	0.0014	0.0002	0.0052

5397	CheTgsld324	0.1220	0.0220	0.4661
5398	ChoNgsld324	0.0001	0.0001	0.0007
5399	ChoTgsld324	0.0101	0.0108	0.0674
5400	CinNgsld324	0.0008	0.0008	0.0050
5401	CinTgsld324	0.0724	0.0685	0.4545
5402	CloNgsld324	0.0000	0.0005	0.0029
5403	CloTgsld324	0.0000	0.0411	0.2601
5404	CmiNgsld324	0.0030	0.0000	0.0098
5405	CmiTgsld324	0.2641	0.0000	0.8563
5406	CofNgsld324	0.0029	0.0118	0.0472
5407	CofTgsld324	0.2655	1.0709	4.2958
5408	CreNgsld324	0.0002	0.0014	0.0050
5409	CreTgsld324	0.0142	0.1237	0.4431
5410	CrtNgsld324	0.0000	0.0016	0.0051
5411	CrtTgsld324	0.0024	0.1425	0.4650
5412	CscNgsld324	0.0000	0.0010	0.0034
5413	CscTgsld324	0.0015	0.0914	0.2980
5414	CwaNgsld324	0.0000	0.0001	0.0004
5415	CwaTgsld324	0.0000	0.0125	0.0402
5416	CasEgsld325	0.0000	0.0005	0.0135
5417	CasNgsld325	0.0000	0.0000	0.0000
5418	CcoEgsld325	0.0000	0.0000	0.0001
5419	CcoNgsld325	0.0000	0.0000	0.0000
5420	CgrEgsld325	0.0000	0.0003	0.0071
5421	CgrNgsld325	0.0000	0.0000	0.0001
5422	CheEgsld325	0.0000	0.0001	0.0012
5423	CheNgsld325	0.0000	0.0000	0.0000
5424	ChoEgsld325	0.0000	0.0000	0.0000
5425	ChoNgsld325	0.0000	0.0000	0.0000
5426	CloEgsld325	0.0000	0.0004	0.0033
5427	CloNgsld325	0.0000	0.0000	0.0000
5428	CreEgsld325	0.0000	0.0018	0.0163
5429	CreNgsld325	0.0000	0.0000	0.0001
5430	CrtEgsld325	0.0000	0.0011	0.0281
5431	CrtNgsld325	0.0000	0.0000	0.0003
5432	CscEgsld325	0.0000	0.0004	0.0033
5433	CscNgsld325	0.0000	0.0000	0.0000
5434	CasEgsld328	0.5500	3.0965	1.1211
5435	CasNgsld328	0.0055	0.0311	0.0113
5436	CcoEgsld328	0.9326	5.2506	1.9009
5437	CcoNgsld328	0.0100	0.0563	0.0204
5438	CgrEgsld328	0.2612	1.4706	0.5324
5439	CgrNgsld328	0.0029	0.0163	0.0059
5440	CheEgsld328	1.8164	10.2264	3.7023
5441	CheNgsld328	0.0195	0.1096	0.0397
5442	ChoEgsld328	0.6912	3.8915	1.4089
5443	ChoNgsld328	0.0055	0.0308	0.0111

5444	CinEgsld328	1.1427	6.4336	2.3292
5445	CinNgsld328	0.0090	0.0508	0.0184
5446	CloEgsld328	1.9712	11.0981	4.0179
5447	CloNgsld328	0.0211	0.1189	0.0430
5448	CmiEgsld328	0.8532	4.8034	1.7390
5449	CmiNgsld328	0.0095	0.0533	0.0193
5450	CofEgsld328	6.7679	38.1035	13.7949
5451	CofNgsld328	0.0535	0.3011	0.1090
5452	CreEgsld328	0.7115	4.0055	1.4501
5453	CreNgsld328	0.0079	0.0445	0.0161
5454	CrtEgsld328	6.1810	34.7992	12.5986
5455	CrtNgsld328	0.0662	0.3728	0.1350
5456	CscEgsld328	1.5220	8.5689	3.1023
5457	CscNgsld328	0.0163	0.0918	0.0332
5458	CwaEgsld328	0.2022	1.1383	0.4121
5459	CwaNgsld328	0.0022	0.0122	0.0044
5460	CwaEgsld326	0.0000	0.0141	0.0689
5461	CwaNgsld326	0.0000	0.0002	0.0008
5462	CasEgsld327	6.7390	0.9136	10.5477
5463	CasNgsld327	0.0758	0.0103	0.1187
5464	CcoEgsld327	0.0105	0.0014	0.0164
5465	CcoNgsld327	0.0001	0.0000	0.0002
5466	CgrEgsld327	1.8995	0.2575	2.9731
5467	CgrNgsld327	0.0194	0.0026	0.0303
5468	CheEgsld327	3.6623	0.4965	5.7323
5469	CheNgsld327	0.0381	0.0052	0.0597
5470	ChoEgsld327	0.9950	0.1349	1.5574
5471	ChoNgsld327	0.0103	0.0014	0.0162
5472	CinEgsld327	6.9901	0.9477	10.9408
5473	CinNgsld327	0.0727	0.0099	0.1137
5474	CloEgsld327	1.0793	0.1463	1.6894
5475	CloNgsld327	0.0107	0.0015	0.0167
5476	CmiEgsld327	10.4124	1.4117	16.2974
5477	CmiNgsld327	0.1093	0.0148	0.1711
5478	CofEgsld327	3.1327	0.4247	4.9033
5479	CofNgsld327	0.0357	0.0048	0.0559
5480	CreEgsld327	6.7072	0.9093	10.4981
5481	CreNgsld327	0.0661	0.0090	0.1034
5482	CrtEgsld327	14.8068	2.0074	23.1754
5483	CrtNgsld327	0.1514	0.0205	0.2370
5484	CscEgsld327	0.1784	0.0242	0.2793
5485	CscNgsld327	0.0018	0.0002	0.0028
5486	CwaEgsld327	0.2971	0.0403	0.4650
5487	CwaNgsld327	0.0036	0.0005	0.0057
5488	CcoEgsld329	0.2114	0.2146	0.7329
5489	CcoNgsld329	0.0023	0.0023	0.0079
5490	CheEgsld329	1.0551	1.0708	3.6574

5491	CheNgsld329	0.0113	0.0115	0.0392
5492	ChoEgsld329	0.2978	0.3022	1.0324
5493	ChoNgsld329	0.0048	0.0049	0.0166
5494	CinEgsld329	0.5551	0.5634	1.9243
5495	CinNgsld329	0.0089	0.0091	0.0309
5496	CofEgsld329	3.0089	3.0535	10.4298
5497	CofNgsld329	0.0484	0.0491	0.1676
5498	CscEgsld329	0.3450	0.3502	1.1960
5499	CscNgsld329	0.0037	0.0038	0.0128
5500	CasNgsld401	0.0000	0.0000	0.0000
5501	CasTgsld401	0.0000	0.0000	0.0000
5502	CcoNgsld401	0.0000	0.0000	0.0000
5503	CcoTgsld401	0.0000	0.0000	0.0000
5504	CgrNgsld401	0.0000	0.0000	0.0000
5505	CgrTgsld401	0.0000	0.0000	0.0000
5506	CheNgsld401	0.0000	0.0000	0.0000
5507	CheTgsld401	0.0000	0.0000	0.0000
5508	ChoNgsld401	0.0000	0.0000	0.0000
5509	ChoTgsld401	0.0000	0.0000	0.0000
5510	CinNgsld401	0.0000	0.0000	0.0000
5511	CinTgsld401	0.0000	0.0000	0.0000
5512	CloNgsld401	0.0000	0.0000	0.0000
5513	CloTgsld401	0.0000	0.0000	0.0000
5514	CmiNgsld401	0.0000	0.0000	0.0000
5515	CmiTgsld401	0.0000	0.0000	0.0000
5516	CofNgsld401	0.0000	0.0000	0.0000
5517	CofTgsld401	0.0000	0.0000	0.0000
5518	CreNgsld401	0.0000	0.0000	0.0000
5519	CreTgsld401	0.0000	0.0000	0.0000
5520	CrtNgsld401	0.0000	0.0000	0.0000
5521	CrtTgsld401	0.0000	0.0000	0.0000
5522	CscNgsld401	0.0000	0.0000	0.0000
5523	CscTgsld401	0.0000	0.0000	0.0000
5524	CwaNgsld401	0.0000	0.0000	0.0000
5525	CwaTgsld401	0.0000	0.0000	0.0000
5526	CasEgsld402	0.0000	0.0000	0.2598
5527	CasNgsld402	0.0000	0.0000	0.0004
5528	CcoEgsld402	0.0000	0.0000	0.2838
5529	CcoNgsld402	0.0000	0.0000	0.0030
5530	CgrEgsld402	0.0000	0.0000	0.5962
5531	CgrNgsld402	0.0000	0.0000	0.0008
5532	CheEgsld402	0.0000	0.0000	1.0148
5533	CheNgsld402	0.0000	0.0000	0.0109
5534	ChoEgsld402	0.0000	0.0000	0.6165
5535	ChoNgsld402	0.0000	0.0000	0.0005
5536	CinEgsld402	0.0000	0.0000	2.1221
5537	CinNgsld402	0.0000	0.0000	0.0227

5538	CloEgsld402	0.0000	0.0000	0.5471
5539	CloNgsld402	0.0000	0.0000	0.0005
5540	CmiEgsld402	0.0000	0.0000	8.8274
5541	CmiNgsld402	0.0000	0.0000	0.0946
5542	CofEgsld402	0.0000	0.0000	4.1707
5543	CofNgsld402	0.0000	0.0000	0.0035
5544	CreEgsld402	0.0000	0.0000	0.2330
5545	CreNgsld402	0.0000	0.0000	0.0005
5546	CrtEgsld402	0.0000	0.0000	5.3856
5547	CrtNgsld402	0.0000	0.0000	0.0046
5548	CscEgsld402	0.0000	0.0000	0.5313
5549	CscNgsld402	0.0000	0.0000	0.0057
5550	CwaEgsld402	0.0000	0.0000	0.5061
5551	CwaNgsld402	0.0000	0.0000	0.0054
5552	CasEgsld403	0.0000	0.0000	0.8239
5553	CasNgsld403	0.0000	0.0000	0.0000
5554	CcoEgsld403	0.0000	0.0000	0.5523
5555	CcoNgsld403	0.0000	0.0000	0.0059
5556	CgrEgsld403	0.0000	0.0000	1.8909
5557	CgrNgsld403	0.0000	0.0000	0.0000
5558	CheEgsld403	0.0000	0.0000	1.9744
5559	CheNgsld403	0.0000	0.0000	0.0212
5560	ChoEgsld403	0.0000	0.0000	1.1995
5561	ChoNgsld403	0.0000	0.0000	0.0000
5562	CinEgsld403	0.0000	0.0000	6.7301
5563	CinNgsld403	0.0000	0.0000	0.0721
5564	CloEgsld403	0.0000	0.0000	1.0645
5565	CloNgsld403	0.0000	0.0000	0.0000
5566	CmiEgsld403	0.0000	0.0000	27.9960
5567	CmiNgsld403	0.0000	0.0000	0.2999
5568	CofEgsld403	0.0000	0.0000	8.1146
5569	CofNgsld403	0.0000	0.0000	0.0000
5570	CreEgsld403	0.0000	0.0000	1.8742
5571	CreNgsld403	0.0000	0.0000	0.0002
5572	CrtEgsld403	0.0000	0.0000	10.4783
5573	CrtNgsld403	0.0000	0.0000	0.0000
5574	CscEgsld403	0.0000	0.0000	1.6850
5575	CscNgsld403	0.0000	0.0000	0.0181
5576	CwaEgsld403	0.0000	0.0000	0.9846
5577	CwaNgsld403	0.0000	0.0000	0.0105
5578	CasNgsld404	0.0000	0.0000	0.0000
5579	CasTgsld404	0.0000	0.0000	0.0000
5580	CcoNgsld404	0.0000	0.0000	0.0000
5581	CcoTgsld404	0.0000	0.0000	0.0000
5582	CgrNgsld404	0.0000	0.0000	0.0000
5583	CgrTgsld404	0.0000	0.0000	0.0000
5584	CheNgsld404	0.0000	0.0000	0.0000

5585	CheTgsld404	0.0000	0.0000	0.0000
5586	ChoNgsld404	0.0000	0.0000	0.0000
5587	ChoTgsld404	0.0000	0.0000	0.0000
5588	CinNgsld404	0.0000	0.0000	0.0000
5589	CinTgsld404	0.0000	0.0000	0.0000
5590	CloNgsld404	0.0000	0.0000	0.0000
5591	CloTgsld404	0.0000	0.0000	0.0000
5592	CmiNgsld404	0.0000	0.0000	0.0000
5593	CmiTgsld404	0.0000	0.0000	0.0000
5594	CofNgsld404	0.0000	0.0000	0.0000
5595	CofTgsld404	0.0000	0.0000	0.0000
5596	CreNgsld404	0.0000	0.0000	0.0000
5597	CreTgsld404	0.0000	0.0000	0.0000
5598	CrtNgsld404	0.0000	0.0000	0.0000
5599	CrtTgsld404	0.0000	0.0000	0.0000
5600	CscNgsld404	0.0000	0.0000	0.0000
5601	CscTgsld404	0.0000	0.0000	0.0000
5602	CwaNgsld404	0.0000	0.0000	0.0000
5603	CwaTgsld404	0.0000	0.0000	0.0000
5604	CasNgsld405	0.0000	0.0000	0.0000
5605	CasTgsld405	0.0000	0.0000	0.0000
5606	CcoNgsld405	0.0000	0.0000	0.0003
5607	CcoTgsld405	0.0000	0.0000	0.0046
5608	CgrNgsld405	0.0000	0.0000	0.0009
5609	CgrTgsld405	0.0000	0.0000	0.0130
5610	CheNgsld405	0.0000	0.0000	0.0010
5611	CheTgsld405	0.0000	0.0000	0.0151
5612	ChoNgsld405	0.0000	0.0000	0.0004
5613	ChoTgsld405	0.0000	0.0000	0.0056
5614	CinNgsld405	0.0000	0.0000	0.0000
5615	CinTgsld405	0.0000	0.0000	0.0000
5616	CloNgsld405	0.0000	0.0000	0.0000
5617	CloTgsld405	0.0000	0.0000	0.0000
5618	CmiNgsld405	0.0000	0.0000	0.0018
5619	CmiTgsld405	0.0000	0.0000	0.1674
5620	CofNgsld405	0.0000	0.0000	0.0039
5621	CofTgsld405	0.0000	0.0000	0.0566
5622	CreNgsld405	0.0000	0.0000	0.0005
5623	CreTgsld405	0.0000	0.0000	0.0101
5624	CrtNgsld405	0.0000	0.0000	0.0000
5625	CrtTgsld405	0.0000	0.0000	0.0000
5626	CscNgsld405	0.0000	0.0000	0.0010
5627	CscTgsld405	0.0000	0.0000	0.0139
5628	CwaNgsld405	0.0000	0.0000	0.0006
5629	CwaTgsld405	0.0000	0.0000	0.0083
5630	CasNgsld406	0.0000	0.0000	0.0000
5631	CasTgsld406	0.0000	0.0000	0.0000

5632	CcoNgsld406	0.0000	0.0000	0.0000
5633	CcoTgsld406	0.0000	0.0000	0.0016
5634	CgrNgsld406	0.0000	0.0000	0.0000
5635	CgrTgsld406	0.0000	0.0000	0.0042
5636	CheNgsld406	0.0000	0.0000	0.0001
5637	CheTgsld406	0.0000	0.0000	0.0053
5638	ChoNgsld406	0.0000	0.0000	0.0000
5639	ChoTgsld406	0.0000	0.0000	0.0018
5640	CinNgsld406	0.0000	0.0000	0.0000
5641	CinTgsld406	0.0000	0.0000	0.0000
5642	CloNgsld406	0.0000	0.0000	0.0000
5643	CloTgsld406	0.0000	0.0000	0.0000
5644	CmiNgsld406	0.0000	0.0000	0.0006
5645	CmiTgsld406	0.0000	0.0000	0.0580
5646	CofNgsld406	0.0000	0.0000	0.0002
5647	CofTgsld406	0.0000	0.0000	0.0183
5648	CreNgsld406	0.0000	0.0000	0.0000
5649	CreTgsld406	0.0000	0.0000	0.0033
5650	CrtNgsld406	0.0000	0.0000	0.0000
5651	CrtTgsld406	0.0000	0.0000	0.0000
5652	CscNgsld406	0.0000	0.0000	0.0001
5653	CscTgsld406	0.0000	0.0000	0.0049
5654	CwaNgsld406	0.0000	0.0000	0.0000
5655	CwaTgsld406	0.0000	0.0000	0.0029
5656	CasNgsld407	0.0000	0.0000	0.0000
5657	CasTgsld407	0.0000	0.0000	0.0000
5658	CcoNgsld407	0.0000	0.0000	0.0000
5659	CcoTgsld407	0.0000	0.0000	0.0021
5660	CgrNgsld407	0.0000	0.0000	0.0000
5661	CgrTgsld407	0.0000	0.0000	0.0054
5662	CheNgsld407	0.0000	0.0000	0.0000
5663	CheTgsld407	0.0000	0.0000	0.0068
5664	ChoNgsld407	0.0000	0.0000	0.0000
5665	ChoTgsld407	0.0000	0.0000	0.0023
5666	CinNgsld407	0.0000	0.0000	0.0000
5667	CinTgsld407	0.0000	0.0000	0.0000
5668	CloNgsld407	0.0000	0.0000	0.0000
5669	CloTgsld407	0.0000	0.0000	0.0000
5670	CmiNgsld407	0.0000	0.0000	0.0008
5671	CmiTgsld407	0.0000	0.0000	0.0743
5672	CofNgsld407	0.0000	0.0000	0.0002
5673	CofTgsld407	0.0000	0.0000	0.0236
5674	CreNgsld407	0.0000	0.0000	0.0000
5675	CreTgsld407	0.0000	0.0000	0.0042
5676	CrtNgsld407	0.0000	0.0000	0.0000
5677	CrtTgsld407	0.0000	0.0000	0.0000
5678	CscNgsld407	0.0000	0.0000	0.0000

5679	CscTgsld407	0.0000	0.0000	0.0063
5680	CwaNgsld407	0.0000	0.0000	0.0000
5681	CwaTgsld407	0.0000	0.0000	0.0038
5682	CasNgsld408	0.0000	0.0000	0.0885
5683	CasTgsld408	0.0000	0.0000	0.5851
5684	CcoNgsld408	0.0000	0.0000	0.0045
5685	CcoTgsld408	0.0000	0.0000	0.4212
5686	CgrNgsld408	0.0000	0.0000	0.2030
5687	CgrTgsld408	0.0000	0.0000	1.3429
5688	CheNgsld408	0.0000	0.0000	0.0161
5689	CheTgsld408	0.0000	0.0000	1.5058
5690	ChoNgsld408	0.0000	0.0000	0.1309
5691	ChoTgsld408	0.0000	0.0000	0.8661
5692	CinNgsld408	0.0000	0.0000	0.0541
5693	CinTgsld408	0.0000	0.0000	5.0482
5694	CloNgsld408	0.0000	0.0000	0.1162
5695	CloTgsld408	0.0000	0.0000	0.7686
5696	CmiNgsld408	0.0000	0.0000	0.2250
5697	CmiTgsld408	0.0000	0.0000	20.9996
5698	CofNgsld408	0.0000	0.0000	0.8858
5699	CofTgsld408	0.0000	0.0000	5.8594
5700	CreNgsld408	0.0000	0.0000	0.1980
5701	CreTgsld408	0.0000	0.0000	1.3096
5702	CrtNgsld408	0.0000	0.0000	1.1438
5703	CrtTgsld408	0.0000	0.0000	7.5661
5704	CscNgsld408	0.0000	0.0000	0.0135
5705	CscTgsld408	0.0000	0.0000	1.2639
5706	CwaNgsld408	0.0000	0.0000	0.0091
5707	CwaTgsld408	0.0000	0.0000	0.8526
5708	CinNgsld409	0.0000	0.0000	0.0000
5709	CinTgsld409	0.0000	0.0000	0.0000
5710	CinNgsld410	0.0000	0.0000	0.0000
5711	CinTgsld410	0.0000	0.0000	0.0000
5712	CasNgsld501	0.0000	0.0000	0.0000
5713	CasTgsld501	0.0000	0.0000	0.0000
5714	CcoNgsld501	0.0000	0.0000	0.0000
5715	CcoTgsld501	0.0000	0.0000	0.0000
5716	CgrNgsld501	0.0000	0.0000	0.0000
5717	CgrTgsld501	0.0000	0.0000	0.0000
5718	CheNgsld501	0.0000	0.0000	0.0000
5719	CheTgsld501	0.0000	0.0000	0.0000
5720	ChoNgsld501	0.0000	0.0000	0.0000
5721	ChoTgsld501	0.0000	0.0000	0.0000
5722	CinNgsld501	0.0000	0.0000	0.0000
5723	CinTgsld501	0.0000	0.0000	0.0000
5724	CloNgsld501	0.0000	0.0000	0.0000
5725	CloTgsld501	0.0000	0.0000	0.0000

5726	CmiNgsld501	0.0000	0.0000	0.0000
5727	CmiTgsld501	0.0000	0.0000	0.0000
5728	CofNgsld501	0.0000	0.0000	0.0000
5729	CofTgsld501	0.0000	0.0000	0.0000
5730	CreNgsld501	0.0000	0.0000	0.0000
5731	CreTgsld501	0.0000	0.0000	0.0000
5732	CrtNgsld501	0.0000	0.0000	0.0000
5733	CrtTgsld501	0.0000	0.0000	0.0000
5734	CscNgsld501	0.0000	0.0000	0.0000
5735	CscTgsld501	0.0000	0.0000	0.0000
5736	CwaNgsld501	0.0000	0.0000	0.0000
5737	CwaTgsld501	0.0000	0.0000	0.0000
5738	CasEgsld502	0.0033	0.0000	1.1966
5739	CasNgsld502	0.0000	0.0000	0.0146
5740	CcoEgsld502	0.0037	0.0000	1.3313
5741	CcoNgsld502	0.0000	0.0000	0.0162
5742	CgrEgsld502	0.0291	0.0000	2.3259
5743	CgrNgsld502	0.0004	0.0000	0.0284
5744	CheEgsld502	0.0133	0.0000	4.7632
5745	CheNgsld502	0.0002	0.0000	0.0581
5746	ChoEgsld502	0.0080	0.0000	2.8646
5747	ChoNgsld502	0.0001	0.0000	0.0349
5748	CinEgsld502	0.0273	0.0000	9.8058
5749	CinNgsld502	0.0003	0.0000	0.1195
5750	CloEgsld502	0.0331	0.0000	2.6413
5751	CloNgsld502	0.0004	0.0000	0.0322
5752	CmiEgsld502	0.1094	0.0000	39.2600
5753	CmiNgsld502	0.0013	0.0000	0.4786
5754	CofEgsld502	0.0571	0.0000	20.4804
5755	CofNgsld502	0.0007	0.0000	0.2497
5756	CreEgsld502	0.0137	0.0000	1.0945
5757	CreNgsld502	0.0002	0.0000	0.0133
5758	CrtEgsld502	0.3020	0.0000	24.1201
5759	CrtNgsld502	0.0037	0.0000	0.2940
5760	CscEgsld502	0.0069	0.0000	2.4919
5761	CscNgsld502	0.0001	0.0000	0.0304
5762	CwaEgsld502	0.0036	0.0000	1.2906
5763	CwaNgsld502	0.0000	0.0000	0.0157
5764	CasEgsld503	0.0000	0.0000	0.6756
5765	CasNgsld503	0.0000	0.0000	0.0082
5766	CcoEgsld503	0.0000	0.0000	1.1193
5767	CcoNgsld503	0.0000	0.0000	0.0136
5768	CgrEgsld503	0.0000	0.0000	0.6566
5769	CgrNgsld503	0.0000	0.0000	0.0080
5770	CheEgsld503	0.0000	0.0000	4.0045
5771	CheNgsld503	0.0000	0.0000	0.0488
5772	ChoEgsld503	0.0000	0.0000	2.4083

5773	ChoNgsld503	0.0000	0.0000	0.0294
5774	CinEgsld503	0.0000	0.0000	5.5365
5775	CinNgsld503	0.0000	0.0000	0.0675
5776	CloEgsld503	0.0000	0.0000	0.8882
5777	CloNgsld503	0.0000	0.0000	0.0108
5778	CmiEgsld503	0.0000	0.0000	22.1667
5779	CmiNgsld503	0.0000	0.0000	0.2702
5780	CofEgsld503	0.0000	0.0000	13.7744
5781	CofNgsld503	0.0000	0.0000	0.1679
5782	CreEgsld503	0.0000	0.0000	0.8055
5783	CreNgsld503	0.0000	0.0000	0.0098
5784	CrtEgsld503	0.0000	0.0000	4.0556
5785	CrtNgsld503	0.0000	0.0000	0.0494
5786	CscEgsld503	0.0000	0.0000	3.5174
5787	CscNgsld503	0.0000	0.0000	0.0429
5788	CwaEgsld503	0.0000	0.0000	1.0850
5789	CwaNgsld503	0.0000	0.0000	0.0132
5790	CasNgsld504	0.0000	0.0000	0.0000
5791	CasTgsld504	0.0000	0.0000	0.0000
5792	CrtNgsld504	0.0000	0.0000	0.0000
5793	CrtTgsld504	0.0000	0.0000	0.0000
5794	CwaNgsld504	0.0000	0.0000	0.0000
5795	CwaTgsld504	0.0000	0.0000	0.0000
5796	CasNgsld505	0.0000	0.0000	0.0000
5797	CasTgsld505	0.0000	0.0000	0.0000
5798	CcoNgsld505	0.0000	0.0000	0.0000
5799	CcoTgsld505	0.0000	0.0000	0.0000
5800	CgrNgsld505	0.0000	0.0000	0.0000
5801	CgrTgsld505	0.0000	0.0000	0.0000
5802	CheNgsld505	0.0000	0.0000	0.0000
5803	CheTgsld505	0.0000	0.0000	0.0000
5804	ChoNgsld505	0.0000	0.0000	0.0000
5805	ChoTgsld505	0.0000	0.0000	0.0000
5806	CinNgsld505	0.0000	0.0000	0.0000
5807	CinTgsld505	0.0000	0.0000	0.0000
5808	CloNgsld505	0.0000	0.0000	0.0000
5809	CloTgsld505	0.0000	0.0000	0.0000
5810	CmiNgsld505	0.0000	0.0000	0.0000
5811	CmiTgsld505	0.0000	0.0000	0.0000
5812	CofNgsld505	0.0000	0.0000	0.0000
5813	CofTgsld505	0.0000	0.0000	0.0000
5814	CreNgsld505	0.0000	0.0000	0.0000
5815	CreTgsld505	0.0000	0.0000	0.0000
5816	CrtNgsld505	0.0000	0.0000	0.0000
5817	CrtTgsld505	0.0000	0.0000	0.0000
5818	CscNgsld505	0.0000	0.0000	0.0000
5819	CscTgsld505	0.0000	0.0000	0.0000

5820	CwaNgsld505	0.0000	0.0000	0.0000
5821	CwaTgsld505	0.0000	0.0000	0.0000
5822	CasNgsld506	0.0000	0.0000	0.0000
5823	CasTgsld506	0.0000	0.0000	0.0000
5824	CcoNgsld506	0.0000	0.0000	0.0000
5825	CcoTgsld506	0.0000	0.0000	0.0000
5826	CgrNgsld506	0.0000	0.0000	0.0000
5827	CgrTgsld506	0.0000	0.0000	0.0000
5828	CheNgsld506	0.0000	0.0000	0.0000
5829	CheTgsld506	0.0000	0.0000	0.0000
5830	ChoNgsld506	0.0000	0.0000	0.0000
5831	ChoTgsld506	0.0000	0.0000	0.0000
5832	CinNgsld506	0.0000	0.0000	0.0000
5833	CinTgsld506	0.0000	0.0000	0.0000
5834	CloNgsld506	0.0000	0.0000	0.0000
5835	CloTgsld506	0.0000	0.0000	0.0000
5836	CmiNgsld506	0.0000	0.0000	0.0000
5837	CmiTgsld506	0.0000	0.0000	0.0000
5838	CofNgsld506	0.0000	0.0000	0.0000
5839	CofTgsld506	0.0000	0.0000	0.0000
5840	CreNgsld506	0.0000	0.0000	0.0000
5841	CreTgsld506	0.0000	0.0000	0.0000
5842	CrtNgsld506	0.0000	0.0000	0.0000
5843	CrtTgsld506	0.0000	0.0000	0.0000
5844	CscNgsld506	0.0000	0.0000	0.0000
5845	CscTgsld506	0.0000	0.0000	0.0000
5846	CwaNgsld506	0.0000	0.0000	0.0000
5847	CwaTgsld506	0.0000	0.0000	0.0000
5848	CasTgsld507	1.8779	1.2244	10.0183
5849	CrtTgsld507	24.9578	16.2725	133.1467
5850	CwaTgsld507	3.2588	2.1248	17.3854
5851	CasTgsld508	0.0062	0.0014	0.0255
5852	CcoTgsld508	0.0018	0.0018	0.0176
5853	CgrTgsld508	0.0004	0.0000	0.0018
5854	CheTgsld508	0.0156	0.0036	0.0643
5855	ChoTgsld508	0.0040	0.0039	0.0389
5856	CinTgsld508	0.0508	0.0117	0.2088
5857	CloTgsld508	0.0002	0.0000	0.0007
5858	CmiTgsld508	0.0116	0.0027	0.0476
5859	CofTgsld508	0.0016	0.0004	0.0066
5860	CreTgsld508	0.0007	0.0000	0.0027
5861	CrtTgsld508	0.0016	0.0000	0.0064
5862	CscTgsld508	0.0129	0.0030	0.0529
5863	CwaTgsld508	0.0021	0.0005	0.0087
5864	CasTgsld509	0.0003	0.0001	0.0010
5865	CcoTgsld509	0.0001	0.0001	0.0007
5866	CgrTgsld509	0.0000	0.0000	0.0001

5867	CheTgsld509	0.0007	0.0001	0.0026
5868	ChoTgsld509	0.0002	0.0002	0.0016
5869	CinTgsld509	0.0021	0.0005	0.0086
5870	CloTgsld509	0.0000	0.0000	0.0000
5871	CmiTgsld509	0.0005	0.0001	0.0021
5872	CofTgsld509	0.0001	0.0000	0.0003
5873	CreTgsld509	0.0000	0.0000	0.0002
5874	CrtTgsld509	0.0001	0.0000	0.0004
5875	CscTgsld509	0.0005	0.0001	0.0022
5876	CwaTgsld509	0.0001	0.0000	0.0004
5877	CasTgsld510	0.9828	0.2248	4.0001
5878	CcoTgsld510	0.3852	0.3573	3.6261
5879	CgrTgsld510	3.0081	0.0002	12.1692
5880	CheTgsld510	3.1803	0.7275	12.9437
5881	ChoTgsld510	0.8276	0.7676	7.7916
5882	CinTgsld510	10.4985	2.4017	42.7288
5883	CloTgsld510	1.6975	0.0001	6.8673
5884	CmiTgsld510	44.3162	10.1379	180.3659
5885	CofTgsld510	13.0462	2.9845	53.0975
5886	CreTgsld510	2.9249	0.0002	11.8326
5887	CrtTgsld510	12.7209	0.0007	51.4625
5888	CscTgsld510	2.6735	0.6116	10.8811
5889	CwaTgsld510	1.0867	0.2486	4.4227
5890	CasTgsld511	0.2128	0.0489	0.8691
5891	CcoTgsld511	0.0610	0.0586	0.5809
5892	CgrTgsld511	0.4560	0.0001	1.8648
5893	CheTgsld511	0.4711	0.1082	1.9242
5894	ChoTgsld511	0.1312	0.1260	1.2498
5895	CinTgsld511	1.8833	0.4324	7.6920
5896	CloTgsld511	0.3017	0.0001	1.2340
5897	CmiTgsld511	0.8378	0.1924	3.4219
5898	CofTgsld511	2.2395	0.5142	9.1466
5899	CreTgsld511	0.5593	0.0001	2.2876
5900	CrtTgsld511	2.8161	0.0005	11.5177
5901	CscTgsld511	0.4469	0.1026	1.8254
5902	CwaTgsld511	0.1379	0.0317	0.5631
5903	CasEgsld601	0.0032	0.0008	0.0230
5904	CasNgsld601	0.0000	0.0000	0.0002
5905	CcoEgsld601	0.0005	0.0004	0.0035
5906	CcoNgsld601	0.0000	0.0000	0.0001
5907	CgrEgsld601	0.0051	0.0013	0.0369
5908	CgrNgsld601	0.0001	0.0000	0.0004
5909	CheEgsld601	0.0011	0.0009	0.0082
5910	CheNgsld601	0.0000	0.0000	0.0003
5911	ChoEgsld601	0.0008	0.0007	0.0064
5912	ChoNgsld601	0.0000	0.0000	0.0003
5913	CinEgsld601	0.0165	0.0041	0.1186

5914	CinNgsld601	0.0002	0.0000	0.0013
5915	CloEgsld601	0.0010	0.0008	0.0077
5916	CloNgsld601	0.0000	0.0000	0.0003
5917	CmiEgsld601	0.1253	0.0309	0.9020
5918	CmiNgsld601	0.0014	0.0003	0.0100
5919	CofEgsld601	0.0253	0.0063	0.1824
5920	CofNgsld601	0.0003	0.0001	0.0019
5921	CreEgsld601	0.0009	0.0008	0.0071
5922	CreNgsld601	0.0000	0.0000	0.0003
5923	CrtEgsld601	0.0034	0.0008	0.0242
5924	CrtNgsld601	0.0001	0.0000	0.0010
5925	CscEgsld601	0.0011	0.0009	0.0083
5926	CscNgsld601	0.0000	0.0000	0.0003
5927	CwaEgsld601	0.0018	0.0005	0.0133
5928	CwaNgsld601	0.0000	0.0000	0.0001
5929	CcoEgsld602	0.0000	0.0000	0.0000
5930	CcoNgsld602	0.0000	0.0000	0.0000
5931	CheEgsld602	0.0050	0.0050	0.1229
5932	CheNgsld602	0.0001	0.0001	0.0013
5933	ChoEgsld602	0.0297	0.0297	0.7269
5934	ChoNgsld602	0.0003	0.0003	0.0078
5935	CinEgsld602	0.0000	0.0000	0.0000
5936	CinNgsld602	0.0000	0.0000	0.0000
5937	CofEgsld602	0.0042	0.0042	0.1026
5938	CofNgsld602	0.0000	0.0000	0.0011
5939	CrtEgsld602	0.0066	0.0066	0.1611
5940	CrtNgsld602	0.0001	0.0001	0.0017
5941	CasEgsld603	0.0823	0.0385	0.5382
5942	CasNgsld603	0.0044	0.0021	0.0288
5943	CcoEgsld603	0.0546	0.0457	0.4153
5944	CcoNgsld603	0.0029	0.0024	0.0219
5945	CgrEgsld603	0.2786	0.1304	1.8226
5946	CgrNgsld603	0.0030	0.0014	0.0195
5947	CheEgsld603	0.1304	0.1092	0.9924
5948	CheNgsld603	0.0069	0.0058	0.0524
5949	ChoEgsld603	0.0762	0.0638	0.5799
5950	ChoNgsld603	0.0040	0.0034	0.0306
5951	CinEgsld603	0.4245	0.1987	2.7775
5952	CinNgsld603	0.0227	0.0106	0.1488
5953	CloEgsld603	0.1216	0.1018	0.9250
5954	CloNgsld603	0.0064	0.0054	0.0489
5955	CmiEgsld603	13.7775	6.4484	90.1460
5956	CmiNgsld603	0.1476	0.0691	0.9658
5957	CofEgsld603	0.6528	0.3055	4.2713
5958	CofNgsld603	0.0345	0.0161	0.2257
5959	CreEgsld603	0.1099	0.0921	0.8365
5960	CreNgsld603	0.0059	0.0049	0.0448

5961	CrtEgsld603	0.4463	0.2089	2.9202
5962	CrtNgsld603	0.0239	0.0112	0.1564
5963	CscEgsld603	0.1282	0.1074	0.9755
5964	CscNgsld603	0.0069	0.0058	0.0523
5965	CwaEgsld603	0.0635	0.0297	0.4154
5966	CwaNgsld603	0.0034	0.0016	0.0223
5967	CasNgsld604	0.0000	0.0000	0.0000
5968	CasTgsld604	0.0000	0.0000	0.0000
5969	CcoNgsld604	0.0000	0.0000	0.0000
5970	CcoTgsld604	0.0000	0.0000	0.0000
5971	CgrNgsld604	0.0000	0.0000	0.0000
5972	CgrTgsld604	0.0001	0.0000	0.0006
5973	CheNgsld604	0.0000	0.0000	0.0000
5974	CheTgsld604	0.0002	0.0002	0.0017
5975	ChoNgsld604	0.0000	0.0000	0.0001
5976	ChoTgsld604	0.0014	0.0011	0.0103
5977	CloNgsld604	0.0000	0.0000	0.0000
5978	CloTgsld604	0.0001	0.0001	0.0007
5979	CreNgsld604	0.0000	0.0000	0.0000
5980	CreTgsld604	0.0001	0.0001	0.0009
5981	CrtNgsld604	0.0000	0.0000	0.0000
5982	CrtTgsld604	0.0003	0.0001	0.0025
5983	CscNgsld604	0.0000	0.0000	0.0000
5984	CscTgsld604	0.0001	0.0001	0.0008
5985	CasNgsld605	0.0000	0.0000	0.0000
5986	CasTgsld605	0.0000	0.0000	0.0000
5987	CcoNgsld605	0.0000	0.0000	0.0000
5988	CcoTgsld605	0.0000	0.0000	0.0000
5989	CgrNgsld605	0.0000	0.0000	0.0000
5990	CgrTgsld605	0.0002	0.0000	0.0017
5991	CheNgsld605	0.0000	0.0000	0.0001
5992	CheTgsld605	0.0007	0.0006	0.0055
5993	ChoNgsld605	0.0000	0.0000	0.0004
5994	ChoTgsld605	0.0046	0.0039	0.0352
5995	CinNgsld605	0.0000	0.0000	0.0000
5996	CinTgsld605	0.0000	0.0000	0.0000
5997	CloNgsld605	0.0000	0.0000	0.0000
5998	CloTgsld605	0.0004	0.0003	0.0027
5999	CmiNgsld605	0.0000	0.0000	0.0000
6000	CmiTgsld605	0.0004	0.0000	0.0028
6001	CofNgsld605	0.0000	0.0000	0.0001
6002	CofTgsld605	0.0007	0.0001	0.0050
6003	CreNgsld605	0.0000	0.0000	0.0000
6004	CreTgsld605	0.0005	0.0004	0.0036
6005	CrtNgsld605	0.0000	0.0000	0.0001
6006	CrtTgsld605	0.0011	0.0001	0.0080
6007	CscNgsld605	0.0000	0.0000	0.0000

6008	CscTgsld605	0.0003	0.0003	0.0025
6009	CwaNgsld605	0.0000	0.0000	0.0000
6010	CwaTgsld605	0.0000	0.0000	0.0000
6011	CasEgsld606	0.0013	0.0001	0.0094
6012	CasNgsld606	0.0000	0.0000	0.0001
6013	CcoEgsld606	0.0017	0.0014	0.0129
6014	CcoNgsld606	0.0000	0.0000	0.0002
6015	CheEgsld606	0.0074	0.0062	0.0563
6016	CheNgsld606	0.0001	0.0001	0.0007
6017	ChoEgsld606	0.0039	0.0033	0.0298
6018	ChoNgsld606	0.0000	0.0000	0.0004
6019	CinEgsld606	0.0122	0.0011	0.0865
6020	CinNgsld606	0.0001	0.0000	0.0010
6021	CloEgsld606	0.0107	0.0090	0.0814
6022	CloNgsld606	0.0001	0.0001	0.0010
6023	CofEgsld606	0.0402	0.0037	0.2847
6024	CofNgsld606	0.0005	0.0000	0.0034
6025	CreEgsld606	0.0000	0.0000	0.0000
6026	CreNgsld606	0.0000	0.0000	0.0000
6027	CrtEgsld606	0.0001	0.0000	0.0005
6028	CrtNgsld606	0.0000	0.0000	0.0000
6029	CscEgsld606	0.0022	0.0018	0.0164
6030	CscNgsld606	0.0000	0.0000	0.0002
6031	CwaEgsld606	0.0000	0.0000	0.0000
6032	CwaNgsld606	0.0000	0.0000	0.0000
6033	CasTgsld607	0.0000	0.0000	0.0000
6034	CcoTgsld607	0.0000	0.0000	0.0000
6035	CloTgsld607	0.0000	0.0000	0.0000
6036	CasNgsld608	0.0000	0.0000	0.0000
6037	CasTgsld608	0.0014	0.0008	0.0070
6038	CcoNgsld608	0.0000	0.0000	0.0000
6039	CcoTgsld608	0.0000	0.0000	0.0000
6040	CloNgsld608	0.0002	0.0001	0.0010
6041	CloTgsld608	0.0580	0.0327	0.2790
6042	CasNgsld609	0.0000	0.0000	0.0000
6043	CasTgsld609	0.0000	0.0000	0.0000
6044	CcoNgsld609	0.0000	0.0000	0.0000
6045	CcoTgsld609	0.0000	0.0000	0.0000
6046	CloNgsld609	0.0000	0.0000	0.0000
6047	CloTgsld609	0.0000	0.0000	0.0000
6048	CasNgsld701	0.0064	0.0000	0.0115
6049	CasTgsld701	0.6277	0.0000	1.1302
6050	CgrNgsld701	0.0052	0.0000	0.0094
6051	CgrTgsld701	0.4858	0.0000	0.8747
6052	CheNgsld701	0.0086	0.0000	0.0154
6053	CheTgsld701	0.8647	0.0000	1.5569
6054	ChoNgsld701	0.0068	0.0000	0.0123

6055	ChoTgsld701	0.6763	0.0000	1.2177
6056	CinNgsld701	0.0331	0.0000	0.0596
6057	CinTgsld701	3.2393	0.0000	5.8324
6058	CloNgsld701	0.0080	0.0000	0.0144
6059	CloTgsld701	0.8060	0.0000	1.4511
6060	CofNgsld701	0.0502	0.0000	0.0904
6061	CofTgsld701	4.9816	0.0000	8.9693
6062	CrtNgsld701	0.0256	0.0000	0.0460
6063	CrtTgsld701	2.5444	0.0000	4.5812
6064	CwaNgsld701	0.0036	0.0000	0.0065
6065	CwaTgsld701	0.3619	0.0000	0.6516
6066	CcoEgsld702	0.0163	0.0163	0.1293
6067	CcoNgsld702	0.0007	0.0007	0.0055
6068	ChoEgsld702	0.0304	0.0304	0.2407
6069	ChoNgsld702	0.0013	0.0013	0.0103
6070	CinEgsld702	0.2038	0.2141	4.2274
6071	CinNgsld702	0.0022	0.0023	0.0453
6072	CofEgsld702	0.3134	0.3292	6.5012
6073	CofNgsld702	0.0033	0.0035	0.0687
6074	CasEgsld801	0.0006	0.0007	0.0080
6075	CcoEgsld801	0.0002	0.0002	0.0016
6076	CgrEgsld801	0.8681	0.8728	10.7164
6077	CheEgsld801	0.0010	0.0008	0.0073
6078	ChoEgsld801	0.0059	0.0049	0.0447
6079	CloEgsld801	0.0181	0.0151	0.1376
6080	CreEgsld801	0.3150	0.2639	2.3969
6081	CrtEgsld801	0.0570	0.0573	0.7041
6082	CscEgsld801	0.0058	0.0048	0.0439
6083	CasEgsld802	0.0002	0.0000	0.0014
6084	CasNgsld802	0.0000	0.0000	0.0000
6085	CcoEgsld802	0.0000	0.0000	0.0000
6086	CcoNgsld802	0.0000	0.0000	0.0000
6087	CgrEgsld802	0.0585	0.0130	0.4153
6088	CgrNgsld802	0.0004	0.0001	0.0026
6089	CheEgsld802	0.0000	0.0000	0.0000
6090	CheNgsld802	0.0000	0.0000	0.0000
6091	ChoEgsld802	0.0011	0.0009	0.0083
6092	ChoNgsld802	0.0000	0.0000	0.0001
6093	CloEgsld802	0.0023	0.0019	0.0174
6094	CloNgsld802	0.0000	0.0000	0.0001
6095	CreEgsld802	0.0490	0.0410	0.3726
6096	CreNgsld802	0.0003	0.0002	0.0023
6097	CrtEgsld802	0.0054	0.0012	0.0384
6098	CrtNgsld802	0.0000	0.0000	0.0002
6099	CscEgsld802	0.0011	0.0009	0.0084
6100	CscNgsld802	0.0000	0.0000	0.0001
6101	CasEgsld803	0.0017	0.0002	0.0118

6102	CasNgsld803	0.0000	0.0000	0.0001
6103	CcoEgsld803	0.0000	0.0000	0.0001
6104	CgrEgsld803	0.8707	0.0798	6.1722
6105	CheEgsld803	0.0000	0.0000	0.0000
6106	ChoEgsld803	0.0155	0.0130	0.1180
6107	CloEgsld803	0.0324	0.0271	0.2464
6108	CreEgsld803	0.6828	0.5719	5.1952
6109	CrtEgsld803	0.0754	0.0069	0.5348
6110	CscEgsld803	0.0156	0.0131	0.1187
6111	CcoEgsld804	0.0030	0.0025	0.0230
6112	CcoNgsld804	0.0000	0.0000	0.0003
6113	CheEgsld804	0.0151	0.0127	0.1152
6114	CheNgsld804	0.0002	0.0001	0.0013
6115	ChoEgsld804	0.0082	0.0069	0.0625
6116	ChoNgsld804	0.0001	0.0001	0.0007
6117	CloEgsld804	0.0357	0.0299	0.2718
6118	CloNgsld804	0.0004	0.0003	0.0030
6119	CscEgsld804	0.0161	0.0135	0.1227
6120	CscNgsld804	0.0002	0.0001	0.0013
6121	CgrEgsld805	0.0471	0.0440	0.3380
6122	CgrNgsld805	0.0000	0.0000	0.0000
6123	CgrEgsld806	0.9802	0.3371	6.6218
6124	CrtEgsld806	0.0306	0.0105	0.2067
6125	CgrTgsld807	0.0000	0.0000	0.0000
6126	CasEgsld808	0.0009	0.0001	0.0061
6127	CasNgsld808	0.0000	0.0000	0.0003
6128	CcoEgsld808	0.0002	0.0001	0.0012
6129	CcoNgsld808	0.0000	0.0000	0.0001
6130	CgrEgsld808	0.3546	0.0325	2.5136
6131	CgrNgsld808	0.0000	0.0000	0.0000
6132	CheEgsld808	0.0007	0.0006	0.0055
6133	CheNgsld808	0.0000	0.0000	0.0003
6134	ChoEgsld808	0.0045	0.0037	0.0339
6135	ChoNgsld808	0.0002	0.0002	0.0016
6136	CloEgsld808	0.0137	0.0115	0.1043
6137	CloNgsld808	0.0006	0.0005	0.0049
6138	CreEgsld808	0.2388	0.2000	1.8171
6139	CreNgsld808	0.0111	0.0093	0.0845
6140	CrtEgsld808	0.0233	0.0021	0.1651
6141	CrtNgsld808	0.0000	0.0000	0.0000
6142	CscEgsld808	0.0044	0.0037	0.0333
6143	CscNgsld808	0.0002	0.0002	0.0015
6144	CasEgsld809	0.0009	0.0001	0.0064
6145	CasNgsld809	0.0000	0.0000	0.0003
6146	CcoEgsld809	0.0000	0.0000	0.0000
6147	CcoNgsld809	0.0000	0.0000	0.0000
6148	CgrEgsld809	0.2983	0.0273	2.1146

6149	CgrNgsld809	0.0128	0.0012	0.0906
6150	CheEgsld809	0.0000	0.0000	0.0000
6151	CheNgsld809	0.0000	0.0000	0.0000
6152	ChoEgsld809	0.0056	0.0047	0.0425
6153	ChoNgsld809	0.0002	0.0002	0.0018
6154	CloEgsld809	0.0117	0.0098	0.0889
6155	CloNgsld809	0.0005	0.0004	0.0038
6156	CreEgsld809	0.2462	0.2062	1.8736
6157	CreNgsld809	0.0106	0.0088	0.0803
6158	CrtEgsld809	0.0272	0.0025	0.1929
6159	CrtNgsld809	0.0012	0.0001	0.0083
6160	CscEgsld809	0.0056	0.0047	0.0428
6161	CscNgsld809	0.0002	0.0002	0.0018
6162	CasEgsld810	0.0002	0.0001	0.0011
6163	CcoEgsld810	0.0000	0.0000	0.0003
6164	CgrEgsld810	0.0847	0.0276	0.5735
6165	CheEgsld810	0.0002	0.0002	0.0015
6166	ChoEgsld810	0.0012	0.0010	0.0092
6167	CloEgsld810	0.0037	0.0031	0.0284
6168	CreEgsld810	0.0660	0.0553	0.5023
6169	CrtEgsld810	0.0062	0.0020	0.0417
6170	CscEgsld810	0.0012	0.0010	0.0090
6171	CgrEgsld811	0.0320	0.0143	0.2100
6172	CgrNgsld811	0.0000	0.0000	0.0000
6173	CrtEgsld811	0.0020	0.0009	0.0130
6174	CrtNgsld811	0.0000	0.0000	0.0000
6175	CasEgsld812	0.0000	0.0000	0.0001
6176	CasNgsld812	0.0000	0.0000	0.0000
6177	CcoEgsld812	0.0000	0.0000	0.0000
6178	CcoNgsld812	0.0000	0.0000	0.0000
6179	CgrEgsld812	0.0144	0.0040	0.0980
6180	CgrNgsld812	0.0000	0.0000	0.0000
6181	CheEgsld812	0.0000	0.0000	0.0000
6182	CheNgsld812	0.0000	0.0000	0.0000
6183	ChoEgsld812	0.0000	0.0000	0.0004
6184	ChoNgsld812	0.0000	0.0000	0.0000
6185	CloEgsld812	0.0001	0.0001	0.0008
6186	CloNgsld812	0.0000	0.0000	0.0000
6187	CreEgsld812	0.0022	0.0018	0.0166
6188	CreNgsld812	0.0000	0.0000	0.0000
6189	CrtEgsld812	0.0003	0.0001	0.0017
6190	CrtNgsld812	0.0000	0.0000	0.0000
6191	CscEgsld812	0.0000	0.0000	0.0004
6192	CscNgsld812	0.0000	0.0000	0.0000
6193	CgrNgsld813	0.0000	0.0000	0.0000
6194	CgrTgsld813	0.0000	0.0000	0.0000
6195	CrtNgsld813	0.0000	0.0000	0.0000

6196	CrtTgsld813	0.0000	0.0000	0.0000
6197	CgrNgsld814	0.0000	0.0000	0.0000
6198	CgrTgsld814	0.0000	0.0000	0.0000
6199	CrtNgsld814	0.0000	0.0000	0.0000
6200	CrtTgsld814	0.0000	0.0000	0.0000
6201	CgrNgsld815	0.0140	0.0063	0.0925
6202	CgrTgsld815	2.3032	1.0292	15.2134
6203	CrtNgsld815	0.0009	0.0004	0.0061
6204	CrtTgsld815	0.1513	0.0676	0.9996
6205	CgrNgsld816	0.0501	0.0224	0.3310
6206	CgrTgsld816	4.1339	1.8473	27.3056
6207	CrtNgsld816	0.0033	0.0015	0.0217
6208	CrtTgsld816	0.2716	0.1214	1.7940
6209	CasNgsld817	0.0001	0.0001	0.0005
6210	CasTgsld817	0.0075	0.0047	0.0475
6211	CcoNgsld817	0.0000	0.0000	0.0003
6212	CcoTgsld817	0.0041	0.0034	0.0311
6213	CgrNgsld817	0.0020	0.0013	0.0129
6214	CgrTgsld817	0.1891	0.1194	1.2040
6215	CheNgsld817	0.0001	0.0001	0.0010
6216	CheTgsld817	0.0119	0.0100	0.0905
6217	ChoNgsld817	0.0001	0.0001	0.0010
6218	ChoTgsld817	0.0125	0.0104	0.0948
6219	CloNgsld817	0.0006	0.0005	0.0047
6220	CloTgsld817	0.0572	0.0479	0.4353
6221	CreNgsld817	0.0024	0.0020	0.0183
6222	CreTgsld817	0.2245	0.1881	1.7085
6223	CrtNgsld817	0.0007	0.0005	0.0047
6224	CrtTgsld817	0.0685	0.0433	0.4361
6225	CscNgsld817	0.0002	0.0002	0.0015
6226	CscTgsld817	0.0188	0.0158	0.1431
6227	CasNgsld818	0.0003	0.0001	0.0025
6228	CasTgsld818	0.0245	0.0082	0.2314
6229	CcoNgsld818	0.0001	0.0000	0.0009
6230	CcoTgsld818	0.0073	0.0024	0.0685
6231	CgrNgsld818	0.0001	0.0000	0.0007
6232	CgrTgsld818	0.0063	0.0021	0.0592
6233	CheNgsld818	0.0005	0.0002	0.0046
6234	CheTgsld818	0.0451	0.0150	0.4262
6235	ChoNgsld818	0.0001	0.0000	0.0012
6236	ChoTgsld818	0.0105	0.0035	0.0988
6237	CinNgsld818	0.0013	0.0004	0.0122
6238	CinTgsld818	0.1029	0.0343	0.9722
6239	CloNgsld818	0.0005	0.0002	0.0045
6240	CloTgsld818	0.0378	0.0126	0.3572
6241	CmiNgsld818	0.0058	0.0019	0.0546
6242	CmiTgsld818	0.4625	0.1541	4.3711

6243	CofNgsld818	0.0019	0.0006	0.0182
6244	CofTgsld818	0.1538	0.0512	1.4536
6245	CreNgsld818	0.0008	0.0003	0.0079
6246	CreTgsld818	0.0669	0.0223	0.6327
6247	CrtNgsld818	0.0058	0.0019	0.0552
6248	CrtTgsld818	0.4672	0.1557	4.4159
6249	CscNgsld818	0.0004	0.0001	0.0042
6250	CscTgsld818	0.0353	0.0118	0.3337
6251	CwaNgsld818	0.0005	0.0002	0.0051
6252	CwaTgsld818	0.0435	0.0145	0.4107
6253	CasEgsld819	0.0001	0.0001	0.0009
6254	CasNgsld819	0.0000	0.0000	0.0000
6255	CcoEgsld819	0.0000	0.0000	0.0002
6256	CcoNgsld819	0.0000	0.0000	0.0000
6257	CgrEgsld819	0.2279	0.1066	1.4908
6258	CgrNgsld819	0.0000	0.0000	0.0000
6259	CheEgsld819	0.0001	0.0001	0.0008
6260	CheNgsld819	0.0000	0.0000	0.0000
6261	ChoEgsld819	0.0006	0.0005	0.0048
6262	ChoNgsld819	0.0000	0.0000	0.0000
6263	CloEgsld819	0.0020	0.0016	0.0149
6264	CloNgsld819	0.0000	0.0000	0.0000
6265	CreEgsld819	0.0340	0.0285	0.2587
6266	CreNgsld819	0.0007	0.0006	0.0053
6267	CrtEgsld819	0.0032	0.0015	0.0207
6268	CrtNgsld819	0.0000	0.0000	0.0000
6269	CscEgsld819	0.0006	0.0005	0.0047
6270	CscNgsld819	0.0000	0.0000	0.0000
6271	CcoEgsld820	0.0000	0.0008	0.0072
6272	CcoNgsld820	0.0000	0.0000	0.0000
6273	ChoEgsld820	0.0000	0.0017	0.0156
6274	ChoNgsld820	0.0000	0.0000	0.0000
6275	CinEgsld820	0.0000	0.0041	0.0605
6276	CinNgsld820	0.0000	0.0000	0.0006
6277	CofEgsld820	0.0000	0.0337	0.4967
6278	CofNgsld820	0.0000	0.0004	0.0055
6279	CasEgsld901	0.0003	0.0002	0.0014
6280	CasNgsld901	0.0000	0.0000	0.0001
6281	CcoEgsld901	0.0002	0.0004	0.0018
6282	CcoNgsld901	0.0000	0.0000	0.0002
6283	CgrEgsld901	0.0002	0.0017	0.0039
6284	CgrNgsld901	0.0000	0.0002	0.0004
6285	CheEgsld901	0.0036	0.0017	0.0147
6286	CheNgsld901	0.0000	0.0000	0.0001
6287	ChoEgsld901	0.0004	0.0010	0.0043
6288	ChoNgsld901	0.0000	0.0001	0.0004
6289	CinEgsld901	0.0411	0.0195	0.1675

6290	CinNgsld901	0.0039	0.0018	0.0158
6291	CloEgsld901	0.0015	0.0106	0.0250
6292	CloNgsld901	0.0002	0.0011	0.0026
6293	CmiEgsld901	0.0005	0.0002	0.0021
6294	CmiNgsld901	0.0000	0.0000	0.0002
6295	CofEgsld901	0.0064	0.0030	0.0261
6296	CofNgsld901	0.0006	0.0003	0.0024
6297	CreEgsld901	0.0039	0.0274	0.0644
6298	CreNgsld901	0.0000	0.0001	0.0002
6299	CrtEgsld901	0.0008	0.0056	0.0133
6300	CrtNgsld901	0.0001	0.0005	0.0012
6301	CscEgsld901	0.0037	0.0017	0.0149
6302	CscNgsld901	0.0000	0.0000	0.0001
6303	CwaEgsld901	0.0004	0.0002	0.0016
6304	CwaNgsld901	0.0000	0.0000	0.0002
6305	CasEgsld902	0.0007	0.0004	0.0035
6306	CasNgsld902	0.0000	0.0000	0.0000
6307	CcoEgsld902	0.0002	0.0005	0.0022
6308	CcoNgsld902	0.0000	0.0000	0.0000
6309	CgrEgsld902	0.0003	0.0023	0.0049
6310	CgrNgsld902	0.0000	0.0000	0.0000
6311	CheEgsld902	0.0054	0.0032	0.0254
6312	CheNgsld902	0.0000	0.0000	0.0000
6313	ChoEgsld902	0.0003	0.0008	0.0032
6314	ChoNgsld902	0.0000	0.0000	0.0000
6315	CinEgsld902	0.0608	0.0366	0.2878
6316	CinNgsld902	0.0000	0.0000	0.0000
6317	CloEgsld902	0.0009	0.0078	0.0170
6318	CloNgsld902	0.0000	0.0000	0.0000
6319	CmiEgsld902	0.0001	0.0001	0.0007
6320	CmiNgsld902	0.0000	0.0000	0.0000
6321	CofEgsld902	0.0017	0.0010	0.0079
6322	CofNgsld902	0.0000	0.0000	0.0000
6323	CreEgsld902	0.0008	0.0071	0.0155
6324	CreNgsld902	0.0000	0.0000	0.0000
6325	CrtEgsld902	0.0002	0.0017	0.0037
6326	CrtNgsld902	0.0000	0.0000	0.0000
6327	CscEgsld902	0.0066	0.0040	0.0312
6328	CscNgsld902	0.0000	0.0000	0.0000
6329	CwaEgsld902	0.0001	0.0001	0.0007
6330	CwaNgsld902	0.0000	0.0000	0.0000
6331	CcoEgsld903	0.0013	0.0067	0.0180
6332	CcoNgsld903	0.0000	0.0000	0.0000
6333	CheEgsld903	0.0052	0.0136	0.0556
6334	CheNgsld903	0.0000	0.0000	0.0000
6335	ChoEgsld903	0.0014	0.0036	0.0147
6336	ChoNgsld903	0.0000	0.0000	0.0000

6337	CloEgsld903	0.0087	0.0739	0.1615
6338	CloNgsld903	0.0000	0.0000	0.0000
6339	CasEgsld904	0.0014	0.0015	0.0292
6340	CcoEgsld904	0.0020	0.0020	0.0157
6341	CheEgsld904	0.0102	0.0107	0.2107
6342	ChoEgsld904	0.0039	0.0039	0.0306
6343	CinEgsld904	0.0250	0.0262	0.5180
6344	CinNgsld904	0.0001	0.0001	0.0013
6345	CmiEgsld904	0.0003	0.0003	0.0069
6346	CmiNgsld904	0.0000	0.0000	0.0000
6347	CofEgsld904	0.0093	0.0097	0.1924
6348	CscEgsld904	0.0440	0.0462	0.9128
6349	CwaEgsld904	0.0008	0.0008	0.0168
6350	CasEgsld905	0.0004	0.0005	0.0039
6351	CasNgsld905	0.0000	0.0000	0.0002
6352	CcoEgsld905	0.0002	0.0002	0.0021
6353	CcoNgsld905	0.0000	0.0000	0.0000
6354	CgrEgsld905	0.0004	0.0007	0.0052
6355	CgrNgsld905	0.0000	0.0000	0.0000
6356	CheEgsld905	0.0033	0.0037	0.0292
6357	CheNgsld905	0.0002	0.0002	0.0018
6358	ChoEgsld905	0.0005	0.0005	0.0039
6359	ChoNgsld905	0.0000	0.0000	0.0000
6360	CinEgsld905	0.0817	0.0918	0.7214
6361	CinNgsld905	0.0009	0.0010	0.0082
6362	CloEgsld905	0.0016	0.0028	0.0205
6363	CloNgsld905	0.0000	0.0000	0.0001
6364	CmiEgsld905	0.0011	0.0012	0.0096
6365	CmiNgsld905	0.0000	0.0000	0.0001
6366	CofEgsld905	0.0028	0.0031	0.0246
6367	CofNgsld905	0.0002	0.0002	0.0015
6368	CreEgsld905	0.0081	0.0140	0.1012
6369	CreNgsld905	0.0005	0.0008	0.0062
6370	CrtEgsld905	0.0014	0.0024	0.0175
6371	CrtNgsld905	0.0001	0.0001	0.0010
6372	CscEgsld905	0.0148	0.0166	0.1303
6373	CscNgsld905	0.0009	0.0010	0.0076
6374	CwaEgsld905	0.0002	0.0003	0.0021
6375	CwaNgsld905	0.0000	0.0000	0.0001
6376	CasEgsld906	0.0008	0.0008	0.0078
6377	CasNgsld906	0.0000	0.0000	0.0000
6378	CcoEgsld906	0.0000	0.0000	0.0000
6379	CcoNgsld906	0.0000	0.0000	0.0000
6380	CgrEgsld906	0.0011	0.0012	0.0112
6381	CgrNgsld906	0.0000	0.0000	0.0000
6382	CheEgsld906	0.0058	0.0060	0.0576
6383	CheNgsld906	0.0000	0.0000	0.0000

6384	ChoEgsld906	0.0009	0.0009	0.0085
6385	ChoNgsld906	0.0000	0.0000	0.0000
6386	CinEgsld906	0.0307	0.0313	0.3021
6387	CinNgsld906	0.0000	0.0000	0.0000
6388	CloEgsld906	0.0045	0.0046	0.0440
6389	CloNgsld906	0.0000	0.0000	0.0000
6390	CmiEgsld906	0.0004	0.0004	0.0040
6391	CmiNgsld906	0.0000	0.0000	0.0000
6392	CofEgsld906	0.0055	0.0056	0.0544
6393	CofNgsld906	0.0000	0.0000	0.0001
6394	CreEgsld906	0.0217	0.0222	0.2141
6395	CreNgsld906	0.0000	0.0000	0.0000
6396	CrtEgsld906	0.0039	0.0040	0.0383
6397	CrtNgsld906	0.0000	0.0000	0.0001
6398	CscEgsld906	0.0000	0.0000	0.0000
6399	CscNgsld906	0.0000	0.0000	0.0000
6400	CwaEgsld906	0.0005	0.0005	0.0047
6401	CwaNgsld906	0.0000	0.0000	0.0000
6402	CcoEgsld907	0.0079	0.0413	0.1106
6403	CheEgsld907	0.0297	0.0776	0.3178
6404	ChoEgsld907	0.0074	0.0194	0.0793
6405	CloEgsld907	0.0498	0.4246	0.9278
6406	CasNgsld908	0.0000	0.0000	0.0001
6407	CasTgsld908	0.0000	0.0002	0.0052
6408	CcoNgsld908	0.0000	0.0000	0.0000
6409	CcoTgsld908	0.0000	0.0000	0.0000
6410	CloNgsld908	0.0000	0.0000	0.0009
6411	CloTgsld908	0.0000	0.0032	0.0875
6412	CscNgsld908	0.0000	0.0000	0.0000
6413	CscTgsld908	0.0000	0.0000	0.0000
6414	CasNgsld909	0.0001	0.0000	0.0007
6415	CasTgsld909	0.0050	0.0007	0.0658
6416	CcoNgsld909	0.0001	0.0000	0.0017
6417	CcoTgsld909	0.0119	0.0017	0.1569
6418	CgrNgsld909	0.0003	0.0000	0.0044
6419	CgrTgsld909	0.0313	0.0044	0.4129
6420	CheNgsld909	0.0004	0.0001	0.0051
6421	CheTgsld909	0.0363	0.0051	0.4789
6422	ChoNgsld909	0.0001	0.0000	0.0008
6423	ChoTgsld909	0.0058	0.0008	0.0770
6424	CinNgsld909	0.0062	0.0009	0.0822
6425	CinTgsld909	0.5815	0.0816	7.6754
6426	CloNgsld909	0.0005	0.0001	0.0065
6427	CloTgsld909	0.0459	0.0064	0.6054
6428	CmiNgsld909	0.0001	0.0000	0.0010
6429	CmiTgsld909	0.0073	0.0010	0.0958
6430	CofNgsld909	0.0005	0.0001	0.0064

6431	CofTgsld909	0.0454	0.0064	0.5993
6432	CreNgsld909	0.0055	0.0008	0.0730
6433	CreTgsld909	0.5163	0.0725	6.8147
6434	CrtNgsld909	0.0011	0.0002	0.0147
6435	CrtTgsld909	0.1041	0.0146	1.3736
6436	CscNgsld909	0.0011	0.0001	0.0140
6437	CscTgsld909	0.0992	0.0139	1.3092
6438	CwaNgsld909	0.0001	0.0000	0.0017
6439	CwaTgsld909	0.0120	0.0017	0.1582
6440	CasNgsld910	0.0000	0.0000	0.0003
6441	CasTgsld910	0.0000	0.0009	0.0253
6442	CcoNgsld910	0.0000	0.0000	0.0000
6443	CcoTgsld910	0.0000	0.0000	0.0000
6444	CloNgsld910	0.0000	0.0005	0.0124
6445	CloTgsld910	0.0000	0.0427	1.1535
6446	CscNgsld910	0.0000	0.0000	0.0000
6447	CscTgsld910	0.0000	0.0000	0.0000
6448	CasNgsld911	0.0003	0.0002	0.0014
6449	CasTgsld911	0.0303	0.0187	0.1284
6450	CcoNgsld911	0.0004	0.0003	0.0018
6451	CcoTgsld911	0.0400	0.0247	0.1696
6452	CgrNgsld911	0.0005	0.0003	0.0019
6453	CgrTgsld911	0.0426	0.0263	0.1806
6454	CheNgsld911	0.0044	0.0027	0.0185
6455	CheTgsld911	0.4064	0.2514	1.7241
6456	ChoNgsld911	0.0014	0.0009	0.0061
6457	ChoTgsld911	0.1332	0.0824	0.5650
6458	CinNgsld911	0.0378	0.0234	0.1604
6459	CinTgsld911	3.5296	2.1833	14.9753
6460	CloNgsld911	0.0091	0.0056	0.0385
6461	CloTgsld911	0.8466	0.5236	3.5918
6462	CmiNgsld911	0.0005	0.0003	0.0020
6463	CmiTgsld911	0.0441	0.0273	0.1870
6464	CofNgsld911	0.0075	0.0046	0.0317
6465	CofTgsld911	0.6966	0.4309	2.9554
6466	CreNgsld911	0.0083	0.0051	0.0350
6467	CreTgsld911	0.7707	0.4767	3.2701
6468	CrtNgsld911	0.0014	0.0009	0.0059
6469	CrtTgsld911	0.1289	0.0797	0.5468
6470	CscNgsld911	0.0036	0.0022	0.0152
6471	CscTgsld911	0.3336	0.2063	1.4154
6472	CwaNgsld911	0.0002	0.0001	0.0008
6473	CwaTgsld911	0.0179	0.0111	0.0759
6474	CasNgsld912	0.0000	0.0000	0.0000
6475	CasTgsld912	0.0000	0.0000	0.0002
6476	CcoNgsld912	0.0000	0.0000	0.0000
6477	CcoTgsld912	0.0004	0.0010	0.0045

6478	CgrNgsld912	0.0000	0.0000	0.0000
6479	CgrTgsld912	0.0004	0.0004	0.0033
6480	CheNgsld912	0.0000	0.0000	0.0002
6481	CheTgsld912	0.0028	0.0032	0.0247
6482	ChoNgsld912	0.0000	0.0001	0.0004
6483	ChoTgsld912	0.0048	0.0115	0.0499
6484	CinNgsld912	0.0001	0.0001	0.0004
6485	CinTgsld912	0.0047	0.0054	0.0417
6486	CloNgsld912	0.0000	0.0000	0.0001
6487	CloTgsld912	0.0015	0.0016	0.0136
6488	CmiNgsld912	0.0000	0.0000	0.0001
6489	CmiTgsld912	0.0012	0.0013	0.0103
6490	CofNgsld912	0.0001	0.0001	0.0010
6491	CofTgsld912	0.0102	0.0118	0.0911
6492	CreNgsld912	0.0000	0.0000	0.0004
6493	CreTgsld912	0.0060	0.0062	0.0530
6494	CrtNgsld912	0.0002	0.0002	0.0013
6495	CrtTgsld912	0.0141	0.0147	0.1253
6496	CscNgsld912	0.0000	0.0000	0.0002
6497	CscTgsld912	0.0029	0.0033	0.0258
6498	CwaNgsld912	0.0000	0.0000	0.0000
6499	CwaTgsld912	0.0000	0.0000	0.0000
6500	CasEgsld921	1.2828	1.8623	8.0203
6501	CcoEgsld921	1.1836	0.0129	2.9822
6502	CgrEgsld921	3.0262	5.4552	10.5952
6503	CheEgsld921	2.1594	4.9068	13.5404
6504	ChoEgsld921	3.6881	0.0257	9.0879
6505	CinEgsld921	5.8679	13.2717	37.2508
6506	CloEgsld921	2.8232	4.1696	9.5541
6507	CmiEgsld921	21.4926	66.4397	137.8657
6508	CofEgsld921	7.7114	21.0283	49.6248
6509	CreEgsld921	4.9757	7.5005	17.0610
6510	CrtEgsld921	10.5538	16.8410	37.9396
6511	CscEgsld921	1.5773	3.5862	10.0878
6512	CwaEgsld921	0.4616	1.4012	3.1140

Economic Potential After Screening
TRC
Medium Fuel
No CO2
2-Year Payback

FPL 000416
20190015-EG

		Summer MW	Winter MW	Annual GWh
	Total:	1,174.0	494.6	3,544.3
1	RM0E204	0.830	2.165	4.383
2	RM0N204	0.000	0.000	0.000
3	RMFE204	5.254	15.353	27.111
4	RMFN204	0.000	0.000	0.000
5	RSFE204	12.735	31.488	63.067
6	RSFN204	0.000	0.000	0.000
7	RM0E207	27.570	5.658	50.329
8	RM0N207	0.401	0.017	0.659
9	RMFE207	139.571	40.090	267.466
10	RMFN207	1.967	0.741	3.965
11	RSFE207	247.201	82.239	486.168
12	RSFN207	3.511	1.345	7.101
13	RM0N301	0.000	0.000	0.000
14	RM0T301	0.000	0.000	0.000
15	RMFN301	0.000	0.000	0.000
16	RMFT301	0.000	0.000	0.000
17	RSFN301	0.000	0.000	0.000
18	RSFT301	0.000	0.000	0.000
19	RM0E314	28.425	5.992	52.066
20	RMFE314	150.395	43.200	288.209
21	RSFN322	0.000	0.000	0.000
22	RM0N504	0.000	0.000	0.000
23	RM0T504	0.000	0.000	0.000
24	RMFN504	0.000	0.000	0.000
25	RMFT504	0.000	0.000	0.000
26	RSFN504	0.000	0.000	0.000
27	RSFT504	0.000	0.000	0.000
28	IGSLD201	0.727	0.710	5.037
29	IGSD201	1.697	1.656	11.752
30	IGSLD202	0.865	0.844	5.989
31	IGSD202	2.018	1.969	13.974
32	IGSLD204	0.641	0.625	4.437
33	IGSD204	1.495	1.459	10.352
34	IGSLD303	1.324	1.287	9.151
35	IGSD303	3.089	3.003	21.351
36	IGSLD401	0.343	0.333	2.509
37	IGSD401	0.799	0.778	5.855
38	IGSLD503	0.815	0.793	5.970

39	IGSD503	1.901	1.851	13.929
40	IGSLD504	1.532	1.492	11.225
41	IGSD504	3.575	3.481	26.193
42	IGSLD602	0.290	0.283	2.081
43	IGSD602	0.678	0.661	4.855
44	IGSLD701	0.849	0.828	6.083
45	IGSD701	1.981	1.932	14.193
46	CcoNgs101	0.000	0.000	0.000
47	CcoTgs101	0.001	0.000	0.004
48	CheNgs101	0.000	0.000	0.001
49	CheTgs101	0.021	0.008	0.095
50	ChoNgs101	0.000	0.000	0.002
51	ChoTgs101	0.043	0.017	0.193
52	CloNgs101	0.001	0.000	0.005
53	CloTgs101	0.110	0.043	0.495
54	CreNgs101	0.010	0.004	0.043
55	CreTgs101	0.893	0.351	4.032
56	CscNgs101	0.000	0.000	0.001
57	CscTgs101	0.022	0.009	0.098
58	CcoNgs103	0.000	0.000	0.000
59	CcoTgs103	0.000	0.000	0.003
60	CheNgs103	0.000	0.000	0.001
61	CheTgs103	0.010	0.005	0.063
62	ChoNgs103	0.000	0.000	0.001
63	ChoTgs103	0.020	0.011	0.124
64	CloNgs103	0.000	0.000	0.002
65	CloTgs103	0.036	0.019	0.216
66	CreNgs103	0.003	0.002	0.017
67	CreTgs103	0.268	0.140	1.628
68	CscNgs103	0.000	0.000	0.001
69	CscTgs103	0.011	0.006	0.066
70	CheEgs203	2.980	0.004	5.781
71	CofEgs203	1.379	0.018	2.763
72	CrtEgs207	1.454	0.004	7.037
73	CheEgs307	0.032	0.001	0.153
74	CheNgs307	0.003	0.000	0.015
75	ChoEgs307	0.178	0.051	1.190
76	ChoNgs307	0.002	0.001	0.011
77	CloEgs307	0.031	0.006	0.122
78	CloNgs307	0.002	0.000	0.009
79	CmiEgs307	3.273	0.227	15.531
80	CmiNgs307	0.040	0.003	0.187
81	CofEgs307	0.557	0.029	2.746
82	CofNgs307	0.004	0.000	0.022
83	CrtEgs307	1.052	0.258	4.032
84	CrtNgs307	0.015	0.004	0.056
85	CheEgs309	0.000	0.000	0.000

86	CheNgs309	0.000	0.000	0.000
87	ChoEgs309	0.000	0.000	0.000
88	ChoNgs309	0.000	0.000	0.000
89	CinEgs309	0.000	0.000	0.000
90	CinNgs309	0.000	0.000	0.000
91	CmiEgs309	0.000	0.000	0.000
92	CmiNgs309	0.000	0.000	0.000
93	CofEgs309	0.000	0.000	0.000
94	CofNgs309	0.000	0.000	0.000
95	CreEgs309	0.000	0.000	0.000
96	CreNgs309	0.000	0.000	0.000
97	CcoEgs310	0.121	0.003	0.302
98	CcoNgs310	0.000	0.000	0.000
99	CheEgs310	1.461	0.040	3.657
100	CheNgs310	0.000	0.000	0.000
101	ChoEgs310	0.907	0.005	2.248
102	ChoNgs310	0.009	0.000	0.022
103	CinEgs310	2.786	0.066	6.961
104	CinNgs310	0.029	0.001	0.072
105	CloEgs310	0.856	0.107	2.235
106	CloNgs310	0.000	0.001	0.001
107	CmiEgs310	1.885	0.184	4.865
108	CmiNgs310	0.020	0.002	0.051
109	CofEgs310	3.293	0.780	9.004
110	CofNgs310	0.037	0.009	0.102
111	CrtEgs310	2.408	0.171	6.143
112	CrtNgs310	0.022	0.002	0.056
113	CscEgs310	1.173	0.109	3.020
114	CscNgs310	0.002	0.001	0.007
115	CheNgs311	0.013	0.000	0.023
116	CheTgs311	1.733	0.000	3.053
117	ChoNgs311	0.003	0.000	0.005
118	ChoTgs311	0.465	0.000	0.772
119	CloNgs311	0.003	0.000	0.004
120	CloTgs311	0.480	0.000	0.682
121	CreNgs311	0.014	0.000	0.021
122	CreTgs311	2.514	0.000	3.471
123	CcoEgs312	0.000	0.000	0.000
124	CcoNgs312	0.000	0.000	0.000
125	CloEgs313	0.000	0.000	0.000
126	CloNgs313	0.000	0.000	0.000
127	CrtEgs319	1.437	0.162	7.427
128	CheEgs320	0.032	0.004	0.117
129	CheNgs320	0.000	0.000	0.001
130	ChoEgs320	0.003	0.002	0.015
131	ChoNgs320	0.000	0.000	0.000
132	CreEgs320	0.004	0.023	0.087

133	CreNgs320	0.000	0.000	0.001
134	CgrNgs322	0.000	0.000	0.000
135	CgrTgs322	0.000	0.000	0.000
136	CinNgs322	0.000	0.000	0.000
137	CinTgs322	0.000	0.000	0.000
138	CmiNgs322	0.000	0.000	0.000
139	CmiTgs322	0.000	0.000	0.000
140	CwaNgs322	0.000	0.000	0.000
141	CwaTgs322	0.000	0.000	0.000
142	CgrNgs323	0.000	0.000	0.000
143	CgrTgs323	0.000	0.000	0.000
144	CinNgs323	0.000	0.000	0.000
145	CinTgs323	0.000	0.000	0.000
146	CmiNgs323	0.000	0.000	0.000
147	CmiTgs323	0.000	0.000	0.000
148	CwaNgs323	0.000	0.000	0.000
149	CwaTgs323	0.000	0.000	0.000
150	CheNgs324	0.001	0.000	0.003
151	CheTgs324	0.073	0.013	0.280
152	ChoNgs324	0.000	0.000	0.000
153	ChoTgs324	0.006	0.007	0.040
154	CcoEgs328	0.560	3.150	1.141
155	CcoNgs328	0.006	0.034	0.012
156	CheEgs328	1.090	6.136	2.221
157	CheNgs328	0.012	0.066	0.024
158	ChoEgs328	0.415	2.335	0.845
159	ChoNgs328	0.003	0.018	0.007
160	CinEgs328	0.686	3.860	1.398
161	CinNgs328	0.005	0.031	0.011
162	CscEgs328	0.913	5.141	1.861
163	CscNgs328	0.010	0.055	0.020
164	CasTgs507	1.127	0.735	6.011
165	CwaTgs507	1.955	1.275	10.431
166	CasEgs603	0.049	0.023	0.323
167	CasNgs603	0.003	0.001	0.017
168	CcoEgs603	0.033	0.027	0.249
169	CcoNgs603	0.002	0.001	0.013
170	CgrEgs603	0.167	0.078	1.094
171	CgrNgs603	0.002	0.001	0.012
172	CheEgs603	0.078	0.066	0.595
173	CheNgs603	0.004	0.003	0.031
174	ChoEgs603	0.046	0.038	0.348
175	ChoNgs603	0.002	0.002	0.018
176	CinEgs603	0.255	0.119	1.666
177	CinNgs603	0.014	0.006	0.089
178	CloEgs603	0.073	0.061	0.555
179	CloNgs603	0.004	0.003	0.029

180	CmiEgs603	8.267	3.869	54.088
181	CmiNgs603	0.089	0.041	0.579
182	CofEgs603	0.392	0.183	2.563
183	CofNgs603	0.021	0.010	0.135
184	CreEgs603	0.066	0.055	0.502
185	CreNgs603	0.004	0.003	0.027
186	CrtEgs603	0.268	0.125	1.752
187	CrtNgs603	0.014	0.007	0.094
188	CscEgs603	0.077	0.064	0.585
189	CscNgs603	0.004	0.003	0.031
190	CwaEgs603	0.038	0.018	0.249
191	CwaNgs603	0.002	0.001	0.013
192	CasTgs607	0.000	0.000	0.000
193	CcoTgs607	0.000	0.000	0.000
194	CloTgs607	0.000	0.000	0.000
195	CasNgs701	0.004	0.000	0.007
196	CasTgs701	0.377	0.000	0.678
197	CgrNgs701	0.003	0.000	0.006
198	CgrTgs701	0.291	0.000	0.525
199	CheNgs701	0.005	0.000	0.009
200	CheTgs701	0.519	0.000	0.934
201	ChoNgs701	0.004	0.000	0.007
202	ChoTgs701	0.406	0.000	0.731
203	CinNgs701	0.020	0.000	0.036
204	CinTgs701	1.944	0.000	3.499
205	CloNgs701	0.005	0.000	0.009
206	CloTgs701	0.484	0.000	0.871
207	CofNgs701	0.030	0.000	0.054
208	CofTgs701	2.989	0.000	5.382
209	CrtNgs701	0.015	0.000	0.028
210	CrtTgs701	1.527	0.000	2.749
211	CwaNgs701	0.002	0.000	0.004
212	CwaTgs701	0.217	0.000	0.391
213	CasEgs808	0.001	0.000	0.004
214	CasNgs808	0.000	0.000	0.000
215	CcoEgs808	0.000	0.000	0.001
216	CcoNgs808	0.000	0.000	0.000
217	CgrEgs808	0.213	0.019	1.508
218	CgrNgs808	0.000	0.000	0.000
219	CheEgs808	0.000	0.000	0.003
220	CheNgs808	0.000	0.000	0.000
221	ChoEgs808	0.003	0.002	0.020
222	ChoNgs808	0.000	0.000	0.001
223	CloEgs808	0.008	0.007	0.063
224	CloNgs808	0.000	0.000	0.003
225	CreEgs808	0.143	0.120	1.090
226	CreNgs808	0.007	0.006	0.051

227	CrtEgs808	0.014	0.001	0.099
228	CrtNgs808	0.000	0.000	0.000
229	CscEgs808	0.003	0.002	0.020
230	CscNgs808	0.000	0.000	0.001
231	CgrNgs816	0.030	0.013	0.199
232	CgrTgs816	2.480	1.108	16.383
233	CrtNgs816	0.002	0.001	0.013
234	CrtTgs816	0.163	0.073	1.076
235	CinNgs909	0.004	0.001	0.049
236	CinTgs909	0.349	0.049	4.605
237	CasNgs911	0.000	0.000	0.001
238	CasTgs911	0.018	0.011	0.077
239	CcoEgs921	0.710	0.008	1.789
240	CscEgs921	0.946	2.152	6.053
241	CcoNgsd101	0.000	0.000	0.000
242	CcoTgsd101	0.004	0.001	0.017
243	CheNgsd101	0.001	0.000	0.004
244	CheTgsd101	0.084	0.033	0.379
245	ChoNgsd101	0.002	0.001	0.008
246	ChoTgsd101	0.171	0.067	0.774
247	CloNgsd101	0.005	0.002	0.021
248	CloTgsd101	0.439	0.172	1.979
249	CreNgsd101	0.038	0.015	0.173
250	CreTgsd101	3.574	1.403	16.128
251	CscNgsd101	0.001	0.000	0.004
252	CscTgsd101	0.087	0.034	0.394
253	CcoNgsd103	0.000	0.000	0.000
254	CcoTgsd103	0.002	0.001	0.011
255	CheNgsd103	0.000	0.000	0.003
256	CheTgsd103	0.042	0.022	0.252
257	ChoNgsd103	0.001	0.000	0.005
258	ChoTgsd103	0.082	0.043	0.498
259	CloNgsd103	0.002	0.001	0.009
260	CloTgsd103	0.142	0.075	0.865
261	CreNgsd103	0.011	0.006	0.070
262	CreTgsd103	1.072	0.561	6.511
263	CscNgsd103	0.000	0.000	0.003
264	CscTgsd103	0.043	0.023	0.263
265	CinNgsd119	0.025	0.025	0.143
266	CinTgsd119	2.349	2.349	13.325
267	CofNgsd119	0.058	0.058	0.329
268	CofTgsd119	3.244	3.244	18.401
269	CheEgsd203	11.920	0.015	23.124
270	CofEgsd203	5.518	0.073	11.052
271	CrtEgsd207	5.816	0.016	28.150
272	CasEgsd302	3.338	0.153	30.169
273	CasNgsd302	0.037	0.002	0.331

274	CcoEgsd302	0.047	0.002	0.421
275	CcoNgsd302	0.001	0.000	0.005
276	CgrEgsd302	0.000	0.000	0.000
277	CgrNgsd302	0.000	0.000	0.000
278	CheEgsd302	0.000	0.000	0.000
279	CheNgsd302	0.000	0.000	0.000
280	ChoEgsd302	1.782	0.082	16.106
281	ChoNgsd302	0.020	0.001	0.177
282	CinEgsd302	7.897	0.362	71.380
283	CinNgsd302	0.087	0.004	0.783
284	CloEgsd302	0.692	0.032	6.258
285	CloNgsd302	0.008	0.000	0.071
286	CmiEgsd302	6.183	0.283	55.884
287	CmiNgsd302	0.071	0.003	0.641
288	CofEgsd302	5.344	0.245	48.300
289	CofNgsd302	0.062	0.003	0.562
290	CreEgsd302	0.269	0.012	2.436
291	CreNgsd302	0.003	0.000	0.027
292	CrtEgsd302	0.000	0.000	0.000
293	CrtNgsd302	0.000	0.000	0.000
294	CscEgsd302	3.638	0.167	32.883
295	CscNgsd302	0.041	0.002	0.371
296	CwaEgsd302	0.000	0.000	0.000
297	CwaNgsd302	0.000	0.000	0.000
298	CasNgsd303	0.001	0.000	0.001
299	CasTgsd303	3.145	0.031	3.589
300	CcoNgsd303	0.005	0.000	0.007
301	CcoTgsd303	0.553	0.005	0.701
302	CgrNgsd303	0.000	0.000	0.000
303	CgrTgsd303	0.000	0.000	0.000
304	CinNgsd303	0.006	0.000	0.003
305	CinTgsd303	13.811	0.136	8.514
306	CloNgsd303	0.000	0.000	0.000
307	CloTgsd303	0.328	0.003	0.618
308	CmiNgsd303	0.000	0.000	0.000
309	CmiTgsd303	8.734	0.086	5.567
310	CofNgsd303	0.007	0.000	0.009
311	CofTgsd303	4.716	0.046	6.057
312	CreNgsd303	0.000	0.000	0.000
313	CreTgsd303	0.149	0.001	0.275
314	CrtNgsd303	0.000	0.000	0.000
315	CrtTgsd303	0.000	0.000	0.000
316	CscNgsd303	0.027	0.000	0.034
317	CscTgsd303	5.195	0.051	6.545
318	CwaNgsd303	0.000	0.000	0.000
319	CwaTgsd303	0.000	0.000	0.000
320	CasNgsd304	0.000	0.000	0.001

321	CasTgsd304	0.579	0.006	1.588
322	CcoNgsd304	0.001	0.000	0.003
323	CcoTgsd304	0.112	0.001	0.340
324	CgrNgsd304	0.000	0.000	0.000
325	CgrTgsd304	0.000	0.000	0.000
326	CheNgsd304	0.000	0.000	0.000
327	CheTgsd304	0.000	0.000	0.000
328	ChoNgsd304	0.004	0.000	0.023
329	ChoTgsd304	0.560	0.006	3.169
330	CinNgsd304	0.001	0.000	0.002
331	CinTgsd304	2.780	0.027	4.122
332	CloNgsd304	0.000	0.000	0.000
333	CloTgsd304	0.066	0.001	0.300
334	CmiNgsd304	0.000	0.000	0.000
335	CmiTgsd304	1.764	0.017	2.704
336	CofNgsd304	0.001	0.000	0.004
337	CofTgsd304	0.949	0.009	2.932
338	CreNgsd304	0.000	0.000	0.000
339	CreTgsd304	0.030	0.000	0.133
340	CrtNgsd304	0.000	0.000	0.000
341	CrtTgsd304	0.000	0.000	0.000
342	CscNgsd304	0.005	0.000	0.016
343	CscTgsd304	1.025	0.010	3.106
344	CheEgsd307	0.129	0.004	0.613
345	CheNgsd307	0.013	0.000	0.061
346	ChoEgsd307	0.713	0.202	4.758
347	ChoNgsd307	0.007	0.002	0.043
348	CinEgsd307	4.019	0.165	19.020
349	CinNgsd307	0.017	0.001	0.082
350	CloEgsd307	0.125	0.024	0.489
351	CloNgsd307	0.009	0.002	0.034
352	CmiEgsd307	13.091	0.907	62.125
353	CmiNgsd307	0.158	0.011	0.750
354	CofEgsd307	2.227	0.117	10.984
355	CofNgsd307	0.018	0.001	0.088
356	CrtEgsd307	4.208	1.031	16.127
357	CrtNgsd307	0.059	0.017	0.225
358	CheEgsd309	0.000	0.000	0.000
359	CheNgsd309	0.000	0.000	0.000
360	ChoEgsd309	0.000	0.000	0.000
361	ChoNgsd309	0.000	0.000	0.000
362	CinEgsd309	0.000	0.000	0.000
363	CinNgsd309	0.000	0.000	0.000
364	CmiEgsd309	0.000	0.000	0.000
365	CmiNgsd309	0.000	0.000	0.000
366	CofEgsd309	0.000	0.000	0.000
367	CofNgsd309	0.000	0.000	0.000

368	CcoEgsd310	0.483	0.012	1.208
369	CcoNgsd310	0.000	0.000	0.000
370	CheEgsd310	5.846	0.162	14.630
371	CheNgsd310	0.000	0.002	0.002
372	ChoEgsd310	3.629	0.020	8.993
373	ChoNgsd310	0.036	0.000	0.090
374	CloEgsd310	3.426	0.426	8.941
375	CloNgsd310	0.000	0.005	0.005
376	CmiEgsd310	7.542	0.737	19.460
377	CmiNgsd310	0.079	0.008	0.206
378	CofEgsd310	13.172	3.119	36.015
379	CofNgsd310	0.149	0.036	0.409
380	CrtEgsd310	9.633	0.685	24.570
381	CrtNgsd310	0.088	0.008	0.226
382	CscEgsd310	4.691	0.436	12.079
383	CscNgsd310	0.009	0.005	0.027
384	CheNgsd311	0.053	0.000	0.093
385	CheTgsd311	6.934	0.000	12.212
386	ChoNgsd311	0.012	0.000	0.020
387	ChoTgsd311	1.861	0.000	3.089
388	CloNgsd311	0.011	0.000	0.016
389	CloTgsd311	1.918	0.000	2.727
390	CreNgsd311	0.058	0.000	0.084
391	CreTgsd311	10.056	0.000	13.883
392	CcoEgsd312	0.000	0.000	0.000
393	CcoNgsd312	0.000	0.000	0.000
394	CreEgsd312	0.000	0.000	0.000
395	CreNgsd312	0.000	0.000	0.000
396	CloEgsd313	0.000	0.000	0.000
397	CloNgsd313	0.000	0.000	0.000
398	CrtEgsd319	5.750	0.649	29.709
399	CheEgsd320	0.128	0.016	0.466
400	CheNgsd320	0.000	0.000	0.002
401	ChoEgsd320	0.010	0.008	0.058
402	ChoNgsd320	0.000	0.000	0.000
403	CreEgsd320	0.015	0.093	0.346
404	CreNgsd320	0.000	0.001	0.003
405	CgrNgsd322	0.000	0.000	0.000
406	CgrTgsd322	0.000	0.000	0.000
407	CinNgsd322	0.000	0.000	0.000
408	CinTgsd322	0.000	0.000	0.000
409	CmiNgsd322	0.000	0.000	0.000
410	CmiTgsd322	0.000	0.000	0.000
411	CwaNgsd322	0.000	0.000	0.000
412	CwaTgsd322	0.000	0.000	0.000
413	CinNgsd323	0.000	0.000	0.000
414	CinTgsd323	0.000	0.000	0.000

415	CwaNgsd323	0.000	0.000	0.000
416	CwaTgsd323	0.000	0.000	0.000
417	CheNgsd324	0.003	0.001	0.012
418	CheTgsd324	0.293	0.053	1.119
419	ChoNgsd324	0.000	0.000	0.002
420	ChoTgsd324	0.024	0.026	0.162
421	CcoEgsd328	2.238	12.601	4.562
422	CcoNgsd328	0.024	0.135	0.049
423	CheEgsd328	4.359	24.543	8.886
424	CheNgsd328	0.047	0.263	0.095
425	ChoEgsd328	1.659	9.340	3.381
426	ChoNgsd328	0.013	0.074	0.027
427	CinEgsd328	2.743	15.441	5.590
428	CinNgsd328	0.022	0.122	0.044
429	CscEgsd328	3.653	20.565	7.445
430	CscNgsd328	0.039	0.220	0.080
431	CasNgsd504	0.000	0.000	0.000
432	CasTgsd504	0.000	0.000	0.000
433	CasTgsd507	4.507	2.939	24.044
434	CwaTgsd507	7.821	5.099	41.725
435	CcoEgsd602	0.000	0.000	0.000
436	CcoNgsd602	0.000	0.000	0.000
437	CheEgsd602	0.012	0.012	0.295
438	CheNgsd602	0.000	0.000	0.003
439	ChoEgsd602	0.071	0.071	1.745
440	ChoNgsd602	0.001	0.001	0.019
441	CinEgsd602	0.000	0.000	0.000
442	CinNgsd602	0.000	0.000	0.000
443	CofEgsd602	0.010	0.010	0.246
444	CofNgsd602	0.000	0.000	0.003
445	CrtEgsd602	0.016	0.016	0.387
446	CrtNgsd602	0.000	0.000	0.004
447	CasEgsd603	0.197	0.092	1.292
448	CasNgsd603	0.011	0.005	0.069
449	CcoEgsd603	0.131	0.110	0.997
450	CcoNgsd603	0.007	0.006	0.053
451	CgrEgsd603	0.669	0.313	4.374
452	CgrNgsd603	0.007	0.003	0.047
453	CheEgsd603	0.313	0.262	2.382
454	CheNgsd603	0.017	0.014	0.126
455	ChoEgsd603	0.183	0.153	1.392
456	ChoNgsd603	0.010	0.008	0.074
457	CinEgsd603	1.019	0.477	6.666
458	CinNgsd603	0.055	0.026	0.357
459	CloEgsd603	0.292	0.244	2.220
460	CloNgsd603	0.015	0.013	0.117
461	CmiEgsd603	33.066	15.476	216.350

462	CmiNgsd603	0.354	0.166	2.318
463	CofEgsd603	1.567	0.733	10.251
464	CofNgsd603	0.083	0.039	0.542
465	CreEgsd603	0.264	0.221	2.008
466	CreNgsd603	0.014	0.012	0.108
467	CrtEgsd603	1.071	0.501	7.008
468	CrtNgsd603	0.057	0.027	0.375
469	CscEgsd603	0.308	0.258	2.341
470	CscNgsd603	0.016	0.014	0.125
471	CwaEgsd603	0.152	0.071	0.997
472	CwaNgsd603	0.008	0.004	0.053
473	CasTgsd607	0.000	0.000	0.000
474	CcoTgsd607	0.000	0.000	0.000
475	CloTgsd607	0.000	0.000	0.000
476	CasNgsd701	0.015	0.000	0.028
477	CasTgsd701	1.506	0.000	2.712
478	CgrNgsd701	0.012	0.000	0.022
479	CgrTgsd701	1.166	0.000	2.099
480	CheNgsd701	0.021	0.000	0.037
481	CheTgsd701	2.075	0.000	3.737
482	ChoNgsd701	0.016	0.000	0.029
483	ChoTgsd701	1.623	0.000	2.923
484	CinNgsd701	0.079	0.000	0.143
485	CinTgsd701	7.774	0.000	13.998
486	CloNgsd701	0.019	0.000	0.035
487	CloTgsd701	1.934	0.000	3.483
488	CofNgsd701	0.120	0.000	0.217
489	CofTgsd701	11.956	0.000	21.526
490	CrtNgsd701	0.061	0.000	0.110
491	CrtTgsd701	6.107	0.000	10.995
492	CwaNgsd701	0.009	0.000	0.016
493	CwaTgsd701	0.869	0.000	1.564
494	CasEgsd801	0.002	0.002	0.019
495	CcoEgsd801	0.001	0.000	0.004
496	CgrEgsd801	2.083	2.095	25.719
497	CheEgsd801	0.002	0.002	0.018
498	ChoEgsd801	0.014	0.012	0.107
499	CloEgsd801	0.043	0.036	0.330
500	CreEgsd801	0.756	0.633	5.753
501	CrtEgsd801	0.137	0.138	1.690
502	CscEgsd801	0.014	0.012	0.105
503	CasEgsd808	0.002	0.000	0.015
504	CasNgsd808	0.000	0.000	0.001
505	CcoEgsd808	0.000	0.000	0.003
506	CcoNgsd808	0.000	0.000	0.000
507	CgrEgsd808	0.851	0.078	6.033
508	CgrNgsd808	0.000	0.000	0.000

509	CheEgsd808	0.002	0.001	0.013
510	CheNgsd808	0.000	0.000	0.001
511	ChoEgsd808	0.011	0.009	0.081
512	ChoNgsd808	0.000	0.000	0.004
513	CloEgsd808	0.033	0.028	0.250
514	CloNgsd808	0.002	0.001	0.012
515	CreEgsd808	0.573	0.480	4.361
516	CreNgsd808	0.027	0.022	0.203
517	CrtEgsd808	0.056	0.005	0.396
518	CrtNgsd808	0.000	0.000	0.000
519	CscEgsd808	0.010	0.009	0.080
520	CscNgsd808	0.000	0.000	0.004
521	CgrNgsd814	0.000	0.000	0.000
522	CgrTgsd814	0.000	0.000	0.000
523	CrtNgsd814	0.000	0.000	0.000
524	CrtTgsd814	0.000	0.000	0.000
525	CgrNgsd816	0.120	0.054	0.794
526	CgrTgsd816	9.921	4.433	65.534
527	CrtNgsd816	0.008	0.004	0.052
528	CrtTgsd816	0.652	0.291	4.306
529	CasEgsd905	0.001	0.001	0.009
530	CasNgsd905	0.000	0.000	0.001
531	CcoEgsd905	0.001	0.001	0.005
532	CcoNgsd905	0.000	0.000	0.000
533	CgrEgsd905	0.001	0.002	0.012
534	CgrNgsd905	0.000	0.000	0.000
535	CheEgsd905	0.008	0.009	0.070
536	CheNgsd905	0.000	0.001	0.004
537	ChoEgsd905	0.001	0.001	0.009
538	ChoNgsd905	0.000	0.000	0.000
539	CinEgsd905	0.196	0.220	1.731
540	CinNgsd905	0.002	0.002	0.020
541	CloEgsd905	0.004	0.007	0.049
542	CloNgsd905	0.000	0.000	0.000
543	CmiEgsd905	0.003	0.003	0.023
544	CmiNgsd905	0.000	0.000	0.000
545	CofEgsd905	0.007	0.008	0.059
546	CofNgsd905	0.000	0.000	0.003
547	CreEgsd905	0.019	0.034	0.243
548	CreNgsd905	0.001	0.002	0.015
549	CrtEgsd905	0.003	0.006	0.042
550	CrtNgsd905	0.000	0.000	0.002
551	CscEgsd905	0.035	0.040	0.313
552	CscNgsd905	0.002	0.002	0.018
553	CwaEgsd905	0.001	0.001	0.005
554	CwaNgsd905	0.000	0.000	0.000
555	CinNgsd909	0.015	0.002	0.197

556	CinTgsd909	1.396	0.196	18.421
557	CasNgsd911	0.001	0.000	0.003
558	CasTgsd911	0.073	0.045	0.308
559	CheNgsd911	0.010	0.006	0.044
560	CheTgsd911	0.975	0.603	4.138
561	CscEgsd921	3.785	8.607	24.211
562	CcoNgsld101	0.000	0.000	0.000
563	CcoTgsld101	0.002	0.001	0.007
564	CheNgsld101	0.000	0.000	0.002
565	CheTgsld101	0.035	0.014	0.158
566	ChoNgsld101	0.001	0.000	0.003
567	ChoTgsld101	0.071	0.028	0.322
568	CloNgsld101	0.002	0.001	0.009
569	CloTgsld101	0.183	0.072	0.825
570	CreNgsld101	0.016	0.006	0.072
571	CreTgsld101	1.489	0.584	6.720
572	CscNgsld101	0.000	0.000	0.002
573	CscTgsld101	0.036	0.014	0.164
574	CcoNgsld103	0.000	0.000	0.000
575	CcoTgsld103	0.001	0.000	0.005
576	CheNgsld103	0.000	0.000	0.001
577	CheTgsld103	0.017	0.009	0.105
578	ChoNgsld103	0.000	0.000	0.002
579	ChoTgsld103	0.034	0.018	0.207
580	CloNgsld103	0.001	0.000	0.004
581	CloTgsld103	0.059	0.031	0.360
582	CreNgsld103	0.005	0.003	0.029
583	CreTgsld103	0.447	0.234	2.713
584	CscNgsld103	0.000	0.000	0.001
585	CscTgsld103	0.018	0.009	0.110
586	CinNgsld119	0.010	0.010	0.059
587	CinTgsld119	0.979	0.979	5.552
588	CofNgsld119	0.024	0.024	0.137
589	CofTgsld119	1.352	1.352	7.667
590	CheEgsld203	4.967	0.006	9.635
591	CofEgsld203	2.299	0.030	4.605
592	CrtEgsld207	2.423	0.007	11.729
593	CasEgsld302	1.431	0.066	12.930
594	CasNgsld302	0.016	0.001	0.142
595	CcoEgsld302	0.020	0.001	0.180
596	CcoNgsld302	0.000	0.000	0.002
597	CgrEgsld302	0.000	0.000	0.000
598	CgrNgsld302	0.000	0.000	0.000
599	CheEgsld302	0.000	0.000	0.000
600	CheNgsld302	0.000	0.000	0.000
601	ChoEgsld302	0.764	0.035	6.903
602	ChoNgsld302	0.008	0.000	0.076

603	CinEgsld302	3.385	0.155	30.591
604	CinNgsld302	0.037	0.002	0.335
605	CloEgsld302	0.297	0.014	2.682
606	CloNgsld302	0.003	0.000	0.030
607	CmiEgsld302	2.650	0.121	23.950
608	CmiNgsld302	0.030	0.001	0.275
609	CofEgsld302	2.290	0.105	20.700
610	CofNgsld302	0.027	0.001	0.241
611	CreEgsld302	0.115	0.005	1.044
612	CreNgsld302	0.001	0.000	0.012
613	CrtEgsld302	0.000	0.000	0.000
614	CrtNgsld302	0.000	0.000	0.000
615	CscEgsld302	1.559	0.071	14.093
616	CscNgsld302	0.018	0.001	0.159
617	CwaEgsld302	0.000	0.000	0.000
618	CwaNgsld302	0.000	0.000	0.000
619	CasNgsld303	0.001	0.000	0.001
620	CasTgsld303	1.348	0.013	1.538
621	CcoNgsld303	0.002	0.000	0.003
622	CcoTgsld303	0.237	0.002	0.300
623	CgrNgsld303	0.000	0.000	0.000
624	CgrTgsld303	0.000	0.000	0.000
625	CinNgsld303	0.002	0.000	0.001
626	CinTgsld303	5.919	0.058	3.649
627	CmiNgsld303	0.000	0.000	0.000
628	CmiTgsld303	3.743	0.037	2.386
629	CofNgsld303	0.003	0.000	0.004
630	CofTgsld303	2.021	0.020	2.596
631	CrtNgsld303	0.000	0.000	0.000
632	CrtTgsld303	0.000	0.000	0.000
633	CscNgsld303	0.012	0.000	0.015
634	CscTgsld303	2.226	0.022	2.805
635	CwaNgsld303	0.000	0.000	0.000
636	CwaTgsld303	0.000	0.000	0.000
637	CasNgsld304	0.000	0.000	0.000
638	CasTgsld304	0.248	0.002	0.680
639	CcoNgsld304	0.000	0.000	0.001
640	CcoTgsld304	0.048	0.000	0.146
641	CgrNgsld304	0.000	0.000	0.000
642	CgrTgsld304	0.000	0.000	0.000
643	CheNgsld304	0.000	0.000	0.000
644	CheTgsld304	0.000	0.000	0.000
645	ChoNgsld304	0.002	0.000	0.010
646	ChoTgsld304	0.240	0.002	1.358
647	CinNgsld304	0.000	0.000	0.001
648	CinTgsld304	1.192	0.012	1.766
649	CloNgsld304	0.000	0.000	0.000

650	CloTgsld304	0.028	0.000	0.129
651	CmiNgsld304	0.000	0.000	0.000
652	CmiTgsld304	0.756	0.007	1.159
653	CofNgsld304	0.001	0.000	0.002
654	CofTgsld304	0.407	0.004	1.257
655	CreNgsld304	0.000	0.000	0.000
656	CreTgsld304	0.013	0.000	0.057
657	CrtNgsld304	0.000	0.000	0.000
658	CrtTgsld304	0.000	0.000	0.000
659	CscNgsld304	0.002	0.000	0.007
660	CscTgsld304	0.439	0.004	1.331
661	CheEgsld307	0.054	0.002	0.255
662	CheNgsld307	0.005	0.000	0.025
663	ChoEgsld307	0.297	0.084	1.983
664	ChoNgsld307	0.003	0.001	0.018
665	CinEgsld307	1.675	0.069	7.925
666	CinNgsld307	0.007	0.000	0.034
667	CloEgsld307	0.052	0.010	0.204
668	CloNgsld307	0.004	0.001	0.014
669	CmiEgsld307	5.454	0.378	25.886
670	CmiNgsld307	0.066	0.005	0.312
671	CofEgsld307	0.928	0.049	4.577
672	CofNgsld307	0.007	0.000	0.037
673	CrtEgsld307	1.753	0.430	6.720
674	CrtNgsld307	0.024	0.007	0.094
675	CheEgsld309	0.000	0.000	0.000
676	CheNgsld309	0.000	0.000	0.000
677	ChoEgsld309	0.000	0.000	0.000
678	ChoNgsld309	0.000	0.000	0.000
679	CinEgsld309	0.000	0.000	0.000
680	CinNgsld309	0.000	0.000	0.000
681	CmiEgsld309	0.000	0.000	0.000
682	CmiNgsld309	0.000	0.000	0.000
683	CofEgsld309	0.000	0.000	0.000
684	CofNgsld309	0.000	0.000	0.000
685	CcoEgsld310	0.201	0.005	0.503
686	CcoNgsld310	0.000	0.000	0.000
687	CheEgsld310	2.436	0.067	6.096
688	CheNgsld310	0.000	0.001	0.001
689	CloEgsld310	1.427	0.178	3.725
690	CloNgsld310	0.000	0.002	0.002
691	CmiEgsld310	3.142	0.307	8.108
692	CmiNgsld310	0.033	0.003	0.086
693	CrtEgsld310	4.014	0.285	10.238
694	CrtNgsld310	0.037	0.003	0.094
695	CscEgsld310	1.955	0.181	5.033
696	CscNgsld310	0.004	0.002	0.011

697	CheNgsld311	0.022	0.000	0.039
698	CheTgsld311	2.889	0.000	5.088
699	ChoNgsld311	0.005	0.000	0.008
700	ChoTgsld311	0.776	0.000	1.287
701	CloNgsld311	0.004	0.000	0.007
702	CloTgsld311	0.799	0.000	1.136
703	CreNgsld311	0.024	0.000	0.035
704	CreTgsld311	4.190	0.000	5.785
705	CcoEgsld312	0.000	0.000	0.000
706	CcoNgsld312	0.000	0.000	0.000
707	CreEgsld312	0.000	0.000	0.000
708	CreNgsld312	0.000	0.000	0.000
709	CloEgsld313	0.000	0.000	0.000
710	CloNgsld313	0.000	0.000	0.000
711	CrtEgsld319	2.396	0.270	12.379
712	CheEgsld320	0.053	0.007	0.194
713	CheNgsld320	0.000	0.000	0.001
714	ChoEgsld320	0.004	0.003	0.024
715	ChoNgsld320	0.000	0.000	0.000
716	CreEgsld320	0.006	0.039	0.144
717	CreNgsld320	0.000	0.000	0.001
718	CmiNgsld322	0.000	0.000	0.000
719	CmiTgsld322	0.000	0.000	0.000
720	CwaNgsld322	0.000	0.000	0.000
721	CwaTgsld322	0.000	0.000	0.000
722	CwaNgsld323	0.000	0.000	0.000
723	CwaTgsld323	0.000	0.000	0.000
724	CheNgsld324	0.001	0.000	0.005
725	CheTgsld324	0.122	0.022	0.466
726	ChoNgsld324	0.000	0.000	0.001
727	ChoTgsld324	0.010	0.011	0.067
728	CcoEgsld328	0.933	5.251	1.901
729	CcoNgsld328	0.010	0.056	0.020
730	CheEgsld328	1.816	10.226	3.702
731	CheNgsld328	0.019	0.110	0.040
732	ChoEgsld328	0.691	3.892	1.409
733	ChoNgsld328	0.005	0.031	0.011
734	CinEgsld328	1.143	6.434	2.329
735	CinNgsld328	0.009	0.051	0.018
736	CscEgsld328	1.522	8.569	3.102
737	CscNgsld328	0.016	0.092	0.033
738	CasTgsld507	1.878	1.224	10.018
739	CwaTgsld507	3.259	2.125	17.385
740	CcoEgsld602	0.000	0.000	0.000
741	CcoNgsld602	0.000	0.000	0.000
742	CheEgsld602	0.005	0.005	0.123
743	CheNgsld602	0.000	0.000	0.001

744	ChoEgsld602	0.030	0.030	0.727
745	ChoNgsld602	0.000	0.000	0.008
746	CinEgsld602	0.000	0.000	0.000
747	CinNgsld602	0.000	0.000	0.000
748	CofEgsld602	0.004	0.004	0.103
749	CofNgsld602	0.000	0.000	0.001
750	CrtEgsld602	0.007	0.007	0.161
751	CrtNgsld602	0.000	0.000	0.002
752	CasEgsld603	0.082	0.038	0.538
753	CasNgsld603	0.004	0.002	0.029
754	CcoEgsld603	0.055	0.046	0.415
755	CcoNgsld603	0.003	0.002	0.022
756	CgrEgsld603	0.279	0.130	1.823
757	CgrNgsld603	0.003	0.001	0.020
758	CheEgsld603	0.130	0.109	0.992
759	CheNgsld603	0.007	0.006	0.052
760	ChoEgsld603	0.076	0.064	0.580
761	ChoNgsld603	0.004	0.003	0.031
762	CinEgsld603	0.424	0.199	2.777
763	CinNgsld603	0.023	0.011	0.149
764	CloEgsld603	0.122	0.102	0.925
765	CloNgsld603	0.006	0.005	0.049
766	CmiEgsld603	13.778	6.448	90.146
767	CmiNgsld603	0.148	0.069	0.966
768	CofEgsld603	0.653	0.306	4.271
769	CofNgsld603	0.034	0.016	0.226
770	CreEgsld603	0.110	0.092	0.836
771	CreNgsld603	0.006	0.005	0.045
772	CrtEgsld603	0.446	0.209	2.920
773	CrtNgsld603	0.024	0.011	0.156
774	CscEgsld603	0.128	0.107	0.975
775	CscNgsld603	0.007	0.006	0.052
776	CwaEgsld603	0.063	0.030	0.415
777	CwaNgsld603	0.003	0.002	0.022
778	CasTgsld607	0.000	0.000	0.000
779	CcoTgsld607	0.000	0.000	0.000
780	CloTgsld607	0.000	0.000	0.000
781	CasNgsld701	0.006	0.000	0.012
782	CasTgsld701	0.628	0.000	1.130
783	CgrNgsld701	0.005	0.000	0.009
784	CgrTgsld701	0.486	0.000	0.875
785	CheNgsld701	0.009	0.000	0.015
786	CheTgsld701	0.865	0.000	1.557
787	ChoNgsld701	0.007	0.000	0.012
788	ChoTgsld701	0.676	0.000	1.218
789	CinNgsld701	0.033	0.000	0.060
790	CinTgsld701	3.239	0.000	5.832

791	CloNgsld701	0.008	0.000	0.014
792	CloTgsld701	0.806	0.000	1.451
793	CofNgsld701	0.050	0.000	0.090
794	CofTgsld701	4.982	0.000	8.969
795	CrtNgsld701	0.026	0.000	0.046
796	CrtTgsld701	2.544	0.000	4.581
797	CwaNgsld701	0.004	0.000	0.007
798	CwaTgsld701	0.362	0.000	0.652
799	CasEgsld801	0.001	0.001	0.008
800	CcoEgsld801	0.000	0.000	0.002
801	CgrEgsld801	0.868	0.873	10.716
802	CheEgsld801	0.001	0.001	0.007
803	ChoEgsld801	0.006	0.005	0.045
804	CloEgsld801	0.018	0.015	0.138
805	CreEgsld801	0.315	0.264	2.397
806	CrtEgsld801	0.057	0.057	0.704
807	CscEgsld801	0.006	0.005	0.044
808	CasEgsld808	0.001	0.000	0.006
809	CasNgsld808	0.000	0.000	0.000
810	CcoEgsld808	0.000	0.000	0.001
811	CcoNgsld808	0.000	0.000	0.000
812	CgrEgsld808	0.355	0.032	2.514
813	CgrNgsld808	0.000	0.000	0.000
814	CheEgsld808	0.001	0.001	0.006
815	CheNgsld808	0.000	0.000	0.000
816	ChoEgsld808	0.004	0.004	0.034
817	ChoNgsld808	0.000	0.000	0.002
818	CloEgsld808	0.014	0.011	0.104
819	CloNgsld808	0.001	0.001	0.005
820	CreEgsld808	0.239	0.200	1.817
821	CreNgsld808	0.011	0.009	0.084
822	CrtEgsld808	0.023	0.002	0.165
823	CrtNgsld808	0.000	0.000	0.000
824	CscEgsld808	0.004	0.004	0.033
825	CscNgsld808	0.000	0.000	0.002
826	CgrNgsld814	0.000	0.000	0.000
827	CgrTgsld814	0.000	0.000	0.000
828	CrtNgsld814	0.000	0.000	0.000
829	CrtTgsld814	0.000	0.000	0.000
830	CgrNgsld816	0.050	0.022	0.331
831	CgrTgsld816	4.134	1.847	27.306
832	CrtNgsld816	0.003	0.001	0.022
833	CrtTgsld816	0.272	0.121	1.794
834	CasEgsld905	0.000	0.000	0.004
835	CasNgsld905	0.000	0.000	0.000
836	CcoEgsld905	0.000	0.000	0.002
837	CcoNgsld905	0.000	0.000	0.000

838	CgrEgsld905	0.000	0.001	0.005
839	CgrNgsld905	0.000	0.000	0.000
840	CheEgsld905	0.003	0.004	0.029
841	CheNgsld905	0.000	0.000	0.002
842	ChoEgsld905	0.000	0.000	0.004
843	ChoNgsld905	0.000	0.000	0.000
844	CinEgsld905	0.082	0.092	0.721
845	CinNgsld905	0.001	0.001	0.008
846	CloEgsld905	0.002	0.003	0.020
847	CloNgsld905	0.000	0.000	0.000
848	CmiEgsld905	0.001	0.001	0.010
849	CmiNgsld905	0.000	0.000	0.000
850	CofEgsld905	0.003	0.003	0.025
851	CofNgsld905	0.000	0.000	0.001
852	CreEgsld905	0.008	0.014	0.101
853	CreNgsld905	0.000	0.001	0.006
854	CrtEgsld905	0.001	0.002	0.018
855	CrtNgsld905	0.000	0.000	0.001
856	CscEgsld905	0.015	0.017	0.130
857	CscNgsld905	0.001	0.001	0.008
858	CwaEgsld905	0.000	0.000	0.002
859	CwaNgsld905	0.000	0.000	0.000
860	CinNgsld909	0.006	0.001	0.082
861	CinTgsld909	0.581	0.082	7.675
862	CasNgsld911	0.000	0.000	0.001
863	CasTgsld911	0.030	0.019	0.128
864	CheNgsld911	0.004	0.003	0.018
865	CheTgsld911	0.406	0.251	1.724
866	CscEgsld921	1.577	3.586	10.088

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QUESTION:
Please explain whether FPL used a two-year payback screen to free ridership in its EP and AP analyses. If so, please explain all of the reasons which support the use of a two year payback screen for this purpose.

RESPONSE:
As described in the direct testimonies of both witnesses Koch and Whitley, FPL used the two-year payback screen in its Economic Potential analysis only. FPL did not use it in either the Technical Potential or Achievable analyses.

The reasons for using the two-year payback screen to address the regulatory requirement of reflecting free ridership are discussed at length in witness Koch's testimony on page 20, line 20 through page 22, line 14 and Witness Whitley's testimony, page 25, line 17 through page 26, line 22. As discussed in the testimonies, the Commission's DSM Goals rule requires FEECA utilities to account for free ridership in their analyses of potential. Since the first implementation of the DSM Goals rule in 1994/95, FPL has used a two-year payback screen to develop its assessments of DSM economic and achievable potential. Moreover, the Commission has long endorsed the use of the two-year payback screen for free riders, most recently reaffirming their position in the 2014 DSM Goals docket, Order No. PSC-14-0696-FOF-EU, stating, *"We approved goals based on a two-year payback criterion to identify free riders since 1994 and we find it appropriate to continue this policy."*

The two-year payback criterion was also agreed upon during Staff's 2018 informal meetings with the parties prior to opening this docket. In addition, the Commission's Order Establishing Procedure (Order No. PSC-2019-0062-PCO-EG) includes required sensitivities for shorter and longer free-ridership exclusion periods, for which one-year and three-year periods were used (essentially, it assumed the two-year payback screen would be used to address free ridership.). The two-year payback remains an effective common-sense approach that is both reasonable and administratively efficient for meeting the Rule 25-17.0021, F.A.C., requirement that Goals reflect consideration of free riders.

DECLARATION

I sponsored the answers to Interrogatory Nos. 14-17, 29-30, 32-39, 48-60, and 62-65 from Southern Alliance for Clean Energy's First Set of Interrogatories to Florida Power & Light Company in Docket No. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Jim Herndon, Vice President, Strategic & Planning Consulting, Nexant

Date: 5/20/19

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	Measures Dropping at the Two-Year Payback Screening					
	RIM Cost-Effectiveness Screening					
	Customer Class	Measure Code	Measure Name	Summer (MW)	Winter (MW)	Energy (GWh)
1	No Applicable Measures					

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	Measures Dropping at the Two-Year Payback Screening					
	TRC Cost-Effectiveness Screening					
	Customer Class	Measure Code	Measure Name	Summer (MW)	Winter (MW)	Energy (GWh)
1	Residential	RM0N101	ENERGY STAR Air Purifier	0.0	0.0	0.0
2	Residential	RM0E101	ENERGY STAR Air Purifier	0.1	0.1	0.1
3	Residential	RMFN101	ENERGY STAR Air Purifier	0.0	0.0	0.0
4	Residential	RMFE101	ENERGY STAR Air Purifier	0.7	0.5	0.5
5	Residential	RSFN101	ENERGY STAR Air Purifier	0.0	0.0	0.0
6	Residential	RSFE101	ENERGY STAR Air Purifier	1.3	0.9	0.9
7	Residential	RM0N104	ENERGY STAR Clothes Washer	0.0	0.0	0.0
8	Residential	RM0E104	ENERGY STAR Clothes Washer	0.7	0.4	0.4
9	Residential	RMFN104	ENERGY STAR Clothes Washer	0.0	0.0	0.0
10	Residential	RMFE104	ENERGY STAR Clothes Washer	2.7	1.6	1.6
11	Residential	RSFN104	ENERGY STAR Clothes Washer	0.1	0.1	0.1
12	Residential	RSFE104	ENERGY STAR Clothes Washer	10.8	6.3	6.3
13	Residential	RM0E114	Removal of 2nd Refrigerator/Freezer	0.4	0.1	0.1
14	Residential	RM0N114	Removal of 2nd Refrigerator/Freezer	0.0	0.0	0.0
15	Residential	RMFE114	Removal of 2nd Refrigerator/Freezer	2.5	0.8	0.8
16	Residential	RMFN114	Removal of 2nd Refrigerator/Freezer	0.0	0.0	0.0
17	Residential	RSFE114	Removal of 2nd Refrigerator/Freezer	16.4	5.5	5.5
18	Residential	RSFN114	Removal of 2nd Refrigerator/Freezer	0.0	0.0	0.0
19	Residential	RSFE314	Duct Repair	99.0	32.1	32.1
20	Residential	RM0N316	ENERGY STAR Dehumidifier	0.0	0.0	0.0
21	Residential	RM0T316	ENERGY STAR Dehumidifier	0.0	0.0	0.0
22	Residential	RMFN316	ENERGY STAR Dehumidifier	0.0	0.0	0.0
23	Residential	RMFT316	ENERGY STAR Dehumidifier	0.2	0.0	0.0
24	Residential	RSFN316	ENERGY STAR Dehumidifier	0.0	0.0	0.0
25	Residential	RSFT316	ENERGY STAR Dehumidifier	0.4	0.1	0.1
26	Residential	RM0N317	ENERGY STAR Room AC	0.0	0.0	0.0
27	Residential	RM0T317	ENERGY STAR Room AC	1.4	0.0	0.0
28	Residential	RMFN317	ENERGY STAR Room AC	0.1	0.0	0.0
29	Residential	RMFT317	ENERGY STAR Room AC	3.8	0.0	0.0
30	Residential	RSFN317	ENERGY STAR Room AC	0.1	0.0	0.0
31	Residential	RSFT317	ENERGY STAR Room AC	9.2	0.0	0.0
32	Residential	RSFN321	Programmable Thermostat	0.0	0.0	0.0
33	Residential	RM0N603	Heat Pump Pool Heater	0.0	0.0	0.0
34	Residential	RM0T603	Heat Pump Pool Heater	0.0	0.0	0.0
35	Residential	RMFN603	Heat Pump Pool Heater	0.0	0.0	0.0
36	Residential	RMFT603	Heat Pump Pool Heater	0.0	0.0	0.0
37	Residential	RSFN603	Heat Pump Pool Heater	0.0	0.0	0.0
38	Residential	RSFT603	Heat Pump Pool Heater	0.0	0.0	0.0
39	Residential	RMFE608	Low Flow Showerhead	4.7	10.1	10.1
40	Residential	RMFN608	Low Flow Showerhead	0.1	0.3	0.3
41	Residential	RSFE608	Low Flow Showerhead	0.9	1.9	1.9
42	Residential	RSFN608	Low Flow Showerhead	0.5	1.0	1.0
43	Industrial	IGSLD101	Compressed Air Controls	0.3	0.3	0.3
44	Industrial	IGSD101	Compressed Air Controls	0.8	0.8	0.8
45	Industrial	IGSLD102	Compressed Air Equipment	0.8	0.8	0.8
46	Industrial	IGSD102	Compressed Air Equipment	1.9	1.9	1.9
47	Industrial	IGSLD103	Compressed Air System Optimization	0.5	0.5	0.5
48	Industrial	IGSD103	Compressed Air System Optimization	1.3	1.2	1.2
49	Industrial	IGSLD203	HVAC Improved Controls	0.6	0.6	0.6
50	Industrial	IGSD203	HVAC Improved Controls	1.5	1.5	1.5

51	Industrial	IGSLD302	Lighting Controls - Exterior	0.0	0.0	0.0
52	Industrial	IGSD302	Lighting Controls - Exterior	0.0	0.0	0.0
53	Industrial	IGSLD305	Lighting Controls	0.4	0.4	0.4
54	Industrial	IGSD305	Lighting Controls	0.9	0.9	0.9
55	Industrial	IGSLD402	Fan Improved Controls	0.9	0.9	0.9
56	Industrial	IGSD402	Fan Improved Controls	2.1	2.1	2.1
57	Industrial	IGSLD403	Fan System Optimization	0.6	0.6	0.6
58	Industrial	IGSD403	Fan System Optimization	1.4	1.4	1.4
59	Industrial	IGSLD501	Motor Equipment Upgrades	0.3	0.3	0.3
60	Industrial	IGSD501	Motor Equipment Upgrades	0.7	0.6	0.6
61	Industrial	IGSLD502	Motor Improved Controls	0.1	0.1	0.1
62	Industrial	IGSD502	Motor Improved Controls	0.2	0.2	0.2
63	Industrial	IGSLD505	Pump Improved Controls	0.1	0.1	0.1
64	Industrial	IGSD505	Pump Improved Controls	0.3	0.3	0.3
65	Industrial	IGSLD506	Pump System Optimization	0.6	0.5	0.5
66	Industrial	IGSD506	Pump System Optimization	1.3	1.3	1.3
67	Industrial	IGSLD603	Process Refrig System Optimization	0.3	0.3	0.3
68	Industrial	IGSD603	Process Refrig System Optimization	0.7	0.7	0.7
69	Industrial	IGSLD801	Process Other Equipment Upgrades	0.0	0.0	0.0
70	Industrial	IGSD801	Process Other Equipment Upgrades	0.0	0.0	0.0
71	Industrial	IGSLD802	Process Other Systems Optimization	0.4	0.4	0.4
72	Industrial	IGSD802	Process Other Systems Optimization	0.8	0.8	0.8
73	Industrial	IGSLD901	Plant Energy Management	3.5	3.4	3.4
74	Industrial	IGSD901	Plant Energy Management	8.2	8.0	8.0
75	Commercial	CcoNgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
76	Commercial	CcoTgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
77	Commercial	CheNgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
78	Commercial	CheTgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
79	Commercial	ChoNgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
80	Commercial	ChoTgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
81	Commercial	CloNgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
82	Commercial	CloTgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
83	Commercial	CreNgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
84	Commercial	CreTgs102	Energy Star Commercial Dishwasher	0.1	(0.0)	(0.0)
85	Commercial	CscNgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
86	Commercial	CscTgs102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
87	Commercial	CcoNgs105	Energy Star Griddle	0.0	0.0	0.0
88	Commercial	CcoTgs105	Energy Star Griddle	0.0	0.0	0.0
89	Commercial	CheNgs105	Energy Star Griddle	0.0	0.0	0.0
90	Commercial	CheTgs105	Energy Star Griddle	0.0	0.0	0.0
91	Commercial	ChoNgs105	Energy Star Griddle	0.0	0.0	0.0
92	Commercial	ChoTgs105	Energy Star Griddle	0.0	0.0	0.0
93	Commercial	CloNgs105	Energy Star Griddle	0.0	0.0	0.0
94	Commercial	CloTgs105	Energy Star Griddle	0.1	0.0	0.0
95	Commercial	CreNgs105	Energy Star Griddle	0.0	0.0	0.0
96	Commercial	CreTgs105	Energy Star Griddle	0.5	0.1	0.1
97	Commercial	CscNgs105	Energy Star Griddle	0.0	0.0	0.0
98	Commercial	CscTgs105	Energy Star Griddle	0.0	0.0	0.0
99	Commercial	CcoNgs107	Energy Star Steamer	0.0	0.0	0.0
100	Commercial	CcoTgs107	Energy Star Steamer	0.0	0.0	0.0
101	Commercial	CheNgs107	Energy Star Steamer	0.0	0.0	0.0
102	Commercial	CheTgs107	Energy Star Steamer	0.0	0.0	0.0
103	Commercial	ChoNgs107	Energy Star Steamer	0.0	0.0	0.0
104	Commercial	ChoTgs107	Energy Star Steamer	0.0	0.0	0.0
105	Commercial	CloNgs107	Energy Star Steamer	0.0	0.0	0.0
106	Commercial	CloTgs107	Energy Star Steamer	0.0	0.0	0.0
107	Commercial	CreNgs107	Energy Star Steamer	0.0	0.0	0.0
108	Commercial	CreTgs107	Energy Star Steamer	0.0	0.0	0.0
109	Commercial	CscNgs107	Energy Star Steamer	0.0	0.0	0.0
110	Commercial	CscTgs107	Energy Star Steamer	0.0	0.0	0.0
111	Commercial	CcoEgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0

112	Commercial	CcoNgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
113	Commercial	CgrEgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
114	Commercial	CgrNgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
115	Commercial	ChoEgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
116	Commercial	ChoNgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
117	Commercial	CloEgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
118	Commercial	CloNgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
119	Commercial	CreEgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
120	Commercial	CreNgs109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
121	Commercial	CcoNgs112	Energy Star Servers	0.0	0.0	0.0
122	Commercial	CcoTgs112	Energy Star Servers	0.0	0.0	0.0
123	Commercial	CheNgs112	Energy Star Servers	0.0	0.0	0.0
124	Commercial	CheTgs112	Energy Star Servers	0.0	0.0	0.0
125	Commercial	ChoNgs112	Energy Star Servers	0.0	0.0	0.0
126	Commercial	ChoTgs112	Energy Star Servers	0.0	0.0	0.0
127	Commercial	CinNgs112	Energy Star Servers	0.0	0.0	0.0
128	Commercial	CinTgs112	Energy Star Servers	0.0	0.0	0.0
129	Commercial	CloNgs112	Energy Star Servers	0.0	0.0	0.0
130	Commercial	CloTgs112	Energy Star Servers	0.0	0.0	0.0
131	Commercial	CmiNgs112	Energy Star Servers	0.0	0.0	0.0
132	Commercial	CmiTgs112	Energy Star Servers	0.0	0.0	0.0
133	Commercial	CofNgs112	Energy Star Servers	0.0	0.0	0.0
134	Commercial	CofTgs112	Energy Star Servers	0.0	0.0	0.0
135	Commercial	CrtNgs112	Energy Star Servers	0.0	0.0	0.0
136	Commercial	CrtTgs112	Energy Star Servers	0.0	0.0	0.0
137	Commercial	CscNgs112	Energy Star Servers	0.0	0.0	0.0
138	Commercial	CscTgs112	Energy Star Servers	0.0	0.0	0.0
139	Commercial	CheEgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
140	Commercial	CheNgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
141	Commercial	ChoEgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
142	Commercial	ChoNgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
143	Commercial	CinEgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
144	Commercial	CinNgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
145	Commercial	CloEgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
146	Commercial	CloNgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
147	Commercial	CmiEgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
148	Commercial	CmiNgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
149	Commercial	CscEgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
150	Commercial	CscNgs116	Smart Strip Plug Outlet	0.0	0.0	0.0
151	Commercial	CinNgs119	ENERGY STAR Water Cooler	0.0	0.0	0.0
152	Commercial	CinTgs119	ENERGY STAR Water Cooler	0.6	0.6	0.6
153	Commercial	CofNgs119	ENERGY STAR Water Cooler	0.0	0.0	0.0
154	Commercial	CofTgs119	ENERGY STAR Water Cooler	0.8	0.8	0.8
155	Commercial	CgrEgs307	Facility Energy Management System	0.3	0.1	0.1
156	Commercial	CgrNgs307	Facility Energy Management System	0.0	0.0	0.0
157	Commercial	CinEgs307	Facility Energy Management System	1.0	0.0	0.0
158	Commercial	CinNgs307	Facility Energy Management System	0.0	0.0	0.0
159	Commercial	CreEgs307	Facility Energy Management System	0.0	0.0	0.0
160	Commercial	CreNgs307	Facility Energy Management System	0.0	0.0	0.0
161	Commercial	CgrEgs309	Programmable Thermostat	0.0	0.0	0.0
162	Commercial	CgrNgs309	Programmable Thermostat	0.0	0.0	0.0
163	Commercial	CgrEgs310	Smart Thermostat	0.4	0.1	0.1
164	Commercial	CgrNgs310	Smart Thermostat	0.0	0.0	0.0
165	Commercial	CreEgs310	Smart Thermostat	1.6	0.3	0.3
166	Commercial	CreNgs310	Smart Thermostat	0.0	0.0	0.0
167	Commercial	CheEgs312	HVAC tune-up	0.0	0.0	0.0
168	Commercial	CheNgs312	HVAC tune-up	0.0	0.0	0.0
169	Commercial	ChoEgs312	HVAC tune-up	0.0	0.0	0.0
170	Commercial	ChoNgs312	HVAC tune-up	0.0	0.0	0.0
171	Commercial	CloEgs312	HVAC tune-up	0.0	0.0	0.0
172	Commercial	CloNgs312	HVAC tune-up	0.0	0.0	0.0

173	Commercial	CreEgs312	HVAC tune-up	0.0	0.0	0.0
174	Commercial	CreNgs312	HVAC tune-up	0.0	0.0	0.0
175	Commercial	CheEgs313	HVAC tune-up_RTU	0.0	0.0	0.0
176	Commercial	CheNgs313	HVAC tune-up_RTU	0.0	0.0	0.0
177	Commercial	ChoEgs313	HVAC tune-up_RTU	0.0	0.0	0.0
178	Commercial	ChoNgs313	HVAC tune-up_RTU	0.0	0.0	0.0
179	Commercial	CofEgs319	Duct Sealing Repair	1.4	0.5	0.5
180	Commercial	CreEgs319	Duct Sealing Repair	0.7	0.2	0.2
181	Commercial	CasNgs322	High Efficiency PTAC	0.0	0.0	0.0
182	Commercial	CasTgs322	High Efficiency PTAC	0.0	0.0	0.0
183	Commercial	CcoNgs322	High Efficiency PTAC	0.0	0.0	0.0
184	Commercial	CcoTgs322	High Efficiency PTAC	0.0	0.0	0.0
185	Commercial	CheNgs322	High Efficiency PTAC	0.0	0.0	0.0
186	Commercial	CheTgs322	High Efficiency PTAC	0.0	0.0	0.0
187	Commercial	ChoNgs322	High Efficiency PTAC	0.0	0.0	0.0
188	Commercial	ChoTgs322	High Efficiency PTAC	0.0	0.0	0.0
189	Commercial	CloNgs322	High Efficiency PTAC	0.0	0.0	0.0
190	Commercial	CloTgs322	High Efficiency PTAC	0.0	0.0	0.0
191	Commercial	CofNgs322	High Efficiency PTAC	0.0	0.0	0.0
192	Commercial	CofTgs322	High Efficiency PTAC	0.0	0.0	0.0
193	Commercial	CreNgs322	High Efficiency PTAC	0.0	0.0	0.0
194	Commercial	CreTgs322	High Efficiency PTAC	0.0	0.0	0.0
195	Commercial	CrtNgs322	High Efficiency PTAC	0.0	0.0	0.0
196	Commercial	CrtTgs322	High Efficiency PTAC	0.0	0.0	0.0
197	Commercial	CscNgs322	High Efficiency PTAC	0.0	0.0	0.0
198	Commercial	CscTgs322	High Efficiency PTAC	0.0	0.0	0.0
199	Commercial	CasNgs323	High Efficiency PTHP	0.0	0.0	0.0
200	Commercial	CasTgs323	High Efficiency PTHP	0.0	0.0	0.0
201	Commercial	CcoNgs323	High Efficiency PTHP	0.0	0.0	0.0
202	Commercial	CcoTgs323	High Efficiency PTHP	0.0	0.0	0.0
203	Commercial	CheNgs323	High Efficiency PTHP	0.0	0.0	0.0
204	Commercial	CheTgs323	High Efficiency PTHP	0.0	0.0	0.0
205	Commercial	ChoNgs323	High Efficiency PTHP	0.0	0.0	0.0
206	Commercial	ChoTgs323	High Efficiency PTHP	0.0	0.0	0.0
207	Commercial	CloNgs323	High Efficiency PTHP	0.0	0.0	0.0
208	Commercial	CloTgs323	High Efficiency PTHP	0.0	0.0	0.0
209	Commercial	CofNgs323	High Efficiency PTHP	0.0	0.0	0.0
210	Commercial	CofTgs323	High Efficiency PTHP	0.0	0.0	0.0
211	Commercial	CreNgs323	High Efficiency PTHP	0.0	0.0	0.0
212	Commercial	CreTgs323	High Efficiency PTHP	0.0	0.0	0.0
213	Commercial	CrtNgs323	High Efficiency PTHP	0.0	0.0	0.0
214	Commercial	CrtTgs323	High Efficiency PTHP	0.0	0.0	0.0
215	Commercial	CscNgs323	High Efficiency PTHP	0.0	0.0	0.0
216	Commercial	CscTgs323	High Efficiency PTHP	0.0	0.0	0.0
217	Commercial	CasNgs408	LED Parking Lighting	0.0	0.0	0.0
218	Commercial	CasTgs408	LED Parking Lighting	0.0	0.0	0.0
219	Commercial	CcoNgs408	LED Parking Lighting	0.0	0.0	0.0
220	Commercial	CcoTgs408	LED Parking Lighting	0.0	0.0	0.0
221	Commercial	CgrNgs408	LED Parking Lighting	0.0	0.0	0.0
222	Commercial	CgrTgs408	LED Parking Lighting	0.0	0.0	0.0
223	Commercial	CheNgs408	LED Parking Lighting	0.0	0.0	0.0
224	Commercial	CheTgs408	LED Parking Lighting	0.0	0.0	0.0
225	Commercial	ChoNgs408	LED Parking Lighting	0.0	0.0	0.0
226	Commercial	ChoTgs408	LED Parking Lighting	0.0	0.0	0.0
227	Commercial	CinNgs408	LED Parking Lighting	0.0	0.0	0.0
228	Commercial	CinTgs408	LED Parking Lighting	0.0	0.0	0.0
229	Commercial	CloNgs408	LED Parking Lighting	0.0	0.0	0.0
230	Commercial	CloTgs408	LED Parking Lighting	0.0	0.0	0.0
231	Commercial	CmiNgs408	LED Parking Lighting	0.0	0.0	0.0
232	Commercial	CmiTgs408	LED Parking Lighting	0.0	0.0	0.0
233	Commercial	CofNgs408	LED Parking Lighting	0.0	0.0	0.0

234	Commercial	CofTgs408	LED Parking Lighting	0.0	0.0	0.0
235	Commercial	CreNgs408	LED Parking Lighting	0.0	0.0	0.0
236	Commercial	CreTgs408	LED Parking Lighting	0.0	0.0	0.0
237	Commercial	CrtNgs408	LED Parking Lighting	0.0	0.0	0.0
238	Commercial	CrtTgs408	LED Parking Lighting	0.0	0.0	0.0
239	Commercial	CscNgs408	LED Parking Lighting	0.0	0.0	0.0
240	Commercial	CscTgs408	LED Parking Lighting	0.0	0.0	0.0
241	Commercial	CwaNgs408	LED Parking Lighting	0.0	0.0	0.0
242	Commercial	CwaTgs408	LED Parking Lighting	0.0	0.0	0.0
243	Commercial	CasNgs501	CFL - 23W	0.0	0.0	0.0
244	Commercial	CasTgs501	CFL - 23W	0.0	0.0	0.0
245	Commercial	CcoNgs501	CFL - 23W	0.0	0.0	0.0
246	Commercial	CcoTgs501	CFL - 23W	0.0	0.0	0.0
247	Commercial	CgrNgs501	CFL - 23W	0.0	0.0	0.0
248	Commercial	CgrTgs501	CFL - 23W	0.0	0.0	0.0
249	Commercial	CheNgs501	CFL - 23W	0.0	0.0	0.0
250	Commercial	CheTgs501	CFL - 23W	0.0	0.0	0.0
251	Commercial	ChoNgs501	CFL - 23W	0.0	0.0	0.0
252	Commercial	ChoTgs501	CFL - 23W	0.0	0.0	0.0
253	Commercial	CinNgs501	CFL - 23W	0.0	0.0	0.0
254	Commercial	CinTgs501	CFL - 23W	0.0	0.0	0.0
255	Commercial	CloNgs501	CFL - 23W	0.0	0.0	0.0
256	Commercial	CloTgs501	CFL - 23W	0.0	0.0	0.0
257	Commercial	CmiNgs501	CFL - 23W	0.0	0.0	0.0
258	Commercial	CmiTgs501	CFL - 23W	0.0	0.0	0.0
259	Commercial	CofNgs501	CFL - 23W	0.0	0.0	0.0
260	Commercial	CofTgs501	CFL - 23W	0.0	0.0	0.0
261	Commercial	CreNgs501	CFL - 23W	0.0	0.0	0.0
262	Commercial	CreTgs501	CFL - 23W	0.0	0.0	0.0
263	Commercial	CrtNgs501	CFL - 23W	0.0	0.0	0.0
264	Commercial	CrtTgs501	CFL - 23W	0.0	0.0	0.0
265	Commercial	CscNgs501	CFL - 23W	0.0	0.0	0.0
266	Commercial	CscTgs501	CFL - 23W	0.0	0.0	0.0
267	Commercial	CwaNgs501	CFL - 23W	0.0	0.0	0.0
268	Commercial	CwaTgs501	CFL - 23W	0.0	0.0	0.0
269	Commercial	CasNgs504	High Bay Fluorescent (T5)	0.0	0.0	0.0
270	Commercial	CasTgs504	High Bay Fluorescent (T5)	0.0	0.0	0.0
271	Commercial	CrtNgs504	High Bay Fluorescent (T5)	0.0	0.0	0.0
272	Commercial	CrtTgs504	High Bay Fluorescent (T5)	0.0	0.0	0.0
273	Commercial	CwaNgs504	High Bay Fluorescent (T5)	0.0	0.0	0.0
274	Commercial	CwaTgs504	High Bay Fluorescent (T5)	0.0	0.0	0.0
275	Commercial	CasNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
276	Commercial	CasTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
277	Commercial	CcoNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
278	Commercial	CcoTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
279	Commercial	CgrNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
280	Commercial	CgrTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
281	Commercial	CheNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
282	Commercial	CheTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
283	Commercial	ChoNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
284	Commercial	ChoTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
285	Commercial	CinNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
286	Commercial	CinTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
287	Commercial	CloNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
288	Commercial	CloTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
289	Commercial	CmiNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
290	Commercial	CmiTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
291	Commercial	CofNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
292	Commercial	CofTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
293	Commercial	CreNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
294	Commercial	CreTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0

295	Commercial	CrtNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
296	Commercial	CrtTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
297	Commercial	CscNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
298	Commercial	CscTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
299	Commercial	CwaNgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
300	Commercial	CwaTgs506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
301	Commercial	CrtTgs507	High Bay LED	15.0	9.8	9.8
302	Commercial	CasTgs508	LED - 14W	0.0	0.0	0.0
303	Commercial	CcoTgs508	LED - 14W	0.0	0.0	0.0
304	Commercial	CgrTgs508	LED - 14W	0.0	0.0	0.0
305	Commercial	CheTgs508	LED - 14W	0.0	0.0	0.0
306	Commercial	ChoTgs508	LED - 14W	0.0	0.0	0.0
307	Commercial	CinTgs508	LED - 14W	0.0	0.0	0.0
308	Commercial	CloTgs508	LED - 14W	0.0	0.0	0.0
309	Commercial	CmiTgs508	LED - 14W	0.0	0.0	0.0
310	Commercial	CofTgs508	LED - 14W	0.0	0.0	0.0
311	Commercial	CreTgs508	LED - 14W	0.0	0.0	0.0
312	Commercial	CrtTgs508	LED - 14W	0.0	0.0	0.0
313	Commercial	CscTgs508	LED - 14W	0.0	0.0	0.0
314	Commercial	CwaTgs508	LED - 14W	0.0	0.0	0.0
315	Commercial	CasTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
316	Commercial	CcoTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
317	Commercial	CgrTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
318	Commercial	CheTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
319	Commercial	ChoTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
320	Commercial	CinTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
321	Commercial	CloTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
322	Commercial	CmiTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
323	Commercial	CofTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
324	Commercial	CreTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
325	Commercial	CrtTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
326	Commercial	CscTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
327	Commercial	CwaTgs509	LED Display Lighting (Interior)	0.0	0.0	0.0
328	Commercial	CasTgs510	LED Linear - Fixture Replacement	0.6	0.1	0.1
329	Commercial	CcoTgs510	LED Linear - Fixture Replacement	0.2	0.2	0.2
330	Commercial	CgrTgs510	LED Linear - Fixture Replacement	1.8	0.0	0.0
331	Commercial	CheTgs510	LED Linear - Fixture Replacement	1.9	0.4	0.4
332	Commercial	ChoTgs510	LED Linear - Fixture Replacement	0.5	0.5	0.5
333	Commercial	CinTgs510	LED Linear - Fixture Replacement	6.3	1.4	1.4
334	Commercial	CloTgs510	LED Linear - Fixture Replacement	1.0	0.0	0.0
335	Commercial	CmiTgs510	LED Linear - Fixture Replacement	26.6	6.1	6.1
336	Commercial	CofTgs510	LED Linear - Fixture Replacement	7.8	1.8	1.8
337	Commercial	CreTgs510	LED Linear - Fixture Replacement	1.8	0.0	0.0
338	Commercial	CrtTgs510	LED Linear - Fixture Replacement	7.6	0.0	0.0
339	Commercial	CscTgs510	LED Linear - Fixture Replacement	1.6	0.4	0.4
340	Commercial	CwaTgs510	LED Linear - Fixture Replacement	0.7	0.1	0.1
341	Commercial	CasTgs511	LED Linear - Lamp Replacement	0.1	0.0	0.0
342	Commercial	CcoTgs511	LED Linear - Lamp Replacement	0.0	0.0	0.0
343	Commercial	CgrTgs511	LED Linear - Lamp Replacement	0.3	0.0	0.0
344	Commercial	CheTgs511	LED Linear - Lamp Replacement	0.3	0.1	0.1
345	Commercial	ChoTgs511	LED Linear - Lamp Replacement	0.1	0.1	0.1
346	Commercial	CinTgs511	LED Linear - Lamp Replacement	1.1	0.3	0.3
347	Commercial	CloTgs511	LED Linear - Lamp Replacement	0.2	0.0	0.0
348	Commercial	CmiTgs511	LED Linear - Lamp Replacement	0.5	0.1	0.1
349	Commercial	CofTgs511	LED Linear - Lamp Replacement	1.3	0.3	0.3
350	Commercial	CreTgs511	LED Linear - Lamp Replacement	0.3	0.0	0.0
351	Commercial	CrtTgs511	LED Linear - Lamp Replacement	1.7	0.0	0.0
352	Commercial	CscTgs511	LED Linear - Lamp Replacement	0.3	0.1	0.1
353	Commercial	CwaTgs511	LED Linear - Lamp Replacement	0.1	0.0	0.0
354	Commercial	CcoEgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
355	Commercial	CcoNgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0

356	Commercial	CheEgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
357	Commercial	CheNgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
358	Commercial	ChoEgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
359	Commercial	ChoNgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
360	Commercial	CinEgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
361	Commercial	CinNgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
362	Commercial	CofEgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
363	Commercial	CofNgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
364	Commercial	CrtEgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
365	Commercial	CrtNgs602	CO Sensors for Parking Garage Exhaust	0.0	0.0	0.0
366	Commercial	CasEgs801	Anti-Sweat Controls	0.0	0.0	0.0
367	Commercial	CcoEgs801	Anti-Sweat Controls	0.0	0.0	0.0
368	Commercial	CgrEgs801	Anti-Sweat Controls	0.5	0.5	0.5
369	Commercial	CheEgs801	Anti-Sweat Controls	0.0	0.0	0.0
370	Commercial	ChoEgs801	Anti-Sweat Controls	0.0	0.0	0.0
371	Commercial	CloEgs801	Anti-Sweat Controls	0.0	0.0	0.0
372	Commercial	CreEgs801	Anti-Sweat Controls	0.2	0.2	0.2
373	Commercial	CrtEgs801	Anti-Sweat Controls	0.0	0.0	0.0
374	Commercial	CscEgs801	Anti-Sweat Controls	0.0	0.0	0.0
375	Commercial	CcoEgs804	Floating Head Pressure Controls	0.0	0.0	0.0
376	Commercial	CcoNgs804	Floating Head Pressure Controls	0.0	0.0	0.0
377	Commercial	CheEgs804	Floating Head Pressure Controls	0.0	0.0	0.0
378	Commercial	CheNgs804	Floating Head Pressure Controls	0.0	0.0	0.0
379	Commercial	ChoEgs804	Floating Head Pressure Controls	0.0	0.0	0.0
380	Commercial	ChoNgs804	Floating Head Pressure Controls	0.0	0.0	0.0
381	Commercial	CloEgs804	Floating Head Pressure Controls	0.0	0.0	0.0
382	Commercial	CloNgs804	Floating Head Pressure Controls	0.0	0.0	0.0
383	Commercial	CscEgs804	Floating Head Pressure Controls	0.0	0.0	0.0
384	Commercial	CscNgs804	Floating Head Pressure Controls	0.0	0.0	0.0
385	Commercial	CgrNgs813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
386	Commercial	CgrTgs813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
387	Commercial	CrtNgs813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
388	Commercial	CrtTgs813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
389	Commercial	CgrNgs814	Energy Star Commercial Glass Door Refrigerator	0.0	0.0	0.0
390	Commercial	CgrTgs814	Energy Star Commercial Glass Door Refrigerator	0.0	0.0	0.0
391	Commercial	CrtNgs814	Energy Star Commercial Glass Door Refrigerator	0.0	0.0	0.0
392	Commercial	CrtTgs814	Energy Star Commercial Glass Door Refrigerator	0.0	0.0	0.0
393	Commercial	CgrNgs815	Energy Star Commercial Solid Door Freezer	0.0	0.0	0.0
394	Commercial	CgrTgs815	Energy Star Commercial Solid Door Freezer	1.4	0.6	0.6
395	Commercial	CrtNgs815	Energy Star Commercial Solid Door Freezer	0.0	0.0	0.0
396	Commercial	CrtTgs815	Energy Star Commercial Solid Door Freezer	0.1	0.0	0.0
397	Commercial	CasEgs902	Faucet Aerator	0.0	0.0	0.0
398	Commercial	CasNgs902	Faucet Aerator	0.0	0.0	0.0
399	Commercial	CcoEgs902	Faucet Aerator	0.0	0.0	0.0
400	Commercial	CcoNgs902	Faucet Aerator	0.0	0.0	0.0
401	Commercial	CgrEgs902	Faucet Aerator	0.0	0.0	0.0
402	Commercial	CgrNgs902	Faucet Aerator	0.0	0.0	0.0
403	Commercial	CheEgs902	Faucet Aerator	0.0	0.0	0.0
404	Commercial	CheNgs902	Faucet Aerator	0.0	0.0	0.0
405	Commercial	ChoEgs902	Faucet Aerator	0.0	0.0	0.0
406	Commercial	ChoNgs902	Faucet Aerator	0.0	0.0	0.0
407	Commercial	CinEgs902	Faucet Aerator	0.0	0.0	0.0
408	Commercial	CinNgs902	Faucet Aerator	0.0	0.0	0.0
409	Commercial	CloEgs902	Faucet Aerator	0.0	0.0	0.0
410	Commercial	CloNgs902	Faucet Aerator	0.0	0.0	0.0
411	Commercial	CmiEgs902	Faucet Aerator	0.0	0.0	0.0
412	Commercial	CmiNgs902	Faucet Aerator	0.0	0.0	0.0
413	Commercial	CofEgs902	Faucet Aerator	0.0	0.0	0.0

414	Commercial	CofNgs902	Faucet Aerator	0.0	0.0	0.0
415	Commercial	CreEgs902	Faucet Aerator	0.0	0.0	0.0
416	Commercial	CreNgs902	Faucet Aerator	0.0	0.0	0.0
417	Commercial	CrtEgs902	Faucet Aerator	0.0	0.0	0.0
418	Commercial	CrtNgs902	Faucet Aerator	0.0	0.0	0.0
419	Commercial	CscEgs902	Faucet Aerator	0.0	0.0	0.0
420	Commercial	CscNgs902	Faucet Aerator	0.0	0.0	0.0
421	Commercial	CwaEgs902	Faucet Aerator	0.0	0.0	0.0
422	Commercial	CwaNgs902	Faucet Aerator	0.0	0.0	0.0
423	Commercial	CcoEgs903	Low Flow Shower Head	0.0	0.0	0.0
424	Commercial	CcoNgs903	Low Flow Shower Head	0.0	0.0	0.0
425	Commercial	CheEgs903	Low Flow Shower Head	0.0	0.0	0.0
426	Commercial	CheNgs903	Low Flow Shower Head	0.0	0.0	0.0
427	Commercial	ChoEgs903	Low Flow Shower Head	0.0	0.0	0.0
428	Commercial	ChoNgs903	Low Flow Shower Head	0.0	0.0	0.0
429	Commercial	CloEgs903	Low Flow Shower Head	0.0	0.0	0.0
430	Commercial	CloNgs903	Low Flow Shower Head	0.0	0.0	0.0
431	Commercial	CasEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
432	Commercial	CasNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
433	Commercial	CcoEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
434	Commercial	CcoNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
435	Commercial	CgrEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
436	Commercial	CgrNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
437	Commercial	CheEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
438	Commercial	CheNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
439	Commercial	ChoEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
440	Commercial	ChoNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
441	Commercial	CinEgs905	Hot Water Pipe Insulation	0.0	0.1	0.1
442	Commercial	CinNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
443	Commercial	CloEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
444	Commercial	CloNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
445	Commercial	CmiEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
446	Commercial	CmiNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
447	Commercial	CofEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
448	Commercial	CofNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
449	Commercial	CreEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
450	Commercial	CreNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
451	Commercial	CrtEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
452	Commercial	CrtNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
453	Commercial	CscEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
454	Commercial	CscNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
455	Commercial	CwaEgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
456	Commercial	CwaNgs905	Hot Water Pipe Insulation	0.0	0.0	0.0
457	Commercial	CcoEgs907	Thermostatic Shower Restriction Valve	0.0	0.0	0.0
458	Commercial	CheEgs907	Thermostatic Shower Restriction Valve	0.0	0.0	0.0
459	Commercial	ChoEgs907	Thermostatic Shower Restriction Valve	0.0	0.0	0.0
460	Commercial	CloEgs907	Thermostatic Shower Restriction Valve	0.0	0.3	0.3
461	Commercial	CcoNgs911	Heat Pump Water Heater	0.0	0.0	0.0
462	Commercial	CcoTgs911	Heat Pump Water Heater	0.0	0.0	0.0
463	Commercial	CgrNgs911	Heat Pump Water Heater	0.0	0.0	0.0
464	Commercial	CgrTgs911	Heat Pump Water Heater	0.0	0.0	0.0
465	Commercial	CheNgs911	Heat Pump Water Heater	0.0	0.0	0.0
466	Commercial	CheTgs911	Heat Pump Water Heater	0.2	0.2	0.2
467	Commercial	ChoNgs911	Heat Pump Water Heater	0.0	0.0	0.0
468	Commercial	ChoTgs911	Heat Pump Water Heater	0.1	0.0	0.0
469	Commercial	CinNgs911	Heat Pump Water Heater	0.0	0.0	0.0
470	Commercial	CinTgs911	Heat Pump Water Heater	2.1	1.3	1.3
471	Commercial	CloNgs911	Heat Pump Water Heater	0.0	0.0	0.0
472	Commercial	CloTgs911	Heat Pump Water Heater	0.5	0.3	0.3
473	Commercial	CmiNgs911	Heat Pump Water Heater	0.0	0.0	0.0
474	Commercial	CmiTgs911	Heat Pump Water Heater	0.0	0.0	0.0

475	Commercial	CofNgs911	Heat Pump Water Heater	0.0	0.0	0.0
476	Commercial	CofTgs911	Heat Pump Water Heater	0.4	0.3	0.3
477	Commercial	CreNgs911	Heat Pump Water Heater	0.0	0.0	0.0
478	Commercial	CreTgs911	Heat Pump Water Heater	0.5	0.3	0.3
479	Commercial	CrtNgs911	Heat Pump Water Heater	0.0	0.0	0.0
480	Commercial	CrtTgs911	Heat Pump Water Heater	0.1	0.0	0.0
481	Commercial	CwaNgs911	Heat Pump Water Heater	0.0	0.0	0.0
482	Commercial	CwaTgs911	Heat Pump Water Heater	0.0	0.0	0.0
483	Commercial	CgrEgs921	Retro-Commissioning	1.8	3.3	3.3
484	Commercial	CheEgs921	Retro-Commissioning	1.3	2.9	2.9
485	Commercial	ChoEgs921	Retro-Commissioning	2.2	0.0	0.0
486	Commercial	CinEgs921	Retro-Commissioning	3.5	8.0	8.0
487	Commercial	CloEgs921	Retro-Commissioning	1.7	2.5	2.5
488	Commercial	CmiEgs921	Retro-Commissioning	12.9	39.9	39.9
489	Commercial	CofEgs921	Retro-Commissioning	4.6	12.6	12.6
490	Commercial	CreEgs921	Retro-Commissioning	3.0	4.5	4.5
491	Commercial	CrtEgs921	Retro-Commissioning	6.3	10.1	10.1
492	Commercial	CcoNgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
493	Commercial	CcoTgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
494	Commercial	CheNgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
495	Commercial	CheTgsd102	Energy Star Commercial Dishwasher	0.1	(0.0)	(0.0)
496	Commercial	ChoNgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
497	Commercial	ChoTgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
498	Commercial	CloNgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
499	Commercial	CloTgsd102	Energy Star Commercial Dishwasher	0.2	(0.0)	(0.0)
500	Commercial	CreNgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
501	Commercial	CreTgsd102	Energy Star Commercial Dishwasher	0.4	(0.0)	(0.0)
502	Commercial	CscNgsd102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
503	Commercial	CscTgsd102	Energy Star Commercial Dishwasher	0.1	(0.0)	(0.0)
504	Commercial	CcoNgsd105	Energy Star Griddle	0.0	0.0	0.0
505	Commercial	CcoTgsd105	Energy Star Griddle	0.0	0.0	0.0
506	Commercial	CheNgsd105	Energy Star Griddle	0.0	0.0	0.0
507	Commercial	CheTgsd105	Energy Star Griddle	0.1	0.0	0.0
508	Commercial	ChoNgsd105	Energy Star Griddle	0.0	0.0	0.0
509	Commercial	ChoTgsd105	Energy Star Griddle	0.1	0.0	0.0
510	Commercial	CloNgsd105	Energy Star Griddle	0.0	0.0	0.0
511	Commercial	CloTgsd105	Energy Star Griddle	0.3	0.1	0.1
512	Commercial	CreNgsd105	Energy Star Griddle	0.0	0.0	0.0
513	Commercial	CreTgsd105	Energy Star Griddle	2.1	0.5	0.5
514	Commercial	CscNgsd105	Energy Star Griddle	0.0	0.0	0.0
515	Commercial	CscTgsd105	Energy Star Griddle	0.1	0.0	0.0
516	Commercial	CcoNgsd107	Energy Star Steamer	0.0	0.0	0.0
517	Commercial	CcoTgsd107	Energy Star Steamer	0.0	0.0	0.0
518	Commercial	CheNgsd107	Energy Star Steamer	0.0	0.0	0.0
519	Commercial	CheTgsd107	Energy Star Steamer	0.0	0.0	0.0
520	Commercial	ChoNgsd107	Energy Star Steamer	0.0	0.0	0.0
521	Commercial	ChoTgsd107	Energy Star Steamer	0.0	0.0	0.0
522	Commercial	CloNgsd107	Energy Star Steamer	0.0	0.0	0.0
523	Commercial	CloTgsd107	Energy Star Steamer	0.0	0.0	0.0
524	Commercial	CreNgsd107	Energy Star Steamer	0.0	0.0	0.0
525	Commercial	CreTgsd107	Energy Star Steamer	0.0	0.0	0.0
526	Commercial	CscNgsd107	Energy Star Steamer	0.0	0.0	0.0
527	Commercial	CscTgsd107	Energy Star Steamer	0.0	0.0	0.0
528	Commercial	CcoEgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
529	Commercial	CcoNgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
530	Commercial	CgrEgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
531	Commercial	CgrNgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
532	Commercial	ChoEgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
533	Commercial	ChoNgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
534	Commercial	CloEgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.1	0.1
535	Commercial	CloNgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0

536	Commercial	CreEgsd109	Low Flow Pre-Rinse Sprayers	0.2	0.1	0.1
537	Commercial	CreNgsd109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
538	Commercial	CcoNgsd112	Energy Star Servers	0.0	0.0	0.0
539	Commercial	CcoTgsd112	Energy Star Servers	0.0	0.0	0.0
540	Commercial	CheNgsd112	Energy Star Servers	0.0	0.0	0.0
541	Commercial	CheTgsd112	Energy Star Servers	0.0	0.0	0.0
542	Commercial	ChoNgsd112	Energy Star Servers	0.0	0.0	0.0
543	Commercial	ChoTgsd112	Energy Star Servers	0.0	0.0	0.0
544	Commercial	CinNgsd112	Energy Star Servers	0.0	0.0	0.0
545	Commercial	CinTgsd112	Energy Star Servers	0.0	0.0	0.0
546	Commercial	CloNgsd112	Energy Star Servers	0.0	0.0	0.0
547	Commercial	CloTgsd112	Energy Star Servers	0.0	0.0	0.0
548	Commercial	CmiNgsd112	Energy Star Servers	0.0	0.0	0.0
549	Commercial	CmiTgsd112	Energy Star Servers	0.0	0.0	0.0
550	Commercial	CofNgsd112	Energy Star Servers	0.0	0.0	0.0
551	Commercial	CofTgsd112	Energy Star Servers	0.1	0.0	0.0
552	Commercial	CrtNgsd112	Energy Star Servers	0.0	0.0	0.0
553	Commercial	CrtTgsd112	Energy Star Servers	0.0	0.0	0.0
554	Commercial	CscNgsd112	Energy Star Servers	0.0	0.0	0.0
555	Commercial	CscTgsd112	Energy Star Servers	0.0	0.0	0.0
556	Commercial	CheEgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
557	Commercial	CheNgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
558	Commercial	ChoEgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
559	Commercial	ChoNgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
560	Commercial	CinEgsd116	Smart Strip Plug Outlet	0.1	0.0	0.0
561	Commercial	CinNgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
562	Commercial	CloEgsd116	Smart Strip Plug Outlet	0.1	0.1	0.1
563	Commercial	CloNgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
564	Commercial	CmiEgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
565	Commercial	CmiNgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
566	Commercial	CscEgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
567	Commercial	CscNgsd116	Smart Strip Plug Outlet	0.0	0.0	0.0
568	Commercial	CasEgsd301	Chilled Water Controls Optimization	1.7	0.0	0.0
569	Commercial	CasNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
570	Commercial	CcoEgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
571	Commercial	CcoNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
572	Commercial	CheEgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
573	Commercial	CheNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
574	Commercial	ChoEgsd301	Chilled Water Controls Optimization	0.5	0.0	0.0
575	Commercial	ChoNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
576	Commercial	CinEgsd301	Chilled Water Controls Optimization	3.9	0.0	0.0
577	Commercial	CinNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
578	Commercial	CloEgsd301	Chilled Water Controls Optimization	0.5	0.0	0.0
579	Commercial	CloNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
580	Commercial	CmiEgsd301	Chilled Water Controls Optimization	4.0	0.0	0.0
581	Commercial	CmiNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
582	Commercial	CofEgsd301	Chilled Water Controls Optimization	2.7	0.0	0.0
583	Commercial	CofNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
584	Commercial	CreEgsd301	Chilled Water Controls Optimization	0.2	0.0	0.0
585	Commercial	CreNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
586	Commercial	CrtEgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
587	Commercial	CrtNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
588	Commercial	CscEgsd301	Chilled Water Controls Optimization	2.4	0.0	0.0
589	Commercial	CscNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
590	Commercial	CwaEgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
591	Commercial	CwaNgsd301	Chilled Water Controls Optimization	0.0	0.0	0.0
592	Commercial	CheNgsd303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
593	Commercial	CheTgsd303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
594	Commercial	ChoNgsd303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
595	Commercial	ChoTgsd303	High Efficiency Chiller (Air Cooled, 50 tons)	2.8	0.0	0.0
596	Commercial	CgrEgsd307	Facility Energy Management System	1.4	0.4	0.4

597	Commercial	CgrNgsd307	Facility Energy Management System	0.0	0.0	0.0
598	Commercial	CreEgsd307	Facility Energy Management System	0.2	0.0	0.0
599	Commercial	CreNgsd307	Facility Energy Management System	0.0	0.0	0.0
600	Commercial	CgrEgsd309	Programmable Thermostat	0.0	0.0	0.0
601	Commercial	CgrNgsd309	Programmable Thermostat	0.0	0.0	0.0
602	Commercial	CreEgsd309	Programmable Thermostat	0.0	0.0	0.0
603	Commercial	CreNgsd309	Programmable Thermostat	0.0	0.0	0.0
604	Commercial	CgrEgsd310	Smart Thermostat	1.5	0.4	0.4
605	Commercial	CgrNgsd310	Smart Thermostat	0.0	0.0	0.0
606	Commercial	CinEgsd310	Smart Thermostat	11.1	0.3	0.3
607	Commercial	CinNgsd310	Smart Thermostat	0.1	0.0	0.0
608	Commercial	CreEgsd310	Smart Thermostat	6.4	1.4	1.4
609	Commercial	CreNgsd310	Smart Thermostat	0.0	0.0	0.0
610	Commercial	CheEgsd312	HVAC tune-up	0.0	0.0	0.0
611	Commercial	CheNgsd312	HVAC tune-up	0.0	0.0	0.0
612	Commercial	ChoEgsd312	HVAC tune-up	0.0	0.0	0.0
613	Commercial	ChoNgsd312	HVAC tune-up	0.0	0.0	0.0
614	Commercial	CloEgsd312	HVAC tune-up	0.0	0.0	0.0
615	Commercial	CloNgsd312	HVAC tune-up	0.0	0.0	0.0
616	Commercial	CheEgsd313	HVAC tune-up_RTU	0.0	0.0	0.0
617	Commercial	CheNgsd313	HVAC tune-up_RTU	0.0	0.0	0.0
618	Commercial	ChoEgsd313	HVAC tune-up_RTU	0.0	0.0	0.0
619	Commercial	ChoNgsd313	HVAC tune-up_RTU	0.0	0.0	0.0
620	Commercial	CofEgsd319	Duct Sealing Repair	5.5	2.2	2.2
621	Commercial	CreEgsd319	Duct Sealing Repair	2.6	0.9	0.9
622	Commercial	CasNgsd322	High Efficiency PTAC	0.0	0.0	0.0
623	Commercial	CasTgsd322	High Efficiency PTAC	0.0	0.0	0.0
624	Commercial	CcoNgsd322	High Efficiency PTAC	0.0	0.0	0.0
625	Commercial	CcoTgsd322	High Efficiency PTAC	0.0	0.0	0.0
626	Commercial	CheNgsd322	High Efficiency PTAC	0.0	0.0	0.0
627	Commercial	CheTgsd322	High Efficiency PTAC	0.0	0.0	0.0
628	Commercial	ChoNgsd322	High Efficiency PTAC	0.0	0.0	0.0
629	Commercial	ChoTgsd322	High Efficiency PTAC	0.0	0.0	0.0
630	Commercial	CloNgsd322	High Efficiency PTAC	0.0	0.0	0.0
631	Commercial	CloTgsd322	High Efficiency PTAC	0.0	0.0	0.0
632	Commercial	CofNgsd322	High Efficiency PTAC	0.0	0.0	0.0
633	Commercial	CofTgsd322	High Efficiency PTAC	0.0	0.0	0.0
634	Commercial	CreNgsd322	High Efficiency PTAC	0.0	0.0	0.0
635	Commercial	CreTgsd322	High Efficiency PTAC	0.0	0.0	0.0
636	Commercial	CrtNgsd322	High Efficiency PTAC	0.0	0.0	0.0
637	Commercial	CrtTgsd322	High Efficiency PTAC	0.0	0.0	0.0
638	Commercial	CscNgsd322	High Efficiency PTAC	0.0	0.0	0.0
639	Commercial	CscTgsd322	High Efficiency PTAC	0.0	0.0	0.0
640	Commercial	CasNgsd323	High Efficiency PTHP	0.0	0.0	0.0
641	Commercial	CasTgsd323	High Efficiency PTHP	0.0	0.0	0.0
642	Commercial	CcoNgsd323	High Efficiency PTHP	0.0	0.0	0.0
643	Commercial	CcoTgsd323	High Efficiency PTHP	0.0	0.0	0.0
644	Commercial	CgrNgsd323	High Efficiency PTHP	0.0	0.0	0.0
645	Commercial	CgrTgsd323	High Efficiency PTHP	0.0	0.0	0.0
646	Commercial	CheNgsd323	High Efficiency PTHP	0.0	0.0	0.0
647	Commercial	CheTgsd323	High Efficiency PTHP	0.0	0.0	0.0
648	Commercial	ChoNgsd323	High Efficiency PTHP	0.0	0.0	0.0
649	Commercial	ChoTgsd323	High Efficiency PTHP	0.0	0.0	0.0
650	Commercial	CloNgsd323	High Efficiency PTHP	0.0	0.0	0.0
651	Commercial	CloTgsd323	High Efficiency PTHP	0.0	0.0	0.0
652	Commercial	CmiNgsd323	High Efficiency PTHP	0.0	0.0	0.0
653	Commercial	CmiTgsd323	High Efficiency PTHP	0.0	0.0	0.0
654	Commercial	CofNgsd323	High Efficiency PTHP	0.0	0.0	0.0
655	Commercial	CofTgsd323	High Efficiency PTHP	0.0	0.0	0.0
656	Commercial	CreNgsd323	High Efficiency PTHP	0.0	0.0	0.0
657	Commercial	CreTgsd323	High Efficiency PTHP	0.0	0.0	0.0

658	Commercial	CrtNgsd323	High Efficiency PTHP	0.0	0.0	0.0
659	Commercial	CrtTgsd323	High Efficiency PTHP	0.0	0.0	0.0
660	Commercial	CscNgsd323	High Efficiency PTHP	0.0	0.0	0.0
661	Commercial	CscTgsd323	High Efficiency PTHP	0.0	0.0	0.0
662	Commercial	CcoEgsd329	VAV System	0.5	0.5	0.5
663	Commercial	CcoNgsd329	VAV System	0.0	0.0	0.0
664	Commercial	CheEgsd329	VAV System	2.5	2.5	2.5
665	Commercial	CheNgsd329	VAV System	0.0	0.0	0.0
666	Commercial	ChoEgsd329	VAV System	0.7	0.7	0.7
667	Commercial	ChoNgsd329	VAV System	0.0	0.0	0.0
668	Commercial	CinEgsd329	VAV System	1.3	1.3	1.3
669	Commercial	CinNgsd329	VAV System	0.0	0.0	0.0
670	Commercial	CofEgsd329	VAV System	7.0	7.1	7.1
671	Commercial	CofNgsd329	VAV System	0.1	0.1	0.1
672	Commercial	CscEgsd329	VAV System	0.8	0.8	0.8
673	Commercial	CscNgsd329	VAV System	0.0	0.0	0.0
674	Commercial	CasNgsd408	LED Parking Lighting	0.0	0.0	0.0
675	Commercial	CasTgsd408	LED Parking Lighting	0.0	0.0	0.0
676	Commercial	CcoNgsd408	LED Parking Lighting	0.0	0.0	0.0
677	Commercial	CcoTgsd408	LED Parking Lighting	0.0	0.0	0.0
678	Commercial	CgrNgsd408	LED Parking Lighting	0.0	0.0	0.0
679	Commercial	CgrTgsd408	LED Parking Lighting	0.0	0.0	0.0
680	Commercial	CheNgsd408	LED Parking Lighting	0.0	0.0	0.0
681	Commercial	CheTgsd408	LED Parking Lighting	0.0	0.0	0.0
682	Commercial	ChoNgsd408	LED Parking Lighting	0.0	0.0	0.0
683	Commercial	ChoTgsd408	LED Parking Lighting	0.0	0.0	0.0
684	Commercial	CinNgsd408	LED Parking Lighting	0.0	0.0	0.0
685	Commercial	CinTgsd408	LED Parking Lighting	0.0	0.0	0.0
686	Commercial	CloNgsd408	LED Parking Lighting	0.0	0.0	0.0
687	Commercial	CloTgsd408	LED Parking Lighting	0.0	0.0	0.0
688	Commercial	CmiNgsd408	LED Parking Lighting	0.0	0.0	0.0
689	Commercial	CmiTgsd408	LED Parking Lighting	0.0	0.0	0.0
690	Commercial	CofNgsd408	LED Parking Lighting	0.0	0.0	0.0
691	Commercial	CofTgsd408	LED Parking Lighting	0.0	0.0	0.0
692	Commercial	CreNgsd408	LED Parking Lighting	0.0	0.0	0.0
693	Commercial	CreTgsd408	LED Parking Lighting	0.0	0.0	0.0
694	Commercial	CrtNgsd408	LED Parking Lighting	0.0	0.0	0.0
695	Commercial	CrtTgsd408	LED Parking Lighting	0.0	0.0	0.0
696	Commercial	CscNgsd408	LED Parking Lighting	0.0	0.0	0.0
697	Commercial	CscTgsd408	LED Parking Lighting	0.0	0.0	0.0
698	Commercial	CwaNgsd408	LED Parking Lighting	0.0	0.0	0.0
699	Commercial	CwaTgsd408	LED Parking Lighting	0.0	0.0	0.0
700	Commercial	CinNgsd409	LED Street Lights	0.0	0.0	0.0
701	Commercial	CinTgsd409	LED Street Lights	0.0	0.0	0.0
702	Commercial	CasNgsd501	CFL - 23W	0.0	0.0	0.0
703	Commercial	CasTgsd501	CFL - 23W	0.0	0.0	0.0
704	Commercial	CcoNgsd501	CFL - 23W	0.0	0.0	0.0
705	Commercial	CcoTgsd501	CFL - 23W	0.0	0.0	0.0
706	Commercial	CgrNgsd501	CFL - 23W	0.0	0.0	0.0
707	Commercial	CgrTgsd501	CFL - 23W	0.0	0.0	0.0
708	Commercial	CheNgsd501	CFL - 23W	0.0	0.0	0.0
709	Commercial	CheTgsd501	CFL - 23W	0.0	0.0	0.0
710	Commercial	ChoNgsd501	CFL - 23W	0.0	0.0	0.0
711	Commercial	ChoTgsd501	CFL - 23W	0.0	0.0	0.0
712	Commercial	CinNgsd501	CFL - 23W	0.0	0.0	0.0
713	Commercial	CinTgsd501	CFL - 23W	0.0	0.0	0.0
714	Commercial	CloNgsd501	CFL - 23W	0.0	0.0	0.0
715	Commercial	CloTgsd501	CFL - 23W	0.0	0.0	0.0
716	Commercial	CmiNgsd501	CFL - 23W	0.0	0.0	0.0
717	Commercial	CmiTgsd501	CFL - 23W	0.0	0.0	0.0
718	Commercial	CofNgsd501	CFL - 23W	0.0	0.0	0.0

719	Commercial	CofTgsd501	CFL - 23W	0.0	0.0	0.0
720	Commercial	CreNgsd501	CFL - 23W	0.0	0.0	0.0
721	Commercial	CreTgsd501	CFL - 23W	0.0	0.0	0.0
722	Commercial	CrtNgsd501	CFL - 23W	0.0	0.0	0.0
723	Commercial	CrtTgsd501	CFL - 23W	0.0	0.0	0.0
724	Commercial	CscNgsd501	CFL - 23W	0.0	0.0	0.0
725	Commercial	CscTgsd501	CFL - 23W	0.0	0.0	0.0
726	Commercial	CwaNgsd501	CFL - 23W	0.0	0.0	0.0
727	Commercial	CwaTgsd501	CFL - 23W	0.0	0.0	0.0
728	Commercial	CrtNgsd504	High Bay Fluorescent (T5)	0.0	0.0	0.0
729	Commercial	CrtTgsd504	High Bay Fluorescent (T5)	0.0	0.0	0.0
730	Commercial	CwaNgsd504	High Bay Fluorescent (T5)	0.0	0.0	0.0
731	Commercial	CwaTgsd504	High Bay Fluorescent (T5)	0.0	0.0	0.0
732	Commercial	CasNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
733	Commercial	CasTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
734	Commercial	CcoNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
735	Commercial	CcoTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
736	Commercial	CgrNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
737	Commercial	CgrTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
738	Commercial	CheNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
739	Commercial	CheTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
740	Commercial	ChoNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
741	Commercial	ChoTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
742	Commercial	CinNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
743	Commercial	CinTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
744	Commercial	CloNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
745	Commercial	CloTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
746	Commercial	CmiNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
747	Commercial	CmiTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
748	Commercial	CofNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
749	Commercial	CofTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
750	Commercial	CreNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
751	Commercial	CreTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
752	Commercial	CrtNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
753	Commercial	CrtTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
754	Commercial	CscNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
755	Commercial	CscTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
756	Commercial	CwaNgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
757	Commercial	CwaTgsd506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
758	Commercial	CrtTgsd507	High Bay LED	59.9	39.1	39.1
759	Commercial	CasTgsd508	LED - 14W	0.0	0.0	0.0
760	Commercial	CcoTgsd508	LED - 14W	0.0	0.0	0.0
761	Commercial	CgrTgsd508	LED - 14W	0.0	0.0	0.0
762	Commercial	CheTgsd508	LED - 14W	0.0	0.0	0.0
763	Commercial	ChoTgsd508	LED - 14W	0.0	0.0	0.0
764	Commercial	CinTgsd508	LED - 14W	0.1	0.0	0.0
765	Commercial	CloTgsd508	LED - 14W	0.0	0.0	0.0
766	Commercial	CmiTgsd508	LED - 14W	0.0	0.0	0.0
767	Commercial	CofTgsd508	LED - 14W	0.0	0.0	0.0
768	Commercial	CreTgsd508	LED - 14W	0.0	0.0	0.0
769	Commercial	CrtTgsd508	LED - 14W	0.0	0.0	0.0
770	Commercial	CscTgsd508	LED - 14W	0.0	0.0	0.0
771	Commercial	CwaTgsd508	LED - 14W	0.0	0.0	0.0
772	Commercial	CasTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
773	Commercial	CcoTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
774	Commercial	CgrTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
775	Commercial	CheTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
776	Commercial	ChoTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
777	Commercial	CinTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
778	Commercial	CloTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
779	Commercial	CmiTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0

780	Commercial	CofTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
781	Commercial	CreTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
782	Commercial	CrtTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
783	Commercial	CscTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
784	Commercial	CwaTgsd509	LED Display Lighting (Interior)	0.0	0.0	0.0
785	Commercial	CasTgsd510	LED Linear - Fixture Replacement	2.4	0.5	0.5
786	Commercial	CcoTgsd510	LED Linear - Fixture Replacement	0.9	0.9	0.9
787	Commercial	CgrTgsd510	LED Linear - Fixture Replacement	7.2	0.0	0.0
788	Commercial	CheTgsd510	LED Linear - Fixture Replacement	7.6	1.7	1.7
789	Commercial	ChoTgsd510	LED Linear - Fixture Replacement	2.0	1.8	1.8
790	Commercial	CinTgsd510	LED Linear - Fixture Replacement	25.2	5.8	5.8
791	Commercial	CloTgsd510	LED Linear - Fixture Replacement	4.1	0.0	0.0
792	Commercial	CmiTgsd510	LED Linear - Fixture Replacement	106.4	24.3	24.3
793	Commercial	CofTgsd510	LED Linear - Fixture Replacement	31.3	7.2	7.2
794	Commercial	CreTgsd510	LED Linear - Fixture Replacement	7.0	0.0	0.0
795	Commercial	CrtTgsd510	LED Linear - Fixture Replacement	30.5	0.0	0.0
796	Commercial	CscTgsd510	LED Linear - Fixture Replacement	6.4	1.5	1.5
797	Commercial	CwaTgsd510	LED Linear - Fixture Replacement	2.6	0.6	0.6
798	Commercial	CasTgsd511	LED Linear - Lamp Replacement	0.5	0.1	0.1
799	Commercial	CcoTgsd511	LED Linear - Lamp Replacement	0.1	0.1	0.1
800	Commercial	CgrTgsd511	LED Linear - Lamp Replacement	1.1	0.0	0.0
801	Commercial	CheTgsd511	LED Linear - Lamp Replacement	1.1	0.3	0.3
802	Commercial	ChoTgsd511	LED Linear - Lamp Replacement	0.3	0.3	0.3
803	Commercial	CinTgsd511	LED Linear - Lamp Replacement	4.5	1.0	1.0
804	Commercial	CloTgsd511	LED Linear - Lamp Replacement	0.7	0.0	0.0
805	Commercial	CmiTgsd511	LED Linear - Lamp Replacement	2.0	0.5	0.5
806	Commercial	CofTgsd511	LED Linear - Lamp Replacement	5.4	1.2	1.2
807	Commercial	CreTgsd511	LED Linear - Lamp Replacement	1.3	0.0	0.0
808	Commercial	CrtTgsd511	LED Linear - Lamp Replacement	6.8	0.0	0.0
809	Commercial	CscTgsd511	LED Linear - Lamp Replacement	1.1	0.2	0.2
810	Commercial	CwaTgsd511	LED Linear - Lamp Replacement	0.3	0.1	0.1
811	Commercial	CcoEgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
812	Commercial	CcoNgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
813	Commercial	CheEgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
814	Commercial	CheNgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
815	Commercial	ChoEgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
816	Commercial	ChoNgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
817	Commercial	CloEgsd804	Floating Head Pressure Controls	0.1	0.1	0.1
818	Commercial	CloNgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
819	Commercial	CscEgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
820	Commercial	CscNgsd804	Floating Head Pressure Controls	0.0	0.0	0.0
821	Commercial	CgrNgsd813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
822	Commercial	CgrTgsd813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
823	Commercial	CrtNgsd813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
824	Commercial	CrtTgsd813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
825	Commercial	CgrNgsd815	Energy Star Commercial Solid Door Freezer	0.0	0.0	0.0
826	Commercial	CgrTgsd815	Energy Star Commercial Solid Door Freezer	5.5	2.5	2.5
827	Commercial	CrtNgsd815	Energy Star Commercial Solid Door Freezer	0.0	0.0	0.0
828	Commercial	CrtTgsd815	Energy Star Commercial Solid Door Freezer	0.4	0.2	0.2
829	Commercial	CasEgsd902	Faucet Aerator	0.0	0.0	0.0
830	Commercial	CasNgsd902	Faucet Aerator	0.0	0.0	0.0
831	Commercial	CcoEgsd902	Faucet Aerator	0.0	0.0	0.0
832	Commercial	CcoNgsd902	Faucet Aerator	0.0	0.0	0.0
833	Commercial	CgrEgsd902	Faucet Aerator	0.0	0.0	0.0
834	Commercial	CgrNgsd902	Faucet Aerator	0.0	0.0	0.0
835	Commercial	CheEgsd902	Faucet Aerator	0.0	0.0	0.0
836	Commercial	CheNgsd902	Faucet Aerator	0.0	0.0	0.0
837	Commercial	ChoEgsd902	Faucet Aerator	0.0	0.0	0.0
838	Commercial	ChoNgsd902	Faucet Aerator	0.0	0.0	0.0
839	Commercial	CinEgsd902	Faucet Aerator	0.1	0.1	0.1
840	Commercial	CinNgsd902	Faucet Aerator	0.0	0.0	0.0

841	Commercial	CloEgsd902	Faucet Aerator	0.0	0.0	0.0
842	Commercial	CloNgsd902	Faucet Aerator	0.0	0.0	0.0
843	Commercial	CmiEgsd902	Faucet Aerator	0.0	0.0	0.0
844	Commercial	CmiNgsd902	Faucet Aerator	0.0	0.0	0.0
845	Commercial	CofEgsd902	Faucet Aerator	0.0	0.0	0.0
846	Commercial	CofNgsd902	Faucet Aerator	0.0	0.0	0.0
847	Commercial	CreEgsd902	Faucet Aerator	0.0	0.0	0.0
848	Commercial	CreNgsd902	Faucet Aerator	0.0	0.0	0.0
849	Commercial	CrtEgsd902	Faucet Aerator	0.0	0.0	0.0
850	Commercial	CrtNgsd902	Faucet Aerator	0.0	0.0	0.0
851	Commercial	CscEgsd902	Faucet Aerator	0.0	0.0	0.0
852	Commercial	CscNgsd902	Faucet Aerator	0.0	0.0	0.0
853	Commercial	CwaEgsd902	Faucet Aerator	0.0	0.0	0.0
854	Commercial	CwaNgsd902	Faucet Aerator	0.0	0.0	0.0
855	Commercial	CcoEgsd903	Low Flow Shower Head	0.0	0.0	0.0
856	Commercial	CcoNgsd903	Low Flow Shower Head	0.0	0.0	0.0
857	Commercial	CheEgsd903	Low Flow Shower Head	0.0	0.0	0.0
858	Commercial	CheNgsd903	Low Flow Shower Head	0.0	0.0	0.0
859	Commercial	ChoEgsd903	Low Flow Shower Head	0.0	0.0	0.0
860	Commercial	ChoNgsd903	Low Flow Shower Head	0.0	0.0	0.0
861	Commercial	CloEgsd903	Low Flow Shower Head	0.0	0.2	0.2
862	Commercial	CloNgsd903	Low Flow Shower Head	0.0	0.0	0.0
863	Commercial	CcoEgsd907	Thermostatic Shower Restriction Valve	0.0	0.1	0.1
864	Commercial	CheEgsd907	Thermostatic Shower Restriction Valve	0.1	0.2	0.2
865	Commercial	ChoEgsd907	Thermostatic Shower Restriction Valve	0.0	0.0	0.0
866	Commercial	CloEgsd907	Thermostatic Shower Restriction Valve	0.1	1.0	1.0
867	Commercial	CcoNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
868	Commercial	CcoTgsd911	Heat Pump Water Heater	0.1	0.1	0.1
869	Commercial	CgrNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
870	Commercial	CgrTgsd911	Heat Pump Water Heater	0.1	0.1	0.1
871	Commercial	ChoNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
872	Commercial	ChoTgsd911	Heat Pump Water Heater	0.3	0.2	0.2
873	Commercial	CinNgsd911	Heat Pump Water Heater	0.1	0.1	0.1
874	Commercial	CinTgsd911	Heat Pump Water Heater	8.5	5.2	5.2
875	Commercial	CloNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
876	Commercial	CloTgsd911	Heat Pump Water Heater	2.0	1.3	1.3
877	Commercial	CmiNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
878	Commercial	CmiTgsd911	Heat Pump Water Heater	0.1	0.1	0.1
879	Commercial	CofNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
880	Commercial	CofTgsd911	Heat Pump Water Heater	1.7	1.0	1.0
881	Commercial	CreNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
882	Commercial	CreTgsd911	Heat Pump Water Heater	1.8	1.1	1.1
883	Commercial	CrtNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
884	Commercial	CrtTgsd911	Heat Pump Water Heater	0.3	0.2	0.2
885	Commercial	CwaNgsd911	Heat Pump Water Heater	0.0	0.0	0.0
886	Commercial	CwaTgsd911	Heat Pump Water Heater	0.0	0.0	0.0
887	Commercial	CcoEgsd921	Retro-Commissioning	2.8	0.0	0.0
888	Commercial	CgrEgsd921	Retro-Commissioning	7.3	13.1	13.1
889	Commercial	CheEgsd921	Retro-Commissioning	5.2	11.8	11.8
890	Commercial	ChoEgsd921	Retro-Commissioning	8.9	0.1	0.1
891	Commercial	CinEgsd921	Retro-Commissioning	14.1	31.9	31.9
892	Commercial	CloEgsd921	Retro-Commissioning	6.8	10.0	10.0
893	Commercial	CmiEgsd921	Retro-Commissioning	51.6	159.5	159.5
894	Commercial	CofEgsd921	Retro-Commissioning	18.5	50.5	50.5
895	Commercial	CreEgsd921	Retro-Commissioning	11.9	18.0	18.0
896	Commercial	CrtEgsd921	Retro-Commissioning	25.3	40.4	40.4
897	Commercial	CcoNgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
898	Commercial	CcoTgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
899	Commercial	CheNgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
900	Commercial	CheTgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
901	Commercial	ChoNgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)

902	Commercial	ChoTgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
903	Commercial	CloNgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
904	Commercial	CloTgsld102	Energy Star Commercial Dishwasher	0.1	(0.0)	(0.0)
905	Commercial	CreNgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
906	Commercial	CreTgsld102	Energy Star Commercial Dishwasher	0.2	(0.0)	(0.0)
907	Commercial	CscNgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
908	Commercial	CscTgsld102	Energy Star Commercial Dishwasher	0.0	(0.0)	(0.0)
909	Commercial	CcoNgsld105	Energy Star Griddle	0.0	0.0	0.0
910	Commercial	CcoTgsld105	Energy Star Griddle	0.0	0.0	0.0
911	Commercial	CheNgsld105	Energy Star Griddle	0.0	0.0	0.0
912	Commercial	CheTgsld105	Energy Star Griddle	0.0	0.0	0.0
913	Commercial	ChoNgsld105	Energy Star Griddle	0.0	0.0	0.0
914	Commercial	ChoTgsld105	Energy Star Griddle	0.1	0.0	0.0
915	Commercial	CloNgsld105	Energy Star Griddle	0.0	0.0	0.0
916	Commercial	CloTgsld105	Energy Star Griddle	0.1	0.0	0.0
917	Commercial	CreNgsld105	Energy Star Griddle	0.0	0.0	0.0
918	Commercial	CreTgsld105	Energy Star Griddle	0.9	0.2	0.2
919	Commercial	CscNgsld105	Energy Star Griddle	0.0	0.0	0.0
920	Commercial	CscTgsld105	Energy Star Griddle	0.0	0.0	0.0
921	Commercial	CcoNgsld107	Energy Star Steamer	0.0	0.0	0.0
922	Commercial	CcoTgsld107	Energy Star Steamer	0.0	0.0	0.0
923	Commercial	CheNgsld107	Energy Star Steamer	0.0	0.0	0.0
924	Commercial	CheTgsld107	Energy Star Steamer	0.0	0.0	0.0
925	Commercial	ChoNgsld107	Energy Star Steamer	0.0	0.0	0.0
926	Commercial	ChoTgsld107	Energy Star Steamer	0.0	0.0	0.0
927	Commercial	CloNgsld107	Energy Star Steamer	0.0	0.0	0.0
928	Commercial	CloTgsld107	Energy Star Steamer	0.0	0.0	0.0
929	Commercial	CreNgsld107	Energy Star Steamer	0.0	0.0	0.0
930	Commercial	CreTgsld107	Energy Star Steamer	0.0	0.0	0.0
931	Commercial	CscNgsld107	Energy Star Steamer	0.0	0.0	0.0
932	Commercial	CscTgsld107	Energy Star Steamer	0.0	0.0	0.0
933	Commercial	CcoEgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
934	Commercial	CcoNgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
935	Commercial	CgrEgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
936	Commercial	CgrNgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
937	Commercial	ChoEgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
938	Commercial	ChoNgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
939	Commercial	CloEgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
940	Commercial	CloNgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
941	Commercial	CreEgsld109	Low Flow Pre-Rinse Sprayers	0.1	0.0	0.0
942	Commercial	CreNgsld109	Low Flow Pre-Rinse Sprayers	0.0	0.0	0.0
943	Commercial	CcoNgsld112	Energy Star Servers	0.0	0.0	0.0
944	Commercial	CcoTgsld112	Energy Star Servers	0.0	0.0	0.0
945	Commercial	CheNgsld112	Energy Star Servers	0.0	0.0	0.0
946	Commercial	CheTgsld112	Energy Star Servers	0.0	0.0	0.0
947	Commercial	ChoNgsld112	Energy Star Servers	0.0	0.0	0.0
948	Commercial	ChoTgsld112	Energy Star Servers	0.0	0.0	0.0
949	Commercial	CinNgsld112	Energy Star Servers	0.0	0.0	0.0
950	Commercial	CinTgsld112	Energy Star Servers	0.0	0.0	0.0
951	Commercial	CloNgsld112	Energy Star Servers	0.0	0.0	0.0
952	Commercial	CloTgsld112	Energy Star Servers	0.0	0.0	0.0
953	Commercial	CmiNgsld112	Energy Star Servers	0.0	0.0	0.0
954	Commercial	CmiTgsld112	Energy Star Servers	0.0	0.0	0.0
955	Commercial	CofNgsld112	Energy Star Servers	0.0	0.0	0.0
956	Commercial	CofTgsld112	Energy Star Servers	0.0	0.0	0.0
957	Commercial	CrtNgsld112	Energy Star Servers	0.0	0.0	0.0
958	Commercial	CrtTgsld112	Energy Star Servers	0.0	0.0	0.0
959	Commercial	CscNgsld112	Energy Star Servers	0.0	0.0	0.0
960	Commercial	CscTgsld112	Energy Star Servers	0.0	0.0	0.0
961	Commercial	CheEgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
962	Commercial	CheNgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0

963	Commercial	ChoEgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
964	Commercial	ChoNgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
965	Commercial	CinEgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
966	Commercial	CinNgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
967	Commercial	CloEgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
968	Commercial	CloNgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
969	Commercial	CmiEgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
970	Commercial	CmiNgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
971	Commercial	CscEgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
972	Commercial	CscNgsld116	Smart Strip Plug Outlet	0.0	0.0	0.0
973	Commercial	CasEgsld301	Chilled Water Controls Optimization	0.7	0.0	0.0
974	Commercial	CasNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
975	Commercial	CcoEgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
976	Commercial	CcoNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
977	Commercial	CheEgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
978	Commercial	CheNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
979	Commercial	ChoEgsld301	Chilled Water Controls Optimization	0.2	0.0	0.0
980	Commercial	ChoNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
981	Commercial	CinEgsld301	Chilled Water Controls Optimization	1.7	0.0	0.0
982	Commercial	CinNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
983	Commercial	CloEgsld301	Chilled Water Controls Optimization	0.2	0.0	0.0
984	Commercial	CloNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
985	Commercial	CmiEgsld301	Chilled Water Controls Optimization	1.7	0.0	0.0
986	Commercial	CmiNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
987	Commercial	CofEgsld301	Chilled Water Controls Optimization	1.1	0.0	0.0
988	Commercial	CofNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
989	Commercial	CreEgsld301	Chilled Water Controls Optimization	0.1	0.0	0.0
990	Commercial	CreNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
991	Commercial	CrtEgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
992	Commercial	CrtNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
993	Commercial	CscEgsld301	Chilled Water Controls Optimization	1.0	0.0	0.0
994	Commercial	CscNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
995	Commercial	CwaEgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
996	Commercial	CwaNgsld301	Chilled Water Controls Optimization	0.0	0.0	0.0
997	Commercial	CheNgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
998	Commercial	CheTgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
999	Commercial	ChoNgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
1000	Commercial	ChoTgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	1.2	0.0	0.0
1001	Commercial	CloNgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
1002	Commercial	CloTgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.1	0.0	0.0
1003	Commercial	CreNgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.0	0.0	0.0
1004	Commercial	CreTgsld303	High Efficiency Chiller (Air Cooled, 50 tons)	0.1	0.0	0.0
1005	Commercial	CgrEgsld307	Facility Energy Management System	0.6	0.2	0.2
1006	Commercial	CgrNgsld307	Facility Energy Management System	0.0	0.0	0.0
1007	Commercial	CreEgsld307	Facility Energy Management System	0.1	0.0	0.0
1008	Commercial	CreNgsld307	Facility Energy Management System	0.0	0.0	0.0
1009	Commercial	CgrEgsld309	Programmable Thermostat	0.0	0.0	0.0
1010	Commercial	CgrNgsld309	Programmable Thermostat	0.0	0.0	0.0
1011	Commercial	CreEgsld309	Programmable Thermostat	0.0	0.0	0.0
1012	Commercial	CreNgsld309	Programmable Thermostat	0.0	0.0	0.0
1013	Commercial	CgrEgsld310	Smart Thermostat	0.6	0.2	0.2
1014	Commercial	CgrNgsld310	Smart Thermostat	0.0	0.0	0.0
1015	Commercial	ChoEgsld310	Smart Thermostat	1.5	0.0	0.0
1016	Commercial	ChoNgsld310	Smart Thermostat	0.0	0.0	0.0
1017	Commercial	CinEgsld310	Smart Thermostat	4.6	0.1	0.1
1018	Commercial	CinNgsld310	Smart Thermostat	0.0	0.0	0.0
1019	Commercial	CofEgsld310	Smart Thermostat	5.5	1.3	1.3
1020	Commercial	CofNgsld310	Smart Thermostat	0.1	0.0	0.0
1021	Commercial	CreEgsld310	Smart Thermostat	2.7	0.6	0.6
1022	Commercial	CreNgsld310	Smart Thermostat	0.0	0.0	0.0
1023	Commercial	CheEgsld312	HVAC tune-up	0.0	0.0	0.0

1024	Commercial	CheNgsld312	HVAC tune-up	0.0	0.0	0.0
1025	Commercial	ChoEgsld312	HVAC tune-up	0.0	0.0	0.0
1026	Commercial	ChoNgsld312	HVAC tune-up	0.0	0.0	0.0
1027	Commercial	CloEgsld312	HVAC tune-up	0.0	0.0	0.0
1028	Commercial	CloNgsld312	HVAC tune-up	0.0	0.0	0.0
1029	Commercial	CheEgsld313	HVAC tune-up_RTU	0.0	0.0	0.0
1030	Commercial	CheNgsld313	HVAC tune-up_RTU	0.0	0.0	0.0
1031	Commercial	ChoEgsld313	HVAC tune-up_RTU	0.0	0.0	0.0
1032	Commercial	ChoNgsld313	HVAC tune-up_RTU	0.0	0.0	0.0
1033	Commercial	CofEgsld319	Duct Sealing Repair	2.3	0.9	0.9
1034	Commercial	CreEgsld319	Duct Sealing Repair	1.1	0.4	0.4
1035	Commercial	CasNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1036	Commercial	CasTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1037	Commercial	CcoNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1038	Commercial	CcoTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1039	Commercial	CgrNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1040	Commercial	CgrTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1041	Commercial	CheNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1042	Commercial	CheTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1043	Commercial	ChoNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1044	Commercial	ChoTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1045	Commercial	CinNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1046	Commercial	CinTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1047	Commercial	CloNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1048	Commercial	CloTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1049	Commercial	CofNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1050	Commercial	CofTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1051	Commercial	CreNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1052	Commercial	CreTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1053	Commercial	CrtNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1054	Commercial	CrtTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1055	Commercial	CscNgsld322	High Efficiency PTAC	0.0	0.0	0.0
1056	Commercial	CscTgsld322	High Efficiency PTAC	0.0	0.0	0.0
1057	Commercial	CasNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1058	Commercial	CasTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1059	Commercial	CcoNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1060	Commercial	CcoTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1061	Commercial	CgrNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1062	Commercial	CgrTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1063	Commercial	CheNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1064	Commercial	CheTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1065	Commercial	ChoNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1066	Commercial	ChoTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1067	Commercial	CinNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1068	Commercial	CinTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1069	Commercial	CloNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1070	Commercial	CloTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1071	Commercial	CmiNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1072	Commercial	CmiTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1073	Commercial	CofNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1074	Commercial	CofTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1075	Commercial	CreNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1076	Commercial	CreTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1077	Commercial	CrtNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1078	Commercial	CrtTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1079	Commercial	CscNgsld323	High Efficiency PTHP	0.0	0.0	0.0
1080	Commercial	CscTgsld323	High Efficiency PTHP	0.0	0.0	0.0
1081	Commercial	CcoEgsld329	VAV System	0.2	0.2	0.2
1082	Commercial	CcoNgsld329	VAV System	0.0	0.0	0.0
1083	Commercial	CheEgsld329	VAV System	1.1	1.1	1.1
1084	Commercial	CheNgsld329	VAV System	0.0	0.0	0.0

1085	Commercial	ChoEgsld329	VAV System	0.3	0.3	0.3
1086	Commercial	ChoNgsld329	VAV System	0.0	0.0	0.0
1087	Commercial	CinEgsld329	VAV System	0.6	0.6	0.6
1088	Commercial	CinNgsld329	VAV System	0.0	0.0	0.0
1089	Commercial	CofEgsld329	VAV System	3.0	3.1	3.1
1090	Commercial	CofNgsld329	VAV System	0.0	0.0	0.0
1091	Commercial	CscEgsld329	VAV System	0.3	0.4	0.4
1092	Commercial	CscNgsld329	VAV System	0.0	0.0	0.0
1093	Commercial	CasNgsld408	LED Parking Lighting	0.0	0.0	0.0
1094	Commercial	CasTgsld408	LED Parking Lighting	0.0	0.0	0.0
1095	Commercial	CcoNgsld408	LED Parking Lighting	0.0	0.0	0.0
1096	Commercial	CcoTgsld408	LED Parking Lighting	0.0	0.0	0.0
1097	Commercial	CgrNgsld408	LED Parking Lighting	0.0	0.0	0.0
1098	Commercial	CgrTgsld408	LED Parking Lighting	0.0	0.0	0.0
1099	Commercial	CheNgsld408	LED Parking Lighting	0.0	0.0	0.0
1100	Commercial	CheTgsld408	LED Parking Lighting	0.0	0.0	0.0
1101	Commercial	ChoNgsld408	LED Parking Lighting	0.0	0.0	0.0
1102	Commercial	ChoTgsld408	LED Parking Lighting	0.0	0.0	0.0
1103	Commercial	CinNgsld408	LED Parking Lighting	0.0	0.0	0.0
1104	Commercial	CinTgsld408	LED Parking Lighting	0.0	0.0	0.0
1105	Commercial	CloNgsld408	LED Parking Lighting	0.0	0.0	0.0
1106	Commercial	CloTgsld408	LED Parking Lighting	0.0	0.0	0.0
1107	Commercial	CmiNgsld408	LED Parking Lighting	0.0	0.0	0.0
1108	Commercial	CmiTgsld408	LED Parking Lighting	0.0	0.0	0.0
1109	Commercial	CofNgsld408	LED Parking Lighting	0.0	0.0	0.0
1110	Commercial	CofTgsld408	LED Parking Lighting	0.0	0.0	0.0
1111	Commercial	CreNgsld408	LED Parking Lighting	0.0	0.0	0.0
1112	Commercial	CreTgsld408	LED Parking Lighting	0.0	0.0	0.0
1113	Commercial	CrtNgsld408	LED Parking Lighting	0.0	0.0	0.0
1114	Commercial	CrtTgsld408	LED Parking Lighting	0.0	0.0	0.0
1115	Commercial	CscNgsld408	LED Parking Lighting	0.0	0.0	0.0
1116	Commercial	CscTgsld408	LED Parking Lighting	0.0	0.0	0.0
1117	Commercial	CwaNgsld408	LED Parking Lighting	0.0	0.0	0.0
1118	Commercial	CwaTgsld408	LED Parking Lighting	0.0	0.0	0.0
1119	Commercial	CinNgsld409	LED Street Lights	0.0	0.0	0.0
1120	Commercial	CinTgsld409	LED Street Lights	0.0	0.0	0.0
1121	Commercial	CasNgsld501	CFL - 23W	0.0	0.0	0.0
1122	Commercial	CasTgsld501	CFL - 23W	0.0	0.0	0.0
1123	Commercial	CcoNgsld501	CFL - 23W	0.0	0.0	0.0
1124	Commercial	CcoTgsld501	CFL - 23W	0.0	0.0	0.0
1125	Commercial	CgrNgsld501	CFL - 23W	0.0	0.0	0.0
1126	Commercial	CgrTgsld501	CFL - 23W	0.0	0.0	0.0
1127	Commercial	CheNgsld501	CFL - 23W	0.0	0.0	0.0
1128	Commercial	CheTgsld501	CFL - 23W	0.0	0.0	0.0
1129	Commercial	ChoNgsld501	CFL - 23W	0.0	0.0	0.0
1130	Commercial	ChoTgsld501	CFL - 23W	0.0	0.0	0.0
1131	Commercial	CinNgsld501	CFL - 23W	0.0	0.0	0.0
1132	Commercial	CinTgsld501	CFL - 23W	0.0	0.0	0.0
1133	Commercial	CloNgsld501	CFL - 23W	0.0	0.0	0.0
1134	Commercial	CloTgsld501	CFL - 23W	0.0	0.0	0.0
1135	Commercial	CmiNgsld501	CFL - 23W	0.0	0.0	0.0
1136	Commercial	CmiTgsld501	CFL - 23W	0.0	0.0	0.0
1137	Commercial	CofNgsld501	CFL - 23W	0.0	0.0	0.0
1138	Commercial	CofTgsld501	CFL - 23W	0.0	0.0	0.0
1139	Commercial	CreNgsld501	CFL - 23W	0.0	0.0	0.0
1140	Commercial	CreTgsld501	CFL - 23W	0.0	0.0	0.0
1141	Commercial	CrtNgsld501	CFL - 23W	0.0	0.0	0.0
1142	Commercial	CrtTgsld501	CFL - 23W	0.0	0.0	0.0
1143	Commercial	CscNgsld501	CFL - 23W	0.0	0.0	0.0
1144	Commercial	CscTgsld501	CFL - 23W	0.0	0.0	0.0
1145	Commercial	CwaNgsld501	CFL - 23W	0.0	0.0	0.0

1146	Commercial	CwaTgsld501	CFL - 23W	0.0	0.0	0.0
1147	Commercial	CasNgsld504	High Bay Fluorescent (T5)	0.0	0.0	0.0
1148	Commercial	CasTgsld504	High Bay Fluorescent (T5)	0.0	0.0	0.0
1149	Commercial	CrtNgsld504	High Bay Fluorescent (T5)	0.0	0.0	0.0
1150	Commercial	CrtTgsld504	High Bay Fluorescent (T5)	0.0	0.0	0.0
1151	Commercial	CwaNgsld504	High Bay Fluorescent (T5)	0.0	0.0	0.0
1152	Commercial	CwaTgsld504	High Bay Fluorescent (T5)	0.0	0.0	0.0
1153	Commercial	CasNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1154	Commercial	CasTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1155	Commercial	CcoNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1156	Commercial	CcoTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1157	Commercial	CgrNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1158	Commercial	CgrTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1159	Commercial	CheNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1160	Commercial	CheTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1161	Commercial	ChoNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1162	Commercial	ChoTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1163	Commercial	CinNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1164	Commercial	CinTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1165	Commercial	CloNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1166	Commercial	CloTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1167	Commercial	CmiNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1168	Commercial	CmiTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1169	Commercial	CofNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1170	Commercial	CofTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1171	Commercial	CreNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1172	Commercial	CreTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1173	Commercial	CrtNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1174	Commercial	CrtTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1175	Commercial	CscNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1176	Commercial	CscTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1177	Commercial	CwaNgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1178	Commercial	CwaTgsld506	Premium T8 - Lamp Replacement	0.0	0.0	0.0
1179	Commercial	CrtTgsld507	High Bay LED	25.0	16.3	16.3
1180	Commercial	CasTgsld508	LED - 14W	0.0	0.0	0.0
1181	Commercial	CcoTgsld508	LED - 14W	0.0	0.0	0.0
1182	Commercial	CgrTgsld508	LED - 14W	0.0	0.0	0.0
1183	Commercial	CheTgsld508	LED - 14W	0.0	0.0	0.0
1184	Commercial	ChoTgsld508	LED - 14W	0.0	0.0	0.0
1185	Commercial	CinTgsld508	LED - 14W	0.1	0.0	0.0
1186	Commercial	CloTgsld508	LED - 14W	0.0	0.0	0.0
1187	Commercial	CmiTgsld508	LED - 14W	0.0	0.0	0.0
1188	Commercial	CofTgsld508	LED - 14W	0.0	0.0	0.0
1189	Commercial	CreTgsld508	LED - 14W	0.0	0.0	0.0
1190	Commercial	CrtTgsld508	LED - 14W	0.0	0.0	0.0
1191	Commercial	CscTgsld508	LED - 14W	0.0	0.0	0.0
1192	Commercial	CwaTgsld508	LED - 14W	0.0	0.0	0.0
1193	Commercial	CasTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1194	Commercial	CcoTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1195	Commercial	CgrTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1196	Commercial	CheTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1197	Commercial	ChoTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1198	Commercial	CinTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1199	Commercial	CloTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1200	Commercial	CmiTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1201	Commercial	CofTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1202	Commercial	CreTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1203	Commercial	CrtTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1204	Commercial	CscTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1205	Commercial	CwaTgsld509	LED Display Lighting (Interior)	0.0	0.0	0.0
1206	Commercial	CasTgsld510	LED Linear - Fixture Replacement	1.0	0.2	0.2

1207	Commercial	CcoTgsld510	LED Linear - Fixture Replacement	0.4	0.4	0.4
1208	Commercial	CgrTgsld510	LED Linear - Fixture Replacement	3.0	0.0	0.0
1209	Commercial	CheTgsld510	LED Linear - Fixture Replacement	3.2	0.7	0.7
1210	Commercial	ChoTgsld510	LED Linear - Fixture Replacement	0.8	0.8	0.8
1211	Commercial	CinTgsld510	LED Linear - Fixture Replacement	10.5	2.4	2.4
1212	Commercial	CloTgsld510	LED Linear - Fixture Replacement	1.7	0.0	0.0
1213	Commercial	CmiTgsld510	LED Linear - Fixture Replacement	44.3	10.1	10.1
1214	Commercial	CofTgsld510	LED Linear - Fixture Replacement	13.0	3.0	3.0
1215	Commercial	CreTgsld510	LED Linear - Fixture Replacement	2.9	0.0	0.0
1216	Commercial	CrtTgsld510	LED Linear - Fixture Replacement	12.7	0.0	0.0
1217	Commercial	CscTgsld510	LED Linear - Fixture Replacement	2.7	0.6	0.6
1218	Commercial	CwaTgsld510	LED Linear - Fixture Replacement	1.1	0.2	0.2
1219	Commercial	CasTgsld511	LED Linear - Lamp Replacement	0.2	0.0	0.0
1220	Commercial	CcoTgsld511	LED Linear - Lamp Replacement	0.1	0.1	0.1
1221	Commercial	CgrTgsld511	LED Linear - Lamp Replacement	0.5	0.0	0.0
1222	Commercial	CheTgsld511	LED Linear - Lamp Replacement	0.5	0.1	0.1
1223	Commercial	ChoTgsld511	LED Linear - Lamp Replacement	0.1	0.1	0.1
1224	Commercial	CinTgsld511	LED Linear - Lamp Replacement	1.9	0.4	0.4
1225	Commercial	CloTgsld511	LED Linear - Lamp Replacement	0.3	0.0	0.0
1226	Commercial	CmiTgsld511	LED Linear - Lamp Replacement	0.8	0.2	0.2
1227	Commercial	CofTgsld511	LED Linear - Lamp Replacement	2.2	0.5	0.5
1228	Commercial	CreTgsld511	LED Linear - Lamp Replacement	0.6	0.0	0.0
1229	Commercial	CrtTgsld511	LED Linear - Lamp Replacement	2.8	0.0	0.0
1230	Commercial	CscTgsld511	LED Linear - Lamp Replacement	0.4	0.1	0.1
1231	Commercial	CwaTgsld511	LED Linear - Lamp Replacement	0.1	0.0	0.0
1232	Commercial	CcoEgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1233	Commercial	CcoNgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1234	Commercial	CheEgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1235	Commercial	CheNgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1236	Commercial	ChoEgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1237	Commercial	ChoNgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1238	Commercial	CloEgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1239	Commercial	CloNgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1240	Commercial	CscEgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1241	Commercial	CscNgsld804	Floating Head Pressure Controls	0.0	0.0	0.0
1242	Commercial	CgrNgsld813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
1243	Commercial	CgrTgsld813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
1244	Commercial	CrtNgsld813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
1245	Commercial	CrtTgsld813	Energy Star Commercial Glass Door Freezer	0.0	0.0	0.0
1246	Commercial	CgrNgsld815	Energy Star Commercial Solid Door Freezer	0.0	0.0	0.0
1247	Commercial	CgrTgsld815	Energy Star Commercial Solid Door Freezer	2.3	1.0	1.0
1248	Commercial	CrtNgsld815	Energy Star Commercial Solid Door Freezer	0.0	0.0	0.0
1249	Commercial	CrtTgsld815	Energy Star Commercial Solid Door Freezer	0.2	0.1	0.1
1250	Commercial	CasEgsld902	Faucet Aerator	0.0	0.0	0.0
1251	Commercial	CasNgsld902	Faucet Aerator	0.0	0.0	0.0
1252	Commercial	CcoEgsld902	Faucet Aerator	0.0	0.0	0.0
1253	Commercial	CcoNgsld902	Faucet Aerator	0.0	0.0	0.0
1254	Commercial	CgrEgsld902	Faucet Aerator	0.0	0.0	0.0
1255	Commercial	CgrNgsld902	Faucet Aerator	0.0	0.0	0.0
1256	Commercial	CheEgsld902	Faucet Aerator	0.0	0.0	0.0
1257	Commercial	CheNgsld902	Faucet Aerator	0.0	0.0	0.0
1258	Commercial	ChoEgsld902	Faucet Aerator	0.0	0.0	0.0
1259	Commercial	ChoNgsld902	Faucet Aerator	0.0	0.0	0.0
1260	Commercial	CinEgsld902	Faucet Aerator	0.1	0.0	0.0
1261	Commercial	CinNgsld902	Faucet Aerator	0.0	0.0	0.0
1262	Commercial	CloEgsld902	Faucet Aerator	0.0	0.0	0.0
1263	Commercial	CloNgsld902	Faucet Aerator	0.0	0.0	0.0
1264	Commercial	CmiEgsld902	Faucet Aerator	0.0	0.0	0.0
1265	Commercial	CmiNgsld902	Faucet Aerator	0.0	0.0	0.0
1266	Commercial	CofEgsld902	Faucet Aerator	0.0	0.0	0.0
1267	Commercial	CofNgsld902	Faucet Aerator	0.0	0.0	0.0

1268	Commercial	CreEgsld902	Faucet Aerator	0.0	0.0	0.0
1269	Commercial	CreNgsld902	Faucet Aerator	0.0	0.0	0.0
1270	Commercial	CrtEgsld902	Faucet Aerator	0.0	0.0	0.0
1271	Commercial	CrtNgsld902	Faucet Aerator	0.0	0.0	0.0
1272	Commercial	CscEgsld902	Faucet Aerator	0.0	0.0	0.0
1273	Commercial	CscNgsld902	Faucet Aerator	0.0	0.0	0.0
1274	Commercial	CwaEgsld902	Faucet Aerator	0.0	0.0	0.0
1275	Commercial	CwaNgsld902	Faucet Aerator	0.0	0.0	0.0
1276	Commercial	CcoEgsld903	Low Flow Shower Head	0.0	0.0	0.0
1277	Commercial	CcoNgsld903	Low Flow Shower Head	0.0	0.0	0.0
1278	Commercial	CheEgsld903	Low Flow Shower Head	0.0	0.0	0.0
1279	Commercial	CheNgsld903	Low Flow Shower Head	0.0	0.0	0.0
1280	Commercial	ChoEgsld903	Low Flow Shower Head	0.0	0.0	0.0
1281	Commercial	ChoNgsld903	Low Flow Shower Head	0.0	0.0	0.0
1282	Commercial	CloEgsld903	Low Flow Shower Head	0.0	0.1	0.1
1283	Commercial	CloNgsld903	Low Flow Shower Head	0.0	0.0	0.0
1284	Commercial	CcoEgsld907	Thermostatic Shower Restriction Valve	0.0	0.0	0.0
1285	Commercial	CheEgsld907	Thermostatic Shower Restriction Valve	0.0	0.1	0.1
1286	Commercial	ChoEgsld907	Thermostatic Shower Restriction Valve	0.0	0.0	0.0
1287	Commercial	CloEgsld907	Thermostatic Shower Restriction Valve	0.0	0.4	0.4
1288	Commercial	CcoNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1289	Commercial	CcoTgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1290	Commercial	CgrNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1291	Commercial	CgrTgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1292	Commercial	ChoNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1293	Commercial	ChoTgsld911	Heat Pump Water Heater	0.1	0.1	0.1
1294	Commercial	CinNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1295	Commercial	CinTgsld911	Heat Pump Water Heater	3.5	2.2	2.2
1296	Commercial	CloNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1297	Commercial	CloTgsld911	Heat Pump Water Heater	0.8	0.5	0.5
1298	Commercial	CmiNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1299	Commercial	CmiTgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1300	Commercial	CofNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1301	Commercial	CofTgsld911	Heat Pump Water Heater	0.7	0.4	0.4
1302	Commercial	CreNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1303	Commercial	CreTgsld911	Heat Pump Water Heater	0.8	0.5	0.5
1304	Commercial	CrtNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1305	Commercial	CrtTgsld911	Heat Pump Water Heater	0.1	0.1	0.1
1306	Commercial	CwaNgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1307	Commercial	CwaTgsld911	Heat Pump Water Heater	0.0	0.0	0.0
1308	Commercial	CcoEgsld921	Retro-Commissioning	1.2	0.0	0.0
1309	Commercial	CgrEgsld921	Retro-Commissioning	3.0	5.5	5.5
1310	Commercial	CheEgsld921	Retro-Commissioning	2.2	4.9	4.9
1311	Commercial	ChoEgsld921	Retro-Commissioning	3.7	0.0	0.0
1312	Commercial	CinEgsld921	Retro-Commissioning	5.9	13.3	13.3
1313	Commercial	CloEgsld921	Retro-Commissioning	2.8	4.2	4.2
1314	Commercial	CmiEgsld921	Retro-Commissioning	21.5	66.4	66.4
1315	Commercial	CofEgsld921	Retro-Commissioning	7.7	21.0	21.0
1316	Commercial	CreEgsld921	Retro-Commissioning	5.0	7.5	7.5
1317	Commercial	CrtEgsld921	Retro-Commissioning	10.6	16.8	16.8

DECLARATION

I sponsored the answers to Interrogatory Nos. 1-12, 18-20, 25-28, and 40-47 and co-sponsored the answers to Interrogatory Nos. 13 and 21 from Southern Alliance for Clean Energy's First Set of Interrogatories to Florida Power & Light Company in Docket Nos. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Andrew W. Whitley

Date: 5/20/2019

FPL 000003
20190015-EG

Passing Batch Measures
TRC
Medium Fuel
no CO2
2 year Payback

	Passed	AP	Zero	
RES	6	4	-2	-33%
COM	37	18	-19	-51%
IND	9	3	-6	-67%
Total	**52**	**25**	**-27**	**-52%**

	ID	#	Name	Maximum Incentive	Participant Install	Participant O&M	Incent % Cost	Bill Savs	Payback No Incent	Payback w/Incent	Payback Change	Life/Payback Comps Life	Life/Payback Comps w/Incent	Life/Payback Comps Change
1	RM0E204	204	Ceiling Insulation (R2 to R38)	$373	$523	$0	71%	$76	6.9	2.0	(4.9)	20	10%	-25%
2	RM0N204	204	Ceiling Insulation (R2 to R38)	$373	$523	$0	71%	$76	6.9	2.0	(4.9)	20	10%	-25%
3	RMFE204	204	Ceiling Insulation (R2 to R38)	$594	$842	$0	71%	$126	6.7	2.0	(4.7)	20	10%	-24%
4	RMFN204	204	Ceiling Insulation (R2 to R38)	$594	$842	$0	71%	$126	6.7	2.0	(4.7)	20	10%	-24%
5	RSFE204	204	Ceiling Insulation (R2 to R38)	$602	$1,014	$0	59%	$208	4.9	2.0	(2.9)	20	10%	-14%
6	RSFN204	204	Ceiling Insulation (R2 to R38)	$602	$1,014	$0	59%	$208	4.9	2.0	(2.9)	20	10%	-14%
7	RM0N301	301	14 SEER ASHP from base electric resistance heating	$32	$276	$0	12%	$123	2.2	2.0	(0.3)	15	13%	-2%
8	RM0T301	301	14 SEER ASHP from base electric resistance heating	$32	$276	$0	12%	$123	2.2	2.0	(0.3)	15	13%	-2%
9	RMFN301	301	14 SEER ASHP from base electric resistance heating	$36	$313	$0	12%	$140	2.2	2.0	(0.3)	15	13%	-2%
10	RMFT301	301	14 SEER ASHP from base electric resistance heating	$36	$313	$0	12%	$140	2.2	2.0	(0.3)	15	13%	-2%
11	RSFN301	301	14 SEER ASHP from base electric resistance heating	$55	$469	$0	12%	$210	2.2	2.0	(0.3)	15	13%	-2%
12	RSFT301	301	14 SEER ASHP from base electric resistance heating	$55	$469	$0	12%	$210	2.2	2.0	(0.3)	15	13%	-2%
13	RM0E314	314	Duct Repair	$93	$162	$0	57%	$35	4.6	2.0	(2.6)	11	18%	-24%
14	RMFE314	314	Duct Repair	$76	$162	$0	47%	$43	3.7	2.0	(1.8)	11	18%	-16%
15	RSFN322	322	Smart Thermostat (EE ONLY)	$43	$132	$0	33%	$45	2.9	2.0	(1.0)	11	18%	-9%
16	RM0N504	504	Two Speed Pool Pump	$154	$359	$0	43%	$104	3.5	2.0	(1.5)	10	20%	-15%
17	RM0T504	504	Two Speed Pool Pump	$154	$359	$0	43%	$104	3.5	2.0	(1.5)	10	20%	-15%
18	RMFN504	504	Two Speed Pool Pump	$154	$359	$0	43%	$104	3.5	2.0	(1.5)	10	20%	-15%
19	RMFT504	504	Two Speed Pool Pump	$154	$359	$0	43%	$104	3.5	2.0	(1.5)	10	20%	-15%
20	RSFN504	504	Two Speed Pool Pump	$154	$359	$0	43%	$104	3.5	2.0	(1.5)	10	20%	-15%
21	RSFT504	504	Two Speed Pool Pump	$154	$359	$0	43%	$104	3.5	2.0	(1.5)	10	20%	-15%
22	IGSLD201	201	Building Envelope Improvements	$169	$920	$130	18%	$510	1.8	1.5	(0.3)	15	10%	-2%
23	IGSD201	201	Building Envelope Improvements	$166	$920	$130	18%	$512	1.8	1.5	(0.3)	15	10%	-2%
24	IGSLD202	202	HVAC Equipment Upgrades	$548	$1,558	$0	35%	$510	3.1	2.0	(1.1)	18	11%	-6%
25	IGSD202	202	HVAC Equipment Upgrades	$545	$1,558	$0	35%	$512	3.0	2.0	(1.1)	18	11%	-6%
26	IGSLD204	204	HVAC Recommissioning	$603	$1,613	$0	37%	$510	3.2	2.0	(1.2)	10	20%	-12%
27	IGSD204	204	HVAC Recommissioning	$600	$1,613	$0	37%	$512	3.2	2.0	(1.2)	10	20%	-12%
28	IGSLD303	303	Efficient Lighting - High Bay	$503	$1,512	$0	33%	$510	3.0	2.0	(1.0)	14	14%	-7%
29	IGSD303	303	Efficient Lighting - High Bay	$500	$1,512	$0	33%	$511	3.0	2.0	(1.0)	14	14%	-7%
30	IGSLD401	401	Fan Equipment Upgrades	$410	$1,445	$0	28%	$523	2.8	2.0	(0.8)	15	13%	-5%
31	IGSD401	401	Fan Equipment Upgrades	$401	$1,445	$0	28%	$527	2.7	2.0	(0.8)	15	13%	-5%
32	IGSLD503	503	Motor Optimization	$514	$1,548	$0	33%	$523	3.0	2.0	(1.0)	10	20%	-10%
33	IGSD503	503	Motor Optimization	$504	$1,548	$0	33%	$527	2.9	2.0	(1.0)	10	20%	-10%
34	IGSLD504	504	Pump Equipment Upgrade	$148	$1,183	$0	13%	$523	2.3	2.0	(0.3)	15	13%	-2%
35	IGSD504	504	Pump Equipment Upgrade	$139	$1,183	$0	12%	$527	2.2	2.0	(0.3)	15	13%	-2%
36	IGSLD602	602	Process Refrig Equipment Upgrade	$348	$1,371	$0	25%	$517	2.7	2.0	(0.7)	10	20%	-7%
37	IGSD602	602	Process Refrig Equipment Upgrade	$341	$1,371	$0	25%	$520	2.6	2.0	(0.7)	10	20%	-7%
38	IGSLD701	701	Process Heat Equipment Upgrade	$642	$1,665	$0	39%	$517	3.2	2.0	(1.2)	10	20%	-12%
39	IGSD701	701	Process Heat Equipment Upgrade	$635	$1,665	$0	38%	$520	3.2	2.0	(1.2)	10	20%	-12%
40	CcoNgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
41	CcoTgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
42	CheNgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
43	CheTgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
44	ChoNgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
45	ChoTgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
46	CloNgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
47	CloTgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
48	CreNgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
49	CreTgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
50	CscNgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
51	CscTgs101	101	Efficient Exhaust Hood	$276	$1,127	$0	24%	$431	2.6	2.0	(0.6)	15	13%	-4%
52	CcoNgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
53	CcoTgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
54	CheNgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
55	CheTgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
56	ChoNgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
57	ChoTgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
58	CloNgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
59	CloTgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
60	CreNgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
61	CreTgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
62	CscNgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
63	CscTgsd101	101	Efficient Exhaust Hood	$391	$1,127	$0	35%	$372	3.0	2.0	(1.1)	15	13%	-7%
64	CcoNgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
65	CcoTgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
66	CheNgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
67	CheTgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
68	ChoNgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
69	ChoTgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
70	CloNgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
71	CloTgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
72	CreNgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
73	CreTgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
74	CscNgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
75	CscTgsld101	101	Efficient Exhaust Hood	$377	$1,127	$0	33%	$379	3.0	2.0	(1.0)	15	13%	-7%
76	CcoNgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
77	CcoTgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
78	CheNgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
79	CheTgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
80	ChoNgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
81	ChoTgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
82	CloNgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
83	CloTgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
84	CreNgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
85	CreTgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
86	CscNgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
87	CscTgs103	103	Energy Star Commercial Oven	$5	$1,152	$0	0%	$580	2.0	2.0	(0.0)	12	16%	0%
88	CcoNgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
89	CcoTgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
90	CheNgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
91	CheTgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
92	ChoNgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
93	ChoTgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
94	CloNgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
95	CloTgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
96	CreNgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
97	CreTgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
98	CscNgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
99	CscTgsd103	103	Energy Star Commercial Oven	$252	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
100	CcoNgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
101	CcoTgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
102	CheNgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
103	CheTgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
104	ChoNgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
105	ChoTgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
106	CloNgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
107	CloTgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
108	CreNgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
109	CreTgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
110	CscNgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
111	CscTgsld103	103	Energy Star Commercial Oven	$253	$1,152	$0	22%	$454	2.5	2.0	(0.6)	12	16%	-5%
112	CinNgsd119	119	ENERGY STAR Water Cooler	$35	$893	$0	4%	$433	2.1	2.0	(0.1)	10	20%	-1%
113	CinTgsd119	119	ENERGY STAR Water Cooler	$35	$893	$0	4%	$433	2.1	2.0	(0.1)	10	20%	-1%

	Forecast N/E	Forecast Method	Incentive Current	Incentive Avg New	Incentive % Diff	Achievements: Average Historic S MW	W MW	GWh	Forecast (Meter) Parts (1.000)	S kW (1.000)	W kW (1.000)	kWh	Meter S kW	Meter W kW	Meter kWh	chnical Potential (@ G S MW	W MW	GWh	Technical Potential (@ Gen) S MW	W MW	GWh				
1	E	Incent ~1.75x	$190	$523	175%	1	2	2.6	3,000	0.52	1.37	1,375	0.27	1.17	763	17.7	46.0	90				RM0E	204		
2		(2/3rd of total											0.27	1.17	763							RM0N	204		
3		install cost) =>											0.50	1.02	1,265							RMFE	204		
4		~50% of TP by											0.50	1.02	1,265							RMFN	204		
5		2029. Annual											0.78	1.91	2,098							RSFE	204		
6		dropoff consistent											0.78	1.91	2,098							RSFN	204		
7	N	Zero - Incentive too							0	0.00	0.45	1,588	0.00	0.35	1,242	0.0	0.0	0				RM0N	301		
8		small (~0.3% of											0.00	0.35	1,242							RM0T	301		
9		total install cost) &											0.00	0.40	1,408							RMFN	301		
10													0.00	0.40	1,408							RMFT	301		
11													0.00	0.60	2,112							RSFN	301		
12													0.00	0.60	2,112							RSFT	301		
13	N	Volume = previous							1,000	0.24	0.01	393	0.21	0.01	352	167.8	46.2	324				RM0E	314		
14		program which paid											0.26	0.01	435							RMFE	314		
15	N	Zero - <1 yr							0	0.18	0.00	451	0.18	0.00	451	45.7	0.0	139	90K/year install in FPL terr. (per Hub) - free-riders. ecobee incent ~3K sold/year.						
16	N	1.1 M pools in FL,							2,138	0.33	0.32	1,046	0.33	0.32	1,046	0.0	0.0	0				RM0N	504		
17		FPL = 54%. 10											0.33	0.32	1,046							RM0T	504		
18		measure life. 4%											0.33	0.32	1,046							RMFN	504		
19		uptake (since still											0.33	0.32	1,046							RMFT	504		
20		~2x out of pocket).											0.33	0.32	1,046							RSFN	504		
21		90% 2-speed.											0.33	0.32	1,046							RSFT	504		
22	N	Zero - Incent too							0	1.00	0.98	7,020	1.00	0.98	7,020	2.3	2.2	16				IGSL	201		
23		small = ~2.5											1.00	0.98	7,020							IGSD	201		
24	E	IND = 5% of	$163	$546	236%				39	1.00	0.98	7,020	1.00	0.98	7,020	2.7	2.6	19				IGSL	202		
25		Chiller/DX COM											1.00	0.98	7,020							IGSD	202		
26	N	Incent % &							20	1.00	0.98	7,020	1.00	0.98	7,020	2.0	2.0	14				IGSL	204		
27		Payback improve =											1.00	0.98	7,020							IGSD	204		
28	E	Zero - <1 year	$80	$502	527%	0	0	0.0	0	1.00	0.97	7,006	1.00	0.97	7,006	4.1	4.0	29				IGSL	303		
29		payback & IND											1.00	0.97	7,006							IGSD	303		
30	N	Zero - <1 year							0	1.00	0.97	7,426	1.00	0.97	7,426	1.1	1.0	8				IGSL	401		
31		payback improve											1.00	0.97	7,426							IGSD	401		
32	N	Zero - <1 year							0	1.00	0.97	7,426	1.00	0.97	7,426	2.5	2.5	19				IGSL	503		
33		payback improve											1.00	0.97	7,426							IGSD	503		
34	N	Zero - Incent too							0	1.00	0.97	7,426	1.00	0.97	7,426	4.8	4.7	36				IGSL	504		
35		small = ~2.5											1.00	0.97	7,426							IGSD	504		
36	N	Zero - <1 year							0	1.00	0.98	7,264	1.00	0.98	7,264	0.9	0.9	7				IGSL	602		
37		payback improve											1.00	0.98	7,264							IGSD	602		
38	N	Incent % &							27	1.00	0.98	7,264	1.00	0.98	7,264	2.7	2.6	19				IGSL	701		
39		Payback improve =											1.00	0.98	7,264							IGSD	701		
40	E	Zero - Existing	######	$348	-83%	0.1	0.0	0	0	1.00	0.39	4,574	1.00	0.39	4,574	7.3	2.9	33	0.0	0.0	0.0	CcoN	101	gs101	gs
41		incent level = low	GS	$276	-86%								1.00	0.39	4,574	17% of DCV is hoods			0.0	0.0	0.0	CcoT	101	gs101	gs
42		MW. Reduction of											1.00	0.39	4,574				0.0	0.0	0.0	CheN	101	gs101	gs
43		~85% & small											1.00	0.39	4,574				0.0	0.0	0.1	CheT	101	gs101	gs
44													1.00	0.39	4,574				0.0	0.0	0.0	ChoN	101	gs101	gs
45													1.00	0.39	4,574				0.0	0.0	0.2	ChoT	101	gs101	gs
46													1.00	0.39	4,574				0.0	0.0	0.0	CloN	101	gs101	gs
47													1.00	0.39	4,574				0.1	0.0	0.5	CloT	101	gs101	gs
48													1.00	0.39	4,574				0.0	0.0	0.0	CreN	101	gs101	gs
49													1.00	0.39	4,574				0.9	0.4	4.0	CreT	101	gs101	gs
50													1.00	0.39	4,574				0.0	0.0	0.0	CscN	101	gs101	gs
51													1.00	0.39	4,574				0.0	0.0	0.1	CscT	101	gs101	gs
52			GSD	$391	-80%								1.00	0.39	4,574				0.0	0.0	0.0	CcoN	101	gsd101	gsd
53													1.00	0.39	4,574				0.0	0.0	0.0	CcoT	101	gsd101	gsd
54													1.00	0.39	4,574				0.0	0.0	0.0	CheN	101	gsd101	gsd
55													1.00	0.39	4,574				0.1	0.0	0.4	CheT	101	gsd101	gsd
56													1.00	0.39	4,574				0.0	0.0	0.0	ChoN	101	gsd101	gsd
57													1.00	0.39	4,574				0.2	0.1	0.8	ChoT	101	gsd101	gsd
58													1.00	0.39	4,574				0.0	0.0	0.0	CloN	101	gsd101	gsd
59													1.00	0.39	4,574				0.4	0.2	2.0	CloT	101	gsd101	gsd
60													1.00	0.39	4,574				0.0	0.0	0.2	CreN	101	gsd101	gsd
61													1.00	0.39	4,574				3.6	1.4	16.1	CreT	101	gsd101	gsd
62													1.00	0.39	4,574				0.0	0.0	0.0	CscN	101	gsd101	gsd
63													1.00	0.39	4,574				0.1	0.0	0.4	CscT	101	gsd101	gsd
64			GSLD	$377	-81%								1.00	0.39	4,574				0.0	0.0	0.0	CcoN	101	gsld101	gsld
65													1.00	0.39	4,574				0.0	0.0	0.0	CcoT	101	gsld101	gsld
66													1.00	0.39	4,574				0.0	0.0	0.0	CheN	101	gsld101	gsld
67													1.00	0.39	4,574				0.0	0.0	0.2	CheT	101	gsld101	gsld
68													1.00	0.39	4,574				0.0	0.0	0.0	ChoN	101	gsld101	gsld
69													1.00	0.39	4,574				0.1	0.0	0.3	ChoT	101	gsld101	gsld
70													1.00	0.39	4,574				0.0	0.0	0.0	CloN	101	gsld101	gsld
71													1.00	0.39	4,574				0.2	0.1	0.8	CloT	101	gsld101	gsld
72													1.00	0.39	4,574				0.0	0.0	0.1	CreN	101	gsld101	gsld
73													1.00	0.39	4,574				1.5	0.6	6.7	CreT	101	gsld101	gsld
74													1.00	0.39	4,574				0.0	0.0	0.0	CscN	101	gsld101	gsld
75													1.00	0.39	4,574				0.0	0.0	0.2	CscT	101	gsld101	gsld
76	N	Zero - <1 year							0	1.00	0.52	6,158	1.00	0.52	6,158	2.3	1.2	14	0.0	0.0	0.0	CcoN	103	gs103	gs
77		payback improve											1.00	0.52	6,158				0.0	0.0	0.0	CcoT	103	gs103	gs
78													1.00	0.52	6,158				0.0	0.0	0.0	CheN	103	gs103	gs
79													1.00	0.52	6,158				0.0	0.0	0.1	CheT	103	gs103	gs
80													1.00	0.52	6,158				0.0	0.0	0.0	ChoN	103	gs103	gs
81													1.00	0.52	6,158				0.0	0.0	0.1	ChoT	103	gs103	gs
82													1.00	0.52	6,158				0.0	0.0	0.0				
83													1.00	0.52	6,158				0.0	0.0	0.2				
84													1.00	0.52	6,158				0.0	0.0	0.0				
85													1.00	0.52	6,158				0.3	0.1	1.6				
86													1.00	0.52	6,158				0.0	0.0	0.0	CscN	103	gs103	gs
87													1.00	0.52	6,158				0.0	0.0	0.1	CscT	103	gs103	gs
88													1.00	0.52	6,158				0.0	0.0	0.0	CcoN	103	gsd103	gsd
89													1.00	0.52	6,158				0.0	0.0	0.0	CcoT	103	gsd103	gsd
90													1.00	0.52	6,158				0.0	0.0	0.0	CheN	103	gsd103	gsd
91													1.00	0.52	6,158				0.0	0.0	0.3	CheT	103	gsd103	gsd
92													1.00	0.52	6,158				0.0	0.0	0.0	ChoN	103	gsd103	gsd
93													1.00	0.52	6,158				0.1	0.0	0.5	ChoT	103	gsd103	gsd
94													1.00	0.52	6,158				0.0	0.0	0.0	CloN	103	gsd103	gsd
95													1.00	0.52	6,158				0.1	0.1	0.9	CloT	103	gsd103	gsd
96													1.00	0.52	6,158				0.0	0.0	0.1	CreN	103	gsd103	gsd
97													1.00	0.52	6,158				1.1	0.6	6.5	CreT	103	gsd103	gsd
98													1.00	0.52	6,158				0.0	0.0	0.0	CscN	103	gsd103	gsd
99													1.00	0.52	6,158				0.0	0.0	0.3	CscT	103	gsd103	gsd
100													1.00	0.52	6,158				0.0	0.0	0.0	CcoN	103	gsld103	gsld
101													1.00	0.52	6,158				0.0	0.0	0.0	CcoT	103	gsld103	gsld
102													1.00	0.52	6,158				0.0	0.0	0.0	CheN	103	gsld103	gsld
103													1.00	0.52	6,158				0.0	0.0	0.1	CheT	103	gsld103	gsld
104													1.00	0.52	6,158				0.0	0.0	0.0	ChoN	103	gsld103	gsld
105													1.00	0.52	6,158				0.0	0.0	0.2	ChoT	103	gsld103	gsld
106													1.00	0.52	6,158				0.0	0.0	0.0	CloN	103	gsld103	gsld
107													1.00	0.52	6,158				0.1	0.0	0.4	CloT	103	gsld103	gsld
108													1.00	0.52	6,158				0.0	0.0	0.0	CreN	103	gsld103	gsld
109													1.00	0.52	6,158				0.4	0.2	2.7	CreT	103	gsld103	gsld
110													1.00	0.52	6,158				0.0	0.0	0.0	CscN	103	gsld103	gsld
111													1.00	0.52	6,158				0.0	0.0	0.1	CscT	103	gsld103	gsld
112	N	Zero - <1 year							0	1.00	1.00	5,750	1.00	1.00	5,750	8.0	8.0	46	0.0	0.0	0.1	CinN	119	gsd119	gsd
113		payback improve											1.00	1.00	5,750				2.3	2.3	13.3	CinT	119	gsd119	gsd

114	CofNgsd119	119	ENERGY STAR Water Cooler	$35	$893	$0	4%	$433	2.1	2.0	(0.1)	10	20%	-1%													1.00	1.00	5,750					0.1	0.1	0.3	CofN	119	gsd119	gsd	
115	CofTgsd119	119	ENERGY STAR Water Cooler	$35	$893	$0	4%	$433	2.1	2.0	(0.1)	10	20%	-1%													1.00	1.00	5,750					3.2	3.2	18.4	CofT	119	gsd119	gsd	
116	CinNgsld119	119	ENERGY STAR Water Cooler	$31	$893	$0	4%	$435	2.1	2.0	(0.1)	10	20%	-1%													1.00	1.00	5,750					0.0	0.0	0.1	CinN	119	gsld119	gsld	
117	CinTgsld119	119	ENERGY STAR Water Cooler	$31	$893	$0	4%	$435	2.1	2.0	(0.1)	10	20%	-1%													1.00	1.00	5,750					1.0	1.0	5.6	CinT	119	gsld119	gsld	
118	CofNgsld119	119	ENERGY STAR Water Cooler	$31	$893	$0	4%	$435	2.1	2.0	(0.1)	10	20%	-1%													1.00	1.00	5,750					0.0	0.0	0.1	CofN	119	gsld119	gsld	
119	CofTgsld119	119	ENERGY STAR Water Cooler	$31	$893	$0	4%	$435	2.1	2.0	(0.1)	10	20%	-1%													1.00	1.00	5,750					1.4	1.4	7.7	CofT	119	gsld119	gsld	
120	CheEgs203	203	Ceiling Insulation(R2 to R38)	$291	$656	$0	44%	$185	3.6	2.0	(1.6)	20	10%	-8%	N	Incent % &							44	1.00	0.36	1,959	1.00	0.36	1,959	4.4	0.0	9		3.0	0.0	5.8	CheE	203	gs203	gs	
121	CofEgs203	203	Ceiling Insulation(R2 to R38)	$291	$656	$0	44%	$185	3.6	2.0	(1.6)	20	10%	-8%		Payback improve =											1.00	0.36	1,959	0.218 <-- avail. mkt. / yr.				1.4	0.0	2.8	CofE	203	gs203	gs	
122	CheEgsd203	203	Ceiling Insulation(R2 to R38)	$74	$656	$0	11%	$295	2.2	2.0	(0.3)	20	10%	-1%		~10% market											1.00	0.36	1,959					11.9	0.0	23.1	CheE	203	gsd203	gsd	
123	CofEgsd203	203	Ceiling Insulation(R2 to R38)	$74	$656	$0	11%	$295	2.2	2.0	(0.3)	20	10%	-1%													1.00	0.36	1,959					5.5	0.1	11.1	CofE	203	gsd203	gsd	
124	CheEgsld203	203	Ceiling Insulation(R2 to R38)	$11	$656	$0	2%	$327	2.0	2.0	(0.0)	20	10%	0%													1.00	0.36	1,959					5.0	0.0	9.6	CheE	203	gsld203	gsld	
125	CofEgsld203	203	Ceiling Insulation(R2 to R38)	$11	$656	$0	2%	$327	2.0	2.0	(0.0)	20	10%	0%													1.00	0.36	1,959					2.3	0.0	4.6	CofE	203	gsld203	gsld	
126	CrtEgs207	207	Wall Insulation	$1,293	$2,205	$0	59%	$461	4.8	2.0	(2.8)	20	10%	-14%	N	Incent % &							97	1.00	2.29	4,900	1.00	2.29	4,900	9.7	0.0	47	15%	1.5	0.0	7.0	CrtE	207	gs207	gs	$194
127	CrtEgsd207	207	Wall Insulation	$1,435	$2,205	$0	65%	$389	5.7	2.0	(3.7)	20	10%	-18%		Payback improve =											1.00	2.29	4,900			#####	60%	5.8	0.0	28.1	CrtE	207	gsd207	gsd	$861
128	CrtEgsld207	207	Wall Insulation	$1,424	$2,205	$0	65%	$394	5.6	2.0	(3.6)	20	10%	-18%													1.00	2.29	4,900				25%	2.4	0.0	11.7	CrtE	207	gsld207	gsld	$356
129	CasEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%	N	Participation =							200	1.00	1.00	8,760	1.00	1.00	8,760	42.2	1.9	381	8%	3.3	0.2	30.2	CasE	302	gsd302	gsd	$53
130	CasNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%		~25% of the ~800											1.00	1.00	8,760			100%	0%	0.0	0.0	0.3	CasN	302	gsd302	gsd	$1
131	CcoEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%		kW/yr of water-											1.00	1.00	8,760			$673	0%	0.0	0.0	0.4	CcoE	302	gsd302	gsd	$1
132	CcoNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%		cooled chillers in											1.00	1.00	8,760				0%	0.0	0.0	0.0	CcoN	302	gsd302	gsd	$0
133	CgrEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%		current program.											1.00	1.00	8,760				0%	0.0	0.0	0.0	CgrE	302	gsd302	gsd	$0
134	CgrNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%		Also payback											1.00	1.00	8,760				0%	0.0	0.0	0.0	CgrN	302	gsd302	gsd	$0
135	CheEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CheE	302	gsd302	gsd	$0
136	CheNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CheN	302	gsd302	gsd	$0
137	ChoEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				4%	1.8	0.1	16.1	ChoE	302	gsd302	gsd	$28
138	ChoNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.2	ChoN	302	gsd302	gsd	$0
139	CinEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				19%	7.9	0.4	71.4	CinE	302	gsd302	gsd	$125
140	CinNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.1	0.0	0.8	CinN	302	gsd302	gsd	$1
141	CloEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				2%	0.7	0.0	6.3	CloE	302	gsd302	gsd	$11
142	CloNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.1	CloN	302	gsd302	gsd	$0
143	CmiEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				15%	6.2	0.3	55.9	CmiE	302	gsd302	gsd	$98
144	CmiNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.1	0.0	0.6	CmiN	302	gsd302	gsd	$1
145	CofEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				13%	5.3	0.2	48.3	CofE	302	gsd302	gsd	$84
146	CofNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.1	0.0	0.6	CofN	302	gsd302	gsd	$1
147	CreEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				1%	0.3	0.0	2.4	CreE	302	gsd302	gsd	$4
148	CreNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CreN	302	gsd302	gsd	$0
149	CrtEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CrtE	302	gsd302	gsd	$0
150	CrtNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CrtN	302	gsd302	gsd	$0
151	CscEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				9%	3.6	0.2	32.9	CscE	302	gsd302	gsd	$58
152	CscNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.4	CscN	302	gsd302	gsd	$1
153	CwaEgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CwaE	302	gsd302	gsd	$0
154	CwaNgsd302	302	Chilled Water System - Variable Speed Drives	$667	$1,842	$0	36%	$594	3.1	2.0	(1.1)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CwaN	302	gsd302	gsd	$0
155	CasEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				3%	1.4	0.1	12.9	CasE	302	gsld302	gsld	$23
156	CasNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.1	CasN	302	gsld302	gsld	$0
157	CcoEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.2	CcoE	302	gsld302	gsld	$0
158	CcoNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CcoN	302	gsld302	gsld	$0
159	CgrEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CgrE	302	gsld302	gsld	$0
160	CgrNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CgrN	302	gsld302	gsld	$0
161	CheEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CheE	302	gsld302	gsld	$0
162	CheNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CheN	302	gsld302	gsld	$0
163	ChoEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				2%	0.8	0.0	6.9	ChoE	302	gsld302	gsld	$12
164	ChoNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.1	ChoN	302	gsld302	gsld	$0
165	CinEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				8%	3.4	0.2	30.6	CinE	302	gsld302	gsld	$55
166	CinNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.3	CinN	302	gsld302	gsld	$1
167	CloEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				1%	0.3	0.0	2.7	CloE	302	gsld302	gsld	$5
168	CloNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CloN	302	gsld302	gsld	$0
169	CmiEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				6%	2.6	0.1	24.0	CmiE	302	gsld302	gsld	$43
170	CmiNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.3	CmiN	302	gsld302	gsld	$0
171	CofEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				5%	2.3	0.1	20.7	CofE	302	gsld302	gsld	$37
172	CofNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.2	CofN	302	gsld302	gsld	$0
173	CreEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.1	0.0	1.0	CreE	302	gsld302	gsld	$2
174	CreNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CreN	302	gsld302	gsld	$0
175	CrtEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CrtE	302	gsld302	gsld	$0
176	CrtNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CrtN	302	gsld302	gsld	$0
177	CscEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				4%	1.6	0.1	14.1	CscE	302	gsld302	gsld	$25
178	CscNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.2	CscN	302	gsld302	gsld	$0
179	CwaEgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CwaE	302	gsld302	gsld	$0
180	CwaNgsld302	302	Chilled Water System - Variable Speed Drives	$689	$1,842	$0	37%	$582	3.2	2.0	(1.2)	13	15%	-9%													1.00	1.00	8,760				0%	0.0	0.0	0.0	CwaN	302	gsld302	gsld	$0
181	CasNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$102	$486	$0	21%	$194	2.5	2.0	(0.5)	20	10%	-3%	E	Zero - <1 year	$165	$90	55%				0	1.00	0.22	1,011	1.00	0.22	1,106	52.2	0.5	45		0.0	0.0	0.0	CasN	303	gsd303	gsd	
182	CasTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$102	$486	$0	21%	$194	2.5	2.0	(0.5)	20	10%	-3%		payback improve											1.00	0.22	1,106					3.1	0.0	3.6	CasT	303	gsd303	gsd	
183	CcoNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$90	$486	$0	19%	$200	2.4	2.0	(0.4)	20	10%	-2%													1.00	0.22	1,227					0.0	0.0	0.0	CcoN	303	gsd303	gsd	
184	CcoTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$90	$486	$0	19%	$200	2.4	2.0	(0.4)	20	10%	-2%													1.00	0.22	1,227					0.6	0.0	0.7	CcoT	303	gsd303	gsd	
185	CgrNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$153	$486	$0	31%	$169	2.9	2.0	(0.9)	20	10%	-5%													1.00	0.22	611					0.0	0.0	0.0	CgrN	303	gsd303	gsd	
186	CgrTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$153	$486	$0	31%	$169	2.9	2.0	(0.9)	20	10%	-5%													1.00	0.22	611					0.0	0.0	0.0	CgrT	303	gsd303	gsd	
187	CinNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$154	$486	$0	32%	$168	2.9	2.0	(0.9)	20	10%	-5%													1.00	0.22	597					0.0	0.0	0.0	CinN	303	gsd303	gsd	
188	CinTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$154	$486	$0	32%	$168	2.9	2.0	(0.9)	20	10%	-5%													1.00	0.22	597					13.8	0.1	8.5	CinT	303	gsd303	gsd	
189	CloNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$29	$486	$0	6%	$231	2.1	2.0	(0.1)	20	10%	-1%													1.00	0.22	1,827					0.0	0.0	0.0	CloN	303	gsd303	gsd	
190	CloTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$29	$486	$0	6%	$231	2.1	2.0	(0.1)	20	10%	-1%													1.00	0.22	1,827					0.3	0.0	0.6	CloT	303	gsd303	gsd	
191	CmiNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$152	$486	$0	31%	$169	2.9	2.0	(0.9)	20	10%	-4%													1.00	0.22	618					0.0	0.0	0.0	CmiN	303	gsd303	gsd	
192	CmiTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$152	$486	$0	31%	$169	2.9	2.0	(0.9)	20	10%	-4%													1.00	0.22	618					8.7	0.1	5.6	CmiT	303	gsd303	gsd	
193	CofNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$88	$486	$0	18%	$201	2.4	2.0	(0.4)	20	10%	-2%													1.00	0.22	1,245					0.0	0.0	0.0	CofN	303	gsd303	gsd	
194	CofTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$88	$486	$0	18%	$201	2.4	2.0	(0.4)	20	10%	-2%													1.00	0.22	1,245					4.7	0.0	6.1	CofT	303	gsd303	gsd	
195	CreNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$33	$486	$0	7%	$229	2.1	2.0	(0.1)	20	10%	-1%													1.00	0.22	1,792					0.0	0.0	0.0	CreN	303	gsd303	gsd	
196	CreTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$33	$486	$0	7%	$229	2.1	2.0	(0.1)	20	10%	-1%													1.00	0.22	1,792					0.1	0.0	0.3	CreT	303	gsd303	gsd	
197	CrtNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$72	$486	$0	15%	$209	2.3	2.0	(0.3)	20	10%	-2%													1.00	0.22	1,405					0.0	0.0	0.0	CrtN	303	gsd303	gsd	
198	CrtTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$72	$486	$0	15%	$209	2.3	2.0	(0.3)	20	10%	-2%													1.00	0.22	1,405					0.0	0.0	0.0	CrtT	303	gsd303	gsd	
199	CscNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$91	$486	$0	19%	$200	2.4	2.0	(0.5)	20	10%	-2%													1.00	0.22	1,221					0.0	0.0	0.0	CscN	303	gsd303	gsd	
200	CscTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$91	$486	$0	19%	$200	2.4	2.0	(0.5)	20	10%	-2%													1.00	0.22	1,221					5.2	0.1	6.5	CscT	303	gsd303	gsd	
201	CwaNgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$188	$486	$0	39%	$151	3.2	2.0	(1.2)	20	10%	-6%													1.00	0.22	268					0.0	0.0	0.0	CwaN	303	gsd303	gsd	
202	CwaTgsd303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$188	$486	$0	39%	$151	3.2	2.0	(1.2)	20	10%	-6%													1.00	0.22	268					0.0	0.0	0.0	CwaT	303	gsd303	gsd	
203	CasNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$55	$486	$0	11%	$218	2.2	2.0	(0.3)	20	10%	-1%													1.00	0.22	1,106					0.0	0.0	0.0	CasN	303	gsld303	gsld	
204	CasTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$55	$486	$0	11%	$218	2.2	2.0	(0.3)	20	10%	-1%													1.00	0.22	1,106					1.3	0.0	1.5	CasT	303	gsld303	gsld	
205	CcoNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$44	$486	$0	9%	$224	2.2	2.0	(0.2)	20	10%	-1%													1.00	0.22	1,227					0.0	0.0	0.0	CcoN	303	gsld303	gsld	
206	CcoTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$44	$486	$0	9%	$224	2.2	2.0	(0.2)	20	10%	-1%													1.00	0.22	1,227					0.2	0.0	0.3	CcoT	303	gsld303	gsld	
207	CgrNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$101	$486	$0	21%	$195	2.5	2.0	(0.5)	20	10%	-3%													1.00	0.22	611					0.0	0.0	0.0	CgrN	303	gsld303	gsld	
208	CgrTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$101	$486	$0	21%	$195	2.5	2.0	(0.5)	20	10%	-3%													1.00	0.22	611					0.0	0.0	0.0	CgrT	303	gsld303	gsld	
209	CinNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$102	$486	$0	21%	$194	2.5	2.0	(0.5)	20	10%	-3%													1.00	0.22	597					0.0	0.0	0.0	CinN	303	gsld303	gsld	
210	CinTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$102	$486	$0	21%	$194	2.5	2.0	(0.5)	20	10%	-3%													1.00	0.22	597					5.9	0.1	3.6	CinT	303	gsld303	gsld	
211	CmiNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$100	$486	$0	21%	$195	2.5	2.0	(0.5)	20	10%	-3%													1.00	0.22	618					0.0	0.0	0.0	CmiN	303	gsld303	gsld	
212	CmiTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$100	$486	$0	21%	$195	2.5	2.0	(0.5)	20	10%	-3%													1.00	0.22	618					3.7	0.0	2.4	CmiT	303	gsld303	gsld	
213	CofNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$42	$486	$0	9%	$224	2.2	2.0	(0.2)	20	10%	-1%													1.00	0.22	1,245					0.0	0.0	0.0	CofN	303	gsld303	gsld	
214	CofTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$42	$486	$0	9%	$224	2.2	2.0	(0.2)	20	10%	-1%													1.00	0.22	1,245					2.0	0.0	2.6	CofT	303	gsld303	gsld	
215	CrtNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$28	$486	$0	6%	$232	2.1	2.0	(0.1)	20	10%	-1%													1.00	0.22	1,405					0.0	0.0	0.0	CrtN	303	gsld303	gsld	
216	CrtTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$28	$486	$0	6%	$232	2.1	2.0	(0.1)	20	10%	-1%													1.00	0.22	1,405					0.0	0.0	0.0	CrtT	303	gsld303	gsld	
217	CscNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$45	$486	$0	9%	$223	2.2	2.0	(0.2)	20	10%	-1%													1.00	0.22	1,221					0.0	0.0	0.0	CscN	303	gsld303	gsld	
218	CscTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$45	$486	$0	9%	$223	2.2	2.0	(0.2)	20	10%	-1%													1.00	0.22	1,221					2.2	0.0	2.8	CscT	303	gsld303	gsld	
219	CwaNgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$132	$486	$0	27%	$179	2.7	2.0	(0.7)	20	10%	-4%													1.00	0.22	268					0.0	0.0	0.0	CwaN	303	gsld303	gsld	
220	CwaTgsld303	303	High Efficiency Chiller (Air Cooled, 50 tons)	$132	$486	$0	27%	$179	2.7	2.0	(0.7)	20	10%	-4%													1.00	0.22	268					0.0	0.0	0.0	CwaT	303	gsld303	gsld	
221	CasNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$769	$1,324	$0	58%	$281	4.7	2.0	(2.7)	20	10%	-14%	E	Retain current level	$160	$692	333%	0.8	0.2	2,619	781	1.00	0.22	3,274	1.00	0.22	2,660	11.3	0.1	26	0%	0.0	0.0	0.0	CasN	304	gsd304	gsd	$0
222	CasTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$769	$1,324	$0	58%	$281	4.7	2.0	(2.7)	20	10%	-14%		= ~70% of TP (in											1.00	0.22	2,660	0.3	0.0	3	5%	0.6	0.0	1.6	CasT	304	gsd304	gsd	$40
223	CcoNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$740	$1,324	$0	56%	$295	4.5	2.0	(2.5)	20	10%	-13%		combination with											1.00	0.22	2,951			100%	0%	0.0	0.0	0.0	CcoN	304	gsd304	gsd	$0
224	CcoTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$740	$1,324	$0	56%	$295	4.5	2.0	(2.5)	20	10%	-13%		measure 305)											1.00	0.22	2,951			$797	1%	0.1	0.0	0.3	CcoT	304	gsd304	gsd	$7
225	CgrNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$890	$1,324	$0	67%	$219	6.0	2.0	(4.1)	20	10%	-20%													1.00	0.22	1,469				0%	0.0	0.0	0.0	CgrN	304	gsd304	gsd	$0
226	CgrTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$890	$1,324	$0	67%	$219	6.0	2.0	(4.1)	20	10%	-20%													1.00	0.22	1,469				0%	0.0	0.0	0.0	CgrT	304	gsd304	gsd	$0
227	CheNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$451	$1,324	$0	34%	$441	3.0	2.0	(1.0)	20	10%	-5%													1.00	0.22	5,788				0%	0.0	0.0	0.0	CheN	304	gsd304	gsd	$0
228	CheTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$451	$1,324	$0	34%	$441	3.0	2.0	(1.0)	20	10%	-5%													1.00	0.22	5,788				0%	0.0	0.0	0.0	CheT	304	gsd304	gsd	$0
229	ChoNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$482	$1,324	$0	36%	$425	3.1	2.0	(1.1)	20	10%	-6%													1.00	0.22	5,483				0%	0.0	0.0	0.0	ChoN	304	gsd304	gsd	$0
230	ChoTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$482	$1,324	$0	36%	$425	3.1	2.0	(1.1)	20	10%	-6%													1.00	0.22	5,483				5%	0.6	0.0	3.2	ChoT	304	gsd304	gsd	$24
231	CinNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$894	$1,324	$0	67%	$218	6.1	2.0	(4.1)	20	10%	-21%													1.00	0.22	1,437				0%	0.0	0.0	0.0	CinN	304	gsd304	gsd	$0
232	CinTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$894	$1,324	$0	67%	$218	6.1	2.0	(4.1)	20	10%	-21%													1.00	0.22	1,437				25%	2.8	0.0	4.1	CinT	304	gsd304	gsd	$221
233	CloNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$593	$1,324	$0	45%	$370	3.6	2.0	(1.6)	20	10%	-8%													1.00	0.22	4,394				0%	0.0	0.0	0.0	CloN	304	gsd304	gsd	$0
234	CloTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$593	$1,324	$0	45%	$370	3.6	2.0	(1.6)	20	10%	-8%													1.00	0.22	4,394				1%	0.1	0.0	0.3	CloT	304	gsd304	gsd	$3
235	CmiNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$889	$1,324	$0	67%	$220	6.0	2.0	(4.0)	20	10%	-20%													1.00	0.22	1,486				0%	0.0	0.0	0.0	CmiN	304	gsd304	gsd	$0
236	CmiTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$889	$1,324	$0	67%	$220	6.0	2.0	(4.0)	20	10%	-20%													1.00	0.22	1,486				16%	1.8	0.0	2.7	CmiT	304	gsd304	gsd	$139

237	CofNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$735	$1,324	$0	56%	$298	4.4	2.0	(2.5)	20	10%	-12%							1.00	0.22	2,994				0%	0.0	0.0	0.0	CofN	304	gsd304	gsd	$0
238	CofTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$735	$1,324	$0	56%	$298	4.4	2.0	(2.5)	20	10%	-12%							1.00	0.22	2,994				8%	0.9	0.0	2.9	CofT	304	gsd304	gsd	$62
239	CreNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$601	$1,324	$0	45%	$365	3.6	2.0	(1.6)	20	10%	-8%							1.00	0.22	4,310				0%	0.0	0.0	0.0	CreN	304	gsd304	gsd	$0
240	CreTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$601	$1,324	$0	45%	$365	3.6	2.0	(1.6)	20	10%	-8%							1.00	0.22	4,310				0%	0.0	0.0	0.1	CreT	304	gsd304	gsd	$2
241	CrtNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$696	$1,324	$0	53%	$317	4.2	2.0	(2.2)	20	10%	-11%							1.00	0.22	3,378				0%	0.0	0.0	0.0	CrtN	304	gsd304	gsd	$0
242	CrtTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$696	$1,324	$0	53%	$317	4.2	2.0	(2.2)	20	10%	-11%							1.00	0.22	3,378				0%	0.0	0.0	0.0	CrtT	304	gsd304	gsd	$0
243	CscNgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$741	$1,324	$0	56%	$295	4.5	2.0	(2.5)	20	10%	-13%							1.00	0.22	2,937				0%	0.0	0.0	0.0	CscN	304	gsd304	gsd	$0
244	CscTgsd304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$741	$1,324	$0	56%	$295	4.5	2.0	(2.5)	20	10%	-13%							1.00	0.22	2,937				9%	1.0	0.0	3.1	CscT	304	gsd304	gsd	$67
245	CasNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$734	$1,324	$0	55%	$298	4.4	2.0	(2.5)	20	10%	-12%							1.00	0.22	2,660				0%	0.0	0.0	0.0	CasN	304	gsld304	gsld	$0
246	CasTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$734	$1,324	$0	55%	$298	4.4	2.0	(2.5)	20	10%	-12%							1.00	0.22	2,660				2%	0.2	0.0	0.7	CasT	304	gsld304	gsld	$16
247	CcoNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$707	$1,324	$0	53%	$312	4.2	2.0	(2.3)	20	10%	-11%							1.00	0.22	2,951				0%	0.0	0.0	0.0	CcoN	304	gsld304	gsld	$0
248	CcoTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$707	$1,324	$0	53%	$312	4.2	2.0	(2.3)	20	10%	-11%							1.00	0.22	2,951				0%	0.0	0.0	0.1	CcoT	304	gsld304	gsld	$3
249	CgrNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$844	$1,324	$0	64%	$243	5.4	2.0	(3.5)	20	10%	-17%							1.00	0.22	1,469				0%	0.0	0.0	0.0	CgrN	304	gsld304	gsld	$0
250	CgrTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$844	$1,324	$0	64%	$243	5.4	2.0	(3.5)	20	10%	-17%							1.00	0.22	1,469				0%	0.0	0.0	0.0	CgrT	304	gsld304	gsld	$0
251	CheNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$446	$1,324	$0	34%	$444	3.0	2.0	(1.0)	20	10%	-5%							1.00	0.22	5,788				0%	0.0	0.0	0.0	CheN	304	gsld304	gsld	$0
252	CheTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$446	$1,324	$0	34%	$444	3.0	2.0	(1.0)	20	10%	-5%							1.00	0.22	5,788				0%	0.0	0.0	0.0	CheT	304	gsld304	gsld	$0
253	ChoNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$474	$1,324	$0	36%	$430	3.1	2.0	(1.1)	20	10%	-6%							1.00	0.22	5,483				0%	0.0	0.0	0.0	ChoN	304	gsld304	gsld	$0
254	ChoTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$474	$1,324	$0	36%	$430	3.1	2.0	(1.1)	20	10%	-6%							1.00	0.22	5,483				2%	0.2	0.0	1.4	ChoT	304	gsld304	gsld	$10
255	CinNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$847	$1,324	$0	64%	$242	5.5	2.0	(3.5)	20	10%	-18%							1.00	0.22	1,437				0%	0.0	0.0	0.0	CinN	304	gsld304	gsld	$0
256	CinTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$847	$1,324	$0	64%	$242	5.5	2.0	(3.5)	20	10%	-18%							1.00	0.22	1,437				11%	1.2	0.0	1.8	CinT	304	gsld304	gsld	$90
257	CloNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$574	$1,324	$0	43%	$379	3.5	2.0	(1.5)	20	10%	-8%							1.00	0.22	4,394				0%	0.0	0.0	0.0	CloN	304	gsld304	gsld	$0
258	CloTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$574	$1,324	$0	43%	$379	3.5	2.0	(1.5)	20	10%	-8%							1.00	0.22	4,394				0%	0.0	0.0	0.1	CloT	304	gsld304	gsld	$1
259	CmiNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$842	$1,324	$0	64%	$244	5.4	2.0	(3.5)	20	10%	-17%							1.00	0.22	1,486				0%	0.0	0.0	0.0	CmiN	304	gsld304	gsld	$0
260	CmiTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$842	$1,324	$0	64%	$244	5.4	2.0	(3.5)	20	10%	-17%							1.00	0.22	1,486				7%	0.8	0.0	1.2	CmiT	304	gsld304	gsld	$57
261	CofNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$703	$1,324	$0	53%	$314	4.2	2.0	(2.2)	20	10%	-11%							1.00	0.22	2,994				0%	0.0	0.0	0.0	CofN	304	gsld304	gsld	$0
262	CofTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$703	$1,324	$0	53%	$314	4.2	2.0	(2.2)	20	10%	-11%							1.00	0.22	2,994				4%	0.4	0.0	1.3	CofT	304	gsld304	gsld	$25
263	CreNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$582	$1,324	$0	44%	$375	3.5	2.0	(1.6)	20	10%	-8%							1.00	0.22	4,310				0%	0.0	0.0	0.0	CreN	304	gsld304	gsld	$0
264	CreTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$582	$1,324	$0	44%	$375	3.5	2.0	(1.6)	20	10%	-8%							1.00	0.22	4,310				0%	0.0	0.0	0.1	CreT	304	gsld304	gsld	$1
265	CrtNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$668	$1,324	$0	50%	$332	4.0	2.0	(2.0)	20	10%	-10%							1.00	0.22	3,378				0%	0.0	0.0	0.0	CrtN	304	gsld304	gsld	$0
266	CrtTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$668	$1,324	$0	50%	$332	4.0	2.0	(2.0)	20	10%	-10%							1.00	0.22	3,378				0%	0.0	0.0	0.0	CrtT	304	gsld304	gsld	$0
267	CscNgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$708	$1,324	$0	54%	$311	4.3	2.0	(2.3)	20	10%	-11%							1.00	0.22	2,937				0%	0.0	0.0	0.0	CscN	304	gsld304	gsld	$0
268	CscTgsld304	304	High Efficiency Chiller (Water cooled-centrifugal, 200 ton	$708	$1,324	$0	54%	$311	4.3	2.0	(2.3)	20	10%	-11%							1.00	0.22	2,937				4%	0.4	0.0	1.3	CscT	304	gsld304	gsld	$28
269	CheEgs307	307	Facility Energy Management System	$43	$931	$0	5%	$449	2.1	2.0	(0.1)	15	13%	-1%	N	Incent % &	261	1.00	0.31	4,787	1.00	0.09	4,771	26.1	3.1	117		0.0	0.0	0.2	CheE	307	gs307	gs	$0
270	CheNgs307	307	Facility Energy Management System	$43	$931	$0	5%	$449	2.1	2.0	(0.1)	15	13%	-1%		Payback improve =					1.00	0.09	4,771	40.3	4.1	188		0.0	0.0	0.0	CheN	307	gs307	gs	$0
271	ChoEgs307	307	Facility Energy Management System	$61	$1,318	$0	5%	$636	2.1	2.0	(0.1)	15	13%	-1%							1.00	0.86	6,755			100%		0.2	0.1	1.2	ChoE	307	gs307	gs	$0
272	ChoNgs307	307	Facility Energy Management System	$61	$1,318	$0	5%	$636	2.1	2.0	(0.1)	15	13%	-1%							1.00	0.86	6,755			$592		0.0	0.0	0.0	ChoN	307	gs307	gs	$0
273	CloEgs307	307	Facility Energy Management System	$612	$1,325	$0	46%	$361	3.7	2.0	(1.7)	15	13%	-11%							1.00	0.46	3,832				0%	0.0	0.0	0.1	CloE	307	gs307	gs	$1
274	CloNgs307	307	Facility Energy Management System	$612	$1,325	$0	46%	$361	3.7	2.0	(1.7)	15	13%	-11%							1.00	0.46	3,832				0%	0.0	0.0	0.0	CloN	307	gs307	gs	$0
275	CmiEgs307	307	Facility Energy Management System	$324	$1,212	$0	27%	$449	2.7	2.0	(0.7)	15	13%	-5%							1.00	0.09	4,771					3.3	0.2	15.5	CmiE	307	gs307	gs	$0
276	CmiNgs307	307	Facility Energy Management System	$324	$1,212	$0	27%	$449	2.7	2.0	(0.7)	15	13%	-5%							1.00	0.09	4,771					0.0	0.0	0.2	CmiN	307	gs307	gs	$0
277	CofEgs307	307	Facility Energy Management System	$14	$902	$0	2%	$449	2.0	2.0	(0.0)	15	13%	0%							1.00	0.09	4,771					0.6	0.0	2.7	CofE	307	gs307	gs	$0
278	CofNgs307	307	Facility Energy Management System	$14	$902	$0	2%	$449	2.0	2.0	(0.0)	15	13%	0%							1.00	0.09	4,771					0.0	0.0	0.0	CofN	307	gs307	gs	$0
279	CrtEgs307	307	Facility Energy Management System	$918	$1,631	$0	56%	$361	4.5	2.0	(2.5)	15	13%	-17%							1.00	0.46	3,832				4%	1.1	0.3	4.0	CrtE	307	gs307	gs	$37
280	CrtNgs307	307	Facility Energy Management System	$918	$1,631	$0	56%	$361	4.5	2.0	(2.5)	15	13%	-17%							1.00	0.46	3,832				0%	0.0	0.0	0.1	CrtN	307	gs307	gs	$1
281	CheEgsd307	307	Facility Energy Management System	$175	$931	$0	19%	$382	2.4	2.0	(0.5)	15	13%	-3%							1.00	0.09	4,771					0.1	0.0	0.6	CheE	307	gsd307	gsd	$0
282	CheNgsd307	307	Facility Energy Management System	$175	$931	$0	19%	$382	2.4	2.0	(0.5)	15	13%	-3%							1.00	0.09	4,771					0.0	0.0	0.1	CheN	307	gsd307	gsd	$0
283	ChoEgsd307	307	Facility Energy Management System	$360	$1,318	$0	27%	$484	2.7	2.0	(0.7)	15	13%	-5%							1.00	0.86	6,755					0.7	0.2	4.8	ChoE	307	gsd307	gsd	$0
284	ChoNgsd307	307	Facility Energy Management System	$360	$1,318	$0	27%	$484	2.7	2.0	(0.7)	15	13%	-5%							1.00	0.86	6,755					0.0	0.0	0.0	ChoN	307	gsd307	gsd	$0
285	CinEgsd307	307	Facility Energy Management System	$70	$826	$0	8%	$382	2.2	2.0	(0.2)	15	13%	-1%							1.00	0.09	4,771					4.0	0.2	19.0	CinE	307	gsd307	gsd	$0
286	CinNgsd307	307	Facility Energy Management System	$70	$826	$0	8%	$382	2.2	2.0	(0.2)	15	13%	-1%							1.00	0.09	4,771					0.0	0.0	0.1	CinN	307	gsd307	gsd	$0
287	CloEgsd307	307	Facility Energy Management System	$664	$1,325	$0	50%	$334	4.0	2.0	(2.0)	15	13%	-13%							1.00	0.46	3,832				0%	0.1	0.0	0.5	CloE	307	gsd307	gsd	$3
288	CloNgsd307	307	Facility Energy Management System	$664	$1,325	$0	50%	$334	4.0	2.0	(2.0)	15	13%	-13%							1.00	0.46	3,832				0%	0.0	0.0	0.0	CloN	307	gsd307	gsd	$0
289	CmiEgsd307	307	Facility Energy Management System	$456	$1,212	$0	38%	$382	3.2	2.0	(1.2)	15	13%	-8%							1.00	0.09	4,771				50%	13.1	0.9	62.1	CmiE	307	gsd307	gsd	$229
290	CmiNgsd307	307	Facility Energy Management System	$456	$1,212	$0	38%	$382	3.2	2.0	(1.2)	15	13%	-8%							1.00	0.09	4,771				1%	0.2	0.0	0.7	CmiN	307	gsd307	gsd	$3
291	CofEgsd307	307	Facility Energy Management System	$146	$902	$0	16%	$382	2.4	2.0	(0.4)	15	13%	-3%							1.00	0.09	4,771					2.2	0.1	11.0	CofE	307	gsd307	gsd	$0
292	CofNgsd307	307	Facility Energy Management System	$146	$902	$0	16%	$382	2.4	2.0	(0.4)	15	13%	-3%							1.00	0.09	4,771					0.0	0.0	0.1	CofN	307	gsd307	gsd	$0
293	CrtEgsd307	307	Facility Energy Management System	$971	$1,631	$0	60%	$334	4.9	2.0	(2.9)	15	13%	-19%							1.00	0.46	3,832				16%	4.2	1.0	16.1	CrtE	307	gsd307	gsd	$157
294	CrtNgsd307	307	Facility Energy Management System	$971	$1,631	$0	60%	$334	4.9	2.0	(2.9)	15	13%	-19%							1.00	0.46	3,832				0%	0.1	0.0	0.2	CrtN	307	gsd307	gsd	$2
295	CheEgsld307	307	Facility Energy Management System	$163	$931	$0	17%	$388	2.4	2.0	(0.4)	15	13%	-3%							1.00	0.09	4,771					0.1	0.0	0.3	CheE	307	gsld307	gsld	$0
296	CheNgsld307	307	Facility Energy Management System	$163	$931	$0	17%	$388	2.4	2.0	(0.4)	15	13%	-3%							1.00	0.09	4,771					0.0	0.0	0.0	CheN	307	gsld307	gsld	$0
297	ChoEgsld307	307	Facility Energy Management System	$367	$1,318	$0	28%	$480	2.7	2.0	(0.8)	15	13%	-5%							1.00	0.86	6,755					0.3	0.1	2.0	ChoE	307	gsld307	gsld	$0
298	ChoNgsld307	307	Facility Energy Management System	$367	$1,318	$0	28%	$480	2.7	2.0	(0.8)	15	13%	-5%							1.00	0.86	6,755					0.0	0.0	0.0	ChoN	307	gsld307	gsld	$0
299	CinEgsld307	307	Facility Energy Management System	$57	$826	$0	7%	$388	2.1	2.0	(0.1)	15	13%	-1%							1.00	0.09	4,771					1.7	0.1	7.9	CinE	307	gsld307	gsld	$0
300	CinNgsld307	307	Facility Energy Management System	$57	$826	$0	7%	$388	2.1	2.0	(0.1)	15	13%	-1%							1.00	0.09	4,771					0.0	0.0	0.0	CinN	307	gsld307	gsld	$0
301	CloEgsld307	307	Facility Energy Management System	$643	$1,325	$0	49%	$345	3.8	2.0	(1.9)	15	13%	-12%							1.00	0.46	3,832				0%	0.1	0.0	0.2	CloE	307	gsld307	gsld	$1
302	CloNgsld307	307	Facility Energy Management System	$643	$1,325	$0	49%	$345	3.8	2.0	(1.9)	15	13%	-12%							1.00	0.46	3,832				0%	0.0	0.0	0.0	CloN	307	gsld307	gsld	$0
303	CmiEgsld307	307	Facility Energy Management System	$444	$1,212	$0	37%	$388	3.1	2.0	(1.1)	15	13%	-8%							1.00	0.09	4,771				21%	5.5	0.4	25.9	CmiE	307	gsld307	gsld	$93
304	CmiNgsld307	307	Facility Energy Management System	$444	$1,212	$0	37%	$388	3.1	2.0	(1.1)	15	13%	-8%							1.00	0.09	4,771				0%	0.1	0.0	0.3	CmiN	307	gsld307	gsld	$1
305	CofEgsld307	307	Facility Energy Management System	$134	$902	$0	15%	$388	2.3	2.0	(0.3)	15	13%	-2%							1.00	0.09	4,771					0.9	0.0	4.6	CofE	307	gsld307	gsld	$0
306	CofNgsld307	307	Facility Energy Management System	$134	$902	$0	15%	$388	2.3	2.0	(0.3)	15	13%	-2%							1.00	0.09	4,771					0.0	0.0	0.0	CofN	307	gsld307	gsld	$0
307	CrtEgsld307	307	Facility Energy Management System	$950	$1,631	$0	58%	$345	4.7	2.0	(2.8)	15	13%	-18%							1.00	0.46	3,832				7%	1.8	0.4	6.7	CrtE	307	gsld307	gsld	$64
308	CrtNgsld307	307	Facility Energy Management System	$950	$1,631	$0	58%	$345	4.7	2.0	(2.8)	15	13%	-18%							1.00	0.46	3,832				0%	0.0	0.0	0.1	CrtN	307	gsld307	gsld	$1
309	CheEgs309	309	Programmable Thermostat	$558	$1,025	$0	54%	$236	4.3	2.0	(2.4)	11	18%	-22%	N	All AP market	0	1.00	2.23	2,506	1.00	2.23	2,506	0.0	0.0	0		0.0	0.0	0.0	CheE	309	gs309	gs	
310	CheNgs309	309	Programmable Thermostat	$558	$1,025	$0	54%	$236	4.3	2.0	(2.4)	11	18%	-22%		potential taken by					1.00	2.23	2,506					0.0	0.0	0.0	CheN	309	gs309	gs	
311	ChoEgs309	309	Programmable Thermostat	$505	$972	$0	52%	$236	4.1	2.0	(2.1)	11	18%	-19%		Smart Thermostats					1.00	2.23	2,506					0.0	0.0	0.0	ChoE	309	gs309	gs	
312	ChoNgs309	309	Programmable Thermostat	$505	$972	$0	52%	$236	4.1	2.0	(2.1)	11	18%	-19%							1.00	2.23	2,506					0.0	0.0	0.0	ChoN	309	gs309	gs	
313	CinEgs309	309	Programmable Thermostat	$420	$886	$0	47%	$236	3.8	2.0	(1.8)	11	18%	-16%							1.00	2.23	2,506					0.0	0.0	0.0	CinE	309	gs309	gs	
314	CinNgs309	309	Programmable Thermostat	$420	$886	$0	47%	$236	3.8	2.0	(1.8)	11	18%	-16%							1.00	2.23	2,506					0.0	0.0	0.0	CinN	309	gs309	gs	
315	CmiEgs309	309	Programmable Thermostat	$797	$1,263	$0	63%	$236	5.4	2.0	(3.4)	11	18%	-31%							1.00	2.23	2,506					0.0	0.0	0.0	CmiE	309	gs309	gs	
316	CmiNgs309	309	Programmable Thermostat	$797	$1,263	$0	63%	$236	5.4	2.0	(3.4)	11	18%	-31%							1.00	2.23	2,506					0.0	0.0	0.0	CmiN	309	gs309	gs	
317	CofEgs309	309	Programmable Thermostat	$485	$951	$0	51%	$236	4.0	2.0	(2.1)	11	18%	-19%							1.00	2.23	2,506					0.0	0.0	0.0	CofE	309	gs309	gs	
318	CofNgs309	309	Programmable Thermostat	$485	$951	$0	51%	$236	4.0	2.0	(2.1)	11	18%	-19%							1.00	2.23	2,506					0.0	0.0	0.0	CofN	309	gs309	gs	
319	CreEgs309	309	Programmable Thermostat	$38	$505	$0	8%	$236	2.1	2.0	(0.2)	11	18%	-1%							1.00	2.23	2,506					0.0	0.0	0.0	CreE	309	gs309	gs	
320	CreNgs309	309	Programmable Thermostat	$38	$505	$0	8%	$236	2.1	2.0	(0.2)	11	18%	-1%							1.00	2.23	2,506					0.0	0.0	0.0	CreN	309	gs309	gs	
321	CheEgsd309	309	Programmable Thermostat	$499	$1,025	$0	49%	$266	3.9	2.0	(1.9)	11	18%	-17%							1.00	2.23	2,506					0.0	0.0	0.0	CheE	309	gsd309	gsd	
322	CheNgsd309	309	Programmable Thermostat	$499	$1,025	$0	49%	$266	3.9	2.0	(1.9)	11	18%	-17%							1.00	2.23	2,506					0.0	0.0	0.0	CheN	309	gsd309	gsd	
323	ChoEgsd309	309	Programmable Thermostat	$446	$972	$0	46%	$266	3.7	2.0	(1.7)	11	18%	-15%							1.00	2.23	2,506					0.0	0.0	0.0	ChoE	309	gsd309	gsd	
324	ChoNgsd309	309	Programmable Thermostat	$446	$972	$0	46%	$266	3.7	2.0	(1.7)	11	18%	-15%							1.00	2.23	2,506					0.0	0.0	0.0	ChoN	309	gsd309	gsd	
325	CinEgsd309	309	Programmable Thermostat	$361	$886	$0	41%	$266	3.3	2.0	(1.4)	11	18%	-12%							1.00	2.23	2,506					0.0	0.0	0.0	CinE	309	gsd309	gsd	
326	CinNgsd309	309	Programmable Thermostat	$361	$886	$0	41%	$266	3.3	2.0	(1.4)	11	18%	-12%							1.00	2.23	2,506					0.0	0.0	0.0	CinN	309	gsd309	gsd	
327	CmiEgsd309	309	Programmable Thermostat	$738	$1,263	$0	58%	$266	4.8	2.0	(2.8)	11	18%	-25%							1.00	2.23	2,506					0.0	0.0	0.0	CmiE	309	gsd309	gsd	
328	CmiNgsd309	309	Programmable Thermostat	$738	$1,263	$0	58%	$266	4.8	2.0	(2.8)	11	18%	-25%							1.00	2.23	2,506					0.0	0.0	0.0	CmiN	309	gsd309	gsd	
329	CofEgsd309	309	Programmable Thermostat	$425	$951	$0	45%	$266	3.6	2.0	(1.6)	11	18%	-15%							1.00	2.23	2,506					0.0	0.0	0.0	CofE	309	gsd309	gsd	
330	CofNgsd309	309	Programmable Thermostat	$425	$951	$0	45%	$266	3.6	2.0	(1.6)	11	18%	-15%							1.00	2.23	2,506					0.0	0.0	0.0	CofN	309	gsd309	gsd	
331	CheEgsld309	309	Programmable Thermostat	$465	$1,025	$0	45%	$283	3.6	2.0	(1.6)	11	18%	-15%							1.00	2.23	2,506					0.0	0.0	0.0	CheE	309	gsld309	gsld	
332	CheNgsld309	309	Programmable Thermostat	$465	$1,025	$0	45%	$283	3.6	2.0	(1.6)	11	18%	-15%							1.00	2.23	2,506					0.0	0.0	0.0	CheN	309	gsld309	gsld	
333	ChoEgsld309	309	Programmable Thermostat	$412	$972	$0	42%	$283	3.4	2.0	(1.5)	11	18%	-13%							1.00	2.23	2,506					0.0	0.0	0.0	ChoE	309	gsld309	gsld	
334	ChoNgsld309	309	Programmable Thermostat	$412	$972	$0	42%	$283	3.4	2.0	(1.5)	11	18%	-13%							1.00	2.23	2,506					0.0	0.0	0.0	ChoN	309	gsld309	gsld	
335	CinEgsld309	309	Programmable Thermostat	$327	$886	$0	37%	$283	3.1	2.0	(1.2)	11	18%	-10%							1.00	2.23	2,506					0.0	0.0	0.0	CinE	309	gsld309	gsld	
336	CinNgsld309	309	Programmable Thermostat	$327	$886	$0	37%	$283	3.1	2.0	(1.2)	11	18%	-10%							1.00	2.23	2,506					0.0	0.0	0.0	CinN	309	gsld309	gsld	
337	CmiEgsld309	309	Programmable Thermostat	$704	$1,263	$0	56%	$283	4.5	2.0	(2.5)	11	18%	-23%							1.00	2.23	2,506					0.0	0.0	0.0	CmiE	309	gsld309	gsld	
338	CmiNgsld309	309	Programmable Thermostat	$704	$1,263	$0	56%	$283	4.5	2.0	(2.5)	11	18%	-23%							1.00	2.23	2,506					0.0	0.0	0.0	CmiN	309	gsld309	gsld	
339	CofEgsld309	309	Programmable Thermostat	$392	$951	$0	41%	$283	3.4	2.0	(1.4)	11	18%	-13%							1.00	2.23	2,506					0.0	0.0	0.0	CofE	309	gsld309	gsld	
340	CofNgsld309	309	Programmable Thermostat	$392	$951	$0	41%	$283	3.4	2.0	(1.4)	11	18%	-13%							1.00	2.23	2,506					0.0	0.0	0.0	CofN	309	gsld309	gsld	
341	CcoEgs310	310	Smart Thermostat (EE Only)	$992	$1,458	$0	68%	$236	6.2	2.0	(4.2)	11	18%	-38%	N	Incent % &	162	1.00	2.23	2,506	1.00	2.23	2,506	32.5	2.8	83	0%	0.1	0.0	0.3	CcoE	310	gs310	gs	$4
342	CcoNgs310	310	Smart Thermostat (EE Only)	$992	$1,458	$0	68%	$236	6.2	2.0	(4.2)	11	18%	-38%		Payback improve =					1.00	2.23	2,506			100%	0%	0.0	0.0	0.0	CcoN	310	gs310	gs	$0
343	CheEgs310	310	Smart Thermostat (EE Only)	$111	$578	$0	19%	$236	2.4	2.0	(0.5)	11	18%	-4%		5% market penetr.					1.00	2.23	2,506			$730		1.5	0.0	3.7	CheE	310	gs310	gs	$0
344	CheNgs310	310	Smart Thermostat (EE Only)	$111	$578	$0	19%	$236	2.4	2.0	(0.5)	11	18%	-4%		by 2029 (res in					1.00	2.23	2,506					0.0	0.0	0.0	CheN	310	gs310	gs	$0
345	ChoEgs310	310	Smart Thermostat (EE Only)	$81	$548	$0	15%	$236	2.3	2.0	(0.3)	11	18%	-3%		territory = ~8% in					1.00	2.23	2,506					0.9	0.0	2.2	ChoE	310	gs310	gs	$0
346	ChoNgs310	310	Smart Thermostat (EE Only)	$81	$548	$0	15%	$236	2.3	2.0	(0.3)	11	18%	-3%		~10 yrs) & FPL res.					1.00	2.23	2,506					0.0	0.0	0.0	ChoN	310	gs310	gs	$0
347	CinEgs310	310	Smart Thermostat (EE Only)	$33	$500	$0	7%	$236	2.1	2.0	(0.1)	11	18%	-1%							1.00	2.23	2,506					2.8	0.1	7.0	CinE	310	gs310	gs	$0
348	CinNgs310	310	Smart Thermostat (EE Only)	$33	$500	$0	7%	$236	2.1	2.0	(0.1)	11	18%	-1%							1.00	2.23	2,506					0.0	0.0	0.1	CinN	310	gs310	gs	$0
349	CloEgs310	310	Smart Thermostat (EE Only)	$501	$967	$0	52%	$236	4.1	2.0	(2.1)	11	18%	-19%							1.00	2.23	2,506				3%	0.9	0.1	2.2	CloE	310	gs310	gs	$13
350	CloNgs310	310	Smart Thermostat (EE Only)	$501	$967	$0	52%	$236	4.1	2.0	(2.1)	11	18%	-19%							1.00	2.23	2,506				0%	0.0	0.0	0.0	CloN	310	gs310	gs	$0
351	CmiEgs310	310	Smart Thermostat (EE Only)	$246	$712	$0	35%	$236	3.0	2.0	(1.0)	11	18%	-9%							1.00	2.23	2,506				6%	1.9	0.2	4.9	CmiE	310	gs310	gs	$14
352	CmiNgs310	310	Smart Thermostat (EE Only)	$246	$712	$0	35%	$236	3.0	2.0	(1.0)	11	18%	-9%							1.00	2.23	2,506				0%	0.0	0.0	0.1	CmiN	310	gs310	gs	$0
353	CofEgs310	310	Smart Thermostat (EE Only)	$70	$536	$0	13%	$236	2.3	2.0	(0.3)	11	18%	-3%							1.00	2.23	2,506					3.3	0.8	9.0	CofE	310	gs310	gs	$0
354	CofNgs310	310	Smart Thermostat (EE Only)	$70	$536	$0	13%	$236	2.3	2.0	(0.3)	11	18%	-3%							1.00	2.23	2,506					0.0	0.0	0.1	CofN	310	gs310	gs	$0
355	CrtEgs310	310	Smart Thermostat (EE Only)	$837	$1,303	$0	64%	$236	5.5	2.0	(3.5)	11	18%	-32%							1.00	2.23	2,506				7%	2.4	0.2	6.1	CrtE	310	gs310	gs	$62
356	CrtNgs310	310	Smart Thermostat (EE Only)	$837	$1,303	$0	64%	$236	5.5	2.0	(3.5)	11	18%	-32%							1.00	2.23	2,506				0%	0.0	0.0	0.1	CrtN	310	gs310	gs	$1
357	CscEgs310	310	Smart Thermostat (EE Only)	$998	$1,465	$0	68%	$236	6.2	2.0	(4.2)	11	18%	-38%							1.00	2.23	2,506				4%	1.2	0.1	3.0	CscE	310	gs310	gs	$36
358	CscNgs310	310	Smart Thermostat (EE Only)	$998	$1,465	$0	68%	$236	6.2	2.0	(4.2)	11	18%	-38%							1.00	2.23	2,506				0%	0.0	0.0	0.0	CscN	310	gs310	gs	$0
359	CcoEgsd310	310	Smart Thermostat (EE Only)	$933	$1,458	$0	64%	$266	5.5	2.0	(3.5)	11	18%	-32%							1.00	2.23	2,506				1%	0.5	0.0	1.2	CcoE	310	gsd310	gsd	$14

360	CcoNgsd310	310	Smart Thermostat (EE Only)	$933	$1,458	$0	64%	$266	5.5	2.0	(3.5)	11	18%	-32%													1.00	2.23	2,506				0%	0.0	0.0	0.0	CcoN	310	gsd310	gsd	$0
361	CheEgsd310	310	Smart Thermostat (EE Only)	$52	$578	$0	9%	$266	2.2	2.0	(0.2)	11	18%	-2%													1.00	2.23	2,506					5.8	0.2	14.6	CheE	310	gsd310	gsd	$0
362	CheNgsd310	310	Smart Thermostat (EE Only)	$52	$578	$0	9%	$266	2.2	2.0	(0.2)	11	18%	-2%													1.00	2.23	2,506					[illegible]	[illegible]	[illegible]	CheN	310	gsd310	gsd	$0
363	ChoEgsd310	310	Smart Thermostat (EE Only)	$22	$548	$0	4%	$266	2.1	2.0	(0.1)	11	18%	-1%													1.00	2.23	2,506					3.6	0.0	9.0	ChoE	310	gsd310	gsd	$0
364	ChoNgsd310	310	Smart Thermostat (EE Only)	$22	$548	$0	4%	$266	2.1	2.0	(0.1)	11	18%	-1%													1.00	2.23	2,506					0.0	0.0	[illegible]	ChoN	310	gsd310	gsd	$0
365	CloEgsd310	310	Smart Thermostat (EE Only)	$442	$967	$0	46%	$266	3.6	2.0	(1.7)	11	18%	-15%													1.00	2.23	2,506				11%	3.4	0.4	8.9	CloE	310	gsd310	gsd	$47
366	CloNgsd310	310	Smart Thermostat (EE Only)	$442	$967	$0	46%	$266	3.6	2.0	(1.7)	11	18%	-15%													1.00	2.23	2,506				0%	0.0	0.0	0.0	CloN	310	gsd310	gsd	$0
367	CmiEgsd310	310	Smart Thermostat (EE Only)	$186	$712	$0	26%	$266	2.7	2.0	(0.7)	11	18%	-6%													1.00	2.23	2,506					7.5	0.7	19.5	CmiE	310	gsd310	gsd	$0
368	CmiNgsd310	310	Smart Thermostat (EE Only)	$186	$712	$0	26%	$266	2.7	2.0	(0.7)	11	18%	-6%													1.00	2.23	2,506					0.1	0.0	0.2	CmiN	310	gsd310	gsd	$0
369	CofEgsd310	310	Smart Thermostat (EE Only)	$10	$536	$0	2%	$266	2.0	2.0	(0.0)	11	18%	0%													1.00	2.23	2,506					13.2	3.1	36.0	CofE	310	gsd310	gsd	$0
370	CofNgsd310	310	Smart Thermostat (EE Only)	$10	$536	$0	2%	$266	2.0	2.0	(0.0)	11	18%	0%													1.00	2.23	2,506					0.1	0.0	0.4	CofN	310	gsd310	gsd	$0
371	CrtEgsd310	310	Smart Thermostat (EE Only)	$777	$1,303	$0	60%	$266	4.9	2.0	(2.9)	11	18%	-27%													1.00	2.23	2,506				30%	9.6	0.7	24.6	CrtE	310	gsd310	gsd	$231
372	CrtNgsd310	310	Smart Thermostat (EE Only)	$777	$1,303	$0	60%	$266	4.9	2.0	(2.9)	11	18%	-27%													1.00	2.23	2,506				0%	0.1	0.0	0.2	CrtN	310	gsd310	gsd	$2
373	CscEgsd310	310	Smart Thermostat (EE Only)	$939	$1,465	$0	64%	$266	5.5	2.0	(3.5)	11	18%	-32%													1.00	2.23	2,506				14%	4.7	0.4	12.1	CscE	310	gsd310	gsd	$136
374	CscNgsd310	310	Smart Thermostat (EE Only)	$939	$1,465	$0	64%	$266	5.5	2.0	(3.5)	11	18%	-32%													1.00	2.23	2,506				0%	0.0	0.0	0.0	CscN	310	gsd310	gsd	$0
375	CcoEgsld310	310	Smart Thermostat (EE Only)	$899	$1,458	$0	62%	$283	5.2	2.0	(3.2)	11	18%	-29%													1.00	2.23	2,506				1%	0.2	0.0	0.5	CcoE	310	gsld310	gsld	$6
376	CcoNgsld310	310	Smart Thermostat (EE Only)	$899	$1,458	$0	62%	$283	5.2	2.0	(3.2)	11	18%	-29%													1.00	2.23	2,506				0%	0.0	0.0	0.0	CcoN	310	gsld310	gsld	$0
377	CheEgsld310	310	Smart Thermostat (EE Only)	$18	$578	$0	3%	$283	2.0	2.0	(0.1)	11	18%	-1%													1.00	2.23	2,506					2.4	0.1	6.1	CheE	310	gsld310	gsld	$0
378	CheNgsld310	310	Smart Thermostat (EE Only)	$18	$578	$0	3%	$283	2.0	2.0	(0.1)	11	18%	-1%													1.00	2.23	2,506					0.0	0.0	0.0	CheN	310	gsld310	gsld	$0
379	CloEgsld310	310	Smart Thermostat (EE Only)	$408	$967	$0	42%	$283	3.4	2.0	(1.4)	11	18%	-13%													1.00	2.23	2,506				4%	1.4	0.2	3.7	CloE	310	gsld310	gsld	$18
380	CloNgsld310	310	Smart Thermostat (EE Only)	$408	$967	$0	42%	$283	3.4	2.0	(1.4)	11	18%	-13%													1.00	2.23	2,506				0%	0.0	0.0	0.0	CloN	310	gsld310	gsld	$0
381	CmiEgsld310	310	Smart Thermostat (EE Only)	$153	$712	$0	21%	$283	2.5	2.0	(0.5)	11	18%	-5%													1.00	2.23	2,506					3.1	0.3	8.1	CmiE	310	gsld310	gsld	$0
382	CmiNgsld310	310	Smart Thermostat (EE Only)	$153	$712	$0	21%	$283	2.5	2.0	(0.5)	11	18%	-5%													1.00	2.23	2,506					0.0	0.0	0.1	CmiN	310	gsld310	gsld	$0
383	CrtEgsld310	310	Smart Thermostat (EE Only)	$744	$1,303	$0	57%	$283	4.6	2.0	(2.6)	11	18%	-24%													1.00	2.23	2,506				12%	4.0	0.3	10.2	CrtE	310	gsld310	gsld	$92
384	CrtNgsld310	310	Smart Thermostat (EE Only)	$744	$1,303	$0	57%	$283	4.6	2.0	(2.6)	11	18%	-24%													1.00	2.23	2,506				0%	0.0	0.0	0.1	CrtN	310	gsld310	gsld	$1
385	CscEgsld310	310	Smart Thermostat (EE Only)	$905	$1,465	$0	62%	$283	5.2	2.0	(3.2)	11	18%	-29%													1.00	2.23	2,506				6%	2.0	0.2	5.0	CscE	310	gsld310	gsld	$55
386	CscNgsld310	310	Smart Thermostat (EE Only)	$905	$1,465	$0	62%	$283	5.2	2.0	(3.2)	11	18%	-29%													1.00	2.23	2,506				0%	0.0	0.0	0.0	CscN	310	gsld310	gsld	$0
387	CheNgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$887	$1,217	$0	73%	$167	7.3	2.0	(5.3)	15	13%	-35%	E	2.5x current	$165	$823	399%	1.5	0.0	5	3,649	1.00	0.00	1,530	1.00	0.00	1,774	29.9	0.0	46		0.0	0.0	0.0	CheN	311	gs311	gs	
388	CheTgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$887	$1,217	$0	73%	$167	7.3	2.0	(5.3)	15	13%	-35%		participation level											1.00	0.00	1,774					1.7	0.0	3.1	CheT	311	gs311	gs	
389	ChoNgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$904	$1,217	$0	74%	$158	7.7	2.0	(5.7)	15	13%	-38%													1.00	0.00	1,680					0.0	0.0	0.0	ChoN	311	gs311	gs	
390	ChoTgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$904	$1,217	$0	74%	$158	7.7	2.0	(5.7)	15	13%	-38%													1.00	0.00	1,680					0.5	0.0	0.8	ChoT	311	gs311	gs	
391	CloNgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$966	$1,217	$0	79%	$127	9.6	2.0	(7.6)	15	13%	-51%													1.00	0.00	1,346					0.0	0.0	0.0	CloN	311	gs311	gs	
392	CloTgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$966	$1,217	$0	79%	$127	9.6	2.0	(7.6)	15	13%	-51%													1.00	0.00	1,346					0.5	0.0	0.7	CloT	311	gs311	gs	
393	CreNgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$971	$1,217	$0	80%	$124	9.8	2.0	(7.8)	15	13%	-52%													1.00	0.00	1,321					0.0	0.0	0.0	CreN	311	gs311	gs	
394	CreTgs311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$971	$1,217	$0	80%	$124	9.8	2.0	(7.8)	15	13%	-52%													1.00	0.00	1,321					2.5	0.0	3.5	CreT	311	gs311	gs	
395	CheNgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$766	$1,217	$0	63%	$228	5.3	2.0	(3.4)	15	13%	-22%													1.00	0.00	1,774					0.1	0.0	0.1	CheN	311	gsd311	gsd	
396	CheTgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$766	$1,217	$0	63%	$228	5.3	2.0	(3.4)	15	13%	-22%													1.00	0.00	1,774					6.9	0.0	12.2	CheT	311	gsd311	gsd	
397	ChoNgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$775	$1,217	$0	64%	$223	5.4	2.0	(3.5)	15	13%	-23%													1.00	0.00	1,680					0.0	0.0	0.0	ChoN	311	gsd311	gsd	
398	ChoTgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$775	$1,217	$0	64%	$223	5.4	2.0	(3.5)	15	13%	-23%													1.00	0.00	1,680					1.9	0.0	3.1	ChoT	311	gsd311	gsd	
399	CloNgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$809	$1,217	$0	66%	$206	5.9	2.0	(3.9)	15	13%	-26%													1.00	0.00	1,346					0.0	0.0	0.0	CloN	311	gsd311	gsd	
400	CloTgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$809	$1,217	$0	66%	$206	5.9	2.0	(3.9)	15	13%	-26%													1.00	0.00	1,346					1.9	0.0	2.7	CloT	311	gsd311	gsd	
401	CreNgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$812	$1,217	$0	67%	$205	5.9	2.0	(4.0)	15	13%	-26%													1.00	0.00	1,321					0.1	0.0	0.1	CreN	311	gsd311	gsd	
402	CreTgsd311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$812	$1,217	$0	67%	$205	5.9	2.0	(4.0)	15	13%	-26%													1.00	0.00	1,321					10.1	0.0	13.9	CreT	311	gsd311	gsd	
403	CheNgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$725	$1,217	$0	60%	$249	4.9	2.0	(2.9)	15	13%	-19%													1.00	0.00	1,774					0.0	0.0	0.0	CheN	311	gsld311	gsld	
404	CheTgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$725	$1,217	$0	60%	$249	4.9	2.0	(2.9)	15	13%	-19%													1.00	0.00	1,774					2.9	0.0	5.1	CheT	311	gsld311	gsld	
405	ChoNgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$733	$1,217	$0	60%	$245	5.0	2.0	(3.0)	15	13%	-20%													1.00	0.00	1,680					0.0	0.0	0.0	ChoN	311	gsld311	gsld	
406	ChoTgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$733	$1,217	$0	60%	$245	5.0	2.0	(3.0)	15	13%	-20%													1.00	0.00	1,680					0.8	0.0	1.3	ChoT	311	gsld311	gsld	
407	CloNgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$764	$1,217	$0	63%	$229	5.3	2.0	(3.3)	15	13%	-22%													1.00	0.00	1,346					0.0	0.0	0.0	CloN	311	gsld311	gsld	
408	CloTgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$764	$1,217	$0	63%	$229	5.3	2.0	(3.3)	15	13%	-22%													1.00	0.00	1,346					0.8	0.0	1.1	CloT	311	gsld311	gsld	
409	CreNgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$767	$1,217	$0	63%	$228	5.3	2.0	(3.4)	15	13%	-22%													1.00	0.00	1,321					0.0	0.0	0.0	CreN	311	gsld311	gsld	
410	CreTgsld311	311	High Efficiency DX, >135k and <240k Btu/h Elect Heat	$767	$1,217	$0	63%	$228	5.3	2.0	(3.4)	15	13%	-22%													1.00	0.00	1,321					4.2	0.0	5.8	CreT	311	gsld311	gsld	
411	CcoEgs312	312	HVAC tune-up	$142	$635	$0	22%	$249	2.5	2.0	(0.6)	5	40%	-11%	N	Zero - <1 year							0	1.00	0.28	3,602	1.00	0.34	2,646	0.0	0.0	0		0.0	0.0	0.0	CcoE	312	gs312	gs	
412	CcoNgs312	312	HVAC tune-up	$142	$635	$0	22%	$249	2.5	2.0	(0.6)	5	40%	-11%		payback improve											1.00	0.34	2,646					0.0	0.0	0.0	CcoN	312	gs312	gs	
413	CcoEgsd312	312	HVAC tune-up	$81	$635	$0	13%	$280	2.3	2.0	(0.3)	5	40%	-6%													1.00	0.34	2,646					0.0	0.0	0.0	CcoE	312	gsd312	gsd	
414	CcoNgsd312	312	HVAC tune-up	$81	$635	$0	13%	$280	2.3	2.0	(0.3)	5	40%	-6%													1.00	0.34	2,646					0.0	0.0	0.0	CcoN	312	gsd312	gsd	
415	CreEgsd312	312	HVAC tune-up	$31	$827	$0	4%	$403	2.1	2.0	(0.1)	5	40%	-2%													1.00	0.18	5,037					0.0	0.0	0.0	CreE	312	gsd312	gsd	
416	CreNgsd312	312	HVAC tune-up	$31	$827	$0	4%	$403	2.1	2.0	(0.1)	5	40%	-2%													1.00	0.18	5,037					0.0	0.0	0.0	CreN	312	gsd312	gsd	
417	CcoEgsld312	312	HVAC tune-up	$46	$635	$0	7%	$298	2.1	2.0	(0.2)	5	40%	-3%													1.00	0.34	2,646					0.0	0.0	0.0	CcoE	312	gsld312	gsld	
418	CcoNgsld312	312	HVAC tune-up	$46	$635	$0	7%	$298	2.1	2.0	(0.2)	5	40%	-3%													1.00	0.34	2,646					0.0	0.0	0.0	CcoN	312	gsld312	gsld	
419	CreEgsld312	312	HVAC tune-up	$18	$827	$0	2%	$409	2.0	2.0	(0.0)	5	40%	-1%													1.00	0.18	5,037					0.0	0.0	0.0	CreE	312	gsld312	gsld	
420	CreNgsld312	312	HVAC tune-up	$18	$827	$0	2%	$409	2.0	2.0	(0.0)	5	40%	-1%													1.00	0.18	5,037					0.0	0.0	0.0	CreN	312	gsld312	gsld	
421	CloEgs313	313	HVAC tune-up_RTU	$82	$611	$0	13%	$268	2.3	2.0	(0.3)	5	40%	-6%	N	Zero - <1 year							0	1.00	0.12	2,847	1.00	0.12	2,847	0.0	0.0	0		0.0	0.0	0.0	CloE	313	gs313	gs	
422	CloNgs313	313	HVAC tune-up_RTU	$82	$611	$0	13%	$268	2.3	2.0	(0.3)	5	40%	-6%		payback improve											1.00	0.12	2,847		Average	DX Units		0.0	0.0	0.0	CloN	313	gs313	gs	
423	CloEgsd313	313	HVAC tune-up_RTU	$51	$611	$0	8%	$283	2.2	2.0	(0.2)	5	40%	-4%													1.00	0.12	2,847	S kW	0.31	0	0	0.0	0.0	0.0	CloE	313	gsd313	gsd	
424	CloNgsd313	313	HVAC tune-up_RTU	$51	$611	$0	8%	$283	2.2	2.0	(0.2)	5	40%	-4%													1.00	0.12	2,847	W kW	0.07	0	0	0.0	0.0	0.0	CloN	313	gsd313	gsd	
425	CloEgsld313	313	HVAC tune-up_RTU	$20	$611	$0	3%	$299	2.0	2.0	(0.1)	5	40%	-1%													1.00	0.12	2,847	kWh	1,139	0	0	0.0	0.0	0.0	CloE	313	gsld313	gsld	
426	CloNgsld313	313	HVAC tune-up_RTU	$20	$611	$0	3%	$299	2.0	2.0	(0.1)	5	40%	-1%													1.00	0.12	2,847					0.0	0.0	0.0	CloN	313	gsld313	gsld	
427	CrtEgs319	319	Duct Sealing Repair	$66	$1,011	$0	7%	$478	2.1	2.0	(0.1)	15	13%	-1%	N	Zero - <1 year							0	1.00	3.54	5,076	1.00	3.54	5,076	9.6	1.1	50		1.4	0.2	7.4	CrtE	319	gs319	gs	
428	CrtEgsd319	319	Duct Sealing Repair	$221	$1,011	$0	22%	$399	2.5	2.0	(0.6)	15	13%	-4%		payback improve											1.00	3.54	5,076					5.7	0.6	29.7	CrtE	319	gsd319	gsd	
429	CrtEgsld319	319	Duct Sealing Repair	$212	$1,011	$0	21%	$404	2.5	2.0	(0.5)	15	13%	-3%													1.00	3.54	5,076					2.4	0.3	12.4	CrtE	319	gsld319	gsld	
430	CheEgs320	320	Dedicated Outdoor Air System on VRF unit	$594	$980	$0	61%	$196	5.0	2.0	(3.0)	15	13%	-20%	N	Incent % &							3	1.00	1.01	2,078	1.00	1.01	2,077	0.3	0.2	1	12%	0.0	0.0	0.1	CheE	320	gs320	gs	$74
431	CheNgs320	320	Dedicated Outdoor Air System on VRF unit	$594	$980	$0	61%	$196	5.0	2.0	(3.0)	15	13%	-20%		Payback improve =											1.00	1.01	2,077			100%	0%	0.0	0.0	0.0	CheN	320	gs320	gs	$0
432	ChoEgs320	320	Dedicated Outdoor Air System on VRF unit	$647	$1,033	$0	63%	$196	5.3	2.0	(3.3)	15	13%	-22%		~10% market											1.00	1.01	2,077			$436	1%	0.0	0.0	0.0	ChoE	320	gs320	gs	$7
433	ChoNgs320	320	Dedicated Outdoor Air System on VRF unit	$647	$1,033	$0	63%	$196	5.3	2.0	(3.3)	15	13%	-22%													1.00	1.01	2,077				0%	0.0	0.0	0.0	ChoN	320	gs320	gs	$0
434	CreEgs320	320	Dedicated Outdoor Air System on VRF unit	$910	$1,298	$0	70%	$196	6.6	2.0	(4.6)	15	13%	-31%													1.00	1.01	2,081				1%	0.0	0.0	0.1	CreE	320	gs320	gs	$13
435	CreNgs320	320	Dedicated Outdoor Air System on VRF unit	$910	$1,298	$0	70%	$196	6.6	2.0	(4.6)	15	13%	-31%													1.00	1.01	2,081				0%	0.0	0.0	0.0	CreN	320	gs320	gs	$0
436	CheEgsd320	320	Dedicated Outdoor Air System on VRF unit	$386	$980	$0	39%	$301	3.3	2.0	(1.3)	15	13%	-9%													1.00	1.01	2,077				50%	0.1	0.0	0.5	CheE	320	gsd320	gsd	$193
437	CheNgsd320	320	Dedicated Outdoor Air System on VRF unit	$386	$980	$0	39%	$301	3.3	2.0	(1.3)	15	13%	-9%													1.00	1.01	2,077				0%	0.0	0.0	0.0	CheN	320	gsd320	gsd	$1
438	ChoEgsd320	320	Dedicated Outdoor Air System on VRF unit	$439	$1,033	$0	42%	$301	3.4	2.0	(1.5)	15	13%	-10%													1.00	1.01	2,077				4%	0.0	0.0	0.1	ChoE	320	gsd320	gsd	$18
439	ChoNgsd320	320	Dedicated Outdoor Air System on VRF unit	$439	$1,033	$0	42%	$301	3.4	2.0	(1.5)	15	13%	-10%													1.00	1.01	2,077				0%	0.0	0.0	0.0	ChoN	320	gsd320	gsd	$0
440	CreEgsd320	320	Dedicated Outdoor Air System on VRF unit	$703	$1,298	$0	54%	$301	4.3	2.0	(2.3)	15	13%	-16%													1.00	1.01	2,081				6%	0.0	0.1	0.3	CreE	320	gsd320	gsd	$41
441	CreNgsd320	320	Dedicated Outdoor Air System on VRF unit	$703	$1,298	$0	54%	$301	4.3	2.0	(2.3)	15	13%	-16%													1.00	1.01	2,081				0%	0.0	0.0	0.0	CreN	320	gsd320	gsd	$0
442	CheEgsld320	320	Dedicated Outdoor Air System on VRF unit	$324	$980	$0	33%	$332	3.0	2.0	(1.0)	15	13%	-7%													1.00	1.01	2,077				21%	0.1	0.0	0.2	CheE	320	gsld320	gsld	$67
443	CheNgsld320	320	Dedicated Outdoor Air System on VRF unit	$324	$980	$0	33%	$332	3.0	2.0	(1.0)	15	13%	-7%													1.00	1.01	2,077				0%	0.0	0.0	0.0	CheN	320	gsld320	gsld	$0
444	ChoEgsld320	320	Dedicated Outdoor Air System on VRF unit	$377	$1,033	$0	37%	$332	3.1	2.0	(1.1)	15	13%	-8%													1.00	1.01	2,077				2%	0.0	0.0	0.0	ChoE	320	gsld320	gsld	$6
445	ChoNgsld320	320	Dedicated Outdoor Air System on VRF unit	$377	$1,033	$0	37%	$332	3.1	2.0	(1.1)	15	13%	-8%													1.00	1.01	2,077				0%	0.0	0.0	0.0	ChoN	320	gsld320	gsld	$0
446	CreEgsld320	320	Dedicated Outdoor Air System on VRF unit	$641	$1,298	$0	49%	$332	3.9	2.0	(1.9)	15	13%	-13%													1.00	1.01	2,081				2%	0.0	0.0	0.1	CreE	320	gsld320	gsld	$16
447	CreNgsld320	320	Dedicated Outdoor Air System on VRF unit	$641	$1,298	$0	49%	$332	3.9	2.0	(1.9)	15	13%	-13%													1.00	1.01	2,081				0%	0.0	0.0	0.0	CreN	320	gsld320	gsld	$0
448	CscNgsld320	320	Dedicated Outdoor Air System on VRF unit	$1,254	$1,911	$0	66%	$332	5.8	2.0	(3.8)	15	13%	-25%													1.00	1.01	2,080				0%	0.0	0.0	0.0	CscN	320	gsld320	gsld	$0
449	CgrNgs322	322	High Efficiency PTAC	$117	$492	$0	24%	$189	2.6	2.0	(0.6)	15	13%	-4%	N	Zero - <1 year							0	1.00	0.00	2,132	1.00	0.00	2,010	0.0	0.0	0		0.0	0.0	0.0	CgrN	322	gs322	gs	
450	CgrTgs322	322	High Efficiency PTAC	$117	$492	$0	24%	$189	2.6	2.0	(0.6)	15	13%	-4%		payback improve											1.00	0.00	2,010					0.0	0.0	0.0	CgrT	322	gs322	gs	
451	CinNgs322	322	High Efficiency PTAC	$129	$503	$0	26%	$189	2.7	2.0	(0.7)	15	13%	-5%													1.00	0.00	2,010					0.0	0.0	0.0	CinN	322	gs322	gs	
452	CinTgs322	322	High Efficiency PTAC	$129	$503	$0	26%	$189	2.7	2.0	(0.7)	15	13%	-5%													1.00	0.00	2,010					0.0	0.0	0.0	CinT	322	gs322	gs	
453	CmiNgs322	322	High Efficiency PTAC	$135	$584	$0	23%	$227	2.6	2.0	(0.6)	15	13%	-4%													1.00	0.00	2,416					0.0	0.0	0.0	CmiN	322	gs322	gs	
454	CmiTgs322	322	High Efficiency PTAC	$135	$584	$0	23%	$227	2.6	2.0	(0.6)	15	13%	-4%													1.00	0.00	2,416					0.0	0.0	0.0	CmiT	322	gs322	gs	
455	CwaNgs322	322	High Efficiency PTAC	$745	$1,120	$0	67%	$189	5.9	2.0	(3.9)	15	13%	-26%													1.00	0.00	2,010					0.0	0.0	0.0	CwaN	322	gs322	gs	
456	CwaTgs322	322	High Efficiency PTAC	$745	$1,120	$0	67%	$189	5.9	2.0	(3.9)	15	13%	-26%													1.00	0.00	2,010					0.0	0.0	0.0	CwaT	322	gs322	gs	
457	CgrNgsd322	322	High Efficiency PTAC	$14	$492	$0	3%	$241	2.0	2.0	(0.1)	15	13%	0%													1.00	0.00	2,010					0.0	0.0	0.0	CgrN	322	gsd322	gsd	
458	CgrTgsd322	322	High Efficiency PTAC	$14	$492	$0	3%	$241	2.0	2.0	(0.1)	15	13%	0%													1.00	0.00	2,010					0.0	0.0	0.0	CgrT	322	gsd322	gsd	
459	CinNgsd322	322	High Efficiency PTAC	$25	$503	$0	5%	$241	2.1	2.0	(0.1)	15	13%	-1%													1.00	0.00	2,010					0.0	0.0	0.0	CinN	322	gsd322	gsd	
460	CinTgsd322	322	High Efficiency PTAC	$25	$503	$0	5%	$241	2.1	2.0	(0.1)	15	13%	-1%													1.00	0.00	2,010					0.0	0.0	0.0	CinT	322	gsd322	gsd	
461	CmiNgsd322	322	High Efficiency PTAC	$66	$584	$0	11%	$262	2.2	2.0	(0.3)	15	13%	-2%													1.00	0.00	2,416					0.0	0.0	0.0	CmiN	322	gsd322	gsd	
462	CmiTgsd322	322	High Efficiency PTAC	$66	$584	$0	11%	$262	2.2	2.0	(0.3)	15	13%	-2%													1.00	0.00	2,416					0.0	0.0	0.0	CmiT	322	gsd322	gsd	
463	CwaNgsd322	322	High Efficiency PTAC	$642	$1,120	$0	57%	$241	4.6	2.0	(2.7)	15	13%	-18%													1.00	0.00	2,010					0.0	0.0	0.0	CwaN	322	gsd322	gsd	
464	CwaTgsd322	322	High Efficiency PTAC	$642	$1,120	$0	57%	$241	4.6	2.0	(2.7)	15	13%	-18%													1.00	0.00	2,010					0.0	0.0	0.0	CwaT	322	gsd322	gsd	
465	CmiNgsld322	322	High Efficiency PTAC	$30	$584	$0	5%	$280	2.1	2.0	(0.1)	15	13%	-1%													1.00	0.00	2,416					0.0	0.0	0.0	CmiN	322	gsld322	gsld	
466	CmiTgsld322	322	High Efficiency PTAC	$30	$584	$0	5%	$280	2.1	2.0	(0.1)	15	13%	-1%													1.00	0.00	2,416					0.0	0.0	0.0	CmiT	322	gsld322	gsld	
467	CwaNgsld322	322	High Efficiency PTAC	$603	$1,120	$0	54%	$261	4.3	2.0	(2.3)	15	13%	-15%													1.00	0.00	2,010					0.0	0.0	0.0	CwaN	322	gsld322	gsld	
468	CwaTgsld322	322	High Efficiency PTAC	$603	$1,120	$0	54%	$261	4.3	2.0	(2.3)	15	13%	-15%													1.00	0.00	2,010					0.0	0.0	0.0	CwaT	322	gsld322	gsld	
469	CgrNgs323	323	High Efficiency PTHP	$112	$486	$0	23%	$189	2.6	2.0	(0.6)	15	13%	-4%	N	Zero - <1 year							0	1.00	0.00	2,011	1.00	0.00	2,011	0.0	0.0	0		0.0	0.0	0.0	CgrN	323	gs323	gs	
470	CgrTgs323	323	High Efficiency PTHP	$112	$486	$0	23%	$189	2.6	2.0	(0.6)	15	13%	-4%		payback improve											1.00	0.00	2,011					0.0	0.0	0.0	CgrT	323	gs323	gs	
471	CinNgs323	323	High Efficiency PTHP	$126	$500	$0	25%	$189	2.6	2.0	(0.7)	15	13%	-4%													1.00	0.00	2,011					0.0	0.0	0.0	CinN	323	gs323	gs	
472	CinTgs323	323	High Efficiency PTHP	$126	$500	$0	25%	$189	2.6	2.0	(0.7)	15	13%	-4%													1.00	0.00	2,011					0.0	0.0	0.0	CinT	323	gs323	gs	
473	CmiNgs323	323	High Efficiency PTHP	$110	$485	$0	23%	$189	2.6	2.0	(0.6)	15	13%	-4%													1.00	0.00	2,011					0.0	0.0	0.0	CmiN	323	gs323	gs	
474	CmiTgs323	323	High Efficiency PTHP	$110	$485	$0	23%	$189	2.6	2.0	(0.6)	15	13%	-4%													1.00	0.00	2,011					0.0	0.0	0.0	CmiT	323	gs323	gs	
475	CwaNgs323	323	High Efficiency PTHP	$737	$1,111	$0	66%	$189	5.9	2.0	(3.9)	15	13%	-26%													1.00	0.00	2,011					0.0	0.0	0.0	CwaN	323	gs323	gs	
476	CwaTgs323	323	High Efficiency PTHP	$737	$1,111	$0	66%	$189	5.9	2.0	(3.9)	15	13%	-26%													1.00	0.00	2,011					0.0	0.0	0.0	CwaT	323	gs323	gs	
477	CinNgsd323	323	High Efficiency PTHP	$11	$500	$0	2%	$247	2.0	2.0	(0.0)	15	13%	0%													1.00	0.00	2,011					0.0	0.0	0.0	CinN	323	gsd323	gsd	
478	CinTgsd323	323	High Efficiency PTHP	$11	$500	$0	2%	$247	2.0	2.0	(0.0)	15	13%	0%													1.00	0.00	2,011					0.0	0.0	0.0	CinT	323	gsd323	gsd	
479	CwaNgsd323	323	High Efficiency PTHP	$622	$1,111	$0	56%	$247	4.5	2.0	(2.5)	15	13%	-17%													1.00	0.00	2,011					0.0	0.0	0.0	CwaN	323	gsd323	gsd	
480	CwaTgsd323	323	High Efficiency PTHP	$622	$1,111	$0	56%	$247	4.5	2.0	(2.5)	15	13%	-17%													1.00	0.00	2,011					0.0	0.0	0.0	CwaT	323	gsd323	gsd	
481	CwaNgsld32	323	High Efficiency PTHP	$581	$1,111	$0	52%	$268	4.1	2.0	(2.2)	15	13%	-14%													1.00	0.00	2,011					0.0	0.0	0.0	CwaN	323	gsld323	gsld	

482	CwaTgsld323	323	High Efficiency PTHP	$581	$1,111	$0	52%	$268	4.1	2.0	(2.2)	15	13%	-14%
483	CheNgs324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$915	$1,527	$0	60%	$309	4.9	2.0	(3.0)	15	13%	-20%
484	CheTgs324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$915	$1,527	$0	60%	$309	4.9	2.0	(3.0)	15	13%	-20%
485	ChoNgs324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$997	$1,609	$0	62%	$309	5.2	2.0	(3.2)	15	13%	-21%
486	ChoTgs324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$997	$1,609	$0	62%	$309	5.2	2.0	(3.2)	15	13%	-21%
487	CheNgsd324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$920	$1,527	$0	60%	$307	5.0	2.0	(3.0)	15	13%	-20%
488	CheTgsd324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$920	$1,527	$0	60%	$307	5.0	2.0	(3.0)	15	13%	-20%
489	ChoNgsd324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$1,002	$1,609	$0	62%	$307	5.2	2.0	(3.3)	15	13%	-22%
490	ChoTgsd324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$1,002	$1,609	$0	62%	$307	5.2	2.0	(3.3)	15	13%	-22%
491	CheNgsld324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$893	$1,527	$0	58%	$321	4.8	2.0	(2.8)	15	13%	-19%
492	CheTgsld324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$893	$1,527	$0	58%	$321	4.8	2.0	(2.8)	15	13%	-19%
493	ChoNgsld324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$975	$1,609	$0	61%	$321	5.0	2.0	(3.0)	15	13%	-20%
494	ChoTgsld324	324	Variable Refrigerant Flow (VRF) HVAC Systems	$975	$1,609	$0	61%	$321	5.0	2.0	(3.0)	15	13%	-20%
495	CcoEgs328	328	Demand Controlled Ventilation	$1,168	$1,553	$0	75%	$195	8.0	2.0	(6.0)	10	20%	-60%
496	CcoNgs328	328	Demand Controlled Ventilation	$1,168	$1,553	$0	75%	$195	8.0	2.0	(6.0)	10	20%	-60%
497	CheEgs328	328	Demand Controlled Ventilation	$1,323	$1,707	$0	77%	$195	8.8	2.0	(6.8)	10	20%	-68%
498	CheNgs328	328	Demand Controlled Ventilation	$1,323	$1,707	$0	77%	$195	8.8	2.0	(6.8)	10	20%	-68%
499	ChoEgs328	328	Demand Controlled Ventilation	$697	$1,081	$0	64%	$195	5.6	2.0	(3.6)	10	20%	-36%
500	ChoNgs328	328	Demand Controlled Ventilation	$697	$1,081	$0	64%	$195	5.6	2.0	(3.6)	10	20%	-36%
501	CinEgs328	328	Demand Controlled Ventilation	$1,281	$1,665	$0	77%	$195	8.6	2.0	(6.6)	10	20%	-66%
502	CinNgs328	328	Demand Controlled Ventilation	$1,281	$1,665	$0	77%	$195	8.6	2.0	(6.6)	10	20%	-66%
503	CscEgs328	328	Demand Controlled Ventilation	$1,233	$1,618	$0	76%	$195	8.3	2.0	(6.3)	10	20%	-63%
504	CscNgs328	328	Demand Controlled Ventilation	$1,233	$1,618	$0	76%	$195	8.3	2.0	(6.3)	10	20%	-63%
505	CcoEgsd328	328	Demand Controlled Ventilation	$1,072	$1,553	$0	69%	$243	6.4	2.0	(4.4)	10	20%	-44%
506	CcoNgsd328	328	Demand Controlled Ventilation	$1,072	$1,553	$0	69%	$243	6.4	2.0	(4.4)	10	20%	-44%
507	CheEgsd328	328	Demand Controlled Ventilation	$1,226	$1,707	$0	72%	$243	7.0	2.0	(5.0)	10	20%	-50%
508	CheNgsd328	328	Demand Controlled Ventilation	$1,226	$1,707	$0	72%	$243	7.0	2.0	(5.0)	10	20%	-50%
509	ChoEgsd328	328	Demand Controlled Ventilation	$600	$1,081	$0	56%	$243	4.4	2.0	(2.5)	10	20%	-25%
510	ChoNgsd328	328	Demand Controlled Ventilation	$600	$1,081	$0	56%	$243	4.4	2.0	(2.5)	10	20%	-25%
511	CinEgsd328	328	Demand Controlled Ventilation	$1,184	$1,665	$0	71%	$243	6.8	2.0	(4.9)	10	20%	-49%
512	CinNgsd328	328	Demand Controlled Ventilation	$1,184	$1,665	$0	71%	$243	6.8	2.0	(4.9)	10	20%	-49%
513	CscEgsd328	328	Demand Controlled Ventilation	$1,137	$1,618	$0	70%	$243	6.6	2.0	(4.7)	10	20%	-47%
514	CscNgsd328	328	Demand Controlled Ventilation	$1,137	$1,618	$0	70%	$243	6.6	2.0	(4.7)	10	20%	-47%
515	CcoEgsld328	328	Demand Controlled Ventilation	$1,034	$1,553	$0	67%	$263	5.9	2.0	(3.9)	10	20%	-39%
516	CcoNgsld328	328	Demand Controlled Ventilation	$1,034	$1,553	$0	67%	$263	5.9	2.0	(3.9)	10	20%	-39%
517	CheEgsld328	328	Demand Controlled Ventilation	$1,188	$1,707	$0	70%	$263	6.5	2.0	(4.5)	10	20%	-45%
518	CheNgsld328	328	Demand Controlled Ventilation	$1,188	$1,707	$0	70%	$263	6.5	2.0	(4.5)	10	20%	-45%
519	ChoEgsld328	328	Demand Controlled Ventilation	$562	$1,081	$0	52%	$263	4.1	2.0	(2.1)	10	20%	-21%
520	ChoNgsld328	328	Demand Controlled Ventilation	$562	$1,081	$0	52%	$263	4.1	2.0	(2.1)	10	20%	-21%
521	CinEgsld328	328	Demand Controlled Ventilation	$1,146	$1,665	$0	69%	$263	6.3	2.0	(4.4)	10	20%	-44%
522	CinNgsld328	328	Demand Controlled Ventilation	$1,146	$1,665	$0	69%	$263	6.3	2.0	(4.4)	10	20%	-44%
523	CscEgsld328	328	Demand Controlled Ventilation	$1,098	$1,618	$0	68%	$263	6.2	2.0	(4.2)	10	20%	-42%
524	CscNgsld328	328	Demand Controlled Ventilation	$1,098	$1,618	$0	68%	$263	6.2	2.0	(4.2)	10	20%	-42%
525	CasNgsd504	504	High Bay Fluorescent (T5)	$6	$939	$0	1%	$472	2.0	2.0	(0.0)	15	13%	0%
526	CasTgsd504	504	High Bay Fluorescent (T5)	$6	$939	$0	1%	$472	2.0	2.0	(0.0)	15	13%	0%
527	CasTgs507	507	High Bay LED	$378	$1,385	$0	27%	$509	2.7	2.0	(0.7)	15	13%	-5%
528	CwaTgs507	507	High Bay LED	$35	$1,041	$0	3%	$509	2.0	2.0	(0.1)	15	13%	0%
529	CasTgsd507	507	High Bay LED	$562	$1,385	$0	41%	$416	3.3	2.0	(1.4)	15	13%	-9%
530	CwaTgsd507	507	High Bay LED	$218	$1,041	$0	21%	$416	2.5	2.0	(0.5)	15	13%	-4%
531	CasTgsld507	507	High Bay LED	$555	$1,385	$0	40%	$419	3.3	2.0	(1.3)	15	13%	-9%
532	CwaTgsld507	507	High Bay LED	$212	$1,041	$0	20%	$419	2.5	2.0	(0.5)	15	13%	-3%
533	CcoEgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
534	CcoNgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
535	CheEgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
536	CheNgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
537	ChoEgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
538	ChoNgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
539	CinEgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
540	CinNgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
541	CofEgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
542	CofNgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
543	CrtEgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
544	CrtNgsd602	602	CO Sensors for Parking Garage Exhaust	$231	$3,028	$0	8%	$1,412	2.1	2.0	(0.2)	15	13%	-1%
545	CcoEgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
546	CcoNgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
547	CheEgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
548	CheNgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
549	ChoEgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
550	ChoNgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
551	CinEgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
552	CinNgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
553	CofEgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
554	CofNgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
555	CrtEgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
556	CrtNgsld602	602	CO Sensors for Parking Garage Exhaust	$409	$3,028	$0	14%	$1,321	2.3	2.0	(0.3)	15	13%	-2%
557	CasEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
558	CasNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
559	CcoEgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
560	CcoNgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
561	CgrEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
562	CgrNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
563	CheEgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
564	CheNgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
565	ChoEgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
566	ChoNgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
567	CinEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
568	CinNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
569	CloEgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
570	CloNgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
571	CmiEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
572	CmiNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
573	CofEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
574	CofNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
575	CreEgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
576	CreNgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
577	CrtEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
578	CrtNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
579	CscEgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
580	CscNgs603	603	VSD Controlled Compressor	$900	$2,336	$0	39%	$726	3.2	2.0	(1.2)	15	13%	-8%
581	CwaEgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
582	CwaNgs603	603	VSD Controlled Compressor	$774	$2,009	$0	39%	$625	3.2	2.0	(1.2)	15	13%	-8%
583	CasEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
584	CasNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
585	CcoEgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
586	CcoNgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
587	CgrEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
588	CgrNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
589	CheEgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
590	CheNgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
591	ChoEgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
592	ChoNgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
593	CinEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
594	CinNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
595	CloEgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
596	CloNgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
597	CmiEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
598	CmiNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
599	CofEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
600	CofNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
601	CreEgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
602	CreNgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%
603	CrtEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%
604	CrtNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%

482													1.00	0.00	2,011					0.0	0.0	0.0	CwaT	323	gsld323	gsld	
483	N	Incent % &							5	1.00	1.01	3,286	1.00	1.01	3,286	0.5	0.1	2	0%	0.0	0.0	0.0	CheN	324	gs324	gs	$1
484		Payback improve =											1.00	1.01	3,286			100%	14%	0.1	0.0	0.3	CheT	324	gs324	gs	$125
485													1.00	1.01	3,286			$919	0%	0.0	0.0	0.0	ChoN	324	gs324	gs	$0
486													1.00	1.01	3,286				1%	0.0	0.0	0.0	ChoT	324	gs324	gs	$11
487													1.00	1.01	3,286				1%	0.0	0.0	0.0	CheN	324	gsd324	gsd	$6
488													1.00	1.01	3,286				55%	0.3	0.1	1.1	CheT	324	gsd324	gsd	$504
489													1.00	1.01	3,286				0%	0.0	0.0	0.0	ChoN	324	gsd324	gsd	$0
490													1.00	1.01	3,286				5%	0.0	0.0	0.2	ChoT	324	gsd324	gsd	$45
491													1.00	1.01	3,286				0%	0.0	0.0	0.0	CheN	324	gsld324	gsld	$2
492													1.00	1.01	3,286				23%	0.1	0.0	0.5	CheT	324	gsld324	gsld	$204
493													1.00	1.01	3,286				0%	0.0	0.0	0.0	ChoN	324	gsld324	gsld	$0
494													1.00	1.01	3,286				2%	0.0	0.0	0.1	ChoT	324	gsld324	gsld	$18
495	E	GSD = Prorata	######	$1,044	-48%	0.2	1.3	0.5	124	1.00	5.63	2,066	1.00	5.63	2,066	24.7	138.8	50	2%	0.6	3.2	1.1	CcoE	328	gs328	gs	$27
496		adjustment v.											1.00	5.63	2,066			100%	0%	0.0	0.0	0.0	CcoN	328	gs328	gs	$0
497		average historic											1.00	5.63	2,066			#####	4%	1.1	6.1	2.2	CheE	328	gs328	gs	$58
498		achievement											1.00	5.63	2,066				0%	0.0	0.1	0.0	CheN	328	gs328	gs	$1
499		GS/GSLD =											1.00	5.63	2,066				2%	0.4	2.3	0.8	ChoE	328	gs328	gs	$12
500		Historically no											1.00	5.63	2,066				0%	0.0	0.0	0.0	ChoN	328	gs328	gs	$0
501													1.00	5.63	2,066				3%	0.7	3.9	1.4	CinE	328	gs328	gs	$36
502													1.00	5.63	2,066				0%	0.0	0.0	0.0	CinN	328	gs328	gs	$0
503													1.00	5.63	2,066				4%	0.9	5.1	1.9	CscE	328	gs328	gs	$46
504													1.00	5.63	2,066				0%	0.0	0.1	0.0	CscN	328	gs328	gs	$0
505													1.00	5.63	2,066				9%	2.2	12.6	4.6	CcoE	328	gsd328	gsd	$97
506													1.00	5.63	2,066				0%	0.0	0.1	0.0	CcoN	328	gsd328	gsd	$1
507													1.00	5.63	2,066				18%	4.4	24.5	8.9	CheE	328	gsd328	gsd	$217
508													1.00	5.63	2,066				0%	0.0	0.3	0.1	CheN	328	gsd328	gsd	$2
509													1.00	5.63	2,066				7%	1.7	9.3	3.4	ChoE	328	gsd328	gsd	$40
510													1.00	5.63	2,066				0%	0.0	0.1	0.0	ChoN	328	gsd328	gsd	$0
511													1.00	5.63	2,066				11%	2.7	15.4	5.6	CinE	328	gsd328	gsd	$132
512													1.00	5.63	2,066				0%	0.0	0.1	0.0	CinN	328	gsd328	gsd	$1
513													1.00	5.63	2,066				15%	3.7	20.6	7.4	CscE	328	gsd328	gsd	$168
514													1.00	5.63	2,066				0%	0.0	0.2	0.1	CscN	328	gsd328	gsd	$2
515													1.00	5.63	2,066				4%	0.9	5.3	1.9	CcoE	328	gsld328	gsld	$39
516													1.00	5.63	2,066				0%	0.0	0.1	0.0	CcoN	328	gsld328	gsld	$0
517													1.00	5.63	2,066				7%	1.8	10.2	3.7	CheE	328	gsld328	gsld	$88
518													1.00	5.63	2,066				0%	0.0	0.1	0.0	CheN	328	gsld328	gsld	$1
519													1.00	5.63	2,066				3%	0.7	3.9	1.4	ChoE	328	gsld328	gsld	$16
520													1.00	5.63	2,066				0%	0.0	0.0	0.0	ChoN	328	gsld328	gsld	$0
521													1.00	5.63	2,066				5%	1.1	6.4	2.3	CinE	328	gsld328	gsld	$53
522													1.00	5.63	2,066				0%	0.0	0.1	0.0	CinN	328	gsld328	gsld	$0
523													1.00	5.63	2,066				6%	1.5	8.6	3.1	CscE	328	gsld328	gsld	$68
524													1.00	5.63	2,066				0%	0.0	0.1	0.0	CscN	328	gsld328	gsld	$1
525	E	Zero - incentive de minimis							0	1.00	0.65	5,407	1.00	0.65	5,407	0.0	0.0	0		0.0	0.0	0.0	CasN	504	gsd504	gsd	
526													1.00	0.65	5,407					0.0	0.0	0.0	CasT	504	gsd504	gsd	
527	E	Retail is virtually	$80	$327	308%				43	1.00	0.65	5,407	1.00	0.65	5,407	6.4	4.2	34		1.1	0.7	6.0	CasT	507	gs507	gs	$0
528		all participants &											1.00	0.65	5,407			100%		2.0	1.3	10.4	CwaT	507	gs507	gs	$0
529		those are <2-year											1.00	0.65	5,407			$560	71%	4.5	2.9	24.0	CasT	507	gsd507	gsd	$396
530		payback are											1.00	0.65	5,407					7.8	5.1	41.7	CwaT	507	gsd507	gsd	$0
531													1.00	0.65	5,407				29%	1.9	1.2	10.0	CasT	507	gsld507	gsld	$163
532													1.00	0.65	5,407					3.3	2.1	17.4	CwaT	507	gsld507	gsld	$0
533	N	Zero - <1 year							0	1.00	1.00	24,843	1.00	1.00	24,843	0.2	0.2	4		0.0	0.0	0.0	CcoE	602	gsd602	gsd	
534		payback improve											1.00	1.00	24,843					0.0	0.0	0.0	CcoN	602	gsd602	gsd	
535													1.00	1.00	24,843					0.0	0.0	0.3	CheE	602	gsd602	gsd	
536													1.00	1.00	24,843					0.0	0.0	0.0	CheN	602	gsd602	gsd	
537													1.00	1.00	24,843					0.1	0.1	1.7	ChoE	602	gsd602	gsd	
538													1.00	1.00	24,843					0.0	0.0	0.0	ChoN	602	gsd602	gsd	
539													1.00	1.00	24,843					0.0	0.0	0.0	CinE	602	gsd602	gsd	
540													1.00	1.00	24,843					0.0	0.0	0.0	CinN	602	gsd602	gsd	
541													1.00	1.00	24,843					0.0	0.0	0.2	CofE	602	gsd602	gsd	
542													1.00	1.00	24,843					0.0	0.0	0.0	CofN	602	gsd602	gsd	
543													1.00	1.00	24,843					0.0	0.0	0.4	CrtE	602	gsd602	gsd	
544													1.00	1.00	24,843					0.0	0.0	0.0	CrtN	602	gsd602	gsd	
545													1.00	1.00	24,843					0.0	0.0	0.0	CcoE	602	gsld602	gsld	
546													1.00	1.00	24,843					0.0	0.0	0.0	CcoN	602	gsld602	gsld	
547													1.00	1.00	24,843					0.0	0.0	0.1	CheE	602	gsld602	gsld	
548													1.00	1.00	24,843					0.0	0.0	0.0	CheN	602	gsld602	gsld	
549													1.00	1.00	24,843					0.0	0.0	0.7	ChoE	602	gsld602	gsld	
550													1.00	1.00	24,843					0.0	0.0	0.0	ChoN	602	gsld602	gsld	
551													1.00	1.00	24,843					0.0	0.0	0.0	CinE	602	gsld602	gsld	
552													1.00	1.00	24,843					0.0	0.0	0.0	CinN	602	gsld602	gsld	
553													1.00	1.00	24,843					0.0	0.0	0.1	CofE	602	gsld602	gsld	
554													1.00	1.00	24,843					0.0	0.0	0.0	CofN	602	gsld602	gsld	
555													1.00	1.00	24,843					0.0	0.0	0.2	CrtE	602	gsld602	gsld	
556													1.00	1.00	24,843					0.0	0.0	0.0	CrtN	602	gsld602	gsld	
557	N	Incent % &							332	1.00	0.64	7,131	1.00	0.47	6,632	66.5	32.1	438	0%	0.0	0.0	0.3	CasE	603	gs603	gs	$1
558		Payback improve =											1.00	0.47	6,632			0%	0%	0.0	0.0	0.0	CasN	603	gs603	gs	$0
559		~5% market penetr.											1.00	0.84	7,713			#####	0%	0.0	0.0	0.2	CcoE	603	gs603	gs	$0
560													1.00	0.84	7,713				0%	0.0	0.0	0.0	CcoN	603	gs603	gs	$0
561													1.00	0.47	6,632				0%	0.2	0.1	1.1	CgrE	603	gs603	gs	$2
562													1.00	0.47	6,632				0%	0.0	0.0	0.0	CgrN	603	gs603	gs	$0
563													1.00	0.84	7,713				0%	0.1	0.1	0.6	CheE	603	gs603	gs	$1
564													1.00	0.84	7,713				0%	0.0	0.0	0.0	CheN	603	gs603	gs	$0
565													1.00	0.84	7,713				0%	0.0	0.0	0.3	ChoE	603	gs603	gs	$1
566													1.00	0.84	7,713				0%	0.0	0.0	0.0	ChoN	603	gs603	gs	$0
567													1.00	0.47	6,632				0%	0.3	0.1	1.7	CinE	603	gs603	gs	$3
568													1.00	0.47	6,632				0%	0.0	0.0	0.1	CinN	603	gs603	gs	$0
569													1.00	0.84	7,713				0%	0.1	0.1	0.6	CloE	603	gs603	gs	$1
570													1.00	0.84	7,713				0%	0.0	0.0	0.0	CloN	603	gs603	gs	$0
571													1.00	0.47	6,632				12%	8.3	3.9	54.1	CmiE	603	gs603	gs	$96
572													1.00	0.47	6,632				0%	0.1	0.0	0.6	CmiN	603	gs603	gs	$1
573													1.00	0.47	6,632				1%	0.4	0.2	2.6	CofE	603	gs603	gs	$5
574													1.00	0.47	6,632				0%	0.0	0.0	0.1	CofN	603	gs603	gs	$0
575													1.00	0.84	7,713				0%	0.1	0.1	0.5	CreE	603	gs603	gs	$1
576													1.00	0.84	7,713				0%	0.0	0.0	0.0	CreN	603	gs603	gs	$0
577													1.00	0.47	6,632				0%	0.3	0.1	1.8	CrtE	603	gs603	gs	$3
578													1.00	0.47	6,632				0%	0.0	0.0	0.1	CrtN	603	gs603	gs	$0
579													1.00	0.84	7,713				0%	0.1	0.1	0.6	CscE	603	gs603	gs	$1
580													1.00	0.84	7,713				0%	0.0	0.0	0.0	CscN	603	gs603	gs	$0
581													1.00	0.47	6,632				0%	0.0	0.0	0.2	CwaE	603	gs603	gs	$0
582													1.00	0.47	6,632				0%	0.0	0.0	0.0	CwaN	603	gs603	gs	$0
583													1.00	0.47	6,632				0%	0.2	0.1	1.3	CasE	603	gsd603	gsd	$3
584													1.00	0.47	6,632				0%	0.0	0.0	0.1	CasN	603	gsd603	gsd	$0
585													1.00	0.84	7,713				0%	0.1	0.1	1.0	CcoE	603	gsd603	gsd	$3
586													1.00	0.84	7,713				0%	0.0	0.0	0.1	CcoN	603	gsd603	gsd	$0
587													1.00	0.47	6,632				1%	0.7	0.3	4.4	CgrE	603	gsd603	gsd	$11
588													1.00	0.47	6,632				0%	0.0	0.0	0.0	CgrN	603	gsd603	gsd	$0
589													1.00	0.84	7,713				0%	0.3	0.3	2.4	CheE	603	gsd603	gsd	$6
590													1.00	0.84	7,713				0%	0.0	0.0	0.1	CheN	603	gsd603	gsd	$0
591													1.00	0.84	7,713				0%	0.2	0.2	1.4	ChoE	603	gsd603	gsd	$4
592													1.00	0.84	7,713				0%	0.0	0.0	0.1	ChoN	603	gsd603	gsd	$0
593													1.00	0.47	6,632				2%	1.0	0.5	6.7	CinE	603	gsd603	gsd	$16
594													1.00	0.47	6,632				0%	0.1	0.0	0.4	CinN	603	gsd603	gsd	$1
595													1.00	0.84	7,713				0%	0.3	0.2	2.2	CloE	603	gsd603	gsd	$6
596													1.00	0.84	7,713				0%	0.0	0.0	0.1	CloN	603	gsd603	gsd	$0
597													1.00	0.47	6,632				50%	33.1	15.5	216.4	CmiE	603	gsd603	gsd	$529
598													1.00	0.47	6,632				1%	0.4	0.2	2.3	CmiN	603	gsd603	gsd	$6
599													1.00	0.47	6,632				2%	1.6	0.7	10.3	CofE	603	gsd603	gsd	$25
600													1.00	0.47	6,632				0%	0.1	0.0	0.5	CofN	603	gsd603	gsd	$1
601													1.00	0.84	7,713				0%	0.3	0.2	2.0	CreE	603	gsd603	gsd	$5
602													1.00	0.84	7,713				0%	0.0	0.0	0.1	CreN	603	gsd603	gsd	$0
603													1.00	0.47	6,632				2%	1.1	0.5	7.0	CrtE	603	gsd603	gsd	$17
604													1.00	0.47	6,632				0%	0.1	0.0	0.4	CrtN	603	gsd603	gsd	$1

605	CscEgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%							1.00	0.84	7,713					0%	0.3	0.3	2.3	CscE	603	gsd603	gsd	$6				
606	CscNgsd603	603	VSD Controlled Compressor	$1,281	$2,336	$0	55%	$533	4.4	2.0	(2.4)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.1	CscN	603	gsd603	gsd	$0				
607	CwaEgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%							1.00	0.47	6,632					0%	0.2	0.1	1.0	CwaE	603	gsd603	gsd	$2				
608	CwaNgsd603	603	VSD Controlled Compressor	$1,063	$2,009	$0	53%	$478	4.2	2.0	(2.2)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.1	CwaN	603	gsd603	gsd	$0				
609	CasEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.1	0.0	0.5	CasE	603	gsld603	gsld	$1				
610	CasNgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.0	CasN	603	gsld603	gsld	$0				
611	CcoEgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.1	0.0	0.4	CcoE	603	gsld603	gsld	$1				
612	CcoNgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CcoN	603	gsld603	gsld	$0				
613	CgrEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.3	0.1	1.8	CgrE	603	gsld603	gsld	$4				
614	CgrNgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.0	CgrN	603	gsld603	gsld	$0				
615	CheEgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.1	0.1	1.0	CheE	603	gsld603	gsld	$3				
616	CheNgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.1	CheN	603	gsld603	gsld	$0				
617	ChoEgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.1	0.1	0.6	ChoE	603	gsld603	gsld	$1				
618	ChoNgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.0	ChoN	603	gsld603	gsld	$0				
619	CinEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					1%	0.4	0.2	2.8	CinE	603	gsld603	gsld	$7				
620	CinNgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.1	CinN	603	gsld603	gsld	$0				
621	CloEgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.1	0.1	0.9	CloE	603	gsld603	gsld	$2				
622	CloNgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CloN	603	gsld603	gsld	$0				
623	CmiEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					21%	13.8	6.4	90.1	CmiE	603	gsld603	gsld	$221				
624	CmiNgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.1	0.1	1.0	CmiN	603	gsld603	gsld	$1				
625	CofEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					1%	0.7	0.3	4.3	CofE	603	gsld603	gsld	$10				
626	CofNgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.2	CofN	603	gsld603	gsld	$1				
627	CreEgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.1	0.1	0.8	CreE	603	gsld603	gsld	$2				
628	CreNgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CreN	603	gsld603	gsld	$0				
629	CrtEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					1%	0.4	0.2	2.9	CrtE	603	gsld603	gsld	$7				
630	CrtNgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.2	CrtN	603	gsld603	gsld	$0				
631	CscEgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.1	0.1	1.0	CscE	603	gsld603	gsld	$3				
632	CscNgsld603	603	VSD Controlled Compressor	$1,296	$2,336	$0	55%	$525	4.4	2.0	(2.5)	15	13%	-16%							1.00	0.84	7,713					0%	0.0	0.0	0.1	CscN	603	gsld603	gsld	$0				
633	CwaEgsld603	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.1	0.0	0.4	CwaE	603	gsld603	gsld	$1				
634	CwaNgsld60	603	VSD Controlled Compressor	$1,069	$2,009	$0	53%	$475	4.2	2.0	(2.3)	15	13%	-15%							1.00	0.47	6,632					0%	0.0	0.0	0.0	CwaN	603	gsld603	gsld	$0				
635	CasTgs607	607	Two Speed Pool Pump	$504	$1,101	$0	46%	$302	3.6	2.0	(1.7)	10	20%	-17%	N	~25K com pools in	10	1.00	0.98	3,209	1.00	0.98	3,209	0.0	0.0	0	2-Speed		0.0	0.0	0.0	CasT	607	gs607	gs					
636	CcoTgs607	607	Two Speed Pool Pump	$504	$1,101	$0	46%	$302	3.6	2.0	(1.7)	10	20%	-17%		FL, FPL = 54%,					1.00	0.98	3,209	0.2	0.1	1	Variable		0.0	0.0	0.0	CcoT	607	gs607	gs		Variable Speed			
637	CloTgs607	607	Two Speed Pool Pump	$504	$1,101	$0	46%	$302	3.6	2.0	(1.7)	10	20%	-17%		50% of market					1.00	0.98	3,209		Average	Units			0.0	0.0	0.0	CloT	607	gs607	gs			Averages	DX Units	
638	CasTgsd607	607	Two Speed Pool Pump	$504	$1,101	$0	46%	$302	3.6	2.0	(1.7)	10	20%	-17%		pnentr. by 2029 -					1.00	0.98	3,209	S kW	0.33	30	10		0.0	0.0	0.0	CasT	607	gsd607	gsd		S kW	0.54	3	2
639	CcoTgsd607	607	Two Speed Pool Pump	$504	$1,101	$0	46%	$302	3.6	2.0	(1.7)	10	20%	-17%		90% 2-speed					1.00	0.98	3,209	W kW	0.32	30	10		0.0	0.0	0.0	CcoT	607	gsd607	gsd		W kW	0.31	3	1
640	CloTgsd607	607	Two Speed Pool Pump	$504	$1,101	$0	46%	$302	3.6	2.0	(1.7)	10	20%	-17%							1.00	0.98	3,209	kWh	1,046	30	31,772		0.0	0.0	0.0	CloT	607	gsd607	gsd		kWh	2,639	3	7,917
641	CasTgsld607	607	Two Speed Pool Pump	$477	$1,101	$0	43%	$316	3.5	2.0	(1.5)	10	20%	-15%							1.00	0.98	3,209						0.0	0.0	0.0	CasT	607	gsld607	gsld					
642	CcoTgsld607	607	Two Speed Pool Pump	$477	$1,101	$0	43%	$316	3.5	2.0	(1.5)	10	20%	-15%							1.00	0.98	3,209	Total COM Poo	#####				0.0	0.0	0.0	CcoT	607	gsld607	gsld					
643	CloTgsld607	607	Two Speed Pool Pump	$477	$1,101	$0	43%	$316	3.5	2.0	(1.5)	10	20%	-15%							1.00	0.98	3,209	Annual % of MI	0.13%				0.0	0.0	0.0	CloT	607	gsld607	gsld					
644	CasNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%	N	GS uptake unlikely.	0	1.00	0.00	1,825	1.00	0.00	1,825	8.8	0.0	16			0.0	0.0	0.0	CasN	701	gs701	gs					
645	CasTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%		GSD/GSLD - Zero -					1.00	0.00	1,825						0.4	0.0	0.7	CasT	701	gs701	gs					
646	CgrNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%		<1 year payback					1.00	0.00	1,825						0.0	0.0	0.0	CgrN	701	gs701	gs					
647	CgrTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.3	0.0	0.5	CgrT	701	gs701	gs					
648	CheNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.0	CheN	701	gs701	gs					
649	CheTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.5	0.0	0.9	CheT	701	gs701	gs					
650	ChoNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.0	ChoN	701	gs701	gs					
651	ChoTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.4	0.0	0.7	ChoT	701	gs701	gs					
652	CinNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.0	CinN	701	gs701	gs					
653	CinTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						1.9	0.0	3.5	CinT	701	gs701	gs					
654	CloNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.0	CloN	701	gs701	gs					
655	CloTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.5	0.0	0.9	CloT	701	gs701	gs					
656	CofNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.1	CofN	701	gs701	gs					
657	CofTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						3.0	0.0	5.4	CofT	701	gs701	gs					
658	CrtNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.0	CrtN	701	gs701	gs					
659	CrtTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						1.5	0.0	2.7	CrtT	701	gs701	gs					
660	CwaNgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.0	0.0	0.0	CwaN	701	gs701	gs					
661	CwaTgs701	701	Efficient Battery Charger	$317	$657	$0	48%	$172	3.8	2.0	(1.8)	7	28%	-26%							1.00	0.00	1,825						0.2	0.0	0.4	CwaT	701	gs701	gs					
662	CasNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.0	0.0	0.0	CasN	701	gsd701	gsd					
663	CasTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						1.5	0.0	2.7	CasT	701	gsd701	gsd					
664	CgrNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.0	0.0	0.0	CgrN	701	gsd701	gsd					
665	CgrTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						1.2	0.0	2.1	CgrT	701	gsd701	gsd					
666	CheNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.0	0.0	0.0	CheN	701	gsd701	gsd					
667	CheTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						2.1	0.0	3.7	CheT	701	gsd701	gsd					
668	ChoNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.0	0.0	0.0	ChoN	701	gsd701	gsd					
669	ChoTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						1.6	0.0	2.9	ChoT	701	gsd701	gsd					
670	CinNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.1	0.0	0.1	CinN	701	gsd701	gsd					
671	CinTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						7.8	0.0	14.0	CinT	701	gsd701	gsd					
672	CloNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.0	0.0	0.0	CloN	701	gsd701	gsd					
673	CloTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						1.9	0.0	3.5	CloT	701	gsd701	gsd					
674	CofNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.1	0.0	0.2	CofN	701	gsd701	gsd					
675	CofTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						12.0	0.0	21.5	CofT	701	gsd701	gsd					
676	CrtNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.1	0.0	0.1	CrtN	701	gsd701	gsd					
677	CrtTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						6.1	0.0	11.0	CrtT	701	gsd701	gsd					
678	CwaNgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.0	0.0	0.0	CwaN	701	gsd701	gsd					
679	CwaTgsd701	701	Efficient Battery Charger	$200	$657	$0	31%	$231	2.8	2.0	(0.9)	7	28%	-12%							1.00	0.00	1,825						0.9	0.0	1.6	CwaT	701	gsd701	gsd					
680	CasNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	CasN	701	gsld701	gsld					
681	CasTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.6	0.0	1.1	CasT	701	gsld701	gsld					
682	CgrNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	CgrN	701	gsld701	gsld					
683	CgrTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.5	0.0	0.9	CgrT	701	gsld701	gsld					
684	CheNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	CheN	701	gsld701	gsld					
685	CheTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.9	0.0	1.6	CheT	701	gsld701	gsld					
686	ChoNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	ChoN	701	gsld701	gsld					
687	ChoTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.7	0.0	1.2	ChoT	701	gsld701	gsld					
688	CinNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.1	CinN	701	gsld701	gsld					
689	CinTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						3.2	0.0	5.8	CinT	701	gsld701	gsld					
690	CloNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	CloN	701	gsld701	gsld					
691	CloTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.8	0.0	1.5	CloT	701	gsld701	gsld					
692	CofNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.1	0.0	0.1	CofN	701	gsld701	gsld					
693	CofTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						5.0	0.0	9.0	CofT	701	gsld701	gsld					
694	CrtNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	CrtN	701	gsld701	gsld					
695	CrtTgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						2.5	0.0	4.6	CrtT	701	gsld701	gsld					
696	CwaNgsld701	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.0	0.0	0.0	CwaN	701	gsld701	gsld					
697	CwaTgsld70	701	Efficient Battery Charger	$160	$657	$0	24%	$251	2.6	2.0	(0.6)	7	28%	-9%							1.00	0.00	1,825						0.4	0.0	0.7	CwaT	701	gsld701	gsld					
698	CasEgsd801	801	Anti-Sweat Controls	$549	$2,092	$0	26%	$779	2.7	2.0	(0.7)	8	25%	-9%	N	Zero - <1 year	0	1.00	0.89	9,313	1.00	1.01	12,513	4.3	4.1	48			0.0	0.0	0.0	CasE	801	gsd801	gsd					
699	CcoEgsd801	801	Anti-Sweat Controls	$234	$1,290	$0	18%	$533	2.4	2.0	(0.4)	8	25%	-5%		payback improve					1.00	0.84	7,713						0.0	0.0	0.0	CcoE	801	gsd801	gsd					
700	CgrEgsd801	801	Anti-Sweat Controls	$549	$2,092	$0	26%	$779	2.7	2.0	(0.7)	8	25%	-9%							1.00	1.01	12,513						2.1	2.1	25.7	CgrE	801	gsd801	gsd					
701	CheEgsd801	801	Anti-Sweat Controls	$234	$1,290	$0	18%	$533	2.4	2.0	(0.4)	8	25%	-5%							1.00	0.84	7,713						0.0	0.0	0.0	CheE	801	gsd801	gsd					
702	ChoEgsd801	801	Anti-Sweat Controls	$234	$1,290	$0	18%	$533	2.4	2.0	(0.4)	8	25%	-5%							1.00	0.84	7,713						0.0	0.0	0.1	ChoE	801	gsd801	gsd					
703	CloEgsd801	801	Anti-Sweat Controls	$234	$1,290	$0	18%	$533	2.4	2.0	(0.4)	8	25%	-5%							1.00	0.84	7,713						0.0	0.0	0.3	CloE	801	gsd801	gsd					
704	CreEgsd801	801	Anti-Sweat Controls	$234	$1,290	$0	18%	$533	2.4	2.0	(0.4)	8	25%	-5%							1.00	0.84	7,713						0.8	0.6	5.8	CreE	801	gsd801	gsd					
705	CrtEgsd801	801	Anti-Sweat Controls	$549	$2,092	$0	26%	$779	2.7	2.0	(0.7)	8	25%	-9%							1.00	1.01	12,513						0.1	0.1	1.7	CrtE	801	gsd801	gsd					
706	CscEgsd801	801	Anti-Sweat Controls	$234	$1,290	$0	18%	$533	2.4	2.0	(0.4)	8	25%	-5%							1.00	0.84	7,713						0.0	0.0	0.1	CscE	801	gsd801	gsd					
707	CasEgsld801	801	Anti-Sweat Controls	$610	$2,092	$0	29%	$748	2.8	2.0	(0.8)	8	25%	-10%							1.00	1.01	12,513						0.0	0.0	0.0	CasE	801	gsld801	gsld					
708	CcoEgsld801	801	Anti-Sweat Controls	$250	$1,290	$0	19%	$525	2.5	2.0	(0.5)	8	25%	-6%							1.00	0.84	7,713						0.0	0.0	0.0	CcoE	801	gsld801	gsld					
709	CgrEgsld801	801	Anti-Sweat Controls	$610	$2,092	$0	29%	$748	2.8	2.0	(0.8)	8	25%	-10%							1.00	1.01	12,513						0.9	0.9	10.7	CgrE	801	gsld801	gsld					
710	CheEgsld801	801	Anti-Sweat Controls	$250	$1,290	$0	19%	$525	2.5	2.0	(0.5)	8	25%	-6%							1.00	0.84	7,713						0.0	0.0	0.0	CheE	801	gsld801	gsld					
711	ChoEgsld801	801	Anti-Sweat Controls	$250	$1,290	$0	19%	$525	2.5	2.0	(0.5)	8	25%	-6%							1.00	0.84	7,713						0.0	0.0	0.0	ChoE	801	gsld801	gsld					
712	CloEgsld801	801	Anti-Sweat Controls	$250	$1,290	$0	19%	$525	2.5	2.0	(0.5)	8	25%	-6%							1.00	0.84	7,713						0.0	0.0	0.1	CloE	801	gsld801	gsld					
713	CreEgsld801	801	Anti-Sweat Controls	$250	$1,290	$0	19%	$525	2.5	2.0	(0.5)	8	25%	-6%							1.00	0.84	7,713						0.3	0.3	2.4	CreE	801	gsld801	gsld					
714	CrtEgsld801	801	Anti-Sweat Controls	$610	$2,092	$0	29%	$748	2.8	2.0	(0.8)	8	25%	-10%							1.00	1.01	12,513						0.1	0.1	0.7	CrtE	801	gsld801	gsld					
715	CscEgsld801	801	Anti-Sweat Controls	$250	$1,290	$0	19%	$525	2.5	2.0	(0.5)	8	25%	-6%							1.00	0.84	7,713						0.0	0.0	0.0	CscE	801	gsld801	gsld					
716	CasEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,186	$2,524	$0	47%	$677	3.7	2.0	(1.8)	15	13%	-12%	N	Incent % &	87	1.00	0.59	7,537	1.00	0.09	7,185	2.6	1.1	19		0%	0.0	0.0	0.0	CasE	808	gs808	gs	$0				
717	CasNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,186	$2,524	$0	47%	$677	3.7	2.0	(1.8)	15	13%	-12%		Payback improve =					1.00	0.09	7,185			100%		0%	0.0	0.0	0.0	CasN	808	gs808	gs	$0				
718	CcoEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%		~50% avail mkt					1.00	0.84	7,713			#####		0%	0.0	0.0	0.0	CcoE	808	gs808	gs	$0				
719	CcoNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CcoN	808	gs808	gs	$0				
720	CgrEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,186	$2,524	$0	47%	$677	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.09	7,185					8%	0.2	0.0	1.5	CgrE	808	gs808	gs	$97				
721	CgrNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,186	$2,524	$0	47%	$677	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.09	7,185					0%	0.0	0.0	0.0	CgrN	808	gs808	gs	$0				
722	CheEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CheE	808	gs808	gs	$0				
723	CheNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CheN	808	gs808	gs	$0				
724	ChoEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.0	ChoE	808	gs808	gs	$1				
725	ChoNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.0	ChoN	808	gs808	gs	$0				
726	CloEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.1	CloE	808	gs808	gs	$4				
727	CloNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	(1.8)	15	13%	-12%							1.00	0.84	7,713					0%	0.0	0.0	0.0	CloN	808	gs808	gs	$0				

728	CreEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	**(1.8)**	15	13%	-12%													1.00	0.84	7,713				5%	0.1	0.1	1.1	CreE	808	gs808	gs	$70
729	CreNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	**(1.8)**	15	13%	-12%													1.00	0.84	7,713				0%	0.0	0.0	0.1	CreN	808	gs808	gs	$3
730	CrtEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,186	$2,524	$0	47%	$677	3.7	2.0	**(1.8)**	15	13%	-12%													1.00	0.09	7,185				1%	0.0	0.0	0.1	CrtE	808	gs808	gs	$6
731	CrtNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,186	$2,524	$0	47%	$677	3.7	2.0	**(1.8)**	15	13%	-12%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CrtN	808	gs808	gs	$0
732	CscEgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	**(1.8)**	15	13%	-12%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CscE	808	gs808	gs	$1
733	CscNgs808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,273	$2,709	$0	47%	$726	3.7	2.0	**(1.8)**	15	13%	-12%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CscN	808	gs808	gs	$0
734	CasEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,522	$2,524	$0	60%	$506	5.0	2.0	**(3.0)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CasE	808	gsd808	gsd	$1
735	CasNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,522	$2,524	$0	60%	$506	5.0	2.0	**(3.0)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CasN	808	gsd808	gsd	$0
736	CcoEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CcoE	808	gsd808	gsd	$0
737	CcoNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CcoN	808	gsd808	gsd	$0
738	CgrEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,522	$2,524	$0	60%	$506	5.0	2.0	**(3.0)**	15	13%	-20%													1.00	0.09	7,185				33%	0.9	0.1	6.0	CgrE	808	gsd808	gsd	$496
739	CgrNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,522	$2,524	$0	60%	$506	5.0	2.0	**(3.0)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CgrN	808	gsd808	gsd	$0
740	CheEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CheE	808	gsd808	gsd	$1
741	CheNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CheN	808	gsd808	gsd	$0
742	ChoEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.1	ChoE	808	gsd808	gsd	$7
743	ChoNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	ChoN	808	gsd808	gsd	$0
744	CloEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				1%	0.0	0.0	0.3	CloE	808	gsd808	gsd	$21
745	CloNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CloN	808	gsd808	gsd	$1
746	CreEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				22%	0.6	0.5	4.4	CreE	808	gsd808	gsd	$363
747	CreNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				1%	0.0	0.0	0.2	CreN	808	gsd808	gsd	$17
748	CrtEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,522	$2,524	$0	60%	$506	5.0	2.0	**(3.0)**	15	13%	-20%													1.00	0.09	7,185				2%	0.1	0.0	0.4	CrtE	808	gsd808	gsd	$33
749	CrtNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,522	$2,524	$0	60%	$506	5.0	2.0	**(3.0)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CrtN	808	gsd808	gsd	$0
750	CscEgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.1	CscE	808	gsd808	gsd	$7
751	CscNgsd808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,654	$2,709	$0	61%	$533	5.1	2.0	**(3.1)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CscN	808	gsd808	gsd	$0
752	CasEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,533	$2,524	$0	61%	$500	5.0	2.0	**(3.1)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CasE	808	gsld808	gsld	$1
753	CasNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,533	$2,524	$0	61%	$500	5.0	2.0	**(3.1)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CasN	808	gsld808	gsld	$0
754	CcoEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CcoE	808	gsld808	gsld	$0
755	CcoNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CcoN	808	gsld808	gsld	$0
756	CgrEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,533	$2,524	$0	61%	$500	5.0	2.0	**(3.1)**	15	13%	-20%													1.00	0.09	7,185				14%	0.4	0.0	2.5	CgrE	808	gsld808	gsld	$208
757	CgrNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,533	$2,524	$0	61%	$500	5.0	2.0	**(3.1)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CgrN	808	gsld808	gsld	$0
758	CheEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CheE	808	gsld808	gsld	$0
759	CheNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CheN	808	gsld808	gsld	$0
760	ChoEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	ChoE	808	gsld808	gsld	$3
761	ChoNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	ChoN	808	gsld808	gsld	$0
762	CloEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				1%	0.0	0.0	0.1	CloE	808	gsld808	gsld	$9
763	CloNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CloN	808	gsld808	gsld	$0
764	CreEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				9%	0.2	0.2	1.8	CreE	808	gsld808	gsld	$153
765	CreNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.1	CreN	808	gsld808	gsld	$7
766	CrtEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,533	$2,524	$0	61%	$500	5.0	2.0	**(3.1)**	15	13%	-20%													1.00	0.09	7,185				1%	0.0	0.0	0.2	CrtE	808	gsld808	gsld	$14
767	CrtNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,533	$2,524	$0	61%	$500	5.0	2.0	**(3.1)**	15	13%	-20%													1.00	0.09	7,185				0%	0.0	0.0	0.0	CrtN	808	gsld808	gsld	$0
768	CscEgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CscE	808	gsld808	gsld	$3
769	CscNgsld808	808	PSC to ECM Evaporator Fan Motor (Reach-In)	$1,669	$2,709	$0	62%	$525	5.2	2.0	**(3.2)**	15	13%	-21%													1.00	0.84	7,713				0%	0.0	0.0	0.0	CscN	808	gsld808	gsld	$0
770	CgrNgsd814	814	Energy Star Commercial Glass Door Refrigerator	$250	$1,217	$0	21%	$489	2.5	2.0	**(0.5)**	12	16%	-4%	N	Zero - <1 year							0	1.00	0.34	6,847	1.00	0.34	6,847	0.0	0.0	0		0.0	0.0	0.0	CgrN	814	gsd814	gsd	
771	CgrTgsd814	814	Energy Star Commercial Glass Door Refrigerator	$250	$1,217	$0	21%	$489	2.5	2.0	**(0.5)**	12	16%	-4%		payback improve											1.00	0.34	6,847					0.0	0.0	0.0	CgrT	814	gsd814	gsd	
772	CrtNgsd814	814	Energy Star Commercial Glass Door Refrigerator	$250	$1,217	$0	21%	$489	2.5	2.0	**(0.5)**	12	16%	-4%													1.00	0.34	6,847					0.0	0.0	0.0	CrtN	814	gsd814	gsd	
773	CrtTgsd814	814	Energy Star Commercial Glass Door Refrigerator	$250	$1,217	$0	21%	$489	2.5	2.0	**(0.5)**	12	16%	-4%													1.00	0.34	6,847					0.0	0.0	0.0	CrtT	814	gsd814	gsd	
774	CgrNgsld814	814	Energy Star Commercial Glass Door Refrigerator	$257	$1,217	$0	21%	$485	2.5	2.0	**(0.5)**	12	16%	-4%													1.00	0.34	6,847					0.0	0.0	0.0	CgrN	814	gsld814	gsld	
775	CgrTgsld814	814	Energy Star Commercial Glass Door Refrigerator	$257	$1,217	$0	21%	$485	2.5	2.0	**(0.5)**	12	16%	-4%													1.00	0.34	6,847					0.0	0.0	0.0	CgrT	814	gsld814	gsld	
776	CrtNgsld814	814	Energy Star Commercial Glass Door Refrigerator	$257	$1,217	$0	21%	$485	2.5	2.0	**(0.5)**	12	16%	-4%													1.00	0.34	6,847					0.0	0.0	0.0	CrtN	814	gsld814	gsld	
777	CrtTgsld814	814	Energy Star Commercial Glass Door Refrigerator	$257	$1,217	$0	21%	$485	2.5	2.0	**(0.5)**	12	16%	-4%													1.00	0.34	6,847					0.0	0.0	0.0	CrtT	814	gsld814	gsld	
778	CgrNgs816	816	Energy Star Commercial Solid Door Refrigerator	$46	$1,292	$0	4%	$630	2.0	2.0	**(0.1)**	12	16%	-1%	N	Zero - <1 year							0	1.00	0.45	6,695	1.00	0.45	6,695	17.8	8.0	118		0.0	0.0	0.2	CgrN	816	gs816	gs	
779	CgrTgs816	816	Energy Star Commercial Solid Door Refrigerator	$46	$1,292	$0	4%	$630	2.0	2.0	**(0.1)**	12	16%	-1%		payback improve											1.00	0.45	6,695					2.5	1.1	16.4	CgrT	816	gs816	gs	
780	CrtNgs816	816	Energy Star Commercial Solid Door Refrigerator	$46	$1,292	$0	4%	$630	2.0	2.0	**(0.1)**	12	16%	-1%													1.00	0.45	6,695					0.0	0.0	0.0	CrtN	816	gs816	gs	
781	CrtTgs816	816	Energy Star Commercial Solid Door Refrigerator	$46	$1,292	$0	4%	$630	2.0	2.0	**(0.1)**	12	16%	-1%													1.00	0.45	6,695					0.2	0.1	1.1	CrtT	816	gs816	gs	
782	CgrNgsd816	816	Energy Star Commercial Solid Door Refrigerator	$338	$1,292	$0	26%	$482	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					0.1	0.1	0.8	CgrN	816	gsd816	gsd	
783	CgrTgsd816	816	Energy Star Commercial Solid Door Refrigerator	$338	$1,292	$0	26%	$482	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					9.9	4.4	65.5	CgrT	816	gsd816	gsd	
784	CrtNgsd816	816	Energy Star Commercial Solid Door Refrigerator	$338	$1,292	$0	26%	$482	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					0.0	0.0	0.1	CrtN	816	gsd816	gsd	
785	CrtTgsd816	816	Energy Star Commercial Solid Door Refrigerator	$338	$1,292	$0	26%	$482	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					0.7	0.3	4.3	CrtT	816	gsd816	gsd	
786	CgrNgsld816	816	Energy Star Commercial Solid Door Refrigerator	$344	$1,292	$0	27%	$479	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					0.1	0.0	0.3	CgrN	816	gsld816	gsld	
787	CgrTgsld816	816	Energy Star Commercial Solid Door Refrigerator	$344	$1,292	$0	27%	$479	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					4.1	1.8	27.3	CgrT	816	gsld816	gsld	
788	CrtNgsld816	816	Energy Star Commercial Solid Door Refrigerator	$344	$1,292	$0	27%	$479	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					0.0	0.0	0.0	CrtN	816	gsld816	gsld	
789	CrtTgsld816	816	Energy Star Commercial Solid Door Refrigerator	$344	$1,292	$0	27%	$479	2.7	2.0	**(0.7)**	12	16%	-6%													1.00	0.45	6,695					0.3	0.1	1.8	CrtT	816	gsld816	gsld	
790	CasEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%	N	Zero - <1 year							0	1.00	1.29	10,078	1.00	1.12	8,951	0.4	0.5	4		0.0	0.0	0.0	CasE	905	gsd905	gsd	
791	CasNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%		payback improve											1.00	1.12	8,951					0.0	0.0	0.0	CasN	905	gsd905	gsd	
792	CcoEgsd905	905	Hot Water Pipe Insulation	$1	$1,163	$0	0%	$587	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	CcoE	905	gsd905	gsd	
793	CcoNgsd905	905	Hot Water Pipe Insulation	$1	$1,163	$0	0%	$587	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	CcoN	905	gsd905	gsd	
794	CgrEgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CgrE	905	gsd905	gsd	
795	CgrNgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CgrN	905	gsd905	gsd	
796	CheEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.1	CheE	905	gsd905	gsd	
797	CheNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CheN	905	gsd905	gsd	
798	ChoEgsd905	905	Hot Water Pipe Insulation	$1	$1,163	$0	0%	$587	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	ChoE	905	gsd905	gsd	
799	ChoNgsd905	905	Hot Water Pipe Insulation	$1	$1,163	$0	0%	$587	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	ChoN	905	gsd905	gsd	
800	CinEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.2	0.2	1.7	CinE	905	gsd905	gsd	
801	CinNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CinN	905	gsd905	gsd	
802	CloEgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CloE	905	gsd905	gsd	
803	CloNgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CloN	905	gsd905	gsd	
804	CmiEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CmiE	905	gsd905	gsd	
805	CmiNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CmiN	905	gsd905	gsd	
806	CofEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.1	CofE	905	gsd905	gsd	
807	CofNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CofN	905	gsd905	gsd	
808	CreEgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.2	CreE	905	gsd905	gsd	
809	CreNgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CreN	905	gsd905	gsd	
810	CrtEgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CrtE	905	gsd905	gsd	
811	CrtNgsd905	905	Hot Water Pipe Insulation	$124	$1,687	$0	7%	$789	2.1	2.0	**(0.2)**	13	15%	-1%													1.00	1.73	12,708					0.0	0.0	0.0	CrtN	905	gsd905	gsd	
812	CscEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.3	CscE	905	gsd905	gsd	
813	CscNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CscN	905	gsd905	gsd	
814	CwaEgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CwaE	905	gsd905	gsd	
815	CwaNgsd905	905	Hot Water Pipe Insulation	$7	$1,189	$0	1%	$597	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CwaN	905	gsd905	gsd	
816	CasEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CasE	905	gsld905	gsld	
817	CasNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CasN	905	gsld905	gsld	
818	CcoEgsld905	905	Hot Water Pipe Insulation	$27	$1,163	$0	2%	$574	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	CcoE	905	gsld905	gsld	
819	CcoNgsld905	905	Hot Water Pipe Insulation	$27	$1,163	$0	2%	$574	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	CcoN	905	gsld905	gsld	
820	CgrEgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CgrE	905	gsld905	gsld	
821	CgrNgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CgrN	905	gsld905	gsld	
822	CheEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CheE	905	gsld905	gsld	
823	CheNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CheN	905	gsld905	gsld	
824	ChoEgsld905	905	Hot Water Pipe Insulation	$27	$1,163	$0	2%	$574	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	ChoE	905	gsld905	gsld	
825	ChoNgsld905	905	Hot Water Pipe Insulation	$27	$1,163	$0	2%	$574	2.0	2.0	**(0.0)**	13	15%	0%													1.00	1.00	8,760					0.0	0.0	0.0	ChoN	905	gsld905	gsld	
826	CinEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.1	0.1	0.7	CinE	905	gsld905	gsld	
827	CinNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CinN	905	gsld905	gsld	
828	CloEgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CloE	905	gsld905	gsld	
829	CloNgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CloN	905	gsld905	gsld	
830	CmiEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CmiE	905	gsld905	gsld	
831	CmiNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CmiN	905	gsld905	gsld	
832	CofEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CofE	905	gsld905	gsld	
833	CofNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CofN	905	gsld905	gsld	
834	CreEgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.1	CreE	905	gsld905	gsld	
835	CreNgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CreN	905	gsld905	gsld	
836	CrtEgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CrtE	905	gsld905	gsld	
837	CrtNgsld905	905	Hot Water Pipe Insulation	$187	$1,687	$0	11%	$757	2.2	2.0	**(0.2)**	13	15%	-2%													1.00	1.73	12,708					0.0	0.0	0.0	CrtN	905	gsld905	gsld	
838	CscEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.1	CscE	905	gsld905	gsld	
839	CscNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CscN	905	gsld905	gsld	
840	CwaEgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CwaE	905	gsld905	gsld	
841	CwaNgsld905	905	Hot Water Pipe Insulation	$35	$1,189	$0	3%	$583	2.0	2.0	**(0.1)**	13	15%	0%													1.00	1.12	8,951					0.0	0.0	0.0	CwaN	905	gsld905	gsld	
842	CinNgs909	909	Solar Water Heater	$1,164	$2,066	$0	56%	$457	4.5	2.0	**(2.5)**	15	13%	-17%	N	Not all segments.	$626	$1,252	100%	6			40	1.00	0.51	4,848	1.00	0.51	4,848	2.4	0.3	31	0%	0.0	0.0	0.0	CinN	909	gs909	gs	$2
843	CinTgs909	909	Solar Water Heater	$1,164	$2,066	$0	56%	$457	4.5	2.0	**(2.5)**	15	13%	-17%		FPL 2011-2015											1.00	0.51	4,848		#####	100%	15%	0.3	0.0	4.6	CinT	909	gs909	gs	$173
844	CinNgsd909	909	Solar Water Heater	$1,302	$2,066	$0	63%	$386	5.4	2.0	**(3.4)**	15	13%	-22%		pilot had very few											1.00	0.51	4,848	Units (2011-201		6	1%	0.0	0.0	0.2	CinN	909	gsd909	gsd	$8
845	CinTgsd909	909	Solar Water Heater	$1,302	$2,066	$0	63%	$386	5.4	2.0	**(3.4)**	15	13%	-22%		participants, though											1.00	0.51	4,848	S kW (Nexant)		3	59%	1.4	0.2	18.4	CinT	909	gsd909	gsd	$773
846	CinNgsld909	909	Solar Water Heater	$1,291	$2,066	$0	62%	$392	5.3	2.0	**(3.3)**	15	13%	-22%													1.00	0.51	4,848	S kW / yr.		20	0%	0.0	0.0	0.1	CinN	909	gsld909	gsld	$3
847	CinTgsld909	909	Solar Water Heater	$1,291	$2,066	$0	62%	$392	5.3	2.0	**(3.3)**	15	13%	-22%													1.00	0.51	4,848				25%	0.6	0.1	7.7	CinT	909	gsld909	gsld	$319
848	CasNgs911	911	Heat Pump Water Heater	$223	$1,023	$0	22%	$405	2.5	2.0	**(0.5)**	10	20%	-5%	N	Zero - <1 year	$500	$186	-63%	2	2	11	0	1.00	0.62	4,301	1.00	0.62	4,301	1.5	0.9	6		0.0	0.0	0.0	CasN	911	gs911	gs	
849	CasTgs911	911	Heat Pump Water Heater	$223	$1,023	$0	22%	$405	2.5	2.0	**(0.5)**	10	20%	-5%		payback improve.											1.00	0.62	4,301					0.0	0.0	0.1	CasT	911	gs911	gs	
850	CasNgsd911	911	Heat Pump Water Heater	$313	$1,023	$0	31%	$359	2.9	2.0	**(0.9)**	10	20%	-9%		Based on prev. FPL											1.00	0.62	4,301	Units		#####		0.0	0.0	0.0	CasN	911	gsd911	gsd	

851	CasTgsd911	911	Heat Pump Water Heater	$313	$1,023	$0	31%	$359	2.9	2.0	**(0.9)**	10	20%	-9%		program averaged											1.00	0.62	4,301	Prev/yr (2007-2	6				[illegible]	0.0	[illegible]	CasT	911	gsd911	gsd
852	CheNgsd911	911	Heat Pump Water Heater	$57	$767	$0	7%	$359	2.1	2.0	**(0.2)**	10	20%	-2%													1.00	0.62	4,301	S kW,	2				0.0	0.0	0.0	CheN	911	gsd911	gsd
853	CheTgsd911	911	Heat Pump Water Heater	$57	$767	$0	7%	$359	2.1	2.0	**(0.2)**	10	20%	-2%													1.00	0.62	4,301						[illegible]	[illegible]	[illegible]	CheT	911	gsd911	gsd
854	CasNgsld911	911	Heat Pump Water Heater	$296	$1,023	$0	29%	$368	2.8	2.0	**(0.8)**	10	20%	-8%													1.00	0.62	4,301						0.0	0.0	0.0	CasN	911	gsld911	gsld
855	CasTgsld911	911	Heat Pump Water Heater	$296	$1,023	$0	29%	$368	2.8	2.0	**(0.8)**	10	20%	-8%													1.00	0.62	4,301						0.0	0.0	[illegible]	CasT	911	gsld911	gsld
856	CheNgsld911	911	Heat Pump Water Heater	$40	$767	$0	5%	$368	2.1	2.0	**(0.1)**	10	20%	-1%													1.00	0.62	4,301						0.0	0.0	0.0	CheN	911	gsld911	gsld
857	CheTgsld911	911	Heat Pump Water Heater	$40	$767	$0	5%	$368	2.1	2.0	**(0.1)**	10	20%	-1%													1.00	0.62	4,301						0.4	0.3	1.7	CheT	911	gsld911	gsld
858	CcoEgs921	921	Retro-Commissioning	$25	$466	$0	5%	$223	2.1	2.0	**(0.1)**	5	40%	-2%	N	Zero - <1 year payback improve							0	1.00	2.33	5,079	1.00	0.01	2,372			7.0	14.4	42	0.7	0.0	1.8	CasE	921	gs921	gs
859	CscEgs921	921	Retro-Commissioning	$62	$1,176	$0	5%	$563	2.1	2.0	**(0.1)**	5	40%	-2%													1.00	3.10	5,982						0.9	2.2	6.1	CscE	921	gs921	gs
860	CscEgsd921	921	Retro-Commissioning	$294	$1,176	$0	25%	$445	2.6	2.0	**(0.7)**	5	40%	-13%													1.00	3.10	5,982						3.8	8.6	24.2	CscE	921	gsd921	gsd
861	CscEgsld921	921	Retro-Commissioning	$293	$1,176	$0	25%	$446	2.6	2.0	**(0.7)**	5	40%	-13%													1.00	3.10	5,982						1.6	3.6	10.1	CscE	921	gsld921	gsld

Florida Power & Light Company
Docket No. 20190015-EG
SACE's First Set of Interrogatories
Interrogatory No. 48

QUESTION:
Please explain whether the estimates of TP, EP, and AP include or exclude the effects of naturally occurring market adoption of efficiency measures (beyond code and standards effects). If the estimates of potential exclude naturally occurring efficiency, please explain how naturally occurring efficiency investments are excluded from the estimates.

RESPONSE:
As described in Section 5.1.1 of Nexant's MPS Report for FPL, the analysis excluded the effects of naturally occurring market adoption that is already accounted for in the utility's base sales forecast. Nexant discussed the assumptions included in the base sales forecast with the load forecasting group to determine the assumptions on naturally occurring efficiency adoption, as well as using utility-specific and regional data on current levels of efficiency adoption that were included in the applicability factors applied to each measure.

DECLARATION

I sponsored the answers to Interrogatory Nos. 14-17, 29-30, 32-39, 48-60, and 62-65 from Southern Alliance for Clean Energy's First Set of Interrogatories to Florida Power & Light Company in Docket No. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Jim Herndon, Vice President, Strategic & Planning Consulting, Nexant

Date: 5/20/19

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Commission Review of Numeric Conservation Goals Florida Power & Light Company	DOCKET NO. 20190015-EG
In re: Commission Review of Numeric Conservation Goals Gulf Power Company	DOCKET NO. 20190016-EG
In re: Commission Review of Numeric Conservation Goals Duke Energy Florida, LLC	DOCKET NO. 20190018-EG
In re: Commission Review of Numeric Conservation Goals Orlando Utilities Commission	DOCKET NO. 20190019-EG
In re: Commission Review of Numeric Conservation Goals JEA	DOCKET NO. 20190020-EG
In re: Commission Review of Numeric Conservation Goals Tampa Electric Company	DOCKET NO. 20190021-EG

DEPOSITION OF: JIM HERNDON

DATE: MAY 29, 2019

TIME: COMMENCED: 9:30 A.M.

LOCATION: RADEY LAW FIRM
301 S. BRONOUGH, STE 200
TALLAHASSEE, FL

REPORTED BY: DEBRA R. KRICK
Court Reporter

PREMIER REPORTING
114 W. 5TH AVENUE
TALLAHASSEE, FLORIDA

APPEARANCES:

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JAMES D. BEASLEY, and MALCOLM N. MEANS, ESQUIRES, Ausley & McMullen, Post Office Box 391, Tallahassee, Florida 32302, appearing on behalf of Tampa Electric Company.

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APPEARANCES (CONTINUED):

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INDEX TO WITNESS

INDEX TO EXHIBITS

it's feasible where it hasn't been adopted already?

A Correct.

Q Okay. And so why doesn't the technical potential account for free riders?

MS. CLARK: I think that's asked and answered.

THE WITNESS: Yeah, it's just not applicable.

BY MR. MARSHALL:

Q The two-year payback screen for free riders that was applied in this case, has Nexant used that screen outside of Florida?

A For market potential studies?

Q Yes.

A Not any that I have been involved with.

Q Has Nexant had to take into account free riders in other jurisdictions?

A We take into account free riders when we assist in DSM program planning, yes.

Q Has Nexant ever had to take into account free riders in market potential studies before?

A Not that I can recall.

Q And so how does Nexant take into account free riders in DSM program planning?

A It depends on the jurisdiction. I would say before, throughout the regulatory process in other jurisdictions, some include market potential study, some

don't. Some include various program planning steps. But at the end of the day, typically what happens in doing utility DSM planning is there is consideration of cost-effectiveness. There is consideration of how a utility should spend its funds and free-riderssship is usually looked at at some point in the DSM planning process to ensure that the utility is using DSM dollars wisely, and not using them on customers that would have done it anyway.

So there is various means to do that, but it's typical in the process to consider free-riderssship, and make sure that your -- the DSM targets or DSM programs are targeting customers that wouldn't do this otherwise, and that it's money well spent.

Q And what are some of those means to account for free riders?

A The two-year payback screening is one. The use of net to gross ratios, which look at the percentage of past program participants that were free riders is looked at. So those are probably the two primary methods I have seen.

Q Did the commercial and industrial measures that Nexant looked at as part of technical potential include water and wastewater?

A So water -- as I recall, water and wastewater

account for free riders?

A I know of other DSM programs that two-year payback is a metric used to limit incentives. So, yeah, I mean, two-year payback is used in other places in terms of DSM programs that are offered.

Q Are you aware of any other jurisdiction where it's used to eliminate measures from consideration as part of a market potential study?

A No other potential studies we've done include that. But like I mentioned earlier, there is often other steps in the planning process where free riders -- before goals are set or targets are established for a utility where things like free-ridersship are considered and dealt with.

Q And I believe you said that Nexant hasn't. Are you aware of any jurisdictions, just based on your knowledge, that use that method to eliminate measures as part of a market potential study?

A Not that I am aware of. But again, it's kind of apples to oranges in terms of the specific DSM planning steps that happen in each jurisdiction.

Q And we talked about the difference between -- that there is one two-year payback screening to account for free riders, and then there is the two-year payback used to set incentive levels for TRC and to cap RIM --

CERTIFICATE OF OATH

STATE OF FLORIDA)
COUNTY OF LEON)

I, the undersigned authority, certify that the above-named witness personally appeared before me and was duly sworn.

WITNESS my hand and official seal this 6th day of June, 2019.

Debbie R Krick

DEBRA R. KRICK
NOTARY PUBLIC
COMMISSION #GG015952
EXPIRES JULY 27, 2020

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, DEBRA R. KRICK, Professional Court Reporter, certify that the foregoing proceedings were taken before me at the time and place therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages, numbered 5 through 177, are a true and correct record of the aforesaid proceedings.

I further certify that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 6th day of June, 2019.

DEBRA R. KRICK
NOTARY PUBLIC
COMMISSION #GG015952
EXPIRES JULY 27, 2020

ERRATA SHEET

I have read the transcript of my deposition, pages 4 through 177 and hereby subscribe to same, including any corrections and/or amendments listed below.

DATE:_____ _____
JIM HERNDON

IN RE DOCKET NOS.: 20190015-EG, 20190016-EG, 20190018-EG, 20190019-EG, 20190020-EG & 20190021-EG

PAGE/LINE	CORRECTION/AMENDMENT	REASON FOR CHANGE
_____	_____	_____
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DATE OF DEPOSITION: 5/29/2019

REPORTER: DEBBIE KRICK

Florida Power & Light Company
Docket No. 20190015-EG
SACE's First Set of Interrogatories
Interrogatory No. 23
Page 1 of 1

QUESTION:
Please explain whether it is the position of FPL that upfront cost is the only barrier to market adoption of all efficiency measures? If so, what is the basis for that statement? If not, please identify all other major market barriers that could lead to less than economically optimal levels of investment in energy efficiency measures.

RESPONSE:
No. Up-front cost typically represents one of the most significant issues for customer adoption of a Demand-Side Management (DSM) measure, but it is not the only potential barrier to adoption. Other such potential barriers include, but are not limited to, the following that can impact a customer's desire to implement a DSM measure:

- Awareness of a DSM measure
- Awareness of potential savings benefits
- Concern with service or product degradation
- Availability of a DSM measure
- Past experiences with DSM measures
- Split incentives (*i.e.,* a different entity receives the benefits than the entity paying for measure)

DECLARATION

I sponsored the answers to Interrogatory Nos. 22-24 and 61 and co-sponsored the answers to Interrogatory Nos. 13 and 21 from Southern Alliance for Clean Energy's First Set of Interrogatories to Florida Power & Light Company in Docket No. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Thomas R. Koch

Date: 5/20/2019

2019 Illinois Statewide Technical Reference Manual for Energy Efficiency

Version 7.0

Volume 1: Overview and User Guide

FINAL

September 28, 2018

Effective:

January 1, 2019

Table of Contents

Tables and Figures

1 Purpose of the TRM

The purpose of the Illinois Statewide Technical Reference Manual (TRM) is to provide a transparent and consistent basis for calculating energy (electric kilowatt-hours (kWh) and natural gas therms) and capacity (electric kilowatts (kW)) savings generated by the State of Illinois' energy efficiency programs[1] which are administered by the state's largest electric and gas Utilities[2] (collectively, Program Administrators or the Utilities).

The TRM is a technical document that is filed with the Illinois Commerce Commission (Commission or ICC) and is intended to fulfill a series of objectives, including:

- "Serve as a common reference document for all… stakeholders, [Program Administrators], and the Commission, so as to provide transparency to all parties regarding savings assumptions and calculations and the underlying sources of those assumptions and calculations.
- Support the calculation of the Illinois Total Resource Cost test[3] ("TRC"), as well as other cost-benefit tests in support of program design, evaluation and regulatory compliance. Actual cost-benefit calculations and the calculation of avoided costs will not be part of this TRM.
- Identify gaps in robust, primary data for Illinois, that can be addressed via evaluation efforts and/or other targeted end-use studies.
- [Provide] a process for periodically updating and maintaining records, and preserve a clear record of what deemed parameters are/were in effect at what times to facilitate evaluation and data accuracy reviews.
- …[S]upport coincident peak capacity (for electric) savings estimates and calculations for electric utilities in a manner consistent with the methodologies employed by the utility's Regional Transmission Organization ("RTO"), as well as those necessary for statewide Illinois tracking of coincident peak capacity impacts."[4]

1.1 Acknowledgments

This document was created through collaboration amongst the members of the Illinois Energy Efficiency Stakeholder Advisory Group (SAG). The SAG is an open forum where interested parties may participate in the evolution of Illinois' energy efficiency programs. Parties wishing to participate in the SAG process may do so by visiting http://www.ilsag.info/questions.html and contacting the Independent Facilitator at Annette.Beitel@FutEE.biz. Parties wishing to participate in the Technical Advisory Committee (TAC), a subcommittee of the SAG, may do so by contacting the TRM Administrator at iltrmadministrator@veic.org.

SAG Stakeholders[5]
Ameren Illinois Company (Ameren)
Citizen's Utility Board (CUB)
City of Chicago
Commonwealth Edison Company (ComEd)
Elevate Energy
Energy Resources Center at the University of Illinois, Chicago (ERC)
Environment IL
Environmental Law and Policy Center (ELPC)
Future Energy Enterprises LLC
Illinois Attorney General's Office (AG)
Illinois Commerce Commission Staff (ICC Staff)

[1] 220 ILCS 5/8-103B and 220 ILCS 5/8-104.
[2] The Program Administrators include: Ameren Illinois, ComEd, Peoples Gas, North Shore Gas, and Nicor Gas (collectively, the Utilities).
[3] The Illinois TRC test is defined in 220 ILCS 5/8-104(b) and 20 ILCS 3855/1-10.
[4] Illinois Statewide Technical Reference Manual Request for Proposals, August 22, 2011, pages 3-4, http://ilsag.org/yahoo_site_admin/assets/docs/TRM_RFP_Final_part_1.230214520.pdf
[5] Being an open forum, this list of SAG stakeholders and participants may change at any time.

SAG Stakeholders[5]
Illinois Department of Commerce and Economic Opportunity (DCEO)
Independent Evaluators (ADM, Cadmus, Itron, Navigant)
Metropolitan Mayor's Caucus (MMC)
Midwest Energy Efficiency Association (MEEA)
Natural Resources Defense Council (NRDC)
Nicor Gas
Peoples Gas and North Shore Gas

Table 1.1: Document Revision History

Document Title	Applicable to PY Beginning
Illinois_Statewide_TRM_Effective_060112_Version_1.0_091412_Clean.doc	6/1/12
Illinois_Statewide_TRM_Effective_060113_Version_2.0_060713_Clean.docx	6/1/13
Illinois_Statewide_TRM_Effective_060114_Version_3.0_022414_Clean.docx	6/1/14
Illinois_Statewide_TRM_Effective_060115_Final_022415_Clean.docx	6/1/15
IL-TRM_Effective_060116_v5.0_Vol_1_Overview_021116_Final IL-TRM_Effective_060116_v5.0_Vol_2_C_and_I_021116_Final IL-TRM_Effective_060116_v5.0_Vol_3_Res_021116_Final IL-TRM_Effective_060116_v5.0_Vol_4_X-Cutting_Measures_and_Attach._021116_Final	6/1/16
IL-TRM_Effective_010118_v6.0_Vol_1_Overview_020817_Final IL-TRM_Effective_010118_v6.0_Vol_2_C_and_I_020817_Final IL-TRM_Effective_010118_v6.0_Vol_3_Res_020817_Final IL-TRM_Effective_010118_v6.0_Vol_4_X-Cutting_Measures_and_Attach_020817_Final	1/1/18
IL-TRM_Effective_010119_v7.0_Vol_1_Overview_092818_Final IL-TRM_Effective_010119_v7.0_Vol_2_C_and_I_092818_Final IL-TRM_Effective_010119_v7.0_Vol_3_Res_092818_Final IL-TRM_Effective_010119_v7.0_Vol_4_X-Cutting_Measures_and_Attach_092818_Final	1/1/19

1.2 Summary of Measure Revisions

The following tables summarize the evolution of measures that are new, revised or errata. This version of the TRM contains 143 measure-level changes as described in the following table.

Table 1.2: Summary of Measure Level Changes

Change Type	# Changes
Errata	13
Revision	113
New Measure	17
Total Changes	143

The 'Change Type' column indicates what kind of change each measure has gone through. Specifically, when a measure error was identified and the TAC process resulted in a consensus, the measure is identified here as an 'Errata'. In these instances the measure code indicates that a new version of the measure has been published, and that the effective date of the measure dates back to January 1st, 2018. Measures that are identified as 'Revised' were included in the sixth edition of the TRM, and have been updated for this edition of the TRM. Both 'Revised' and 'New Measure(s)' have an effective date of January 1st, 2019.

The following table provides an overview of the 143 measure-level changes that are included in this version of the TRM.

Table 1.3: Summary of Measure Revisions

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
Volume 1: Overview	N/A	N/A	N/A	Revision	Edits to 1.4 Development Process – docket information Section 3.4 – Addition of mobile home Section 3.5 – Addition of loadshapes from primary research studies. Edits or additions of the following loadshape values: Residential Indoor Lighting Residential Holiday String Lighting Commercial Indoor Lighting Grocery/Conv. Store Indoor Lighting Health Indoor Lighting Office Indoor Lighting Retail Indoor Lighting Warehouse Indoor Lighting Education Indoor Lighting Commercial Outdoor Lighting Commercial Clothes Washer Reference to new Excel file mapping Illinois zip codes to Heating and Cooling Degree-day zones.	N/A
Volume 2: C&I	4,1 Agricultural	4.1.1 Engine Block Timer for Agricultural Equipment	CI-AGE-EBLT-V02-190101	Revision	Assumptions adjusted from Vermont basis to Illinois climate. Variables defined.	N/A
		4.1.2 High Volume Low Speed Fans	CI-AGE-HVSF-V02-190101	Revision	Minor typo fixes	N/A
		4.1.3 High Speed Fans	CI-AGE-HSF_-V02-190101	Revision	Minor typo fixes	N/A
		4.1.4 Livestock Waterer	CI-AGE-LSW1-V02-190101	Revision	Minor typo fixes. Additions to measure and coincidence factor description.	N/A
	4.2 Food Service Equipment	4.2.2 Commercial Solid and Glass Door Refrigerators and Freezers	CI-FSE-CSDO-V02-190101	Revision	Updated based on new ENERGY STAR and Federal Standard Updated measure cost.	Dependent on inputs
		4.2.3 Commercial Steam Cooker	CI-FSE-STMC-V05-190101	Revision	Addition of secondary kWh savings for water supply	Increase
		4.2.6 ENERGY STAR Dishwasher	CI-FSE-ESDW-V04-190101	Revision	Addition of secondary kWh savings for water supply and waste water treatment Update to conversion factor	Increase
		4.2.7 ENERGY STAR	CI-FSE-ESFR-V02-190101	Revision	Updated based on new ENERGY STAR spec.	Dependent

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
		Fryer			Updated Measure Life	on inputs
		4.2.8 ENERGY STAR Griddle	CI-FSE-ESGR-V03-190101	Revision	Coincident factor fix	kW Increase dependent on inputs
		4.2.9 ENERGY STAR Hot Food Holding Cabinets	CI-FSE-ESHH-V03-190101	Revision	Coincident factor fix	kW Increase dependent on inputs
		4.2.10 ENERGY STAR Ice Maker	CI-FSE-ESIM-V02-190101	Revision	Measure Life Update. Update to Federal Standard and ENERGY STAR specifications effective January 2018.	Dependent on inputs
		4.2.11 High Efficiency Pre-Rinse Spray Valve	CI-FSE-SPRY-V05-190101	Revision	Addition of secondary kWh savings for water supply and waste water treatment	Increase
		4.2.19 ENERGY STAR Electric Convection Oven	CI-FSE-ECON-V02-190101	Revision	Coincident factor fix	kW Increase dependent on inputs
	4.3 Hot Water	4.3.1 Storage Water Heater	CI-HWE-STWH-V03-190101	Revision	Standard change to Uniform Energy Factor. Reference to upcoming IECC 2018 code for New Construction.	Dependent on inputs
		4.3.2 Low Flow Faucet Aerators	CI-HWE-LFFA-V08-190101	Revision	Measure Life Update. Addition of secondary kWh savings for water supply and waste water treatment	Increases
		4.3.3 Low Flow Showerheads	CI-HWE-LFSH-V05-190101	Revision	Addition of secondary kWh savings for water supply and waste water treatment	Increases
		4.3.4 Commercial Pool Covers	CI-HWE-PLCV-V02-190101	Revision	Addition of secondary kWh savings for water supply	Increases
		4.3.5 Tankless Water Heater	CI-HWE-TKWH-V04-190101	Revision	Gas storage baseline definition made consistent with Storage Water Heater. Added IECC 2018 new construction code baseline assumptions.	Unknown
		4.3.6 Ozone Laundry	CI-HWE-OZLD-V02-190101	Revision	Addition of secondary kWh savings for water supply and waste water treatment	Increases
		4.3.7 Multifamily Central Domestic Hot Water Plants	CI-HWE-MDHW-V03-190101	Revision	Reference to upcoming IECC 2018 code for New Construction.	N/A
	4.4 HVAC	4.4 HVAC End Use	N/A	Revision	Update to select building type heating and cooling EFLH assumptions that have been transitioned and	Dependent on inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
					calibrated to OpenStudio by the Modeling Subcommittee. Model Source provided in table	
		4.4.1 Air Conditioner Tune-Up	CI-HVC-ACTU-V05-180101	Errata	Correction of error in algorithm for deemed approach.	Decrease
		4.4.6 Electric Chiller	CI-HVC-CHIL-V06-190101	Revision	Measure Life Update. Added IECC 2018 new construction code baseline assumptions.	Increase lifetime savings
		4.4.7 ENERGY STAR and CEE Super-Efficient Room Conditioner	CI-HVC-ESRA-V02-190101	Revision	Update to Federal Standard and Efficient specifications.	Dependent on inputs
		4.4.9 Heat Pump Systems	CI-HVC-HPSY-V06-190101	Revision	Update to Federal Standard. Added IECC 2018 new construction code baseline assumptions.	Dependent on Inputs
		4.4.10 High Efficiency Boiler	CI-HVC-BOIL-V06-190101	Revision	Addition of new federal standard notice	N/A
		4.4.11 High Efficiency Furnace	CI-HVC-FRNC-V08-190101	Revision	Update to select building type cooling run hours assumptions that have been transitioned and calibrated to OpenStudio by the Modeling Subcommittee. Model Source provided in table	N/A
		4.4.13 Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	CI-HVC-PTAC-V09-190101	Revision	Measure Life Update. Update to Federal Standard	Decrease
		4.4.14 Pipe Insulation	CI-HVC-PINS-V05-190101	Revision	Assumptions for larger pipe sizes added.	N/A
		4.4.15 Single-Package and Split System Unitary Air Conditioners	CI-HVC-SPUA-V06-190101	Revision	Update to Federal Standard. Added IECC 2018 new construction code baseline assumptions. Clarification of use of EER for older units.	Dependent on Inputs
		4.4.17 Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	CI-HVC-VSDHP-V05-190101	Revision	Update to measure life. Reference to upcoming IECC 2018 code for New Construction. Update to select building type heating and cooling run hours assumptions that have been transitioned and calibrated to OpenStudio by the Modeling Subcommittee.	Increase in lifetime savings

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
					Model Source provided in table	
		4.4.18 Small Commercial Programmable Thermostats	CI-HVC-PROG-V02-190101	Revision	Update to measure life.	Increase in lifetime savings
		4.4.19 Demand Controlled Ventilation	CI-HVC-DCV-V05-190101	Revision	Addition of assumptions for adding DCV controls to exhaust fans in enclosed parking garages. Adjustments to analysis resulting in new savings factors.	Dependent on Inputs
		4.4.25 Small Commercial Programmable Thermostat Adjustments	CI-HVC-PRGA-V02-180101	Errata	Correction of error in the Natural Gas Climate Zone Coefficients for Assembly building type.	Dependent on Inputs
			CI-HVC-PRGA-V03-190101	Revision	Measure Life update	N/A
		4.4.26 Variable Speed Drives for HVAC Supply and Return Fans	CI-HVC-VSDF-V03-190101	Revision	Measure cost update. Reference to upcoming IECC 2018 code for New Construction. Update to select building type fan run hours assumptions that have been transitioned and calibrated to OpenStudio by the Modeling Subcommittee. Model Source provided in table	N/A
		4.4.27 Energy Recovery Ventilator	CI-HVC-ERVE-V03-190101	Revision	Addition of cooling savings. Reference to upcoming IECC 2018 code for New Construction.	Increase
		4.4.30 Notched V Belts for HVAC Systems	CI-HVC-NVBE-V04-190101	Revision	Update to select building type fan run hours assumptions that have been transitioned and calibrated to OpenStudio by the Modeling Subcommittee. Model Source provided in table	N/A
		4.4.32 Combined Heat and Power	CI-HVC-CHAP-V03-190101	Revision	Update to Heat Rate base on eGrid 2016	Dependent on Inputs
		4.4.33 Industrial air Curtain	CI-HVC-AIRC-V02-190601	Revision	Reference to upcoming IECC 2018 code for New Construction.	N/A
		4.4.34 Destratification Fan	CI-HVC-DSFN-V03-190101	Revision	Change to assumptions in thermal resistance through roof	Decrease
		4.4.35 Economizer Repair and Optimization	CI-HVC-ECRP-V03-180101	Errata	Correction of error in Integrated Economizer Operation (EL) variable and example calculation.	Dependent on Inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
		4.4.36 Multi-Family Space Heating Steam Boiler Averaging Controls	CI-HVC-SBAC-V02-190101	Revision	Change to qualification criteria. Measure cost update. Change to Savings Factor	Increase
		4.4.40 Gas High Efficiency Single Package Vertical Air Conditioner	CI-HVC -SPVA-V01-190101	New	New Measure	N/A
		4.4.41 Advanced Rooftop Controls	CI-HVC-ARTC-V01-190101	New	New Measure	N/A
		4.4.42 Advanced Thermostats for Small Commercial	CI-HVC-ADTH-V01-190101	New	New Measure	N/A
		4.4.43 Packaged RTU Sealing	CI-HVC-PRTU-V01-190101	New	New Measure	N/A
		4.4.44 Commercial Ground Source Heat Pump	CI-HVC-GSHP-V01-190101	New	New Measures	N/A
		4.4.45 Adsorbant Air Cleaning	CI-HVC-ADAC-V01-190101	New	New Measures	N/A
	4.5 Lighting	4.5 Lighting End Use Table	N/A	Revision	Update to select building type assumptions that have been transitioned and calibrated to OpenStudio by the Modeling Subcommittee. Change to Exterior dusk to dawn hours assumption. Change to Refrigerator and Freezer Coincidence Factor.	Dependent on Inputs
		4.5.1 Commercial Compact Fluorescent Lamp	CI-LTG-CCFL-V08-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		4.5.3 High Performance and Reduced Wattage T8 Fixtures and Lamps	CI-LTG-T8FX-V07-190101	Revision	Measure Life Update. Update to C&I v RES split and ISR. Additional year of T12 as viable retrofit baseline.	Decrease
		4.5.4 LED Bulbs and Fixtures	CI-LTG-LEDB-V07-180101	Errata	Correction of year that the mid-life adjustment applies to account for T12 replacement, from 2018 to 2019. Addition of mid-life adjustment assumptions for omnidirectional screw based lamps.	N/A
			CI-LTG-LEDB-V08-190101	Revision	Update to Lamp lumen bins. Decorative and Directional Lamp EISA backstop	Dependent on Inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
					adjustments added. Update to C&I v RES split and ISR. Clarification on calculation of 3-way lamps.	
		4.5.5 Commercial LED Exit Signs	CI-LTG-LEDE-V03-190101	Revision	Update to lifetime. Update to measure cost. Update to WattsBase and WattsEE assumptions	Dependent on Inputs
		4.5.7 Lighting Power Density	CI-LTG-LPDE-V04-190101	Revision	Added IECC 2018 new construction code baseline assumptions.	Dependent on Inputs
		4.5.8 Miscellaneous Commercial/ Industrial Lighting	CI-LTG-MSCI-V03-190101	Revision	Measure Life Update.	N/A
		4.5.9 Multi-Level Lighting Switch	CI-LTG-MLLC-V04-190101	Revision	Reference to upcoming IECC 2018 code for New Construction.	N/A
		4.5.10 Lighting Controls	CI-LTG-OSLC-V05-190101	Revision	Combining occupancy, daylighting and integrated controls in to one measure. Updating watts controlled and % savings factors. Updated costs.	Decrease
		4.5.12 T5 Fixtures and Lamps	CI-LTG-T5FX-V06-190101	Revision	Measure Life Update. Additional year of T12 as viable retrofit baseline.	N/A
		4.5.13 Occupancy Controlled Bi-Level Lighting Fixtures	CI-LTG-OCBL-V03-190101	Revision	Reference to upcoming IECC 2018 code for New Construction.	N/A
		4.5.14 Commercial Specialty Compact Fluorescent Lamp	CI-LTG-SCFL-V04-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		4.5.16 LED Streetlighting	CI-LTG-STRT-V01-190101	New	New Measure	N/A
	4.6 Refrigeration	4.6.1 Automatic Door Closer for Walk-In Coolers and Freezers	CI-RFG-ATDC-V02-190101	Revision	Reference update	N/A
		4.6.3 Door Heater Controls for Cooler or Freezer	CI-RFG-DHCT-V02-190101	Revision	Measure Life Update.	Decrease in lifetime savings
		4.6.6 Evaporator Fan Control for Electrically Commutated Motors	CI-RFG-EVPF-V04-190101	Revision	Measure Life Update.	Decrease in lifetime savings
		4.6.10 High Speed Roll Up Doors	CI-RFG-HSRD-V02-190101	Revision	Measure Life Update.	Increase in lifetime savings

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
		4.6.11 Q-Sync Motors for Reach-in Coolers/Freezers	CI-RFG-QMF-V01-190101	New	New measure	N/A
		4.6.12 Variable Frequency Drive for Condenser Fans	CI-RFG-VSC-V01-190101	New	New measure	N/A
	4.7 Compressed Air	4.7.1 VSD Air Compressor	CI-CPA-VSDA-V02-190101	Revision	Clarification on measure eligibility. Additional baseline characterized. CF for varying shift lengths. Measure Life Update.	Dependent on Inputs
		4.7.2 Compressed Air Low Pressure Drop Filters	CI-CPA-LPDF-V02-190101	Revision	Measure Life Update. CF and hours for varying shift lengths.	Dependent on Inputs
		4.7.3 Compressed Air No-Loss Condensate Drains	CI-CPA-NCLD-V02-190101	Revision	Added CF assumption.	N/A
		4.7.4 Efficient Compressed Air Nozzles	CI-CPA-CNOZ-V02-190101	Revision	CF for varying shift lengths.	N/A
		4.7.5 Efficient Refrigerated Compressed Air Dryer	CI-CPA-CADR-V02-190101	Revision	Measure Life Update. CF for varying shift lengths. Removal of default 50% CFM factor.	Increases
	4.8 Miscellaneous	4.8.1 Pump Optimization	CI-MSC-PMPO-V02-190101	Revision	Measure Life Update.	Decrease in lifetime savings
		4.8.2 Roof Insulation for C&I Facilities	CI-MSC-RINS-V03-190101	Revision	Reference to upcoming IECC 2018 code for New Construction.	N/A
		4.8.7 Advanced Power Strip – Tier 1 Commercial	CI-MSC-APSC-V02-190101	Revision	Algorithm typo fixed	N/A
		4.8.10 Commercial Clothes Dryer Moisture Sensor	CI-MSC-CDMS-V01-190101	New	New Measure	N/A
		4.8.11 Efficient Thermal Oxidizers	CI-MSC-ETOX-V01-190101	New	New Measure	N/A
Volume 3: Residential	5.1 Appliances	5.1.2 ENERGY STAR Clothes Washer	RS-APL-ESCL-V05-180101	Errata	Update to Federal Standard.	Decrease
			RS-APL-ESCL-V06-190101	Revision	Addition of CEE Tier 3. Measure cost update.	Dependent on Inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
					Update to assumptions based on current available product and updated RECS information. Addition of secondary kWh savings for water supply and waste water treatment	
		5.1.3 ENERGY STAR Dehumidifier	RS-APL-ESDH-V04-180101	Errata	Update to ENERGY STAR specification.	Increase
			RS-APL-ESDH-V05-190101	Revision	Notes for upcoming Federal Standard change. Update to measure cost.	N/A
		5.1.4 ENERGY STAR Dishwasher	RS-APL-ESDI-V04-190101	Revision	Update to measure cost. Update to measure life. Update to operating hours assumption. Addition of secondary kWh savings for water supply and waste water treatment	Increase in kWh. Decrease in kW savings
		5.1.5 ENERGY STAR Freezer	RS-APL-ESFR-V03-190101	Revision	Measure Life Update.	Increase in lifetime savings
		5.1.6 ENERGY STAR and CEE Tier 2 Refrigerator	RS-APL-ESRE-V06-190101	Revision	Measure Life Update.	Increase in lifetime savings
		5.1.7 ENERGY STAR Room Air Conditioner	RS-APL-ESRA-V07-190101	Revision	Removal of Connected Allowance from ENERGY STAR specification.	Increase
		5.1.8 Refrigerator and Freezer Recycling	RS-APL-RFRC-V07-190101	Revision	Removal of NTG discussion and reference to section 4.2. Measure Life Update.	Decrease in lifetime savings
		5.1.9 Room Air Conditioner Recycling	RS-APL-RARC-V02-190101	Revision	Update to assumption of retired unit efficiency.	Decrease
		5.1.10 ENERGY STAR Clothes Dryer	RS-APL-ESDR-V02-190101	Revision	Measure Life Update.	Increase in lifetime savings
		5.1.12 Ozone Laundry	RS-APL-OZNE-V01-190101	New	New Measure.	N/A
	5.2 Consumer Electronics	5.2.1 Advanced Power Strip – Tier 1	RS-CEL-SSTR-V04-190101	Revision	Clarification of ISR definitions	N/A
		5.2.2 Advanced Power Strip – Residential Audio Visual	RS-CEL-APS2-V03-190101	Revision	Clarification of ERP	N/A
	5.3 HVAC	5.3.1 Air Source Heat Pump	RS-HVC-ASHP-V08-190101	Revision	Note added that it is not appropriate to claim additional ECM savings. Addition of Quality Install assumptions. Measure Life Update. Updates to existing and in-situ efficient ratings.	Dependent on Inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
		5.3.2 Boiler Pipe Insulation	RS-HVC-PINS-V03-190101	Revision	Addition of midlife adjustment to account for HVAC replacement during lifetime of measure	Decrease in lifetime savings
		5.3.3 Central Air Conditioning	RS-HVC-CAC1-V08-190101	Revision	Note added that it is not appropriate to claim additional ECM savings. Addition of Quality Install assumptions. Update efficient condition specifications. Updates to existing and in-situ efficient ratings.	Dependent on Inputs
		5.3.4 Duct Insulation and Sealing	RS-HVC-DINS-V07-190101	Revision	Addition of midlife adjustment to account for HVAC replacement during lifetime of measure	Decrease in lifetime savings
		5.3.5 Furnace Blower Motor	RS-HVC-FBMT-V04-190101	Revision	Updates to description. Change to savings methodology based on Opinion Dynamics and Cadmus metering study. Measure Life Update.	Dependent on Inputs
		5.3.6 Gas High Efficiency Boiler	RS-HVC-GHEB-V07-190101	Revision	Change to 'EFLH * Capacity' methodology.	Dependent on Inputs
		5.3.7 Gas High Efficiency Furnace	RS-HVC-GHEF-V08-190101	Revision	Change to 'EFLH * Capacity' methodology.	Dependent on Inputs
		5.3.8 Ground Source Heat Pump	RS-HVC-GSHP-V08-190101	Revision	Update to gas water heater Federal standard. Addition of GSHP as an existing option for early replacement. Updates to existing efficient ratings. Update to Heat Rate base on eGrid 2016.	Dependent on Inputs
		5.3.9 High Efficiency Bathroom Exhaust Fan	RS-HVC-BAFA-V02-190101	Revision	Update to include both standard and continuous usage. Addition of ENERGY STAR specifications.	Dependent on Inputs
		5.3.10 HVAC Tune Up (Central Air Conditioning or Air Source Heat Pump)	RS-HVC-TUNE-V04-190101	Revision	Clarification of multifamily definitions	N/A
		5.3.11 Programmable Thermostats	RS-HVC-PROG-V05-190101	Revision	Measure Life Update. Addition of mobile home and unknown household factors	Increase in lifetime savings
		5.3.12 Ductless Heat Pumps	RS-HVC-DHP-V06-190101	Revision	Measure Life Update. Addition of incremental cost from baseline DMSHP. Updates to existing efficient ratings. Update to Heat Rate base on eGrid 2016.	Dependent on Inputs
		5.3.13 Residential	RS-HVC-FTUN-V04-	Revision	Clarification of measure life.	Dependent

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
		Furnace Tune-Up	190101		Methodology added to use HVAC SAVE outputs directly. Change to 'EFLH * Capacity' methodology.	on Inputs
		5.3.14 Boiler Reset Controls	RS-HVC-BREC-V02-190101	Revision	Addition of midlife adjustment to account for HVAC replacement during lifetime of measure	Decrease in lifetime savings
		5.3.16 Advanced Thermostats	RS-HVC-ADTH-V03-190101	Revision	Measure Life Update. Addition of mobile home and unknown household factors and capacities. Updates to existing efficient ratings. Updates to assumptions based on Navigant program participant evaluation Update to cooling % reduction assumption.	Dependent on Inputs
		5.3.17 Gas High Efficiency Combination Boiler	RS-HVC-COMB-V01-190101	New	New Measure	N/A
	5.4 Hot Water	5.4.1 Domestic Hot Water Pipe Insulation	RS-HWE-PINS-V03-190101	Revision	Addition of circumference factor pre- and post-insulation.	Dependent on Inputs
		5.4.2 Gas Water Heater	RS-HWE-GWHT-V08-190101	Revision	Addition of Uniform Energy Factor. Update to gas water heater Federal standard.	Dependent on Inputs
		5.4.3 Heat Pump Water Heaters	RS-HWE-HPWH-V07-190101	Revision	Addition of Uniform Energy Factor Update to electric water heater Federal Standard. Update to measure costs. Update to COP of cooling estimate. Measure Life Update. Addition of midlife adjustment to account for HVAC replacement during lifetime of measure	Dependent on Inputs
		5.4.4 Low Flow Faucet Aerators	RS-HWE-LFFA-V07-190101	Revision	Measure Life Update. Updates to eligibility and existing GPM assumptions. Updates to ISR assumptions. Addition of unknown household type size. Addition of secondary kWh savings for water supply and waste water treatment. Update to Gallons per Hour calculation.	Dependent on Inputs
		5.4.5 Low Flow Showerheads	RS-HWE-LFSH-V06-190101	Revision	Updates to eligibility and existing GPM assumptions. Updates to ISR assumptions. Addition of unknown household type size. Addition of secondary kWh savings for water supply and waste water treatment.	Dependent on Inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
					Update to Gallons per Hour calculation.	
		5.4.6 Water Heater temperature Setback	RS-HWE-TMPS-V06-190101	Revision	Clarification of multifamily definitions	N/A
		5.4.8 Thermostatic Restrictor Shower Valve	RS-HWE-TRVA-V04-190101	Revision	Addition of unknown household type size. Addition of secondary kWh savings for water supply and waste water treatment	Increase
		5.4.9 Shower Timer	RS-DHW-SHTM-V02-190101	Revision	Addition of unknown household type size. Addition of secondary kWh savings for water supply and waste water treatment	Increase
	5.5 Lighting	5.5.1 Compact Fluorescent Lamp	RS-LTG-ESCF-V07-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LTG-ESCF-V08-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		5.5.2 Specialty Compact Fluorescent Lamp	RS-LTG-ESCC-V06-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LTG-ESCC-V07-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		5.5.3 ENERGY STAR Torchiere	RS-LTG-ESTO-V05-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LTG-ESTO-V06-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		5.5.4 Exterior Hardwired Compact Fluorescent Lamp Fixture	RS-LRG-EFOX-V07-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LRG-EFOX-V08-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		5.5.5 Interior Hardwired Compact Fluorescent Lamp Fixture	RS-LTG-IFIX-V07-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LTG-IFIX-V08-190101	Revision	Addition of language that measure is effective until 12/31/2018.	N/A
		5.5.6 LED Specialty Lamps	RS-LTG-LEDD-V08-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LTG-LEDD-V09-190101	Revision	Updates to Res v C&I split, ISR, leakage, CF and HOU. Decorative and Directional Lamp EISA backstop adjustments added. Format of watts tables updated. Clarification on deferred install methodology.	Decrease in Savings
		5.5.7 LED Exit Signs	RS-LTG-LEDE-V03-190101	Revision	Clarity of application within multifamily unit. Measure made RF only. Measure life adjusted accordingly.	Dependent on Inputs

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
					Measure cost updated. Base and Efficient wattage adjusted.	
		5.5.8 LED Screw Based Omnidirectional Bulbs	RS-LTG-LEDA-V06-180101	Errata	Addition of leakage assumption to kW and waste heat algorithms.	Decrease in kW savings
			RS-LTG-LEDA-V07-190101	Revision	Updates to Res v C&I split, ISR, leakage, CF and HOU. Clarification on deferred install methodology.	Dependent on Inputs
		5.5.9 LED Fixtures	RS-LTG-LDFX-V01-190101	New	New Measure	N/A
		5.5.10 Holiday String Lighting	RS-LTG-LEDH-V01-190101	New	New Measure	N/A
		5.5.11 LED Nightlights	RS-LTG-NITL-V01-190101	New	New Measure	N/A
	5.6 Shell	5.6.1 Airsealing	RS-SHL-AIRS-V07-190101	Revision	Update to measure life. Addition of midlife adjustment to account for HVAC replacement during lifetime of measure Addition of cooling, heating fan and gas heating adjustment factors, with distinction made between measures combined with attic insulation or not.	Dependent on Inputs
		5.6.2 Basement Sidewall Insulation	RS-SHL-BINS-V09-190101	Revision	Update to measure life. Addition of midlife adjustment to account for HVAC replacement during lifetime of measure	Decrease in lifetime savings
		5.6.3 Floor Insulation Above Crawlspace	RS-SHL-FINS-V09-190101	Revision	Update to measure life. Addition of midlife adjustment to account for HVAC replacement during lifetime of measure.	Decrease in lifetime savings
		5.6.4 Wall Insulation	RS-SHL-WINS-V08-190101	Revision	Separation of Wall and Ceiling/Attic Insulation measures Update to measure life. Addition of midlife adjustment to account for HVAC replacement during lifetime of measure	Decrease in lifetime savings
		5.6.5 Ceiling/Attic Insulation	RS-SHL-AINS-V01-190101	Revision	Separation of Wall and Ceiling/Attic Insulation measures Update to measure life. Addition of midlife adjustment to account for HVAC replacement during lifetime of measure Updates to cooling, gas heating adjustment factors plus addition of heating fan adjustment factor, with distinction made between measures combined with airsealing measure or not.	Dependent on Inputs
		5.6.6 Rim/Band Joist Insulation	RS-SHL-RINS-V01-190101	New	New Measure	
	5.7	5.7.1 High Efficiency	RS-MSC-RPLP-V02-190101	Revision	Update to ENERGY STAR specifications.	Dependent

Volume	End Use	Measure Name	Measure Code	Change Type	Explanation	Impact on Savings
	Miscellaneous	Pool Pumps			Addition of above ground pools. Update to measure cost.	on Inputs
Volume 4: Cross Cutting Measures and Attachments	6.1 Behavior	6.1.1 Adjustments to Behavior Savings to Account for Persistence	CC-BEH-BEHP-V03-190101	Revision	Footnote added to Retention Rate variable to acknowledge uncertainty related to the current assumption, and a recommendation to update should better evaluation information become available.	N/A
	Attachment B: Effective Useful Life for Custom Measure Guidelines	N/A	N/A	New	New section providing guidelines and default assumptions for custom measure effective useful lives.	N/A

Table 1.4: Summary of Attachment A: IL-NTG Methods Revisions

IL-TRM Volume	Sectors	Protocol Name	Change Type	Explanation
Vol. 4	All Sectors	Programs Currently Covered in this Document	Revision	Added language to allow SAG-approved updates to go into effect before the effective date of the updated TRM.
Vol. 4	All Sectors	Spillover Specific Issues	Revision	Added language and table for estimating spillover from trade allies for all sectors (not only for residential).
Vol. 4	All Sectors	Commercial, Industrial and Public Sector Programs	Revision	Updated table with 2018-21 programs.
Vol. 4	All Sectors	Core Free Ridership Scoring Algorithm: Algorithm 1 and Algorithm 2	Revision	Added language to aid evaluators in selecting the appropriate algorithm to use.
Vol. 4	Residential and Low Income	Residential and Low Income Programs	Revision	Updated table with 2018-21 programs. Added footnote regarding NTG value for Income Eligible programs.
Vol. 4	Residential and Low Income	Residential and Low Income Programs	Revision	Changed language from program influence on *decision* to program influence on *making* energy efficiency improvements.
Vol. 4	All Sectors	Non-Participant Spillover Measured Through Trade Allies	Revision	Moved and revised language from section 4.1.3 to section 5.1 to allow for combining trade ally free ridership with customer free ridership for all sectors.
Vol. 4	Residential and Low Income	Appliance Recycling	Revision	Deleted language in section 4.2 regarding Induced Replacement to reflect current industry practiced described in the latest version of the Uniform Methods Protocol.
Vol. 4	Residential and Low Income	Nonparticipant Spillover Measured Through Trade Allies	Revision	Deleted section 4.1.3 to allow estimating nonparticipant spillover through trade allies for all sectors.
Vol. 4	Residential and Low Income	Multifamily Protocol	Revision	Added language clarifying CFL, non-CFL, LED and non-LED measures.
Vol. 4	Residential and Low Income	Builder Nonparticipant Spillover	Revision	Updated Table 4-6 to IECC 2015 Building Energy Code.
Vol. 4	Cross- Sectors	Combining Participant and Trade-Ally Free Ridership Scores	Revision	Added section 5.1 for combining trade ally free ridership with customer free ridership for all sectors.
Vol. 4	Cross- Sectors	Combining Participant and Trade-Ally Free Ridership Scores	Revision	Added section 5.2 for estimating spillover through trade allies for all sectors.
Vol. 4	Cross-Sectors	Consumption Data Analysis Protocol	Revision	Revised to address when consumption data analysis yields net savings, gross savings, or something in between.
Vol. 4	Cross-Sectors	Survey-Based Approaches	Revision	Added language to consider survey mode effects, especially online vs. telephone.

1.3 Enabling ICC Policy

This Illinois Statewide Technical Reference Manual (TRM) was developed to comply with the Illinois Commerce Commission (ICC or Commission) Final Orders from the electric and gas Utilities'[6] Energy Efficiency Plan dockets. In the Final Orders, the ICC required the utilities to work with the Illinois Department of Commerce and Economic Opportunity (DCEO) and the Illinois Energy Efficiency Stakeholder Advisory Group (SAG) to develop a statewide TRM. *See, e.g.,* ComEd's Final Order *(Docket No. 10-0570, Final Order[7] at 59-60, December 21, 2010);* Ameren's Final Order *(Docket No. 10-0568, Order on Rehearing[8] at 19, May 24, 2011);* Peoples Gas/North Shore Gas' Final Order *(Docket No. 10-0564, Final Order[9]at 76, May 24, 2011),* and Nicor's Final Order *(Docket No. 10-0562, Final Order[10] at 30, May 24, 2011).*

As directed in the Utilities' Efficiency Plan Orders, the SAG had the opportunity to, and also participated in, every aspect of the development of the TRM. Interested members of the SAG participated in weekly teleconferences to review, comment, and participate in the development of the TRM. The active participants in the TRM were designated as the "Technical Advisory Committee" (TAC). The TAC participants include representatives from the following organizations:

- the Utilities (ComEd, Ameren IL, Nicor Gas, Peoples Gas/North Shore Gas),
- Implementation contractors (CLEAResult, Conservation Services Group, Elevate Energy, Franklin Energy, GDS Associates, PECI, 360 Energy Group),
- Illinois Department of Commerce and Economic Opportunity (DCEO),
- the independent evaluators (ADM Associates, The Cadmus Group, Itron, Navigant Consulting, Michael's Engineering, Opinion Dynamics Corporation),
- ICC Staff,
- the Illinois Attorney General's Office (AG),
- Natural Resources Defense Council (NRDC),
- the Environmental Law and Policy Center (ELPC),
- the Citizen's Utility Board (CUB),
- The University of Illinois at Chicago,
- Future Energy Enterprises,
- Issue-specific invited participants including; Geothermal Alliance of Illinois, the Geothermal Exchange Organization, Embertec, TrickleStar, Google Nest, Ecobee, and US EPA ENERGY STAR.

1.4 Development Process

The first edition of the IL-TRM was approved by the Commission in ICC Docket No. 12-0528[11]. The second edition of the IL-TRM was approved by the Commission in ICC Docket No. 13-0437[12]. The policies surrounding the applicability and use of the IL-TRM in planning, implementation, and evaluation were originally established by the

[6] The Illinois Utilities subject to this TRM include: Ameren Illinois Company d/b/a Ameren Illinois (Ameren), Commonwealth Edison Company (ComEd), The Peoples Gas Light and Coke Company and North Shore Gas Company, and Northern Illinois Gas Company d/b/a Nicor Gas.
[7] http://www.icc.illinois.gov/docket/files.aspx?no=10-0570&docId=159809
[8] http://www.icc.illinois.gov/docket/files.aspx?no=10-0568&docId=167031
[9] http://www.icc.illinois.gov/docket/files.aspx?no=10-0564&docId=167023
[10] http://www.icc.illinois.gov/docket/files.aspx?no=10-0562&docId=167027
[11] http://www.icc.illinois.gov/docket/files.aspx?no=12-0528&docId=187554
[12] http://www.icc.illinois.gov/docket/files.aspx?no=13-0437&docId=200492

Commission in ICC Docket No. 13-0077[13], and most recently in ICC Docket No. 17-0270[14]. The third edition of the IL-TRM was approved by the Commission in ICC Docket No. 14-0189[15]. The fourth edition of the IL-TRM was approved by the Commission in ICC Docket No. 15-0187[16]. The fifth edition of the IL-TRM was approved by the Commission in ICC Docket No. 16-0171[17]. The sixth edition of the IL-TRM was approved by the Commission in ICC Docket No. 17-0106[18].

This document represents the seventh edition of the IL-TRM and it applies to Section 8-103B and Section 8-104 energy efficiency programs. It contains a series of new measures, as well as a series of errata items[19] and updates to existing measures that were already present in the first six editions. Like the previous editions, it is a result of an ongoing review process involving the Illinois Commerce Commission (ICC) Staff (Staff or ICC Staff), the Utilities, the Evaluators, the SAG TAC, and the SAG. VEIC meets with the SAG and/or the TRM TAC at least once each month to create a high level of transparency and vetting in the development of this TRM.

Measure requests that are submitted by interested parties are ranked based on the following criteria to determine the approximate priority level for order of inclusion in the TRM:

1. High Priority
    a. For those existing measures that make up a significant portion of a utilities' portfolio and/or where the impact of the requested change is high
    b. For new measures where plans are in place to implement in the next program year
2. Medium Priority
    a. For existing measures that are a less significant percent of a utilities' portfolio and value change will not have a significant impact
    b. For new measures where a savings value is estimated but implementation plans not yet developed
3. Low Priority
    a. For existing measures that represent a very small percent of a utilities' portfolio
    b. For new measures that are just beginning to be explored and will not be implemented in the next program year

These rankings are used to align budget and schedule constraints with desired updates from the TRM.

As measure requests are finalized leading up to the next update of the TRM, weekly TAC meetings are often scheduled to maximize the level of collaboration and visibility into the measure characterization process. Where consensus does not emerge on specific measures or issues, those items are identified in a memo. As a result, this TRM represents a broad consensus amongst the SAG and TAC participants. In keeping with the goal of transparency, all of the comments and their status to-date are available through the TAC SharePoint web site, https://portal.veic.org.

For each measure characterization, this TRM includes engineering algorithm(s) and a value(s) for each parameter in the equation(s). These parameters have values that fall into one of three categories: a single deemed value, a lookup

[13] http://www.icc.illinois.gov/docket/files.aspx?no=13-0077&docId=203903; http://www.icc.illinois.gov/docket/files.aspx?no=13-0077&docId=195913; http://www.icc.illinois.gov/downloads/public/edocket/339744.pdf

[14] https://www.icc.illinois.gov/docket/files.aspx?no=17-0270&docId=257523 Please see IL-TRM Policy Document Version 2.0 available at https://www.icc.illinois.gov/downloads/public/edocket/447989.pdf

[15] http://www.icc.illinois.gov/docket/files.aspx?no=14-0189&docId=210478 http://www.icc.illinois.gov/downloads/public/Illinois_Statewide_TRM_Effective_060114_Version_3.0_022414_Clean.pdf

[16] http://www.icc.illinois.gov/docket/files.aspx?no=15-0187&docId=226161 http://www.icc.illinois.gov/downloads/public/Illinois_Statewide_TRM_Effective_060115_Final_022415_Clean.pdf

[17] https://www.icc.illinois.gov/docket/files.aspx?no=16-0171&docId=239985 https://www.icc.illinois.gov/downloads/public/IL-TRM%20Version%205.0%20dated%20February%2011,%202016%20Final%20-%20Compiled%20Volumes%201-4.pdf

[18] https://www.icc.illinois.gov/docket/files.aspx?no=17-0106&docId=250827 https://www.icc.illinois.gov/downloads/public/edocket/442527.pdf

[19] Errata as well as links to the official IL-TRM documents, dockets, and policy documents are available on the following ICC webpage: http://www.icc.illinois.gov/Electricity/programs/TRM.aspx

table of deemed values or an actual value such as the capacity of the equipment. The TRM makes extensive use of lookup tables because they allow for an appropriate level of measure streamlining and customization within the context of an otherwise prescriptive measure.

Accuracy is the overarching principle that governs what value to use for each parameter. When it is explicitly allowed within the text of the measure characterization, the preferred value is the actual or on-site value for the individual measure being implemented. The *deemed values*[20] in the lookup tables are the next most accurate choice, and in the absence of either an actual value or an appropriate value in a lookup table, the single, *deemed value* should be used. As a result, this single, *deemed value* can be thought of as a default value for that particular input to the algorithm.

A single *deemed savings estimate* is produced by any given combination of an algorithm and the allowable input values for each of its parameters. In cases where lookup tables are provided, there is a range of deemed savings estimates that are possible, depending on site-specific factors such as equipment capacity, location and building type.

Algorithms and their parameter values are included for calculating estimated:

- Gross annual electric energy savings (kWh)
- Gross annual natural gas energy savings (therms)
- Gross electric summer coincident peak demand savings (kW)

To support cost-effectiveness calculations, parameter values are also included for:

- Incremental costs ($)
- Measure life (years)
- Operation and maintenance costs ($)
- Water (gal) and other resource savings where appropriate.

1.4.1 Reliability Review

The process of incorporating new and better information into the TRM occurs annually as new measures and errors are identified, program designs change, old measures are dropped from programs, or other external events (such as code and standard changes or new evaluations and other data) warrant a review of assumptions. However, not all measures have updates triggered by such events, and some measures continue to appear in the TRM without ongoing review. Short of proactively identified issues that would trigger an update to a TRM characterization, a regular reliability review should be undertaken to assess that the information in older measures is still relevant and reliable. This review will include a general appraisal of reasonableness and continued program relevancy and an update of any assumptions to reflect new information.

To ensure that measures initially developed in the past and not recently revisited are updated and retired as needed, each measure is given a Review Deadline – a date that triggers a reliability review. This Review Deadline is established for each measure based on factors such as expected revisions to energy codes or federal standards; knowledge of upcoming evaluation or research efforts; knowledge of rapidly changing technology, cost, baselines, or other factors; or expected shifts in current customer practices. No Review Deadline is longer than six years from the date of the initial characterization or last update of a measure. The TRM Administrator will propose Review Deadlines for each measure, and they are reviewed and approved by the TAC. The Review Deadline for each measure is indicated in the measure characterization within the TRM. For example, a Review Deadline specified as 1/1/2019 means that the measure will be reviewed no later than the annual IL-TRM update process that occurs in 2018, in advance of the 1/1/2019 Review Deadline. Following a review and/or update, a new Review Deadline will be assigned to that measure.

[20] Emphasis has been added to denote the difference between a “deemed value” and a “deemed savings estimate”. A deemed value refers to a single input value to an algorithm, while a deemed savings estimate is the result of calculating the end result of all of the values in the savings algorithm.

2 Organizational Structure

The organization of this document follows a three-level format. These levels are designed to define and clarify what the measure is and where it is applied.

1. **Market Sectors Volumes**[21]
    - This level of organization specifies the type of customer the measures apply to, either Commercial and Industrial (provided in Volume 2), Residential (provided in Volume 3), or cross-cutting measures, such as Behavior Persistence (provided in Volume 4, together with Attachments including the documentation of Illinois Statewide Net-to-Gross methodologies).
    - Answers the question, "What category best describes the customer?"
2. **End-use Category**
    - This level of organization represents most of the major end-use categories for which an efficient alternative exists. The following table lists all of the end-use categories in this version of the TRM.
    - Answers the question, "To what end-use category does the measure apply?"

Table 2.1: End-Use Categories in the TRM[22]

Volume 2: Commercial and Industrial Market Sector	Volume 3: Residential Market Sector	Volume 4: Cross-Cutting Measures and Attachments
Agricultural Equipment	Appliances	Behavior
Food Service Equipment	Consumer Electronics	
Hot Water	Hot Water	
HVAC	HVAC	
Lighting	Lighting	
Refrigeration	Shell	
Compressed Air	Miscellaneous	
Miscellaneous		

3. **Measure & Technology**
    - This level of organization represents individual efficient measures such as CFL lighting and LED lighting, both of which are individual technologies within the Lighting end-use category.
    - Answers the question, "What technology defines the measure?"

This organizational structure is silent on which fuel the measure is designed to save; electricity or natural gas. By organizing the TRM this way, measures that save on both fuels do not need to be repeated. As a result, the TRM will be easier to use and to maintain.

2.1 Measure Code Specification

In order to uniquely identify each measure in the TRM, abbreviations for the major organizational elements of the TRM have been established. When these abbreviations are combined and delimited by a dash ('-') a unique, 18-character alphanumeric code is formed that can be used for tracking the measures and their associated savings estimates. Measure codes appear at the end of each measure and are structured using five parts.

Code Structure = Market + End-use Category + Measure + Version # + Effective Date

[21] Note that the Public sector buildings and low income measures are not listed as a separate Market Sector. The Public building type is one of a series of building types that are included in the appropriate measures in the Commercial and Industrial Sector.

[22] Please note that this is not an exhaustive list of end-uses and that others may be included in future versions of the TRM.

For example, the commercial boiler measure is coded: "CI-HVC-BLR_-V01-120601"

Table 2.2: Measure Code Specification Key

Market (@@)	End-use (@@@)	Measure (@@@@)	Version (V##)	Effective Date
CI (C&I)	AGE (Agricultural Equipment)	BLR_	V01	YYMMDD
RS (Residential)	APL (Appliances)	T5FX	V02	YYMMDD
CC (Cross-Cutting)	BEH (Behavior)	T8FX	V03	YYMMDD
	CEL (Consumer Electronics)	…	…	…
	CPA (Compressed Air)			
	FSE (Food Service Equipment)			
	HVC (HVAC)			
	HWE (Hot Water)			
	LTG (Lighting)			
	MSC (Miscellaneous)			
	RFG (Refrigeration)			
	SHL (Shell)			

2.2 Components of TRM Measure Characterizations

Each measure characterization uses a standardized format that includes at least the following components. Measures that have a higher level of complexity may have additional components, but also follow the same format, flow and function.

DESCRIPTION

Brief description of measure stating how it saves energy, the markets it serves and any limitations to its applicability.

DEFINITION OF EFFICIENT EQUIPMENT

Clear definition of the criteria for the efficient equipment used to determine delta savings. Including any standards or ratings if appropriate.

DEFINITION OF BASELINE EQUIPMENT

Clear definition of the efficiency level of the baseline equipment used to determine delta savings including any standards or ratings if appropriate. If a Time of Sale measure the baseline will be new base level equipment (to replace existing equipment at the end of its useful life or for a new building). For Early Replacement or Early Retirement measures the baseline is the existing working piece of equipment that is being removed.

DEEMED LIFETIME OF EFFICIENT EQUIPMENT

The expected duration in years (or hours) of the savings. If an early replacement measure, the assumed life of the existing unit is also provided.

DEEMED MEASURE COST

For time of sale measures, incremental cost from baseline to efficient is provided. Installation costs should only be included if there is a difference between each efficiency level. For Early Replacement the full equipment and install cost of the efficient installation is provided in addition to the full deferred hypothetical baseline replacement cost.

LOADSHAPE

The appropriate loadshape to apply to electric savings is provided.

COINCIDENCE FACTOR

The summer coincidence factor is provided to estimate the impact of the measure on the utility's system peak – defined as 1PM to hour ending 5PM on non-holiday weekdays, June through August.

Algorithm

CALCULATION OF ENERGY SAVINGS

Algorithms are provided followed by list of assumptions with their definition.

If there are no Input Variables, there will be a finite number of Output values. These will be identified and listed in a table. Where there are custom inputs, an example calculation is often provided to illustrate the algorithm and provide context.

ELECTRIC ENERGY SAVINGS

SUMMER COINCIDENT PEAK DEMAND SAVINGS

NATURAL GAS SAVINGS

WATER IMPACT DESCRIPTIONS AND CALCULATION

DEEMED O&M COST ADJUSTMENT CALCULATION

Only required if the operation and maintenance cost for the efficient case is different to the baseline.

MEASURE CODE

REVIEW DEADLINE

If not otherwise updated as part of an identified new TRM issue request before this Review Deadline, the measure will undergo a reliability review for reasonableness, continued program relevancy, and update of material assumptions during the update cycle prior to this deadline.

2.3 Variable Input Tables

Many of the measures in this TRM require the user to select the appropriate input value from a list of inputs for a given parameter in the savings algorithm. Where the TRM asks the user to select the input, look-up tables of allowable values are provided. For example, a set of input parameters may depend on building type; while a range of values may be given for each parameter, only one value is appropriate for any specific building type. If no table of alternative inputs is provided for a particular parameter, then the single deemed value will be used, unless the measure has a custom allowable input.

2.3.1 C&I Custom Value Use in Measure Implementation

This section defines the requirements for capturing Custom variables that can be used in place of defaults for select assumptions within the prescriptive measures defined in this statewide TRM. This approach is to be used when a variable in a measure formula can be replaced by a verifiable and documented value that is not presented in the TRM. This approach assumes that the algorithms presented in the measure are used as stated and only allows changes to certain variable values and is not a replacement algorithm for the measure. A custom variable is when customer input is provided to define the number or the value is measured at the site. Custom values can also be supplied from product data of the measure installed. In certain cases the custom data can be provided from a documented study or report that is applicable to the measure. Custom variables and potential sources are clearly defined in the specific measures where "Actual" or "Custom" is noted.

In exceptional cases where the participant, program administrator, and independent evaluator all agree that the TRM algorithm for a particular energy efficiency measure does not accurately characterize the energy efficiency measure within a project due to the complexity in the design and configuration of the particular energy efficiency project, a more comprehensive custom engineering and financial analysis may be used that more accurately incorporates the attributes of the measure in the complex energy efficiency project. In such cases and consistent with Commission policy adopted in ICC Docket No. 17-0270, Program Administrators are subject to retrospective evaluation risk (retroactive adjustments to savings based on ex post evaluation findings) for such projects using customized savings calculations.

2.4 Program Delivery & Baseline Definitions

The measure characterizations in this TRM are not grouped by program delivery type. As a result, the measure characterizations provided include information and assumptions to support savings calculations for the range of program delivery options commonly used for the measure. The organizational significance of this approach is that multiple baselines, incremental costs, O&M costs, measure lives and in-service rates are included in the measure characterization(s) that are delivered under two or more different program designs. Values appropriate for each given program delivery type are clearly specified in the algorithms or in look-up tables within the characterization.

Care has been taken to clearly define in the measure's description the types of program delivery that the measure characterization is designed to support. However, there are no universally accepted definitions for a particular program type, and the description of the program type(s) may differ by measure. Nevertheless, program delivery types can be generally defined according to the following table. These are the definitions used in the measure descriptions, and, when necessary, individual measure descriptions may further refine and clarify these definitions of program delivery type.

Table 2.3: Program Delivery Types

Program	Attributes
Time of Sale (TOS)	Definition: A program in which the customer is incented to purchase or install higher efficiency equipment than if the program had not existed. This may include retail rebate (coupon) programs, upstream buydown programs, online store programs or contractor based programs as examples. Baseline = New equipment. Efficient Case = New, premium efficiency equipment above federal and state codes and standard industry practice. Example: CFL rebate
New Construction (NC)	Definition: A program that intervenes during building design to support the use of more-efficient equipment and construction practices. Baseline = Building code or federal standards. Efficient Case = The program's level of building specification Example: Building shell and mechanical measures
Retrofit (RF)	Definition: A program that upgrades existing equipment before the end of its useful life. Baseline = Existing equipment or the existing condition of the building or equipment. A single baseline applies over the measure's life. Efficient Case = New, premium efficiency equipment above federal and state codes and standard industry practice. Example: Air sealing and insulation
Early Replacement (EREP)	Definition: A program that replaces existing equipment before the end of its expected life. Baseline = Dual; it begins as the existing equipment and shifts to new baseline equipment after the expected life of the existing equipment is over. Efficient Case = New, premium efficiency equipment above federal and state codes and standard industry practice. Example: Refrigerators, freezers
Early	Definition: A program that retires duplicative equipment before its expected life is over.

Program	Attributes
Retirement (ERET)	Baseline = The existing equipment, which is retired and not replaced. Efficient Case = Zero because the unit is retired. Example: Appliance recycling
Direct Install (DI)	Definition: A program where measures are installed during a site visit. Baseline = Existing equipment. Efficient Case = New, premium efficiency equipment above federal and state codes and standard industry practice. Example: Lighting and low-flow hot water measures
Efficiency Kits (KITS)	Definition: A program where measures are provided free of charge to a customer in an Efficiency Kit. Baseline = Existing equipment. Efficient Case = New, premium efficiency equipment above federal and state codes and standard industry practice. Example: Lighting and low-flow hot water measures

The concept and definition of the baseline is a key element of every measure characterization and is directly related to the program delivery type. Without a clear definition of the baseline, the savings algorithms cannot be adequately specified and subsequent evaluation efforts would be hampered. As a result, each measure has a detailed description (and in many cases, specification) of the specific baseline that should be used to calculate savings. Baselines in this TRM fall into one of the following four categories, and are organized within each measure characterization by the program delivery type to which it applies.

1. **Building Code:** As defined by the minimum specifications required under state energy code or applicable federal standards.
2. **Existing Equipment**: As determined by the most representative (or average) example of equipment that is in the existing stock. Existing equipment baselines apply over the equipment's remaining useful life.
3. **New Equipment:** As determined by the equipment that represents standard practice in the current market environment. New equipment baselines apply over the effective useful life of the measure.
4. **Dual Baseline:** A baseline that begins as the existing equipment and shifts to new equipment after the expected life of the existing equipment is over

3 Assumptions

The information contained in this TRM contains VEIC's recommendations for the content of the Illinois TRM. Sources that are cited within the TRM have been chosen based on two priorities, geography and age. Whenever possible and appropriate, VEIC has incorporated Illinois-specific information into each measure characterization. The Business TRM documents from Ameren and ComEd were reviewed, as well as program and measure specific data from evaluations, efficiency plans, and working documents.

The assumptions for these characterizations rest on our understanding of the information available. In each case, the available Illinois and Midwest-specific information was reviewed, including evaluations and support material provided by the Illinois Utilities.

When Illinois or region-specific evaluations or data were not available, best practice research and data from other jurisdictions were used, often from west- and east-coast states that have allocated large amounts of funding to evaluation work and to refining their measure characterization parameters. As a result, much of the most-defensible information originates from these regions. In every case, VEIC used the most-recent, well-designed, and best-supported studies and only if it was appropriate to generalize their conclusions to the Illinois programs.

3.1 Footnotes & Documentation of Sources

Each new and updated measure characterization is supported by a work paper, which is posted to the SharePoint web site (https://portal.veic.org).[23] Both the work paper and the measure characterizations themselves use footnotes to document the references that have been used to characterize the technology. The reference documents are too numerous to include in an Appendix and have instead been posted to the TRM's SharePoint website. These files can be found in the 'Sources and Reference Documents' folder in the main directory, and are also posted to the SAG's public web site (http://www.ilsag.info/technical-reference-manual.html).

3.2 General Savings Assumptions

The TRM savings estimates are expected to serve as average, representative values, or ways to calculate savings based on program-specific information. All information is presented on a per-measure basis. In using the measure-specific information in the TRM, it is helpful to keep the following notes in mind.

- All estimates of energy (kWh or therms) and peak (kW) savings are for first-year savings, not lifetime savings.
- Unless otherwise noted, measure life is defined to be the life of an energy consuming measure, including its equipment life and measure persistence.
- Where deemed values for savings are provided, they represent the average energy (kWh or therms) or peak (kW) savings that could be expected from the average of all measures that might be installed in Illinois in the program year.
- In general, the baselines included in the TRM are intended to represent average conditions in Illinois. Some are based on data from the state, such as household consumption characteristics provided by the Energy Information Administration. Some are extrapolated from other areas, when Illinois data are not available.

3.3 Shifting Baseline Assumptions

The TRM anticipates the effects of changes in efficiency codes and standards on affected measures. When these changes take effect, a shift in the baseline is usually required. This complicates the measure savings estimation somewhat, and will be handled in future versions of the TRM by describing the choice of and reasoning behind a shifting baseline assumption. In this version of the TRM, this applies to CFLs and T5/T8 Linear Fluorescents, Furnaces and Early Replacement Measures.

[23] To gain access to the SharePoint web site, please contact the TRM Administrator at iltrmadministrator@veic.org.

3.3.1 CFL and T5/T8 Linear Fluorescents and LED Baseline Assumptions

Specific reductions in savings have been incorporated for CFL and LED measures that relate to the shift in appropriate baseline due to changes in Federal Standards for lighting products. Federal legislation (stemming from the Energy Independence and Security Act of 2007) mandated a phase-in process that began in 2012 for all general-purpose light bulbs (defined as omnidirectional or A-lamps) between 40W and 100W to be approximately 30% more energy efficient than current incandescent bulbs, in essence beginning the phase-out of the current style, or "standard", incandescent bulbs. From 2012, standard 100W incandescent bulbs could no longer be manufactured, followed by restrictions on standard 75W bulbs in 2013 and 60W and 40W bulbs in 2014. The baseline for the CFL and LED Omnidirectional Lamp measure in the corresponding program years therefore became bulbs (improved or "efficient" incandescent, or halogen) that met the new standard and have the same lumen equivalency. In addition, a backstop provision requires replacement baseline lamps meet 45 lumens/watt from 2020. To account for this shifting baseline, annual savings are reduced within the lifetime of the measure using a midlife baseline adjustment. The magnitude and timing of these adjustments are specified within each measure.

Specialty and Directional lamps were not included in the original definition of General Service Lamps in the Energy Independence and Security Act of 2007 (EISA). Therefore, the initial baseline is an incandescent / halogen lamp described in that measure.

However, a DOE Final Rule released on 1/19/2017 updated the EISA regulations to remove the exemption for these lamp types such that they become subject to the backstop provision defined within the original legislation. There is, however, uncertainty around the final application of the EISA backstop provision, particularly whether the expanded definition will hold, as well as uncertainty regarding how the market for these products would change absent the backstop. Therefore, the 2019 version of the LED Specialty Lamp measure delays application of the midlife adjustment associated with the backstop provision to 1/1/2024. However, TAC members commit to making appropriate mid-year adjustments to the measure characterization in the event that new information adds sufficient clarity and concludes any legal challenges to support making a change to this agreement. This means that, if within PY2019 it becomes clear that the EISA backstop *will* apply to the measures characterized herein, the timing of the midlife adjustment will be changed to be applied in 2021, consistent with the omnidirectional measure. Likewise, if it becomes clear that these lamp types will revert to being exempt, the midlife adjustment will be removed. In addition, the TAC and IL TRM Administrator must consider NTG and lifetime assumptions and, if consensus is reached, apply coordinated adjustments to the TRM at that time (if consensus is not reached the most recent NTG evaluation results for these measures will be applied). Any mid-year adjustments to the TRM and NTG would be applied for all installs beginning 30 days after agreement is reached, rather than waiting for the next TRM update.

In July 14, 2012, Federal Standards were enacted that were expected to eliminate T-12s as an option for linear fluorescent fixtures. Through v3.0 of the TRM, it was assumed that the T-12 would no longer be baseline for retrofits from 1/1/2016. However, due to significant loopholes in the legislation, T-12 compliant product is still freely available, and in Illinois T-12s continue to hold a significant share of the existing and replacement lamp market. Therefore, the timing of the sunsetting of T-12s as a viable baseline was pushed back in v7.0 to 1/1/2020, and will be revisited in future update sessions and incorporate findings from any baseline studies conducted through the year.

3.3.2 Early Replacement Baseline Assumptions

A series of measures have an option to choose an Early Replacement Baseline if the following conditions are met:

Early Replacement determination will be based on meeting the following conditions:

- The existing unit is operational when replaced, or
- The existing unit requires minor repairs (see table below) [24].

[24] The Technical Advisory Committee agreed that if the cost of repair is less than 20% of the new baseline replacement cost it can be considered early replacement.

Existing System	Maximum repair cost
Air Source Heat Pump	$918
Central Air Conditioner	$734
Boiler	$709
Furnace	$528
Ground Source Heat Pump	<$249 per ton

- All other conditions will be considered Time of Sale.

The Baseline efficiency of the existing unit replaced:

- If the efficiency of the existing unit is less than the maximum shown below, the Baseline efficiency is the actual efficiency value of the unit replaced. If the efficiency is greater than the maximum, the Baseline efficiency is shown in the "New Baseline" column below:

Existing System	Maximum efficiency for Actual	New Baseline
Air Source Heat Pump	10 SEER	14 SEER
Central Air Conditioner	10 SEER	13 SEER
Boiler	75% AFUE	82% AFUE
Furnace	75% AFUE	80% AFUE
Ground Source Heat Pump	10 SEER	13 SEER

- If the operational status, repair cost or efficiency of the existing unit is unknown, the Baseline efficiency is the "New Baseline" column above.

3.3.3 Furnace Baseline

The prior national standard for residential oil and gas furnaces was 78% AFUE. DOE raised the standard in 2007 to 80% AFUE, effective 2015. However, virtually all furnaces on the market have an AFUE of 80% or better, which prompted states and environmental and consumer groups to sue DOE over its 2007 decision. In April 2009, DOE accepted a "voluntary remand" in that litigation. In October 2009, manufacturers and efficiency advocates negotiated an agreement that, for the first time, included different standard levels in three climate regions: the North, South, and Southwest. DOE issued a direct final rule (DFR) in June 2011 reflecting the standard levels in the consensus agreement. The DFR became effective on October 25, 2011 establishing new standards: In the North, most furnaces will be required to have an AFUE of 90%.The 80% AFUE standard for the South and Southwest will remain unchanged at 80%. Oil furnaces will be required to have an AFUE of 83% in all three regions. The amended standards will become effective in May 2013 for non-weatherized furnaces and in January 2015 for weatherized furnaces. DOE estimates that the standards will save about 3.3 quads (quadrillion Btu) of energy over 30 years and yield a net present value of about $14 billion at a 3 percent discount rate.

Update*:* On January 14th 2013, the U.S. Department of Energy (DOE) proposed to settle a lawsuit brought by the American Public Gas Association (APGA) that seeks to roll back gas furnace efficiency standards. As a result, the new standards, completed in 2011 and slated to take effect in May 2013, would be eliminated in favor of yet another round of DOE hearings and studies. Even if DOE completes a new rulemaking in two years, it's unlikely to take effect before 2020.[25]

As a result, each of the furnace measures contains the following language describing the baseline assumption:

"Although the current Federal Standard for gas furnaces is an AFUE rating of 78%, based upon review of available product in the AHRI database, the baseline efficiency for this characterization is assumed to be 80%. The baseline

[25] Appliance Standards Awareness Project, http://www.appliance-standards.org/product/furnaces

will be adjusted when the Federal Standard is updated."

3.4 Glossary

Baseline Efficiency: The assumed standard efficiency of equipment, absent an efficiency program.

Building Types[26]:

Note where a measure installation is within a building or application that does not fit with any of the defined building types below, the user should apply custom assumptions where it is reasonable to estimate them, else the building of best fit should be used.

Building Type	Definition
Assisted Living MultiFamily	Applies to residential buildings of three of more units with staff to assist the occupants. Gross Floor Area should include all fully-enclosed space within the exterior walls of the building(s) including individual rooms or units, wellness centers, exam rooms, community rooms, small shops or service areas for residents and visitors (e.g. hair salons, convenience stores), staff offices, lobbies, atriums, cafeterias, kitchens, storage areas, hallways, basements, stairways, corridors between buildings, and elevator shafts.
Auditorium/Assembly	Applies to any performance space such as a theater, arena, or hall. Gross Floor Area should include all space within the building(s), including seating, stage and backstage areas, food service areas, retail areas, rehearsal studios, administrative/office space, mechanical rooms, storage areas, elevator shafts, and stairwells.
Childcare/Pre-school	Applies to any building providing childcare to pre-kindergarten age children.
College/University	Applies to facility space used for higher education. Relevant buildings include administrative headquarters, residence halls, athletic and recreation facilities, laboratories, etc. The total gross floor area should include all supporting functions such as kitchens used by staff, lobbies, atria, conference rooms and auditoria, fitness areas for staff, storage areas, stairways, elevator shafts, etc.
Convenience Store	Applies to facility space used for the retail sale of a limited selection of food and beverage products. The total gross floor area should include all supporting functions such as kitchens and break rooms used by staff, storage areas (refrigerated and non-refrigerated), and administrative areas.
Elementary School	Applies to a school serving children In any grades from Kindergarten through sixth grade. The total gross floor area should include all supporting functions such as administrative space, conference rooms, kitchens used by staff, lobbies, cafeterias, gymnasiums, auditoria, laboratory classrooms, portable classrooms, greenhouses, stairways, atria, elevator shafts, small landscaping sheds, storage areas, etc.
Exterior	Applies to unconditioned spaces that are outside of the building envelope.
Garage	Applies to unconditioned spaces either attached or detached from the primary building envelope that are not used for living space.
Grocery	Applies to facility space used for the retail sale of food and beverage products. It should not be used by restaurants. The total gross floor area should include all supporting functions such as kitchens and break rooms used by staff, storage areas (refrigerated and non-refrigerated), administrative areas, stairwells, atria, lobbies, etc.
Healthcare Clinic	Applies to a facility space used to provide diagnosis and treatment for medical, dental, or psychiatric outpatient care. Gross Floor Area should include all space within the building(s) including offices, exam rooms, laboratories, lobbies, atriums, conference rooms and auditoriums, employee break rooms and kitchens, rest rooms, elevator shafts, stairways, mechanical rooms, and storage areas.

[26] Source: US EPA, www.energystar.gov, Space Type Definitions, or definitions as developed through the Technical Advisory Committee.

Building Type	Definition
High School/Middle School	Applies to facility space used as a school building for 7th through 12th grade students. This does not include college or university classroom facilities and laboratories, vocational, technical, or trade schools. The total gross floor area should include all supporting functions such as administrative space, conference rooms, kitchens used by staff, lobbies, cafeterias, gymnasiums, auditoria, laboratory classrooms, portable classrooms, greenhouses, stairways, atria, elevator shafts, small landscaping sheds, storage areas, etc.
Hospital	Applies to a general medical and surgical hospital (including critical access hospitals and children's hospitals) that is either a stand-alone building or a campus of buildings. Spaces more accurately characterized as a Healthcare Clinic should use that definition. The definition of Hospital accounts for all space types that are located within the Hospital building/campus, such as medical offices, administrative offices, and skilled nursing. The total floor area should include the aggregate floor area of all buildings on the campus as well as all supporting functions such as: stairways, connecting corridors between buildings, medical offices, exam rooms, laboratories, lobbies, atria, cafeterias, storage areas, elevator shafts, and any space affiliated with emergency medical care, or diagnostic care.
Hotel/Motel Combined (All Spaces)	Applies to buildings that rent overnight accommodations on a room/suite basis, typically including a bath/shower and other facilities in guest rooms. The total gross floor area should include all interior space, including guestrooms, halls, lobbies, atria, food preparation and restaurant space, conference and banquet space, health clubs/spas, indoor pool areas, and laundry facilities, as well as all space used for supporting functions such as elevator shafts, stairways, mechanical rooms, storage areas, employee break rooms, back-of-house offices, etc. Hotel does not apply to fractional ownership properties such as condominiums or vacation timeshares. Hotel properties should be owned by a single entity and have rooms available on a nightly basis. Where distinction between Hotel and Motel is necessary: Hotel: Room entrances and Corridors are located in the *interior* of the building. Corridors are conditioned spaces. Building can be significantly larger in size/height. Motel: Room entrances and Corridors are located on the *exterior* of the building. Corridors are not conditioned spaces. Buildings tend to be two to three stories in height.
Hotel/Motel Common Areas	All the common areas open to guests of the hotel such as the lobby, corridors and stairways, and other spaces that may have continuous or large lighting and HVAC hours.
Hotel/Motel Guest Room	Applies to the guest rooms of the hotel or motel. These spaces are occupied intermittently.
Low-use Small Business	Any business type with low (<3000) operating hours (provided as option in lighting measures).
Manufacturing	Applies to buildings that are dedicated to manufacturing activities. Includes light industry buildings characterized by consumer product and component manufacturing and heavy industry buildings typically characterized by a plant that includes a main production area that has high-ceilings and contains heavy equipment used for assembly line production. These building types may be distinguished by categorizing NAICS (SIC) codes according to the needs of the Program Administrator.
Miscellaneous	Applies to spaces that do not fit clearly within any available categories should be designated as "miscellaneous".
Mobile Home	A mobile home is a prefabricated structure, built in a factory on a permanently attached chassis before being transported to site. Use single family assumptions throughout the TRM unless otherwise specified.
Movie Theater	Applies to buildings used for public or private film screenings. Gross Floor Area should include all space within the building(s), including seating areas, lobbies, concession stands, bathrooms, administrative/office space, mechanical rooms, storage areas,

Building Type	Definition
	elevator shafts, and stairwells.
Multifamily-Mid Rise	Applies to residential buildings with up to four floors, including all public and multiuse spaces within the building envelope. Small Multifamily buildings best described as a house should use the residential measure characterizations.
Multifamily-High Rise Combined (All Spaces)	Applies to residential buildings with five or more floors, including all public and multiuse spaces within the building envelope. Gross Floor Area should include all fully-enclosed space within the exterior walls of the building(s) including living space in each unit (including occupied and unoccupied units), interior common areas (e.g. lobbies, offices, community rooms, common kitchens, fitness rooms, indoor pools), hallways, stairwells, elevator shafts, connecting corridors between buildings, storage areas, and mechanical space such as a boiler room. Open air stairwells, breezeways, and other similar areas that are not fully-enclosed should not be included in the Gross Floor Area.
Multifamily-High Rise Common Areas	All the common areas open to occupants of the building such as the lobby, corridors and stairways, and other spaces that may have continuous or high lighting and HVAC hours.
Multifamily-High Rise Residential Units	Applies to the residential units in the building only.
Office-Low Rise	Applies to facility spaces in buildings with four floors or fewer used for general office, professional, and administrative purposes. The total gross floor area should include all supporting functions such as kitchens used by staff, lobbies, atria, conference rooms and auditoria, fitness areas for staff, storage areas, stairways, elevator shafts, etc.
Office-Mid Rise	Applies to facility spaces in buildings with five to nine floors used for general office, professional, and administrative purposes. The total gross floor area should include all supporting functions such as kitchens used by staff, lobbies, atria, conference rooms and auditoria, fitness areas for staff, storage areas, stairways, elevator shafts, etc.
Office-High Rise	Applies to facility spaces in buildings with ten floors or more used for general office, professional, and administrative purposes. The total gross floor area should include all supporting functions such as kitchens used by staff, lobbies, atria, conference rooms and auditoria, fitness areas for staff, storage areas, stairways, elevator shafts, etc.
Religious Worship/Church	Applies to buildings that are used as places of worship. This includes churches, temples, mosques, synagogues, meetinghouses, or any other buildings that primarily function as a place of religious worship. Gross Floor Area should include all areas inside the building that includes the primary worship area, including food preparation, community rooms, classrooms, and supporting areas such as restrooms, storage areas, hallways, and elevator shafts.
Restaurant	Applies to a subcategory of Retail/Service space that is used to provide commercial food services to individual customers, and includes kitchen, dining, and common areas.
Retail/Service-Department store	Applies to facility space used to conduct the retail sale of consumer product goods. Stores must be at least 30,000 square feet and have an exterior entrance to the public. The total gross floor area should include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, etc. Retail segments typically included under this definition are: Department Stores, Discount Stores, Supercenters, Warehouse Clubs, Drug Stores, Dollar Stores, Home Center/Hardware Stores, and Apparel/Hard Line Specialty Stores (e.g., books, clothing, office products, toys, home goods, electronics). Retail segments excluded under this definition are: Grocery, Convenience Stores, Automobile Dealerships, and Restaurants.
Retail/Service- Strip Mall	Applies to facility space used to conduct the retail sale of consumer product goods. Stores must less than 30,000 square feet and have an exterior entrance to the public. The total gross floor area should include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, etc. Retail segments excluded under this definition are: Grocery, Convenience Stores,

Building Type	Definition
	Automobile Dealerships, and Restaurants.
Warehouse	Applies to unrefrigerated or refrigerated buildings that are used to store goods, manufactured products, merchandise or raw materials. The total gross floor area of Refrigerated Warehouses should include all temperature controlled area designed to store perishable goods or merchandise under refrigeration at temperatures below 50 degrees Fahrenheit. The total gross floor area of Unrefrigerated Warehouses should include space designed to store non-perishable goods and merchandise. Unrefrigerated warehouses also include distribution centers. The total gross floor area of refrigerated and unrefrigerated warehouses should include all supporting functions such as offices, lobbies, stairways, rest rooms, equipment storage areas, elevator shafts, etc. Existing atriums or areas with high ceilings should only include the base floor area that they occupy. The total gross floor area of refrigerated or unrefrigerated warehouse should not include outside loading bays or docks. Self-storage facilities, or facilities that rent individual storage units, are not eligible for a rating using the warehouse model.

Coincidence Factor (CF): Coincidence factors represent the fraction of connected load expected to be coincident with a particular system peak period, on a diversified basis. Coincidence factors are provided for summer peak periods.

Commercial & Industrial: The market sector that includes measures that apply to any of the building types defined in this TRM, which includes multifamily common areas and public housing[27].

Connected Load: The maximum wattage of the equipment, under normal operating conditions.

Deemed Value: A value that has been assumed to be representative of the average condition of an input parameter.

Default Value: When a measure indicates that an input to a prescriptive saving algorithm may take on a range of values, an average value is also provided in many cases. This value is considered the default input to the algorithm, and should be used when the other alternatives listed in the measure are not applicable.

End-use Category: A general term used to describe the categories of equipment that provide a service to an individual or building. See Table 2.1 for a list of the end-use categories that are incorporated in this TRM.

Energy Efficiency: "Energy efficiency" means measures that reduce the amount of electricity or natural gas consumed in order to achieve a given end use. "Energy efficiency" includes voltage optimization measures that optimize the voltage at points on the electric distribution voltage system and thereby reduce electricity consumption by electric customers' end use devices. "Energy efficiency" also includes measures that reduce the total Btus of electricity, natural gas and other fuels needed to meet the end use or uses (20 ILCS 3855/1-10). For purposes of this Section, "energy efficiency" means measures that reduce the amount of energy required to achieve a given end use. "Energy efficiency" also includes measures that reduce the total Btus of electricity and natural gas needed to meet the end use or uses (220 ILCS 5/8-104(b)).

Equivalent Full Load Hours (EFLH): The equivalent hours that equipment would need to operate at its peak capacity in order to consume its estimated annual kWh consumption (annual kWh/connected kW) or therms.

High Efficiency: General term for technologies and processes that require less energy, water, or other inputs to operate.

Lifetime: The number of years (or hours) that the new high efficiency equipment is expected to function. These are generally based on engineering lives, but sometimes adjusted based on expectations about frequency of removal, remodeling or demolition. Two important distinctions fall under this definition; Effective Useful Life (EUL) and Remaining Useful Life (RUL).

[27] Measures that apply to the multifamily and public housing building types describe how to handle tenant versus master metered buildings.

EUL – EUL is based on the manufacturers rating of the effective useful life; how long the equipment will last. For example, a CFL that operates x hours per year will typically have an EUL of y. A house boiler may have a lifetime of 20 years but the EUL is only 15 years since after that time it may be operating at a non-efficient point. An estimate of the median number of years that the measures installed under a program are still in place and operable.

RUL – Applies to retrofit or replacement measures. For example, if an existing working refrigerator is replaced with a high efficiency unit, the RUL is an assumption of how many more years the existing unit would have lasted. As a general rule the RUL is usually assumed to be 1/3 of the EUL.

Load Factor (LF): The fraction of full load (wattage) for which the equipment is typically run.

Measure Cost: The incremental (for time of sale measures) or full cost (both capital and labor for retrofit measures) of implementing the High Efficiency equipment. See Section 3.8 Measure Incremental Cost Definition for full definition.

Measure Description: A detailed description of the technology and the criteria it must meet to be eligible as an energy efficient measure.

Measure: An efficient technology or procedure that results in energy savings as compared to the baseline efficiency.

Residential: The market sector that includes measures that apply only to detached, residential buildings or duplexes.

Operation and Maintenance (O&M) Cost Adjustments: The dollar impact resulting from differences between baseline and efficient case Operation and Maintenance costs.

Operating Hours (HOURS): The annual hours that equipment is expected to operate.

Program: The mode of delivering a particular measure or set of measures to customers. See Table 2.4 for a list of program descriptions that are presently operating in Illinois.

Rating Period Factor (RPF): Percentages for defined times of the year that describe when energy savings will be realized for a specific measure.

Stakeholder Advisory Group (SAG): The Illinois Energy Efficiency Stakeholder Advisory Group (SAG) was first defined in the electric utilities' first energy efficiency Plan Orders to include "… the Utility, DCEO, Staff, the Attorney General, BOMA and CUB and representation from a variety of interests, including residential consumers, business consumers, environmental and energy advocacy organizations, trades and local government... [and] a representative from the ARES (alternative retail electric supplier) community should be included."[28] A group of stakeholders who have an interest in Illinois' energy efficiency programs and who meet regularly to share information and work toward consensus on various energy efficiency issues. The Utilities in Illinois have been directed by the ICC to work with the SAG on the development of a statewide TRM.

Table 3.1: Degree-Day Zones and Values by Market Sector

	Residential		C&I		
Zone	HDD	CDD	HDD	CDD	Weather Station / City
1	5,352	820	4,272	2,173	Rockford AP / Rockford
2	5,113	842	4,029	2,181	Chicago O'Hare AP / Chicago
3	4,379	1,108	3,406	2,666	Springfield #2 / Springfield
4	3,378	1,570	2,515	3,358	Belleville SIU RSCH / Belleville
5	3,438	1,370	2,546	3,090	Carbondale Southern IL AP / Marion
Average	4,860	947	3,812	2,362	Weighted by occupied housing units

[28] ICC Docket No. 07-0540, Final Order at 32-33, February 6, 2008.
http://www.icc.illinois.gov/downloads/public/edocket/215193.pdf

	Residential		C&I		
Zone	HDD	CDD	HDD	CDD	Weather Station / City
Base Temp	60F	65F	55F	55F	Year climate normals, 1981-2010

3.5 Electrical Loadshapes (kWh)

Loadshapes are an integral part of the measure characterization and are used to divide energy savings into appropriate periods using Rating Period Factors (RPFs) such that each have variable avoided cost values allocated to them for the purpose of estimating cost effectiveness.

For the purposes of assigning energy savings (kWh) periods, the TRM TAC has agreed to use the industry standards for wholesale power market transactions as shown in the following table.

Table 3.2: On and Off Peak Energy Definitions

Period Category	Period Definition (Central Prevailing Time)
Winter On-Peak Energy	8AM - 11PM, weekdays, Oct – Apr, No NERC holidays
Winter Off-Peak Energy	All other hours
Summer On-Peak Energy	8AM - 11PM, weekdays, May – Sept, No NERC holidays
Summer Off-Peak Energy	All other hours

Loadshapes have been developed for each end-use by assigning Rating Period Factor percentages to each of the four periods above. Three methodologies were used:

1. Itron eShapes data for Missouri, provided by Ameren and reconciled to Illinois loads, were used to calculate the percentage of load in to the four categories above.
2. Where the Itron eShapes data did not provide a particular end-use or specific measure load profile, loadshapes that have been developed over many years by Efficiency Vermont and that have been reviewed by the Vermont Department of Public Service were adjusted to match Illinois period definitions. Note – no weather sensitive loadshapes were based on this method. Any of these load profiles that relate to High Impact Measures should be an area of future evaluation.
3. Loadshapes have also been developed from primary research studies conducted in Illinois or other jurisdictions if robust datasets were available to support hourly analysis of end use consumption.

The following pages provide the loadshape values for most measures provided in the TRM[29]. The source of the loadshape is also provided.

ComEd uses the DSMore™ (Integral Analytics DSMore™ Demand Side Management Option/Risk Evaluator) software to screen the efficiency measures for cost effectiveness. Since this tool requires a loadshape value for weekdays and weekends in each month (i.e., 24 inputs), the percentages for the four period categories above were calculated by weighting the proportion of weekdays/weekends in each month to the total within each period. The results of these calculations are also provided below.

[29] All loadshape information has been posted to the VEIC SharePoint site, and is publicly accessible through the Stakeholder Advisory Group's web site. http://www.ilsag.info/technical-reference-manual.html
http://ilsagfiles.org/SAG_files/Technical_Reference_Manual/Residential_Loadshapes_References.zip
http://ilsagfiles.org/SAG_files/Technical_Reference_Manual/Commercial_Loadshapes_References.zip
http://ilsagfiles.org/SAG_files/Technical_Reference_Manual/Version_3/Final_Draft/Sources%20and%20References%20-%20Loadshapes/TRM_Version_3_Loadshapes_2.24.zip
http://ilsagfiles.org/SAG_files/Technical_Reference_Manual/2018_Loadshape_Files.zip

Table 3.3: Loadshapes by Season

		Winter Peak	Winter Off-peak	Summer Peak	Summer Off-peak	
	Loadshape Reference Number	Oct-Apr, M-F, non-holiday, 8AM - 11PM	Oct-Apr, All other time	May-Sept, M-F, non-holiday, 8AM - 11PM	May- Sept, All other time	Loadshape Source
Residential Clothes Washer	R01	47.0%	11.1%	34.0%	8.0%	Itron eShapes
Residential Dish Washer	R02	49.3%	8.7%	35.7%	6.3%	Itron eShapes
Residential Electric DHW	R03	43.2%	20.6%	24.5%	11.7%	Itron eShapes
Residential Freezer	R04	38.9%	16.4%	31.5%	13.2%	Itron eShapes
Residential Refrigerator	R05	37.0%	18.1%	30.1%	14.7%	Itron eShapes
Residential Indoor Lighting	R06	35.1%	26.1%	22.0%	16.8%	Opinion Dynamics IL Metering Study[30]
Residential Outdoor Lighting	R07	18.0%	44.1%	9.4%	28.4%	Efficiency Vermont
Residential Cooling	R08	4.1%	0.7%	71.3%	23.9%	Itron eShapes
Residential Electric Space Heat	R09	57.8%	38.8%	1.7%	1.7%	Itron eShapes
Residential Electric Heating and Cooling	R10	35.2%	22.8%	31.0%	11.0%	Itron eShapes
Residential Ventilation	R11	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Residential - Dehumidifier	R12	12.9%	16.2%	31.7%	39.2%	Efficiency Vermont
Residential Standby Losses - Entertainment Center	R13	26.0%	32.5%	18.9%	22.6%	Efficiency Vermont
Residential Standby Losses - Home Office	R14	23.9%	34.6%	17.0%	24.5%	Efficiency Vermont
Residential Pool Pumps	R15	0%	0%	58.9%	41.1%	Efficiency Vermont
Residential Holiday String Lighting	R16	43.1%	56.9%	0%	0%	Estimate[31]
Commercial Electric Cooking	C01	40.6%	18.2%	28.7%	12.6%	Itron eShapes
Commercial Electric DHW	C02	40.5%	18.2%	28.5%	12.8%	Itron eShapes
Commercial Cooling	C03	4.9%	0.8%	66.4%	27.9%	Itron eShapes
Commercial Electric Heating	C04	53.5%	43.2%	1.9%	1.4%	Itron eShapes
Commercial Electric Heating and Cooling	C05	19.4%	13.5%	47.1%	19.9%	Itron eShapes
Commercial Indoor Lighting	C06	30.1%	27.5%	22.8%	19.7%	Navigant EmPOWER study[32]

[30] See 'IL Res Indoor LED Lighting Load Shape_2018-06-06' and 'IL Res Indoor LED Lighting Load Shape Development Methodology_2018-05-18' for details.
[31] Based on average of Residential Indoor and Outdoor lighting winter usage only.
[32] See '3.5 Electrical Load Shapes_Il TRM Workpapre_CI_Ltg_2018-06-28' and 'IL Commercial Lighting Load Shape Development Methodology_2018-06-28' for

		Winter Peak	Winter Off-peak	Summer Peak	Summer Off-peak	
	Loadshape Reference Number	Oct-Apr, M-F, non-holiday, 8AM - 11PM	Oct-Apr, All other time	May-Sept, M-F, non-holiday, 8AM - 11PM	May- Sept, All other time	Loadshape Source
Grocery/Conv. Store Indoor Lighting	C07	28.0%	30.2%	20.3%	21.5%	Navigant EmPOWER study
Health Indoor Lighting	C08	29.1%	28.9%	21.6%	20.3%	Navigant EmPOWER study
Office Indoor Lighting	C09	29.9%	28.2%	22.3%	19.6%	Navigant EmPOWER study
Restaurant Indoor Lighting	C10	32.1%	25.7%	23.4%	18.8%	Efficiency Vermont
Retail Indoor Lighting	C11	32.6%	25.4%	24.2%	17.9%	Navigant EmPOWER study
Warehouse Indoor Lighting	C12	26.0%	29.0%	22.4%	22.6%	Navigant EmPOWER study
Education Indoor Lighting	C13	34.7%	26.2%	23.6%	15.5%	Navigant EmPOWER study
Indust. 1-shift (8/5) (e.g., comp. air, lights)	C14	50.5%	7.2%	37.0%	5.3%	Efficiency Vermont
Indust. 2-shift (16/5) (e.g., comp. air, lights)	C15	47.5%	10.2%	34.8%	7.4%	Efficiency Vermont
Indust. 3-shift (24/5) (e.g., comp. air, lights)	C16	34.8%	23.2%	25.5%	16.6%	Efficiency Vermont
Indust. 4-shift (24/7) (e.g., comp. air, lights)	C17	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Industrial Indoor Lighting	C18	44.3%	13.6%	32.4%	9.8%	Efficiency Vermont
Industrial Outdoor Lighting	C19	18.0%	44.1%	9.4%	28.4%	Efficiency Vermont
Commercial Outdoor Lighting	C20	16.8%	44.6%	9.3%	29.3%	Navigant EmPOWER study
Commercial Office Equipment	C21	37.7%	20.9%	26.7%	14.7%	Itron eShapes
Commercial Refrigeration	C22	38.5%	20.6%	26.7%	14.2%	Itron eShapes
Commercial Ventilation	C23	38.1%	20.6%	29.7%	11.6%	Itron eShapes
Traffic Signal - Red Balls, always changing or flashing	C24	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - Red Balls, changing day, off night	C25	37.0%	20.9%	27.1%	14.9%	Efficiency Vermont
Traffic Signal - Green Balls, always changing	C26	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - Green Balls, changing day, off night	C27	37.0%	20.9%	27.1%	14.9%	Efficiency Vermont
Traffic Signal - Red Arrows	C28	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - Green Arrows	C29	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - Flashing Yellows	C30	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - “Hand” Don’t Walk Signal	C31	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - “Man” Walk Signal	C32	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Traffic Signal - Bi-Modal Walk/Don’t Walk	C33	25.8%	32.3%	18.9%	23.0%	Efficiency Vermont
Industrial Motor	C34	47.5%	10.2%	34.8%	7.4%	Efficiency Vermont

details.

		Winter Peak	Winter Off-peak	Summer Peak	Summer Off-peak	
	Loadshape Reference Number	Oct-Apr, M-F, non-holiday, 8AM - 11PM	Oct-Apr, All other time	May-Sept, M-F, non-holiday, 8AM - 11PM	May- Sept, All other time	Loadshape Source
Industrial Process	C35	47.5%	10.2%	34.8%	7.4%	Efficiency Vermont
HVAC Pump Motor (heating)	C36	38.7%	48.6%	5.9%	6.8%	Efficiency Vermont
HVAC Pump Motor (cooling)	C37	7.8%	9.8%	36.8%	45.6%	Efficiency Vermont
HVAC Pump Motor (unknown use)	C38	23.2%	29.2%	21.4%	26.2%	Efficiency Vermont
VFD - Supply fans <10 HP	C39	38.8%	16.1%	28.4%	16.7%	Efficiency Vermont
VFD - Return fans <10 HP	C40	38.8%	16.1%	28.4%	16.7%	Efficiency Vermont
VFD - Exhaust fans <10 HP	C41	34.8%	23.2%	20.3%	21.7%	Efficiency Vermont
VFD - Boiler feedwater pumps <10 HP	C42	42.9%	44.2%	6.6%	6.3%	Efficiency Vermont
VFD - Chilled water pumps <10 HP	C43	11.2%	5.5%	40.7%	42.6%	Efficiency Vermont
VFD Boiler circulation pumps <10 HP	C44	42.9%	44.2%	6.6%	6.3%	Efficiency Vermont
Refrigeration Economizer	C45	36.3%	50.8%	5.6%	7.3%	Efficiency Vermont
Evaporator Fan Control	C46	24.0%	35.9%	16.7%	23.4%	Efficiency Vermont
Standby Losses - Commercial Office	C47	8.2%	50.5%	5.6%	35.7%	Efficiency Vermont
VFD Boiler draft fans <10 HP	C48	37.3%	48.9%	6.4%	7.3%	Efficiency Vermont
VFD Cooling Tower Fans <10 HP	C49	7.9%	5.2%	54.0%	32.9%	Efficiency Vermont
Engine Block Heater Timer	C50	26.5%	61.0%	4.1%	8.5%	Efficiency Vermont
Door Heater Control	C51	30.4%	69.6%	0.0%	0.0%	Efficiency Vermont
Beverage and Snack Machine Controls	C52	10.0%	48.3%	7.4%	34.3%	Efficiency Vermont
Flat	C53	36.3%	21.8%	26.2%	15.7%	Itron eShapes
Religious Indoor Lighting	C54	26.8%	31.4%	18.9%	22.8%	Efficiency Vermont
Commercial Clothes Washer	C55	47.0%	11.1%	34.0%	8.0%	Itron eShapes[33]

[33] Assumed equal to R01 Residential Clothes Washer loadshape.

Table 3.4: Loadshapes by Month and Day of Week

		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
		M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S
Residential Clothes Washer	R01	7.0%	1.6%	6.3%	1.5%	6.6%	1.7%	6.7%	1.5%	6.9%	1.6%	6.5%	1.6%	7.1%	1.5%	6.8%	1.7%	6.6%	1.6%	7.0%	1.5%	6.5%	1.7%	6.9%	1.6%
Residential Dish Washer	R02	7.3%	1.2%	6.6%	1.2%	7.0%	1.4%	7.1%	1.2%	7.3%	1.2%	6.9%	1.3%	7.4%	1.2%	7.1%	1.3%	7.0%	1.2%	7.4%	1.2%	6.8%	1.3%	7.2%	1.3%
Residential Electric DHW	R03	6.4%	2.9%	5.8%	2.7%	6.1%	3.3%	6.2%	2.8%	5.0%	2.3%	4.7%	2.4%	5.1%	2.2%	4.9%	2.5%	4.8%	2.3%	6.5%	2.8%	6.0%	3.1%	6.3%	3.0%
Residential Freezer	R04	5.8%	2.3%	5.2%	2.2%	5.5%	2.6%	5.6%	2.2%	6.4%	2.6%	6.1%	2.7%	6.6%	2.5%	6.3%	2.8%	6.1%	2.6%	5.8%	2.2%	5.4%	2.4%	5.7%	2.4%
Residential Refrigerator	R05	5.5%	2.6%	4.9%	2.4%	5.2%	2.9%	5.3%	2.5%	6.2%	2.9%	5.8%	3.0%	6.3%	2.8%	6.0%	3.1%	5.9%	2.9%	5.5%	2.5%	5.1%	2.7%	5.4%	2.6%
Residential Indoor Lighting	R06	5.9%	2.7%	5.7%	2.2%	6.5%	2.2%	5.5%	2.7%	5.8%	2.5%	5.1%	1.9%	4.8%	2.4%	5.6%	2.0%	5.9%	3.0%	6.6%	2.7%	6.4%	2.8%	5.9%	3.3%
Residential Outdoor Lighting	R07	2.7%	6.2%	2.4%	5.9%	2.6%	7.0%	2.6%	6.0%	1.9%	5.7%	1.8%	5.8%	2.0%	5.3%	1.9%	6.0%	1.8%	5.7%	2.7%	6.0%	2.5%	6.6%	2.6%	6.4%
Residential Cooling	R08	0.6%	0.1%	0.5%	0.1%	0.6%	0.1%	0.6%	0.1%	14.6%	4.8%	13.7%	4.9%	14.9%	4.5%	14.2%	5.0%	13.9%	4.8%	0.6%	0.1%	0.6%	0.1%	0.6%	0.1%
Residential Electric Space Heat	R09	8.6%	5.5%	7.7%	5.1%	8.2%	6.1%	8.3%	5.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.4%	0.3%	0.3%	8.7%	5.3%	8.0%	5.8%	8.5%	5.6%
Residential Electric Heating and Cooling	R10	5.2%	3.2%	4.7%	3.0%	5.0%	3.6%	5.0%	3.1%	6.3%	2.2%	6.0%	2.3%	6.5%	2.1%	6.2%	2.3%	6.0%	2.2%	5.3%	3.1%	4.9%	3.4%	5.2%	3.3%
Residential Ventilation	R11	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Residential - Dehumidifier	R12	1.9%	2.3%	1.7%	2.2%	1.8%	2.6%	1.8%	2.2%	6.5%	7.8%	6.1%	8.0%	6.6%	7.3%	6.3%	8.2%	6.2%	7.8%	1.9%	2.2%	1.8%	2.4%	1.9%	2.4%
Residential Standby Losses - Entertainment Center	R13	3.8%	4.6%	3.5%	4.3%	3.7%	5.1%	3.7%	4.4%	3.9%	4.5%	3.7%	4.6%	4.0%	4.2%	3.8%	4.8%	3.7%	4.5%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Residential Standby	R14	3.5%	4.9%	3.2%	4.6%	3.4%	5.5%	3.4%	4.7%	3.5%	4.9%	3.3%	5.0%	3.5%	4.6%	3.4%	5.2%	3.3%	4.9%	3.6%	4.7%	3.3%	5.2%	3.5%	5.0%

		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
		M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S
Losses - Home Office																									
Residential Holiday String Lighting	R16	9%	11%	2%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	3%	9%	11%	22%	28%
Commercial Electric Cooking	C01	6.0%	2.6%	5.4%	2.4%	5.7%	2.9%	5.8%	2.5%	5.9%	2.5%	5.5%	2.6%	6.0%	2.4%	5.7%	2.6%	5.6%	2.5%	6.1%	2.5%	5.6%	2.7%	5.9%	2.6%
Commercial Electric DHW	C02	6.0%	2.6%	5.4%	2.4%	5.7%	2.9%	5.8%	2.5%	5.8%	2.5%	5.5%	2.6%	6.0%	2.4%	5.7%	2.7%	5.6%	2.5%	6.1%	2.5%	5.6%	2.7%	5.9%	2.6%
Commercial Cooling	C03	0.7%	0.1%	0.6%	0.1%	0.7%	0.1%	0.7%	0.1%	13.6%	5.5%	12.8%	5.7%	13.9%	5.2%	13.3%	5.9%	13.0%	5.5%	0.7%	0.1%	0.7%	0.1%	0.7%	0.1%
Commercial Electric Heating	C04	7.9%	6.1%	7.1%	5.7%	7.6%	6.8%	7.7%	5.9%	0.4%	0.3%	0.4%	0.3%	0.4%	0.3%	0.4%	0.3%	0.4%	0.3%	8.0%	5.9%	7.4%	6.5%	7.8%	6.3%
Commercial Electric Heating and Cooling	C05	2.9%	1.9%	2.6%	1.8%	2.8%	2.1%	2.8%	1.9%	9.6%	4.0%	9.1%	4.1%	9.8%	3.7%	9.4%	4.2%	9.2%	4.0%	2.9%	1.9%	2.7%	2.0%	2.8%	2.0%
Commercial Indoor Lighting	C06	5.5%	2.8%	5.2%	2.3%	6.2%	2.2%	5.4%	2.7%	6.1%	2.4%	6.2%	2.3%	5.5%	3.0%	6.5%	2.2%	5.5%	2.7%	5.9%	2.5%	5.7%	2.5%	5.4%	3.1%
Grocery/Conv. Store Indoor Lighting	C07	5.7%	2.8%	5.5%	2.2%	6.3%	2.2%	5.5%	2.8%	6.0%	2.5%	6.0%	2.2%	5.4%	3.0%	6.3%	2.2%	5.5%	2.8%	6.0%	2.5%	5.7%	2.5%	5.5%	3.0%
Health Indoor Lighting	C08	5.4%	2.9%	5.3%	2.4%	6.4%	2.2%	5.5%	2.7%	6.0%	2.4%	6.0%	2.1%	5.5%	3.0%	6.4%	2.3%	5.5%	2.7%	6.0%	2.4%	5.8%	2.4%	5.2%	3.3%
Office Indoor Lighting	C09	5.2%	3.0%	5.1%	2.6%	6.3%	2.4%	5.3%	3.0%	5.7%	2.6%	6.0%	2.4%	5.3%	3.2%	6.3%	2.3%	5.2%	2.9%	5.5%	2.7%	5.5%	2.8%	5.2%	3.3%
Restaurant Indoor Lighting	C10	4.8%	3.6%	4.3%	3.4%	4.5%	4.1%	4.6%	3.5%	4.8%	3.7%	4.5%	3.8%	4.9%	3.5%	4.7%	4.0%	4.6%	3.7%	4.8%	3.5%	4.4%	3.8%	4.7%	3.7%
Retail Indoor Lighting	C11	5.6%	2.8%	5.4%	2.3%	6.3%	2.3%	5.5%	2.8%	6.0%	2.5%	6.0%	2.2%	5.4%	3.0%	6.4%	2.3%	5.5%	2.7%	5.9%	2.5%	5.7%	2.5%	5.5%	3.1%
Warehouse Indoor Lighting	C12	5.4%	2.8%	4.7%	2.1%	5.8%	1.9%	5.0%	2.3%	6.5%	2.3%	7.1%	2.2%	6.2%	2.8%	7.3%	2.2%	5.8%	2.6%	6.0%	2.3%	5.9%	2.4%	5.3%	3.2%
Education	C13	5.1%	2.8%	5.7%	3.3%	7.8%	1.9%	6.9%	2.5%	7.2%	2.1%	5.5%	1.6%	4.2%	1.7%	6.4%	1.6%	6.3%	2.4%	6.6%	2.1%	6.2%	2.1%	4.9%	3.0%

		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
		M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S
Indoor Lighting																									
Indust. 1-shift (8/5) (e.g., comp. air, lights)	C14	7.5%	1.0%	6.7%	1.0%	7.1%	1.1%	7.2%	1.0%	7.5%	1.1%	7.1%	1.1%	7.7%	1.0%	7.4%	1.1%	7.2%	1.1%	7.6%	1.0%	7.0%	1.1%	7.4%	1.0%
Indust. 2-shift (16/5) (e.g., comp. air, lights)	C15	7.0%	1.4%	6.3%	1.4%	6.7%	1.6%	6.8%	1.4%	7.1%	1.5%	6.7%	1.5%	7.3%	1.4%	6.9%	1.6%	6.8%	1.5%	7.1%	1.4%	6.6%	1.5%	7.0%	1.5%
Indust. 3-shift (24/5) (e.g., comp. air, lights)	C16	5.1%	3.3%	4.6%	3.1%	4.9%	3.7%	5.0%	3.2%	5.2%	3.3%	4.9%	3.4%	5.3%	3.1%	5.1%	3.5%	5.0%	3.3%	5.2%	3.2%	4.8%	3.5%	5.1%	3.4%
Indust. 4-shift (24/7) (e.g., comp. air, lights)	C17	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Industrial Indoor Lighting	C18	6.6%	1.9%	5.9%	1.8%	6.3%	2.1%	6.3%	1.9%	6.6%	1.9%	6.2%	2.0%	6.8%	1.8%	6.5%	2.0%	6.3%	1.9%	6.6%	1.9%	6.1%	2.0%	6.5%	2.0%
Industrial Outdoor Lighting	C19	2.7%	6.2%	2.4%	5.9%	2.6%	7.0%	2.6%	6.0%	1.9%	5.7%	1.8%	5.8%	2.0%	5.3%	1.9%	6.0%	1.8%	5.7%	2.7%	6.0%	2.5%	6.6%	2.6%	6.4%
Commercial Outdoor Lighting	C20	6.1%	3.2%	6.3%	2.5%	6.8%	2.4%	5.3%	2.7%	5.8%	2.4%	5.2%	1.9%	4.8%	2.6%	5.8%	2.0%	5.5%	2.7%	6.0%	2.5%	5.8%	2.5%	6.0%	3.4%
Commercial Office Equipment	C21	5.6%	3.0%	5.0%	2.8%	5.3%	3.3%	5.4%	2.9%	5.4%	2.9%	5.1%	3.0%	5.6%	2.7%	5.3%	3.1%	5.2%	2.9%	5.6%	2.9%	5.2%	3.1%	5.5%	3.0%
Commercial Refrigeration	C22	5.7%	2.9%	5.1%	2.7%	5.4%	3.2%	5.5%	2.8%	5.5%	2.8%	5.1%	2.9%	5.6%	2.7%	5.3%	3.0%	5.2%	2.8%	5.8%	2.8%	5.3%	3.1%	5.6%	3.0%
Commercial Ventilation	C23	5.6%	2.9%	5.1%	2.7%	5.4%	3.3%	5.4%	2.8%	6.1%	2.3%	5.7%	2.4%	6.2%	2.2%	5.9%	2.4%	5.8%	2.3%	5.7%	2.8%	5.3%	3.1%	5.6%	3.0%
Traffic Signal - Red Balls, always changing or flashing	C24	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%

		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
		M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S
Traffic Signal - Red Balls, changing day, off night	C25	5.5%	2.9%	4.9%	2.8%	5.2%	3.3%	5.3%	2.9%	5.5%	3.0%	5.2%	3.1%	5.7%	2.8%	5.4%	3.1%	5.3%	3.0%	5.5%	2.9%	5.1%	3.1%	5.4%	3.0%
Traffic Signal - Green Balls, always changing	C26	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Traffic Signal - Green Balls, changing day, off night	C27	5.5%	2.9%	4.9%	2.8%	5.2%	3.3%	5.3%	2.9%	5.5%	3.0%	5.2%	3.1%	5.7%	2.8%	5.4%	3.1%	5.3%	3.0%	5.5%	2.9%	5.1%	3.1%	5.4%	3.0%
Traffic Signal - Red Arrows	C28	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Traffic Signal - Green Arrows	C29	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Traffic Signal - Flashing Yellows	C30	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Traffic Signal - “Hand” Don’t Walk Signal	C31	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Traffic Signal - “Man” Walk Signal	C32	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Traffic Signal - Bi-Modal Walk/Don’t Walk	C33	3.8%	4.6%	3.4%	4.3%	3.6%	5.1%	3.7%	4.4%	3.8%	4.6%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.6%	3.9%	4.4%	3.6%	4.8%	3.8%	4.7%
Industrial Motor	C34	7.0%	1.4%	6.3%	1.4%	6.7%	1.6%	6.8%	1.4%	7.1%	1.5%	6.7%	1.5%	7.3%	1.4%	6.9%	1.6%	6.8%	1.5%	7.1%	1.4%	6.6%	1.5%	7.0%	1.5%
Industrial Process	C35	7.0%	1.4%	6.3%	1.4%	6.7%	1.6%	6.8%	1.4%	7.1%	1.5%	6.7%	1.5%	7.3%	1.4%	6.9%	1.6%	6.8%	1.5%	7.1%	1.4%	6.6%	1.5%	7.0%	1.5%
HVAC Pump Motor (heating)	C36	5.7%	6.9%	5.2%	6.4%	5.5%	7.7%	5.5%	6.6%	1.2%	1.4%	1.1%	1.4%	1.2%	1.3%	1.2%	1.4%	1.2%	1.4%	5.8%	6.6%	5.3%	7.3%	5.7%	7.1%
HVAC Pump Motor (cooling)	C37	1.2%	1.4%	1.0%	1.3%	1.1%	1.5%	1.1%	1.3%	7.5%	9.1%	7.1%	9.3%	7.7%	8.5%	7.3%	9.6%	7.2%	9.1%	1.2%	1.3%	1.1%	1.5%	1.1%	1.4%

		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
		M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S
HVAC Pump Motor (unknown use)	C38	3.4%	4.1%	3.1%	3.9%	3.3%	4.6%	3.3%	4.0%	4.4%	5.2%	4.1%	5.4%	4.5%	4.9%	4.3%	5.5%	4.2%	5.2%	3.5%	4.0%	3.2%	4.4%	3.4%	4.2%
VFD - Supply fans <10 HP	C39	5.7%	2.3%	5.2%	2.1%	5.5%	2.5%	5.6%	2.2%	5.8%	3.3%	5.5%	3.4%	5.9%	3.1%	5.7%	3.5%	5.5%	3.3%	5.8%	2.2%	5.4%	2.4%	5.7%	2.3%
VFD - Return fans <10 HP	C40	5.7%	2.3%	5.2%	2.1%	5.5%	2.5%	5.6%	2.2%	5.8%	3.3%	5.5%	3.4%	5.9%	3.1%	5.7%	3.5%	5.5%	3.3%	5.8%	2.2%	5.4%	2.4%	5.7%	2.3%
VFD - Exhaust fans <10 HP	C41	5.1%	3.3%	4.6%	3.1%	4.9%	3.7%	5.0%	3.2%	4.1%	4.3%	3.9%	4.4%	4.2%	4.1%	4.1%	4.6%	4.0%	4.3%	5.2%	3.2%	4.8%	3.5%	5.1%	3.4%
VFD - Boiler feedwater pumps <10 HP	C42	6.4%	6.2%	5.7%	5.9%	6.1%	7.0%	6.1%	6.0%	1.3%	1.3%	1.3%	1.3%	1.4%	1.2%	1.3%	1.3%	1.3%	1.3%	6.4%	6.0%	5.9%	6.6%	6.3%	6.4%
VFD - Chilled water pumps <10 HP	C43	1.7%	0.8%	1.5%	0.7%	1.6%	0.9%	1.6%	0.8%	8.3%	8.5%	7.8%	8.7%	8.5%	8.0%	8.1%	8.9%	7.9%	8.5%	1.7%	0.8%	1.6%	0.8%	1.6%	0.8%
VFD Boiler circulation pumps <10 HP	C44	6.4%	6.2%	5.7%	5.9%	6.1%	7.0%	6.1%	6.0%	1.3%	1.3%	1.3%	1.3%	1.4%	1.2%	1.3%	1.3%	1.3%	1.3%	6.4%	6.0%	5.9%	6.6%	6.3%	6.4%
Refrigeration Economizer	C45	5.4%	7.2%	4.8%	6.7%	5.1%	8.0%	5.2%	7.0%	1.1%	1.5%	1.1%	1.5%	1.2%	1.4%	1.1%	1.5%	1.1%	1.5%	5.4%	7.0%	5.0%	7.6%	5.3%	7.4%
Evaporator Fan Control	C46	3.6%	5.1%	3.2%	4.8%	3.4%	5.7%	3.4%	4.9%	3.4%	4.7%	3.2%	4.8%	3.5%	4.4%	3.3%	4.9%	3.3%	4.7%	3.6%	4.9%	3.3%	5.4%	3.5%	5.2%
Standby Losses - Commercial Office	C47	1.2%	7.1%	1.1%	6.7%	1.2%	8.0%	1.2%	6.9%	1.1%	7.1%	1.1%	7.3%	1.2%	6.7%	1.1%	7.5%	1.1%	7.1%	1.2%	6.9%	1.1%	7.5%	1.2%	7.3%
VFD Boiler draft fans <10 HP	C48	5.5%	6.9%	5.0%	6.5%	5.3%	7.7%	5.3%	6.7%	1.3%	1.5%	1.2%	1.5%	1.3%	1.4%	1.3%	1.5%	1.2%	1.5%	5.6%	6.7%	5.2%	7.3%	5.5%	7.1%
VFD Cooling Tower Fans <10 HP	C49	1.2%	0.7%	1.1%	0.7%	1.1%	0.8%	1.1%	0.7%	11.0%	6.5%	10.4%	6.7%	11.3%	6.2%	10.8%	6.9%	10.5%	6.5%	1.2%	0.7%	1.1%	0.8%	1.2%	0.8%
Engine Block Heater Timer	C50	3.9%	8.6%	3.5%	8.1%	3.7%	9.6%	3.8%	8.3%	0.8%	1.7%	0.8%	1.7%	0.8%	1.6%	0.8%	1.8%	0.8%	1.7%	4.0%	8.3%	3.7%	9.1%	3.9%	8.9%
Door Heater Control	C51	4.5%	9.8%	4.0%	9.2%	4.3%	11.0%	4.3%	9.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	9.5%	4.2%	10.4%	4.4%	10.1 %

		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
		M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S	M-F	S-S
Beverage and Snack Machine Controls	C52	1.5%	6.8%	1.3%	6.4%	1.4%	7.6%	1.4%	6.6%	1.5%	6.8%	1.4%	7.0%	1.5%	6.4%	1.5%	7.2%	1.4%	6.8%	1.5%	6.6%	1.4%	7.2%	1.5%	7.0%
Flat	C53	5.4%	3.1%	4.8%	2.9%	5.1%	3.4%	5.2%	3.0%	5.3%	3.1%	5.0%	3.2%	5.5%	2.9%	5.2%	3.3%	5.1%	3.1%	5.4%	3.0%	5.0%	3.3%	5.3%	3.2%
Religious Indoor Lighting	C54	4.0%	4.4%	3.6%	4.2%	3.8%	5.0%	3.8%	4.3%	3.9%	4.5%	3.6%	4.7%	3.9%	4.3%	3.8%	4.8%	3.7%	4.5%	4.0%	4.3%	3.7%	4.7%	3.9%	4.6%
Commercial Clothes Washer	C55	7.0%	1.6%	6.3%	1.5%	6.6%	1.7%	6.7%	1.5%	6.9%	1.6%	6.5%	1.6%	7.1%	1.5%	6.8%	1.7%	6.6%	1.6%	7.0%	1.5%	6.5%	1.7%	6.9%	1.6%

3.6 Summer Peak Period Definition (kW)

To estimate the impact that an efficiency measure has on a utility's system peak, the peak itself needs to be defined. Illinois spans two different electrical control areas, the Pennsylvania – Jersey – Maryland (PJM) and the Midwest Independent System Operators (MISO). As a result, there is some disparity in the peak definition across the state. However, only PJM has a forward capacity market where an efficiency program can potentially participate. Because ComEd is part of the PJM control area, their definition of summer peak is being applied statewide in this TRM.

Because Illinois is a summer peaking state, only the summer peak period is defined for the purpose of this TRM. The coincident summer peak period is defined as 1:00-5:00 PM Central Prevailing Time on non-holiday weekdays, June through August.

Summer peak coincidence factors can be found within each measure characterization. The source is provided and is based upon evaluation results, analysis of load shape data (e.g., the Itron eShapes data provided by Ameren), or through a calculation using stated assumptions.

For measures that are not weather-sensitive, the summer peak coincidence factor is estimated whenever possible as the average of savings within the peak period defined above. For weather sensitive measures such as cooling, the summer peak coincidence factor is provided in two different ways. The first method is to estimate demand savings during the utility's peak hour (as provided by Ameren). This is likely to be the most indicative of actual peak benefits. The second way represents the average savings over the summer peak period, consistent with the non-weather sensitive end uses, and is presented so that savings can be bid into PJM's Forward Capacity Market.

3.7 Heating and Cooling Degree-Day Data

Many measures are weather sensitive. Because there is a range of climactic conditions across the state, VEIC engaged the Utilities to provide their preferences for what airports and cities are the best proxies for the weather in their service territories. The result of this engagement is in the table below. All of the data represents 30-year normals[34] from the National Climactic Data Center (NCDC). Note that the base temperature for the calculation of heating degree-days in this document does not follow the historical 65F degree base temperature convention. Instead VEIC used several different temperatures in this TRM to more accurately reflect the outdoor temperature when a heating or cooling system turns on.

Residential heating is based on 60F, in accordance with regression analysis of heating fuel use and weather by state by the Pacific Northwest National Laboratory[35]. Residential cooling is based on 65F in agreement with a field study in Wisconsin[36]. These are lower than typical thermostat set points because internal gains, such as appliances, lighting, and people, provide some heating. In C&I settings, internal gains are often much higher; the base temperatures for both heating and cooling is 55F[37]. Custom degree-days with building-specific base temperatures are recommended for large C&I projects.

Table 3.5: Degree-Day Zones and Values by Market Sector

	Residential		C&I		
Zone	HDD	CDD	HDD	CDD	Weather Station / City
1	5,352	820	4,272	2,173	Rockford AP / Rockford
2	5,113	842	4,029	3,357	Chicago O'Hare AP / Chicago
3	4,379	1,108	3,406	2,666	Springfield #2 / Springfield

[34] 30-year normals have been used instead of Typical Meteorological Year (TMY) data due to the fact that few of the measures in the TRM are significantly affected by solar insolation, which is one of the primary benefits of using the TMY approach.
[35] Belzer and Cort, Pacific Northwest National Laboratory in "Statistical Analysis of Historical State-Level Residential Energy Consumption Trends," 2004.
[36] Energy Center of Wisconsin, May 2008 metering study; "Central Air Conditioning in Wisconsin, A Compilation of Recent Field Research", p. 32 (amended in 2010).
[37] This value is based upon experience, and it is preferable to use building-specific base temperatures when available.

	Residential		C&I		
Zone	HDD	CDD	HDD	CDD	Weather Station / City
4	3,378	1,570	2,515	3,090	Belleville SIU RSCH / Belleville
5	3,438	1,370	2,546	2,182	Carbondale Southern IL AP / Marion
Average	4,860	947	3,812	3,051	Weighted by occupied housing units
Base Temp	60F	65F	55F	55F	30 year climate normals, 1981-2010

This table assigns each of the proxy cities to one of five climate zones. The following graphics from the Illinois State Water Survey show isobars (lines of equal degree-days), and we have color-coded the counties in each of these graphics using those isobars as a dividing line. Using this approach, the state divides into five cooling degree-day zones and five heating degree-day zones. Note that although the heating and cooling degree-day maps are similar, they are not the same, and the result is that there are a total of 10 climate zones in the state. The counties are listed in the tables following the figures for ease of reference. In addition, an Excel file containing all Illinois Zip Codes with the corresponding Heating and Cooling Degree-day zones is provided on the SharePoint site within the 'TRM Reference Documents' section.

Figure 3.1: Cooling Degree-Day Zones by County

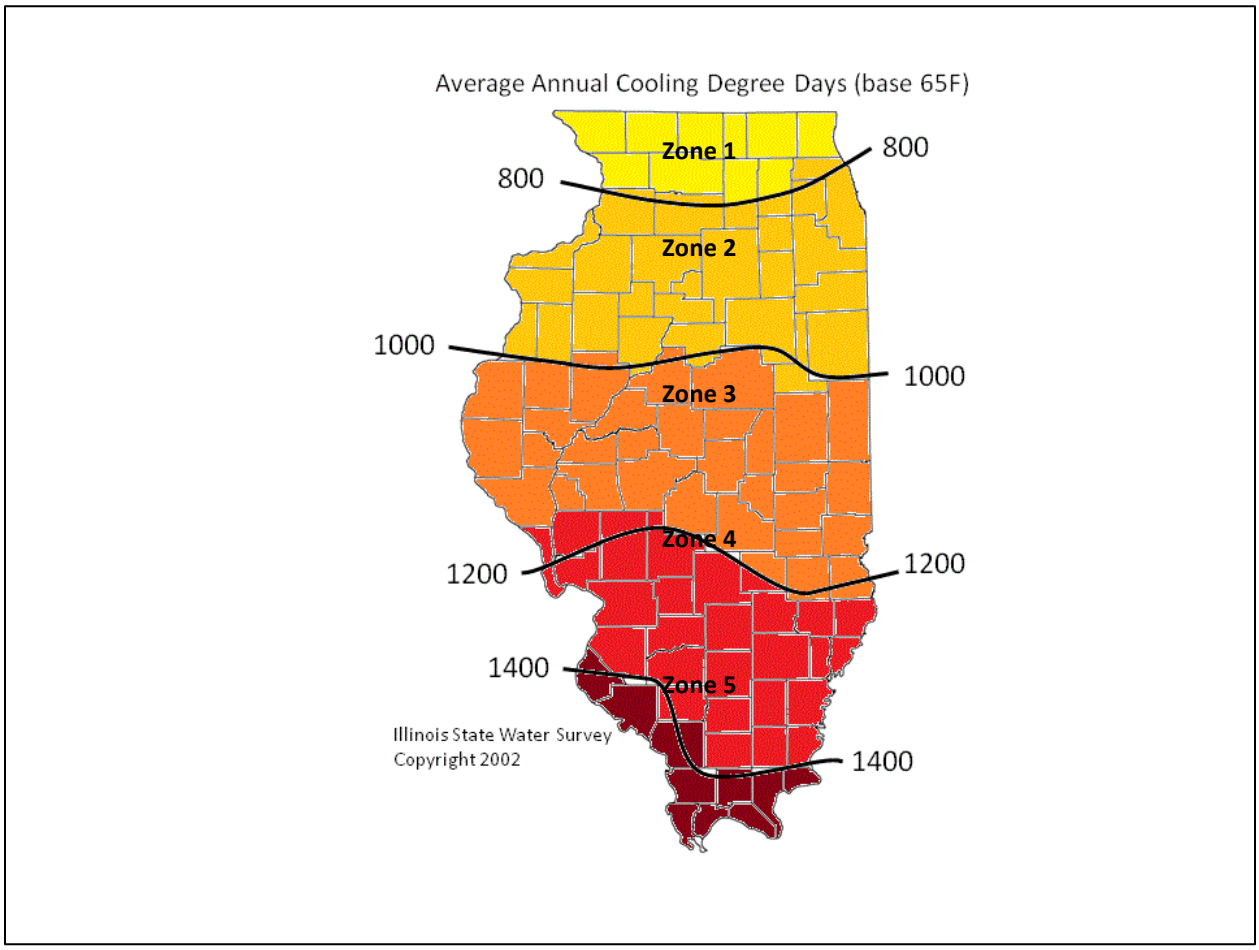

Figure 3.2: Heating Degree-Day Zones by County

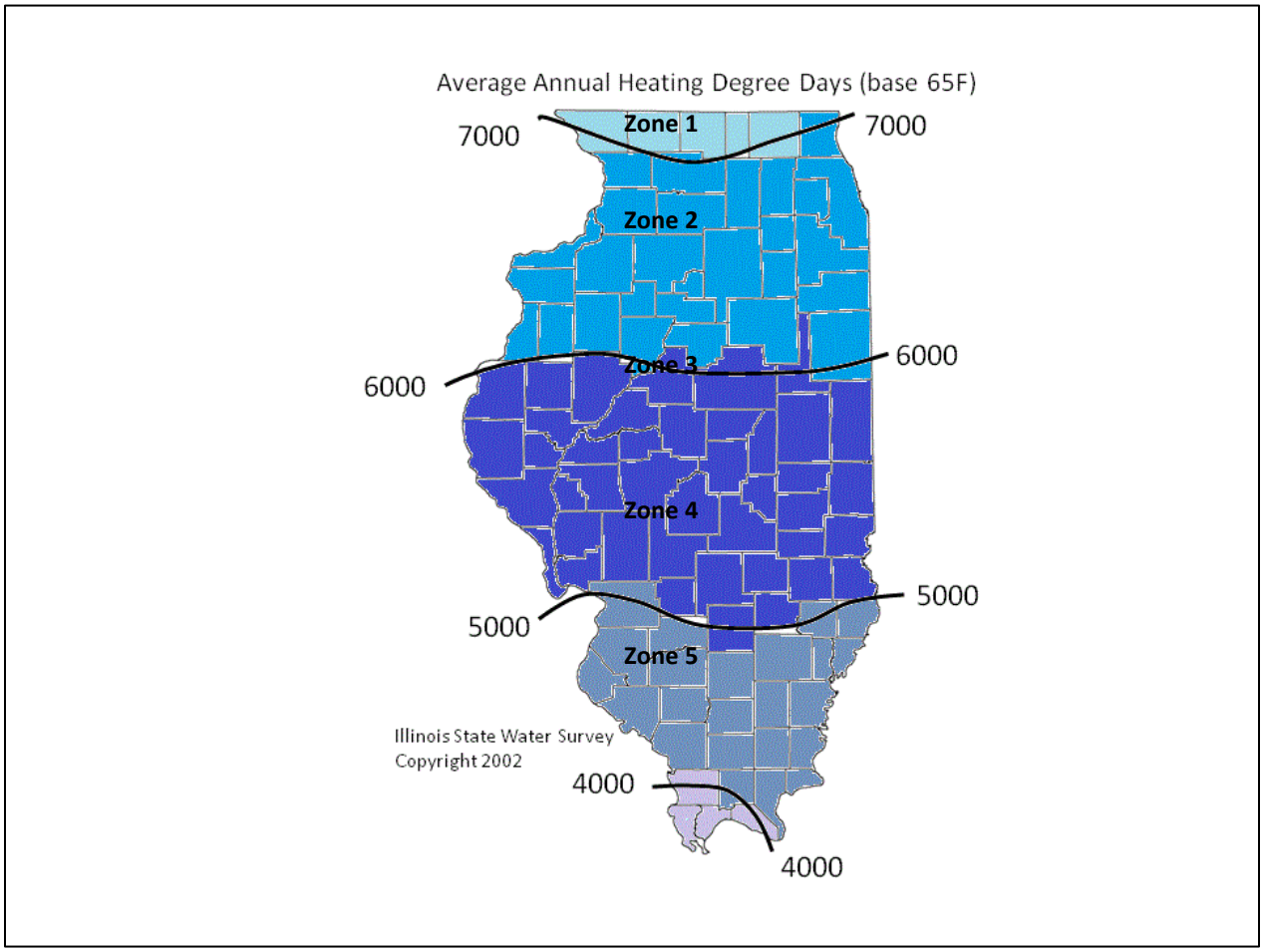

Table 3.6: Heating Degree-Day Zones by County

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Boone County	Bureau County	Adams County	Clinton County	Alexander County
Jo Daviess County	Carroll County	Bond County	Edwards County	Massac County
Stephenson County	Cook County	Brown County	Franklin County	Pulaski County
Winnebago County	DeKalb County	Calhoun County	Gallatin County	Union County
	DuPage County	Cass County	Hamilton County	
	Grundy County	Champaign County	Hardin County	
	Henderson County	Christian County	Jackson County	
	Henry County	Clark County	Jefferson County	
	Iroquois County	Clay County	Johnson County	
	Kane County	Coles County	Lawrence County	
	Kankakee County	Crawford County	Madison County	
	Kendall County	Cumberland County	Marion County	
	Knox County	De Witt County	Monroe County	
	Lake County	Douglas County	Perry County	
	LaSalle County	Edgar County	Pope County	
	Lee County	Effingham County	Randolph County	
	Livingston County	Fayette County	Richland County	
	Marshall County	Ford County	Saline County	

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
	McHenry County	Fulton County	St. Clair County	
	Mercer County	Greene County	Wabash County	
	Ogle County	Hancock County	Washington County	
	Peoria County	Jasper County	Wayne County	
	Putnam County	Jersey County	White County	
	Rock Island County	Logan County	Williamson County	
	Stark County	Macon County		
	Warren County	Macoupin County		
	Whiteside County	Mason County		
	Will County	McDonough County		
	Woodford County	McLean County		
		Menard County		
		Montgomery		
		Morgan County		
		Moultrie County		
		Piatt County		
		Pike County		
		Sangamon County		
		Schuyler County		
		Scott County		
		Shelby County		
		Tazewell County		
		Vermilion County		

Table 3.7: Cooling Degree-day Zones by County

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Boone County	Bureau County	Adams County	Bond County	Alexander County
Carroll County	Cook County	Brown County	Clay County	Hardin County
DeKalb County	DuPage County	Calhoun County	Clinton County	Johnson County
Jo Daviess County	Grundy County	Cass County	Edwards County	Massac County
Kane County	Henderson County	Champaign County	Fayette County	Pope County
Lake County	Henry County	Christian County	Franklin County	Pulaski County
McHenry County	Iroquois County	Clark County	Gallatin County	Randolph County
Ogle County	Kankakee County	Coles County	Hamilton County	Union County
Stephenson County	Kendall County	Crawford County	Jackson County	
Winnebago County	Knox County	Cumberland County	Jefferson County	
	LaSalle County	De Witt County	Jersey County	
	Lee County	Douglas County	Lawrence County	
	Livingston County	Edgar County	Macoupin County	
	Marshall County	Effingham County	Madison County	
	Mercer County	Ford County	Marion County	
	Peoria County	Fulton County	Monroe County	
	Putnam County	Greene County	Montgomery	
	Rock Island County	Hancock County	Perry County	
	Stark County	Jasper County	Richland County	
	Warren County	Logan County	Saline County	
	Whiteside County	Macon County	St. Clair County	
	Will County	Mason County	Wabash County	

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
	Woodford County	McDonough County	Washington County	
		McLean County	Wayne County	
		Menard County	White County	
		Morgan County	Williamson County	
		Moultrie County		
		Piatt County		
		Pike County		
		Sangamon County		
		Schuyler County		
		Scott County		
		Shelby County		
		Tazewell County		
		Vermilion County		

3.8 Measure Incremental Cost Definition

Incremental Costs means the difference between the cost of the efficient Measure and the cost of the most relevant baseline measure that would have been installed (if any) in the absence of the efficiency Program. Installation costs (material and labor) and Operations and Maintenance (O&M) costs shall be included if there is a difference between the efficient Measure and the baseline measure. In cases where the efficient Measure has a significantly shorter or longer life than the relevant baseline measure (e.g., LEDs versus halogens), the avoided baseline replacement measure costs should be accounted for in the TRC analysis. The Customer's value of service lost, the Customer's value of their lost amenity, and the Customer's transaction costs shall be included in the TRC analysis where a reasonable estimate or proxy of such costs can be easily obtained (e.g., Program Administrator payment to a Customer to reduce load during a demand response event, Program Administrator payment to a Customer as an inducement to give up duplicative functioning equipment). This Incremental Cost input in the TRC analysis is not reduced by the amount of any Incentives (any Financial Incentives Paid to Customers or Incentives Paid to Third Parties by a Program Administrator that is intended to reduce the price of the efficient Measure to the Customer). Incremental Cost calculations will vary depending on the type of efficient Measure being implemented, as outlined in the examples provided below and as set forth in the IL-TRM.

Examples of Incremental Cost calculations include:

a. The Incremental Cost for an efficient Measure that is installed in new construction or is being purchased at the time of natural installation, investment, or replacement is the additional cost incurred to purchase an efficient Measure over and above the cost of the baseline/standard (i.e., less efficient) measure (including any incremental installation, replacement, or O&M costs if there is a difference between the efficient Measure and baseline measure).

b. For a retrofit Measure where the efficiency Program caused the Customer to update their existing equipment, facility, or processes (e.g., air sealing, insulation, tank wrap, controls), where the Customer would not have otherwise made a purchase, the appropriate baseline is zero expenditure, and the Incremental Cost is the full cost of the new retrofit Measure (including installation costs).

c. For the early replacement of a functioning measure with a new efficient Measure, where the Customer would not have otherwise made a purchase for a number of years, the appropriate baseline is a dual baseline that begins as the existing measure and shifts to the new standard measure after the expected remaining useful life of the existing measure ends. Thus, the Incremental Cost is the full cost of the new efficient Measure (including installation costs) being purchased to replace a still-functioning measure less the present value of the assumed deferred replacement cost of replacing the existing measure with a new baseline measure at the end of the existing measure's life (described in section 3.9). This deferred credit may not be necessary when the lifetime of the measure is short, the costs are very low, or for other reasons (e.g., certain Direct Install Measures, Measures provided in Kits to Customers).

d. For study-based services (e.g., facility energy audits, energy surveys, energy assessments, retro-commissioning) that are truly necessary for a Customer to implement efficient Measures, as opposed to being principally intended to be a form of marketing, the Incremental Cost is the full cost of the study-based service. Even if the study-based service is performed entirely by a Program Administrator's implementation contractor, the full cost of the study-based service charged by the implementation contractor is the Incremental Cost, because this is assumed to be the cost of the study-based service that would have been incurred by the Customer if the Customer were to have the study-based service performed in the absence of the efficiency Program. If the Customer implements efficient Measures as a result of the study-based service provided by the efficiency Program, the Incremental Cost for those efficient Measures should also be classified as Incremental Costs in the TRC analysis.

e. For the early retirement of duplicative functioning equipment before its expected life is over (e.g., appliance recycling Programs), the Incremental Costs are composed of the Customer's value placed on their lost amenity, any Customer transaction costs, and the pickup and recycling cost. The Incremental Costs include the actual cost of the pickup and recycling of the equipment (often paid for by a Program Administrator to an implementation contractor) because this is assumed to be the cost of recycling the equipment that would have been incurred by the Customer if the Customer were to recycle the equipment on their own in the absence of the efficiency Program. The payment a Program Administrator makes to the Customer serves as a proxy for the value the Customer places on their lost amenity and any Customer transaction costs.

3.9 Discount Rates, Inflation Rates, and O&M Costs

The Illinois Utilities use screening tools that apply an appropriate discount rate to any future costs or benefits. The societal discount rate, required for use by all electric utilities, is defined as a nominal discount rate of 2.38%, or a real (inflation-adjusted) discount rate of 0.46%[38].

Where a future cost is provided within the TRM (e.g., in early replacement measures where a deferred baseline replacement cost is provided) and the future cost has been adjusted using an inflation rate (based upon the 20-year Treasury yield of 1.91%[39]), the nominal discount rate should be used to discount to the present value. Where future costs have not been adjusted for inflation, the real discount rate should be used to discount to present value.

Some measures specify an operations and maintenance (O&M) parameter that describes the incremental O&M cost savings that can be expected over the measure's lifetime. For most measures the TRM does not specify the NPV of the O&M costs. Instead, the necessary information required to calculate the NPV is included. An example is provided below:

Baseline Case:	O&M costs equal $150 every two years.
Efficient Case:	O&M costs equal $50 every five years.

Given this information, the incremental O&M costs can be determined by discounting the cash flows in the Baseline Case and the Efficient Case separately using the real discount rate.

For a select few measures that include baseline shifts that result in multiple component costs and lifetimes over the lifetime of the measure, this standard method cannot be used. In only these cases, the O&M costs are presented both as Annual Levelized equivalent cost (i.e., the annual payment that results in an equivalent NPV to the actual stream of O&M costs) and as NPVs using a real societal discount rate of 0.46%.

3.10 Interactive Effects

The TRM presents engineering equations for most measures. This approach is desirable because it conveys information clearly and transparently, and is widely accepted in the industry. Unlike simulation model results,

[38] Based on the current 10 year Treasury bond yield rates, as of January 2017. The 10 year rates are used to be consistent with the average measure life of the measures specified within this TRM.
[39] Established for use in the TRM in late 2015.

engineering equations also provide flexibility and the opportunity for users to substitute local, specific information for specific input values. Furthermore, the parameters can be changed in TRM updates to be applied in future years as better information becomes available.

One limitation is that some interactive effects between measures are not automatically captured. Because we cannot know what measures will be implemented at the same time with the same customer, we cannot always capture the interactions between multiple measures within individual measure characterizations. However, interactive effects with different end-uses are included in individual measure characterizations whenever possible[40]. For instance, waste heat factors are included in the lighting characterizations to capture the interaction between more-efficient lighting measures and the amount of heating and/or cooling that is subsequently needed in the building.

By contrast, no effort is made to account for interactive effects between an efficient air conditioning measure and an efficient lighting measure, because it is impossible to know the specifics of the other measure in advance of its installation. For custom measures and projects where a bundle of measures is being implemented at the same time, these kinds of interactive effects should be estimated.

[40] For more information, please refer to the document, "Dealing with interactive Effects During Measure Characterization" Memo to the Stakeholder Advisory Group dated 12/13/11.
http://portal.veic.org/projects/illinoistrm/Shared%20Documents/Memos/Interactive_Effects_Memo_121311.docx

QUESTION:
Please explain whether the potential for "early retirement" when estimating TP, EP, and/or AP was considered. Did you assume that higher efficiency replacements of existing equipment could only occur at the time of natural replacement, or did you also consider the potential for early replacement of still functioning existing equipment (for example, replacing a functioning existing T12 office light fixture with a new LED troffer/fixture)? If early retirement was not considered, please explain why. If early retirement was considered, please explain whether a baseline shift was used to estimate savings over time and whether the value of avoided future replacement costs was included as a negative cost (or benefit) in the TRC test.

RESPONSE:
"Early retirement" is not applicable to either the TP or EP because these types of potential analyses assume 100% adoption of the efficient technology or curtailable load. Likewise for the AP, the concept of early retirement is also not applicable to "non-equipment" measures, which are those such as lighting controls or the addition of attic insulation, that do not directly replace existing equipment.

Early retirement can apply to the subset of "equipment" measures in the AP. However, potential early retirement of existing equipment was not directly reflected in the study due to the lack of reliable information on early retirement adoption rates. Instead, the method was to apply AP savings for equipment measures at the end of the estimated equipment useful life (EUL). The current stock of existing equipment was distributed evenly based on the measure's EUL and was assumed to turn over, or be replaced, each year of the study (*e.g.,* for a measure with a 10-year measure life, 10% of the stock is assumed to turn over each year).

DECLARATION

I sponsored the answers to Interrogatory Nos. 14-17, 29-30, 32-39, 48-60, and 62-65 from Southern Alliance for Clean Energy's First Set of Interrogatories to Florida Power & Light Company in Docket No. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Jim Herndon, Vice President, Strategic & Planning Consulting, Nexant

Date: 5/20/19

NAVIGANT

ComEd Residential Lighting Discounts Program and Holiday Light Exchange Program Impact Evaluation Report

Energy Efficiency / Demand Response Plan: Program Year 2018 (CY2018) (01/01/2018-12/31/2018)

Presented to
ComEd

FINAL

April 10, 2019

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ComEd Residential Lighting Discounts and Holiday Light Exchange Impact Evaluation Report

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ComEd Residential Lighting Discounts and Holiday Light Exchange Impact Evaluation Report

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LIST OF TABLES AND FIGURES

NAVIGANT

ComEd Residential Lighting Discounts and Holiday Light Exchange Impact Evaluation Report

1. INTRODUCTION

This report presents the results of the impact evaluations of ComEd's CY2018 Residential Lighting Discounts Program and CY2018 Holiday Light Exchange Program. It presents a summary of the energy and demand impacts for the programs and is broken out by relevant measure and program structure details. The appendix presents the impact analysis methodology. CY2018 covers January 1, 2018 through December 31, 2018.

2. PROGRAM DESCRIPTION

The primary goal of the Residential Lighting Discounts Program is to increase the market penetration of energy-efficient lighting within ComEd's service territory by providing incentives for bulbs purchased through various retail channels. The program also seeks to increase customer awareness and acceptance of energy-efficient lighting technologies through the distribution of educational materials. In CY2018, the Residential Lighting Discounts Program offered incentives for the purchase of standard, reflector and specialty LED lamps, as well as LED fixtures.

The CY2018 Residential Lighting Discounts Program incentivized just over 11.2 million high efficiency LED lamps and fixtures. This included 7,800,621 omni-directional LEDs, 1,905,419 directional LEDs, 866,560 specialty LEDs, and 679,049 LED fixtures and retrofit kits as shown in the following table and figure. While not all these bulbs were installed in CY2018 (the TRM deems installation rates for years one, two and three), the overall quantity of bulbs installed in CY2018 was 11,824,893 as it includes carryover installations from bulbs sold in PY8 and PY9. Table 2-1 also provides the known volume of carryover bulbs that will be installed in CY2018 from program sales in PY9 and PY8 and the carryover in CY2019 and CY2020 from CY2018 sales. Estimates of CY2019 and CY2020 carryover savings are provided in Section 7.3.

Table 2-1. Residential Lighting Discounts CY2018 Volumetric Findings Detail

Participation	Total	Standard CFLs	Omni-Directional LEDs	Directional LEDs	Specialty LEDs	LED Fixtures
CY2018 Incentivized Bulbs	11,251,649	0	7,800,621	1,905,419	866,560	679,049
CY2018 1st Year Installed Bulbs	10,307,819	0	7,035,380	1,783,663	811,187	677,589
PY8 Carryover–CY2018 Installs	900,076	824,039	54,000	16,689	5,192	157
PY9 Carryover–CY2018 Installs	616,998	352,969	188,818	52,490	22,026	694
Total Installed Bulbs in CY2018	11,824,893	1,177,008	7,278,197	1,852,842	838,405	678,441
PY9 Carryover–CY2019 Installs	530,377	300,250	165,007	45,871	19,249	0
CY2018 Carryover–CY2019 Installs	388,607	0	323,336	44,587	20,278	407
CY2018 Carryover–CY2020 Installs	335,681	0	278,482	39,061	17,764	373

Source: ComEd tracking data and Navigant team analysis.

In addition to the Residential Lighting Discounts Program, this report presents the impact evaluation results from ComEd's Holiday Light Exchange Program. This program encourages customers to swap out their incandescent holiday light strings and replace them with LED holiday light strings provided from ComEd via giveaway events at local retailers and public spaces (arboretums, zoos, etc.). The program also provides free Tier 1 Advanced Power Strips to the first 100 customers at each event. During CY2018, the Holiday Light Exchange Program exchanged 70-bulb LED holiday light strings for 170 C7/C9 incandescent light strings and 3,378 incandescent mini light strings and distributed 440 Tier 1 Advanced Power Strips as seen in Table 2-2.

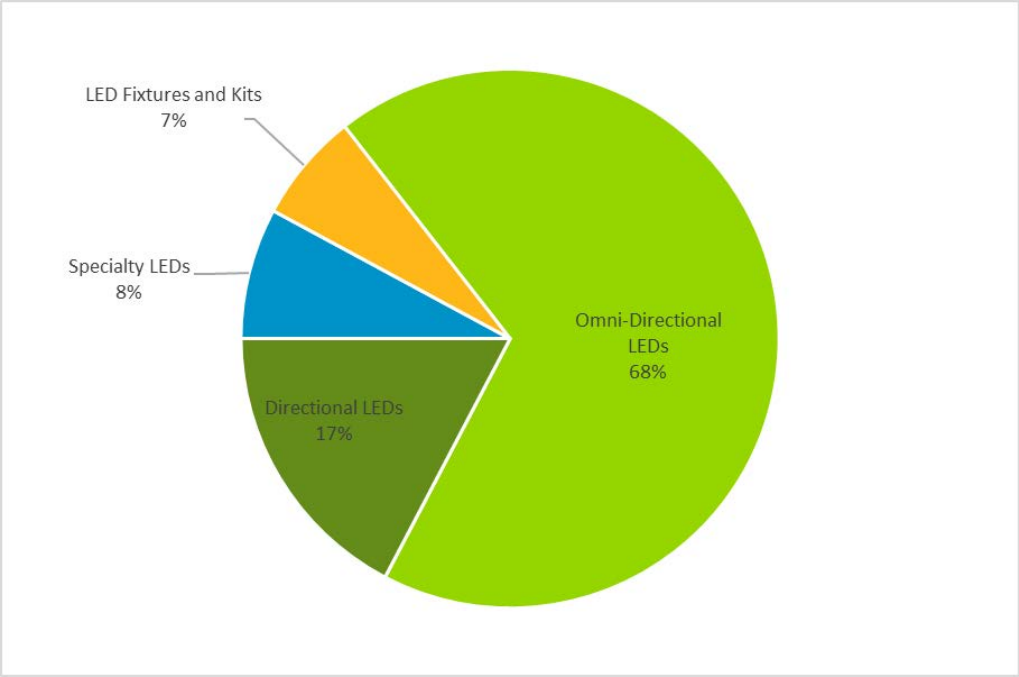
Table 2-2. Holiday Light Exchange CY2018 Volumetric Findings Detail

Participation	Total	Incandescent C7/C9 Strands Exchanged	Incandescent Mini Strands Exchanged	Tier 1 Advanced Power Strips Distributed
CY2018 Distributed Measures	3,988	170	3,378	440
CY2018 Installed Measures	3,852	170	3,378	304

Source: ComEd tracking data and Navigant team analysis.

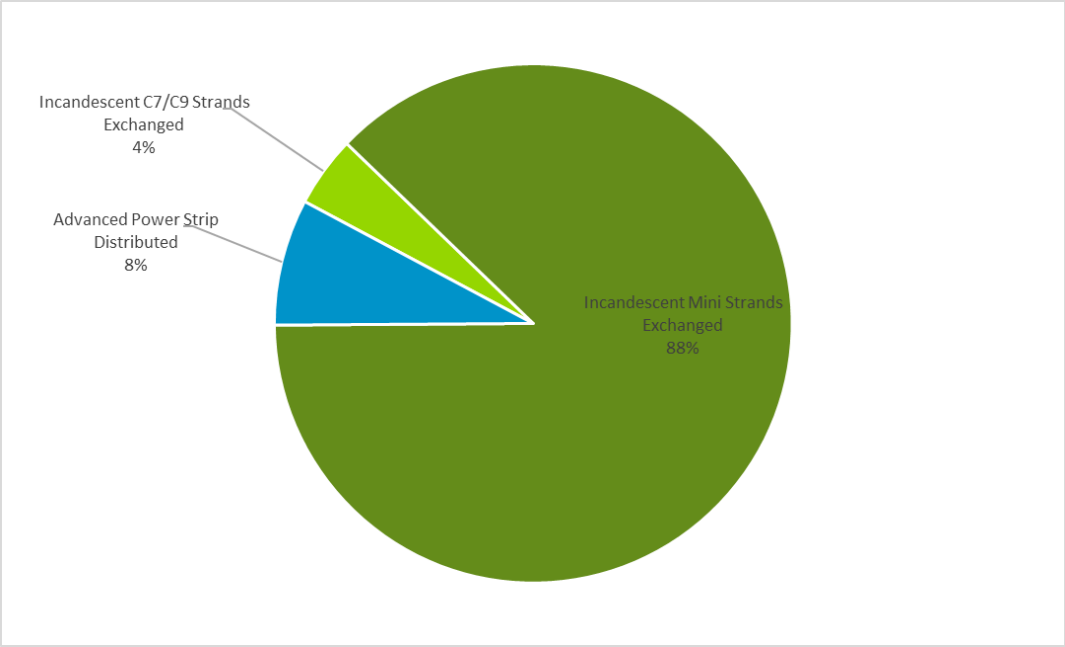
Figure 2-1 presents the number of measures installed in CY2018 from the Residential Lighting Discounts and Holiday Light Exchange programs.

Figure 2-1.Residential Lighting Discounts Number of Measures Installed by Type



Note: This figure excludes CY2018 carryover measures.
Source: ComEd tracking data and Navigant team analysis

Figure 2-2. Holiday Light Exchange Number of Measures Installed by Type



Source: ComEd tracking data and Navigant team analysis

3. Program Savings Detail

Table 3-1 summarizes the incremental energy and demand savings the Residential Lighting Discounts (including carryover) and Holiday Light Exchange programs achieved in CY2018. Additionally, Table 3-2 presents the incremental energy and demand savings of the Residential Lighting Discounts Program, excluding carryover from PY8 and PY9 purchases.

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ComEd Residential Lighting Discounts and Holiday Light Exchange Impact Evaluation Report

Table 3-1. CY2018 Total Annual Incremental Electric Savings

	Residential Lighting Discounts				Holiday Light Exchange			
Savings Category	Energy Savings (kWh)	Demand Savings (kW)	Summer Peak Demand Savings (kW)	Winter Peak Demand Savings (kW)	Energy Savings (kWh)	Demand Savings (kW)	Summer Peak Demand Savings (kW)	Winter Peak Demand Savings (kW)
Electricity								
Ex Ante Gross Savings	518,684,542	NR	NR	NR	47,962	NR	NR	NR
Program Gross Realization Rate	0.97	NA	NA	NA	1.14	NA	NA	NA
Verified Gross Savings	503,823,727	461,558	60,994	67,111	54,842	148	1.94	NA
Program Net-to-Gross Ratio (NTG)	Varies	Varies	Varies	Varies	0.80	0.80	0.80	NA
Verified Net Savings	301,534,004	275,876	36,498	40,137	43,874	118	1.55	NA
Converted from Gas*								
Ex Ante Gross Savings	NA	NA	NA	NA	NA	NA	NA	NA
Program Gross Realization Rate	NA	NA	NA	NA	NA	NA	NA	NA
Verified Gross Savings	NA	NA	NA	NA	NA	NA	NA	NA
Program Net-to-Gross Ratio (NTG)	NA	NA	NA	NA	NA	NA	NA	NA
Verified Net Savings	NA	NA	NA	NA	NA	NA	NA	NA
Total Electric Plus Gas								
Ex Ante Gross Savings	518,684,542	NR	NR	NR	47,962	NR	NR	NR
Program Gross Realization Rate	0.97	NA	NA	NA	1.14	NA	NA	NA
Verified Gross Savings	503,823,727	461,558	60,994	67,111	54,842	148	1.94	NA
Program Net-to-Gross Ratio (NTG)	Varies	Varies	Varies	Varies	0.80	0.80	0.80	NA
Verified Net Savings	301,534,004	275,876	36,498	40,137	43,874	118	1.55	NA

* There are no gas savings associated with the Residential Lighting Discounts or Holiday Light Exchange programs
NR = Not recorded
NA = Not applicable
Note: The demand savings are equivalent to the reduction in kW of bulbs installed in 2018.
The coincident Summer Peak period is defined as 1:00-5:00 PM Central Prevailing Time on non-holiday weekdays, June through August.
Source: ComEd tracking data and Navigant team analysis.

Table 3-2. Residential Lighting Discounts CY2018 Total Annual Incremental Electric Savings Excluding Carryover

	Residential Lighting Discounts			
Savings Category	Energy Savings (kWh)	Demand Savings (kW)	Summer Peak Demand Savings (kW)	Winter Peak Demand Savings (kW)
Electricity				
Ex Ante Gross Savings	467,885,454	NR	NR	NR
Program Gross Realization Rate	0.97	NA	NA	NA
Verified Gross Savings	453,027,169	415,013	55,414	60,938
Program Net-to-Gross Ratio (NTG)	Varies	Varies	Varies	Varies
Verified Net Savings	269,754,735	246,787	33,020	246,787
Converted from Gas*				
Ex Ante Gross Savings	NA	NA	NA	NA
Program Gross Realization Rate	NA	NA	NA	NA
Verified Gross Savings	NA	NA	NA	NA
Program Net-to-Gross Ratio (NTG)	NA	NA	NA	NA
Verified Net Savings	NA	NA	NA	NA
Total Electric Plus Gas				
Ex Ante Gross Savings	467,885,454	NR	NR	NR
Program Gross Realization Rate	0.97	NA	NA	NA
Verified Gross Savings	453,027,169	415,013	55,414	60,938
Program Net-to-Gross Ratio (NTG)	Varies	Varies	Varies	Varies
Verified Net Savings	269,754,735	246,787	33,020	246,787

* There are no gas savings associated with the Residential Lighting Discounts or Holiday Light Exchange programs.
NR = Not recorded
NA = Not applicable
Note: The coincident Summer Peak period is defined as 1:00-5:00 PM Central Prevailing Time on non-holiday weekdays, June through August.
Source: ComEd tracking data and Navigant team analysis.

4. Cumulative Persisting Annual Savings

4.1 Residential Lighting Discounts Program

The measure-specific and total ex ante gross savings for the Residential Lighting Discounts Program and the cumulative persisting annual savings (CPAS) for the measures installed in CY2018 are shown in the following table and figure. The CY2018 total CPAS across all measures is 301,534,004 kWh. There are no gas savings associated with this program. As seen in the table below, standard (omni-directional) lamps and carryover savings have a significant reduction in net savings following the implementation of the Energy Independence and Security Act (EISA) standards change in 2020. Savings from the CY2019 program may see increased reductions in 2024 if the EISA standards are applied to specialty and reflector lamps. However, since there currently is uncertainty regarding the implementation of the EISA standards to these bulb types, a reduction in future savings has not been applied within the tables below in accordance with Version 6 of the Illinois Technical Reference Manual (TRM).

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ComEd Residential Lighting Discounts and Holiday Light Exchange Impact Evaluation Report

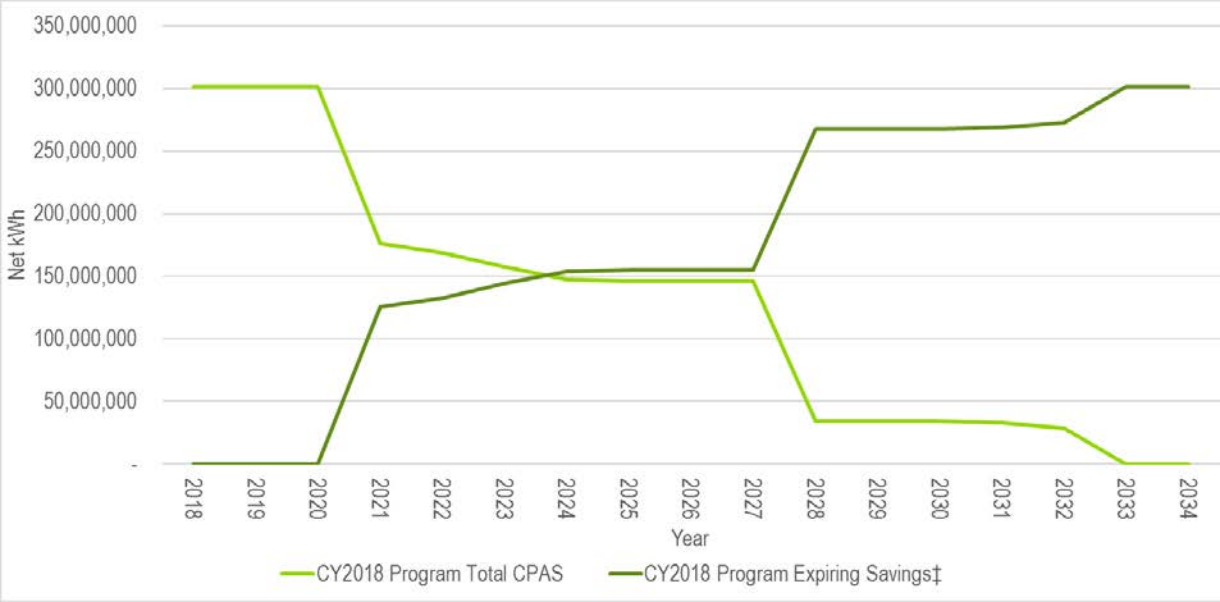
Table 4-1. Residential Lighting Discounts Cumulative Persisting Annual Savings (CPAS) – Total

End Use Type	Research Category	EUL	CY2018 Verified Gross Savings	NTG*	Lifetime Net Savings†	Verified Net kWh Savings 2018	2019	2020	2021	2022	2023	2024	2025	2026
Lighting	Standard LED (Residential)	10.0	212,526,024	0.58	683,315,813	123,265,094	123,265,094	123,265,094	44,788,647	44,788,647	44,788,647	44,788,647	44,788,647	44,788,647
Lighting	Standard LED (Non-Residential)	4.6	52,215,054	0.58	108,572,129	30,284,731	30,284,731	30,284,731	11,004,025	6,713,911				
Lighting	Directional LED (Residential)	10.0	83,866,938	0.58	486,428,242	48,642,824	48,642,824	48,642,824	48,642,824	48,642,824	48,642,824	48,642,824	48,642,824	48,642,824
Lighting	Directional LED (Non-Residential)	6.1	18,833,376	0.58	66,755,279	10,923,358	10,923,358	10,923,358	10,923,358	10,923,358	10,923,358	1,215,129		
Lighting	Specialty LED (Residential)	10.0	32,702,443	0.58	189,674,172	18,967,417	18,967,417	18,967,417	18,967,417	18,967,417	18,967,417	18,967,417	18,967,417	18,967,417
Lighting	Specialty LED (Non-Residential)	4.4	6,223,484	0.58	15,774,337	3,609,621	3,609,621	3,609,621	3,609,621	1,335,854				
Lighting	LED Fixtures and Kits (Residential)	15.0	39,383,480	0.73	431,249,101	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940
Lighting	LED Fixtures and Kits (Non-Residential)	13.8	7,276,370	0.73	73,228,529	5,311,750	5,311,750	5,311,750	5,311,750	5,311,750	5,311,750	5,311,750	5,311,750	5,311,750
Lighting	Carryover (Residential)	4.9	42,945,862	0.63	88,380,490	26,969,909	26,969,909	26,969,909	3,932,203	3,538,559				
Lighting	Carryover (Non-Residential)	3.5	7,850,696	0.61	14,707,479	4,809,360	4,809,360	4,809,360	279,400					
CY2018 Program Total Electric CPAS			503,823,727		2,158,085,569	301,534,004	301,534,004	301,534,004	176,209,185	168,972,262	157,383,937	147,675,707	146,460,578	146,460,578
CY2018 Program Expiring Electric Savings‡							-	-	125,324,819	132,561,742	144,150,067	153,858,297	155,073,426	155,073,426

End Use Type	Research Category	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Lighting	Standard LED (Residential)	44,788,647											
Lighting	Standard LED (Non-Residential)												
Lighting	Directional LED (Residential)	48,642,824											
Lighting	Directional LED (Non-Residential)												
Lighting	Specialty LED (Residential)	18,967,417											
Lighting	Specialty LED (Non-Residential)												
Lighting	LED Fixtures and Kits (Residential)	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940	28,749,940						
Lighting	LED Fixtures and Kits (Non-Residential)	5,311,750	5,311,750	5,311,750	5,311,750	4,175,781							
Lighting	Carryover (Residential)												
Lighting	Carryover (Non-Residential)												
CY2018 Program Total Electric CPAS		146,460,578	34,061,690	34,061,690	34,061,690	32,925,721	28,749,940	-	-	-	-	-	-
CY2018 Program Expiring Electric Savings‡		155,073,426	267,472,314	267,472,314	267,472,314	268,608,283	272,784,064	301,534,004	301,534,004	301,534,004	301,534,004	301,534,004	301,534,004

Note: The green highlighted cell shows program total first year electric savings.
* A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html. Carryover NTG values are the savings weighted average of NTG values from the program year carryover bulbs were purchased.
† Lifetime savings are the sum of CPAS savings through the EUL.
‡ Expiring savings are equal to CPAS Yn-1 - CPAS Yn + Expiring Savings Yn-1.
Source: Navigant analysis

Figure 4-1. Residential Lighting Discounts Cumulative Persisting Annual Savings



‡ Expiring savings are equal to CPAS Yn-1 - CPAS Yn + Expiring Savings Yn-1.
Source: Navigant analysis

4.2 Holiday Light Exchange Program

The measure-specific and total ex ante gross savings for the Holiday Light Exchange Program and the cumulative persisting annual savings (CPAS) for the measures installed in CY2018 are shown in the following table and figure. The total CPAS across all measures is 43,874 kWh. There are no gas savings associated with this program. All measures associated with this program have an EUL of seven years. As a result, all program savings expire in 2025.

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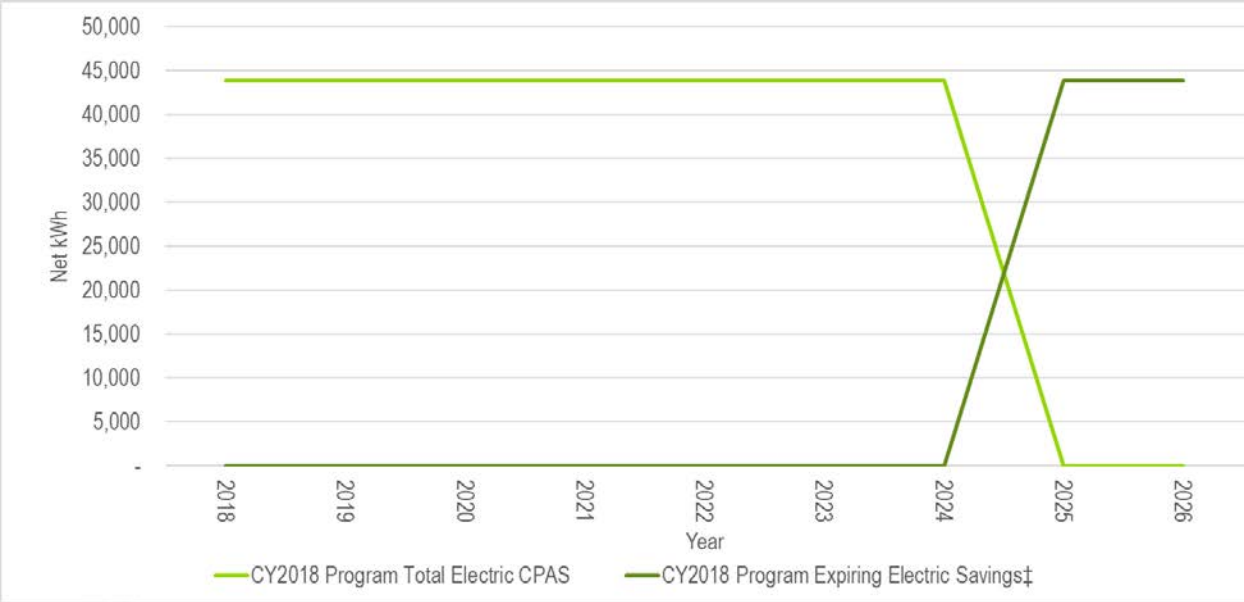
Table 4-2. Holiday Light Exchange Cumulative Persisting Annual Savings (CPAS) – Electricity/Total

End Use Type	Research Category	EUL	CY2018 Verified Gross Savings	NTG*	Lifetime Net Savings†	Verified Net kWh Savings 2018	2019	2020	2021	2022	2023	2024	2025	2026
Holiday String Lights	Holiday String Lights (Exchanged Incandescent C7/C9 and Mini)	7	37,682	0.80	211,019	30,146	30,146	30,146	30,146	30,146	30,146	30,146		
Advance Power Strip	Tier 1 Advanced Power Strips	7	17,160	0.80	96,096	13,728	13,728	13,728	13,728	13,728	13,728	13,728		
CY2018 Program Total Electric CPAS			54,842		307,115	43,874	43,874	43,874	43,874	43,874	43,874	43,874	-	-
CY2018 Program Expiring Electric Savings‡							-	-	-	-	-	-	43,874	43,874

Note: The green highlighted cell shows program total first year electric savings (including direct electric savings and those converted from gas).
* A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
†Lifetime savings are the sum of CPAS savings through the EUL.
‡ Expiring savings are equal to CPAS Yn-1 - CPAS Yn + Expiring Savings Yn-1.
Source: Navigant analysis

Figure 4-2. Holiday Light Exchange Cumulative Persisting Annual Savings



‡ Expiring savings are equal to CPAS Yn-1 - CPAS Yn + Expiring Savings Yn-1.
Source: Navigant analysis

5. Program Savings by Measure

The Residential Lighting Discounts Program includes five distinct lighting measure groups as shown in the following tables. These groups include standard omni-directional LEDs, directional LEDs (BR, R, MR, and PAR reflector lamps), specialty LEDs (globe, candelabra, and 3-way lamps), LED fixtures and retrofit kits, and carryover lamps (CFL and LED lamps and fixtures purchased in PY8 and PY9 but installed in CY2018). All five measure groups are split by the residential and non-residential sectors to highlight where the savings are expected to be realized. Overall, standard LEDs make up the largest share of program energy and demand savings (more than 50%).

The following tables also include savings estimates for the Holiday Light Exchange Program. The three measure groups included in this program are exchanged C7/C9 holiday string lights, exchanged incandescent mini holiday string lights, and distributed Tier 1 advanced power strips. The efficient measure for both the exchanged C7/C9 holiday string lights and exchanged incandescent mini holiday string lights are LED string lights. Per the IL TRM v7,[1] there are no peak demand savings associated with holiday string lights, however these measures are included in all savings tables in this section.

[1] IL TRM v6 does not include Holiday String Lights as a measure. IL TRM v7 was used as a result.

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Table 5-1. CY2018 Energy Savings by Measure

Program	End Use Type	Research Category	Ex Ante Gross Savings (kWh)	Verified Gross Realization Rate	Verified Gross Savings (kWh)	NTG*	Verified Net Savings (kWh)	Effective Useful Life
Residential Lighting Discounts	Lighting	Standard LED (Residential)	227,805,324	0.93	212,526,024	0.58	123,265,094	10.0
	Lighting	Standard LED (Non-Residential)	51,129,860	1.02	52,215,054	0.58	30,284,731	4.6
	Lighting	Directional LED (Residential)	87,571,966	0.96	83,866,938	0.58	48,642,824	10.0
	Lighting	Directional LED (Non-Residential)	18,684,502	1.01	18,833,376	0.58	10,923,358	6.1
	Lighting	Specialty LED (Residential)	33,548,367	0.97	32,702,443	0.58	18,967,417	10.0
	Lighting	Specialty LED (Non-Residential)	6,068,182	1.03	6,223,484	0.58	3,609,621	4.4
	Lighting	LED Fixtures and Kits (Residential)	36,217,915	1.09	39,383,480	0.73	28,749,940	15.0
	Lighting	LED Fixtures and Kits (Non-Residential)	6,859,338	1.06	7,276,370	0.73	5,311,750	13.8
	Lighting	Carryover (Residential)	42,944,528	1.00	42,945,862	0.63	26,969,909	4.9
	Lighting	Carryover (Non-Residential)	7,854,559	1.00	7,850,696	0.61	4,809,360	3.5
	Lighting	Total (Residential)	428,088,100	0.96	411,424,748	0.60	246,595,185	9.9
	Lighting	Total (Non-Residential)	90,596,442	1.02	92,398,979	0.59	54,938,819	5.5
	Lighting	Total (All Sectors)	518,684,542	0.97	503,823,727	0.60	301,534,004	9.1
Holiday Light Exchange	Holiday String Lighting	Exchanged Incandescent C7/C9 Strands	4,041	2.13	8,590	0.80	6,872	7.0
	Holiday String Lighting	Exchanged Incandescent Mini Strands	26,768	1.09	29,092	0.80	23,274	7.0
	Advanced Power Strip	Tier 1 Advanced Power Strip Distributed	17,153	1.00	17,160	0.80	13,728	7.0
	Holiday Light Exchange	Total	47,962	1.14	54,842	0.80	43,874	7.0

* A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.

Source: ComEd tracking data and Navigant team analysis.

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Table 5-2. CY2018 Demand Savings by Measure

Program	End Use Type	Research Category	Ex Ante Gross Demand Reduction (kW)	Verified Gross Realization Rate	Verified Gross Demand Reduction (kW)	NTG*	Verified Net Demand Reduction (kW)
Residential Lighting Discounts	Lighting	Standard LED (Residential)	NR	NR	236,713	0.58	137,294
	Lighting	Standard LED (Non-Residential)	NR	NR	13,262	0.58	7,692
	Lighting	Directional LED (Residential)	NR	NR	88,799	0.58	51,503
	Lighting	Directional LED (Non-Residential)	NR	NR	4,784	0.58	2,774
	Lighting	Specialty LED (Residential)	NR	NR	29,344	0.58	17,019
	Lighting	Specialty LED (Non-Residential)	NR	NR	1,581	0.58	917
	Lighting	LED Fixtures and Kits (Residential)	NR	NR	38,587	0.73	28,168
	Lighting	LED Fixtures and Kits (Non-Residential)	NR	NR	1,944	0.73	1,419
	Lighting	Carryover (Residential)	NR	NR	44,674	0.63	27,947
	Lighting	Carryover (Non-Residential)	NR	NR	1,871	0.61	1,143
	Lighting	Total (Residential)	NR	NR	438,117	0.60	261,931
	Lighting	Total (Non-Residential)	NR	NR	23,441	0.59	13,945
	Lighting	**Total (All Sectors)**	NR	NR	461,558	0.60	275,876
Holiday Light Exchange	Holiday String Lighting	Exchanged Incandescent C7/C9 Strands	NR	NR	7.0	0.80	5.6
	Holiday String Lighting	Exchanged Incandescent Mini Strands	NR	NR	138	0.80	111
	Advanced Power Strip	Tier 1 Advanced Power Strip Distributed	NR	NR	2.4	0.80	1.9
	Holiday Light Exchange	**Total**	NR	NR	148	0.80	118

* A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
NR = Not recorded
Source: ComEd tracking data and Navigant team analysis.

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Table 5-3. CY2018 Summer Peak Demand Savings by Measure

Program	End Use Type	Research Category	Ex Ante Gross Summer Peak Demand Reduction (kW)	Verified Gross Realization Rate	Verified Gross Summer Peak Demand Reduction (kW)	NTG*	Verified Net Summer Peak Demand Reduction (kW)
Residential Lighting Discounts	Lighting	Standard LED (Residential)	NR	NR	21,283	0.58	12,344
	Lighting	Standard LED (Non-Residential)	NR	NR	10,461	0.58	6,068
	Lighting	Directional LED (Residential)	NR	NR	9,265	0.58	5,374
	Lighting	Directional LED (Non-Residential)	NR	NR	3,773	0.58	2,189
	Lighting	Specialty LED (Residential)	NR	NR	3,521	0.58	2,042
	Lighting	Specialty LED (Non-Residential)	NR	NR	1,247	0.58	723
	Lighting	LED Fixtures and Kits (Residential)	NR	NR	4,350	0.73	3,176
	Lighting	LED Fixtures and Kits (Non-Residential)	NR	NR	1,513	0.73	1,104
	Lighting	Carryover (Residential)	NR	NR	4,104	0.63	2,577
	Lighting	Carryover (Non-Residential)	NR	NR	1,476	0.61	901
	Lighting	Total (Residential)	NR	NR	42,524	0.60	25,512
	Lighting	Total (Non-Residential)	NR	NR	18,470	0.59	10,985
	Lighting	**Total (All Sectors)**	NR	NR	60,994	0.60	36,498
Holiday Light Exchange	Holiday String Lighting	Exchanged Incandescent C7/C9 Strands	NA	NR	0	0.80	0
	Holiday String Lighting	Exchanged Incandescent Mini Strands	NA	NR	0	0.80	0
	Advanced Power Strip	Tier 1 Advanced Power Strip Distributed	NA	NR	1.94	0.80	1.55
	Holiday Light Exchange	**Total**	NR	NR	1.94	0.80	1.55

* A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
NR = Not recorded
Source: ComEd tracking data and Navigant team analysis.

Table 5-4. CY2018 Winter Peak Demand Savings by Measure

Program	End Use Type	Research Category	Ex Ante Gross Winter Peak Demand Reduction (kW)	Verified Gross Realization Rate	Verified Gross Winter Peak Demand Reduction (kW)	NTG*	Verified Net Winter Peak Demand Reduction (kW)
Residential Lighting Discounts	Lighting	Standard LED (Residential)	NR	NR	27,459	0.58	15,926
	Lighting	Standard LED (Non-Residential)	NR	NR	7,294	0.58	4,231
	Lighting	Directional LED (Residential)	NR	NR	11,899	0.58	6,901
	Lighting	Directional LED (Non-Residential)	NR	NR	2,631	0.58	1,526
	Lighting	Specialty LED (Residential)	NR	NR	4,546	0.58	2,637
	Lighting	Specialty LED (Non-Residential)	NR	NR	869	0.58	504
	Lighting	LED Fixtures and Kits (Residential)	NR	NR	5,171	0.73	3,775
	Lighting	LED Fixtures and Kits (Non-Residential)	NR	NR	1,069	0.73	780
	Lighting	Carryover (Residential)	NR	NR	5,274	0.63	3,309
	Lighting	Carryover (Non-Residential)	NR	NR	899	0.61	549
	Lighting	Total (Residential)	NR	NR	54,348	0.60	32,548
	Lighting	Total (Non-Residential)	NR	NR	12,763	0.59	7,590
	Lighting	Total (All Sectors)	NR	NR	67,111	0.60	40,137
Holiday Light Exchange	Holiday String Lighting	Exchanged Incandescent C7/C9 Strands	NR	NR	NA	NA	NA
	Holiday String Lighting	Exchanged Incandescent Mini Strands	NR	NR	NA	NA	NA
	Advanced Power Strip	Tier 1 Advanced Power Strip Distributed	NR	NR	NA	NA	NA
	Holiday Light Exchange	Total	NR	NR	NA	NA	NA

* A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.
NR = Not recorded
Note: Winter Peak demand savings are not calculated for the Holiday Light Exchange Program as no Winter Peak CF is provided in the IL TRM.
Source: ComEd tracking data and Navigant team analysis.

6. Impact Analysis Findings and Recommendations

6.1 Impact Parameter Estimates

6.1.1 Lamps, Fixtures, and String Lights

Energy and demand[2] savings for lamps, fixtures, and string lighting are estimated using the following formulas as specified in the IL TRM:

Verified Gross Annual ΔkWh = ResSplit * Res ΔkWh + NonResSplit * NonRes ΔkWh
Where:
Res ΔkWh = Bulbs * DeltaWatts/1000 * ISR_r * (1-Leakage) * HOU_r * $WHFe_r$
NonRes ΔkWh = Bulbs * DeltaWatts/1000 * ISR_{nr} * (1-Leakage) * HOU_{nr}* $WHFe_{nr}$
Verified Gross Annual ΔkW = Delta Watts/1000 * ISR * (1-Leakage)

[2] Holiday string lights do not have summer or winter peak demand savings.

Verified Gross Annual Summer Peak ΔkW = Gross Annual ΔkW * Summer Peak CF * WHFd
Verified Gross Annual Winter Peak ΔkW = Gross Annual ΔkW * Winter Peak CF

Where:

- **Res/NonRes split** = Percentage of program bulbs installed in residential and non-residential locations. Deemed within Illinois TRM v6.
- **Bulbs** = Quantity of bulbs sold through the CY2018 program, based on program tracking data.
- **Delta Watts** = Difference in wattage between the baseline bulb (WattsBase) and the efficient program bulb (WattsEE):
  - WattsBase = Baseline bulb wattage, mapping deemed in Illinois TRM v6.
  - WattsEE = Wattage of efficient program bulb, based on program tracking data.
- **ISR $_{r(nr)}$ =** First-year installation rate (residential or non-residential), deemed in Illinois TRM v6.
- **Leakage** = Percentage of program bulbs installed outside of ComEd service territory, deemed in Illinois TRM v6.
- **HOU$_{r(nr)}$** = Annual hours-of-use (residential or non-residential), deemed in Illinois TRM v6.
- **WHFe$_{r(nr)}$** = Waste heat factor – Energy (residential or non-residential), deemed in Illinois TRM v6.
- **WHFd$_{r(nr)}$** = Waste heat factor – Demand (residential or non-residential), deemed in Illinois TRM v6.
- **Summer Peak CF** = Peak load coincidence factor, the percentage of program bulbs turned on during summer peak hours (weekdays from 1 to 5 p.m.).
- **Winter Peak CF** = Peak load coincidence factor, the percentage of program bulbs turned on during the PJM Winter Peak hours.[3]

The source of the verified first-year gross and net savings parameters are shown in the table below. The sources of the parameters used to calculate the second and third year carryover are presented in the carryover section (Section 7.3).

The lifetime energy and demand savings are estimated by multiplying the verified savings by the effective useful life for each measure.[4]

[3] The Winter Peak Period is defined by PJM as the period from 6-8 am and 5-7 pm, Central Time Zone, between January 1 and February 28.
[4] Standard lamps (CFL and LED) receive baseline adjustments in lifetime savings starting 2021 to account for the implementation of the EISA efficiency standards for these measures.

Table 6-1. Lamp, Fixture, String Lighting Savings Parameters

Gross Savings Input Parameters	Deemed * or Evaluated?	Source – LEDs and Fixtures	Source – Holiday String Lighting
Program Bulbs	Evaluated	CY2018 Program Tracking Data	CY2018 Program Tracking Data
Delta Watts	Deemed	Illinois TRM v6	Illinois TRM v7
Installation Rate	Deemed	Illinois TRM v6	Illinois TRM v7
Leakage	Evaluated	Illinois TRM v6 Errata	Illinois TRM v7
Res / Non-Res Split	Deemed	Illinois TRM v6	Illinois TRM v7
Hours of Use (HOU)	Deemed	Illinois TRM v6	Illinois TRM v7
Summer Peak Coincidence Factor	Deemed	Illinois TRM v6	Illinois TRM v7
Winter Peak Coincidence Factor	Evaluated	Memo to ComEd	NA
Waste Heat Factor (Energy)	Deemed	Illinois TRM v6	Illinois TRM v7
Waste Heat Factor (Demand)	Deemed	Illinois TRM v6	Illinois TRM v7
NTG†	Deemed	IL SAG Consensus	Evaluator Recommendation

* State of Illinois Technical Reference Manual version 6.0 and Technical Reference Manual version 7.0 from http://www.ilsag.info/technical-reference-manual.html.
† A deemed value. Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.xlsx, which is to be found on the IL SAG web site here: http://ilsag.info/net-to-gross-framework.html.

6.1.2 Tier 1 Advanced Power Strips

Energy and demand[5] savings for Tier 1 advanced power strips are estimated using the following formula as specified in the TRM:

Verified Gross Annual ΔkWh = kWh * ISR
Verified Gross Annual ΔkW = ΔkWh / Hours
Verified Gross Annual Summer Peak ΔkW = ΔkWh / Hours * Summer Peak CF

The source of the verified first-year gross and net savings parameters are shown in the below.

The lifetime energy and demand savings are estimating by multiplying the verified savings by the effective useful life for each measure.[6]

Table 6-2. Tier 1 Advanced Power Strip Savings Parameters

Gross Savings Input Parameters	Deemed * or Evaluated?	Source
Advanced Power Strips	Evaluated	CY2018 Program Tracking Data
Energy Savings	Deemed	Illinois TRM v7
Installation Rate	Deemed	Illinois TRM v7
Hours of Use (HOU)	Deemed	Illinois TRM v7
Summer Peak Coincidence Factor	Deemed	Illinois TRM v7
NTG†	Deemed	Evaluator Recommendation

* State of Illinois Technical Reference Manual version 7.0 from http://www.ilsag.info/technical-reference-manual.html.
† A deemed value. Source: ComEd Holiday Light Exchange CY2019 Evaluation Plan.docx

[5] Winter demand savings were not calculated for Tier 1 Advanced Power Strips as there is no Winter Peak coincidence factor for this measure.
[6] Standard lamps (CFL and LED) receive baseline adjustments in lifetime savings starting 2021 to account for the implementation of new EISA efficiency standards for these measures.

6.2 Other Impact Findings and Recommendations

The evaluation team has developed several recommendations based on findings from the CY2018 evaluation, as follows:

6.2.1 Residential Lighting Discounts

Finding 1. The gross realization rate for the Residential Lighting Discounts Program is 97.2%. The main source of the discrepancies between the ex ante and verified savings estimates results from differences in the gross savings calculations. The evaluation team includes interactive effects (WHFe and WHFd), in-service rates (ISR) and program leakage into the final savings calculations per the IL TRM v6, however, the ex ante gross savings did not include the application of these parameters.

Recommendation 1. The evaluation team recommends that ex ante gross savings be calculated using all parameters included in the TRM estimated savings equations.

Finding 2. The evaluation team noted several differences in baseline wattage values applied to program lamps. These differences include:

Finding 2a. For R Reflector LEDs, the evaluation team found differences between the ex ante and verified baseline wattages. Roughly 3,250 records of R20 lamps in the tracking data were mapped using the R, BR, and ER category for lamps with diameters less than or equal to 2.25 inches. However, all R20 lamps sold through the program have a diameter of 2.5 inches.[7] The second cause for discrepancies in R20 lumen mapping results from roughly 4,500 R20 records that have lumens less than 720 but are not using the TRM specified R20 exceptions for lower lumen categories.

Recommendation 2a. The evaluation team recommends that the baseline wattages for R20 lamps with 720 lumens and above be mapped to the "R, ER, BR with medium screw bases with diameter >2.25 inches and the baseline wattages of R20 lamps with lumens less than 720 be mapped using the appropriate exceptions category included in the TRM.

Finding 2b. The evaluation team found that PAR lamps in the tracking data were grouped with other reflector types[8] and assigned baseline wattages based on lumen mappings of those groupings as opposed to using the ENERGY STAR Center Beam Candle Power tool specified for PAR lamps in the TRM. Applying this formula to calculate the verified baseline wattages for PAR lamps yielded differences in baseline wattages ranging from 10 to 55 watts from the ex ante baseline wattages.

Recommendation 2b. The evaluation team recommends that all PAR baseline wattages be determined using the ENERGY STAR Center Beam Candle Power tool specified for PAR lamps in the TRM.

Finding 2c. The evaluation team found roughly 1,800 records of Decorative - Candelabra Base lamps that were mapped to a lower wattage bin than specified in the TRM.

Recommendation 2c. The evaluation team recommends that all lamps should be mapped using the defined lumen ranges in the TRM.

Finding 2d. The evaluation team found discrepancies between the ex ante and verified baseline wattage assignments for roughly 28,000 hardwired fixture records (87% of these records are

[7] The diameter of a reflector can be calculated based on the numeric portion of the reflector type. The number is a measurement in eighths of an inch and so an R20 is 20/8 = 2.5''.

[8] Other reflector types refer to TRM lumen mapping descriptions of "*R, BR, and ER with medium screw bases w/ diameter <=2.25 in*" and "*All reflector lamps below lumen ranges specified above*"

one of two models). The evaluation team could not identify a reason as to why these records did not align with the TRM lumen mapping. The evaluation team used the assumption that all hardwired fixtures were mapped to R, ER, BR with medium screw bases with diameter >2.25 inches for baseline wattage assignments.

Recommendation 2d. The evaluation team recommends that an additional hardwired fixture variable be added to the tracking data that specifies the fixture type and the associated baseline category.

Finding 3. There are no differences in ex ante and verified hours of use (HOU) values with the exception of retrofit kits. The evaluation team applied a residential and non-residential HOU value of 891 and 3,612 (respectively) to retrofit kits. This results in a residential/non-residential weighted average HOU equal to 1,027, whereas the residential/non-residential weighted average HOU included in the tracking data is equal to 1,015. Since the tracking data only contains a weighted average HOU values, it is not possible to verify what HOU value was used for each market sector.

Recommendation 3. The evaluation team recommends the same HOU values that are applied to interior hardwired fixtures be applied to retrofit kits.

Finding 4. The tracking data parameters used to calculate energy savings are provided as a residential and non-residential weighted average based on the program residential/non-residential split. Because only a single weighted value is provided, it is not possible for the evaluation team to verify the actual values used to calculate ex ante savings based on the tracking data alone.

Recommendation 4. The evaluation team recommends that residential and non-residential values for each parameter be included in the tracking data starting in CY2019.

6.2.2 Holiday Light Exchange

Finding 1. The gross realization rate for the Holiday Light Exchange Program is 114%. The source of the discrepancies in the gross energy savings estimates results from differences in the per-unit savings value applied to holiday string lights that were exchanged during program events. The evaluation team assumed a baseline string length of 100 bulbs per string for mini string lights and 50 bulbs per string for C7/C9 string lights.[9] The efficient products distributed to the participants were 70-bulb LED string lights. This results in an estimated savings of 50.52 kWh per string for C7/C9 exchanges and 8.61 kWh per string for mini exchanges. The per unit ex ante savings estimates were 23.77 kWh for C7/C9 exchanges and 7.92 kWh for mini exchanges. The ex ante savings estimates assumed a 100-bulb replacement string and a 25-bulb C7/C9 string.

Recommendation 1. The evaluation team recommends that the approximate bulbs per string for exchanged holiday lights be recorded during program events and included in the tracking data. Additionally, details on the holiday lights given away should also be included in the tracking data (at a minimum, the number of bulbs per string). Including these two variables in the tracking data will allow for increased accuracy in the estimation of program savings.

Finding 2. The evaluation team estimated program leakage for holiday string lights and advanced power strips using the participant zip codes found in the tracking data. Evaluation determined the leakage for holiday string lights to be 1.6% and the leakage for Tier 1 advanced power strips to be 3.0%.

[9] The holiday string light baseline assumptions were agreed upon in a meeting between ComEd, the evaluation team, and the implementation team on 11/19/2018.

Recommendation 2a. The evaluation team recommends that program participants be identified as ComEd customers to get a more accurate picture of program leakage specific to each program year.

Recommendation 2b. The evaluation team recommends that the actual program leakage should be used when calculating program savings, rather than the TRM deemed leakage value. While the CY2018 evaluation included a deemed leakage value from the TRM in savings estimates, it is more accurate to use the annual verified leakage from participants at events.

7. Appendix 1. Impact Analysis Methodology

7.1 Verified Gross Program Savings Analysis Approach Estimates

The evaluation team calculated verified savings for all measures with available data. For CY2018, the evaluation team calculated verified savings for omni-directional LEDs, directional LEDs, specialty LEDs, LED fixtures, holiday string lights, and Tier 1 advanced power strips. The data used to estimate the verified gross program savings came from the CY2018 program tracking data,[10] and the Illinois Statewide Technical Reference Manual for Energy Efficiency Versions 6.0 and 7.0 (Illinois TRM v6 and v7).

7.2 Verified Net Program Savings Analysis Approach

Verified net energy and demand (coincident peak and overall) savings are calculated by multiplying the verified gross savings estimates by a net-to-gross (NTG) ratio. For the CY2018 Residential Lighting Discounts Program, the NTG ratio estimates are 0.58 for standard, specialty and directional LEDs, and 0.73 for LED fixtures. These NTG ratio estimates are based on past evaluation research and approved through the Illinois Stakeholder Advisory Group (IL SAG) consensus process. The NTG value estimates for CY2018 Holiday Light Exchange Program (for holiday string lights and Tier 1 advanced power strips) are set equal to 0.80 per the evaluation plan and as recommended by the evaluation team.

7.3 Carryover Savings Estimation

7.3.1 CY2018 Carryover Savings

The evaluation team calculated the CY2018 carryover savings estimates using the Illinois TRM (v4, v5, and v6) and the PY8 and PY9 Impact Evaluation Reports. The energy and demand savings from third year PY8 and second year PY9 installations are calculated based on the following parameters:

- Delta Watts – Verified savings estimate from the year of installation (source: Illinois TRM v6)
- Residential/Non-Residential Split – Evaluation research from the year of purchase (PY8 and PY9 Reports)
- HOU and Peak CF – Verified savings estimate from the year of installation (source: Illinois TRM v6)
- Energy and Demand IE – Verified savings estimate from the year of installation (source: Illinois TRM v6)
- Installation Rate – Verified savings estimate from the year of purchase (source: IL TRM v4 and Illinois TRM v5)
- NTG – Evaluation research from the year of purchase (source: PY7 and PY8 Reports)

[10] The Evaluation Team received the final CY2018 tracking data on January 18, 2019: RLD_2018_EOY_Data_Rev1_01182019.xlsx.

Table 7-1 shows that in CY2018 a total of 1,516,223 bulbs, purchased during PY8 or PY9, are expected to be installed within ComEd's service territory. The table below provides both the gross and net energy and demand savings from these carryover bulbs attributable to the CY2018. Total CY2018 net carryover savings are estimated to be 31,779,269 kWh, 29,089 kW, 3,478 Summer Peak kW, and 3,857 Winter Peak kW.

Table 7-1. CY2018 Carryover Savings

CY2018 Carryover Savings	PY8 Bulbs	PY9 Bulbs	Total CY2018 Carryover
Carryover Bulbs Installed During CY2018	899,919	616,304	1,516,223
Average Delta Watts	31.7	34.6	NA
Average Daily Hours of Use	2.64	2.64	NA
Summer Peak Load Coincidence Factor	0.102	0.133	NA
Winter Peak Load Coincidence Factor	0.132	1.061	NA
Installation Rate	6.9%	3.1%	NA
Energy Interactive Effects	1.06	1.06	NA
Demand Interactive Effects	1.12	1.12	NA
Gross kWh Impact Per Unit	32.6	34.8	NA
Gross kW Impact Per Unit	0.032	0.034	NA
Carryover Gross Energy Savings (kWh)	29,330,127	21,466,431	50,796,558
Carryover Gross Demand Savings (kW)	28,544	17,983	46,527
Carryover Gross Summer Peak Demand Savings (kW)	3,418	2,148	5,566
Carryover Gross Winter Peak Demand Savings (kW)	3,768	2,395	6,163
Net-to-Gross Ratio	0.60	0.65	NA
Carryover Net Energy Savings (kWh)	17,705,189	14,074,080	31,779,269
Carryover Net Demand Savings (kW)	17,234	11,855	29,089
Carryover Net Summer Peak Demand Savings (kW)	2,063	1,415	3,478
Carryover Net Winter Peak Demand Savings (kW)	2,276	1,581	3,857
EUL Res	3.7	6.5	4.9
EUL NonRes	3.1	4.1	3.5

NA = Not applicable
Source: ComEd tracking data and Navigant team analysis.

7.3.2 CY2019 Preliminary Carryover Savings

The evaluation team calculated a preliminary CY2019 carryover estimate using the Illinois TRM (v5, v6, and v7) and the PY9 and CY2018 Impact Evaluation Reports. The energy and demand savings from these PY9 third year and CY2018 second year installations are calculated based on the following parameters:

- Delta Watts – Verified savings estimate from the year of installation (source: Illinois TRM v7)
- Residential/Non-Residential Split – Verified savings from the year of purchase (source: Illinois TRM v5 and v6)
- HOU and Peak CF – Verified savings estimate from the year of installation (source: Illinois TRM v7)

- Energy and Demand IE – Verified savings estimate from the year of installation (source: Illinois TRM v7)
- Installation Rate – Verified savings estimate from the year of purchase (source: Illinois TRM v5 and v6)
- NTG – The deemed net-to-gross values from the year of purchase.

Table 7-2 shows that in CY2019 a total of 868,832 bulbs that were purchased in PY9 or CY2018 are expected to be installed within ComEd's service territory. The table below provides both the gross and net energy and demand savings from these bulbs. Total **preliminary** net energy savings estimate is expected to be 20,937,700 kWh, 19,079 kW, 2,707 Summer Peak kW, and 2,488 Winter Peak kW.

Table 7-2. CY2019 Preliminary Carryover Savings Estimates from PY9 and CY2018 Bulb Sales

Preliminary CY2019 Carryover Savings	PY9 Bulbs	CY2018 Bulbs	Total CY2019 Carryover
Carryover Bulbs Installed During CY2018	530,377	338,455	868,832
Average Delta Watts	34.6	38.9	NA
Average Daily Hours of Use	2.78	2.78	NA
Summer Peak Load Coincidence Factor	0.117	0.419	NA
Winter Peak Load Coincidence Factor	0.133	0.133	NA
Energy Interactive Effects	1.06	1.06	NA
Demand Interactive Effects	1.12	1.12	NA
Gross kWh Impact Per Unit	36.4	42.9	NA
Gross kW Impact Per Unit	0.034	0.038	NA
Carryover Gross Energy Savings (kWh)	19,302,204	16,797,279	36,099,483
Carryover Gross Demand Savings (kW)	17,983	14,911	32,894
Carryover Gross Summer Peak Demand Savings (kW)	2,464	2,203	4,667
Carryover Gross Winter Peak Demand Savings (kW)	2,399	1,890	4,289
Net-to-Gross Ratio	0.58	0.58	NA
Carryover Net Energy Savings (kWh)	11,195,278	9,742,422	20,937,700
Carryover Net Demand Savings (kW)	10,430	8,649	19,079
Carryover Net Summer Peak Demand Savings (kW)	1,429	1,278	2,707
Carryover Net Winter Peak Demand Savings (kW)	1,391	1,096	2,488
EUL Res	6.7	3.8	5.3
EUL NonRes	10.0	5.1	8.7

Note: CY2019 Preliminary Carryover excludes roughly 700 fixtures that are expected to be installed in Non-Res location
NA = Not applicable
Source: Navigant team analysis

7.3.3 CY2020 Preliminary Partial Carryover Savings from CY2018

The evaluation team calculated a preliminary partial CY2020 carryover savings estimate based on the bulbs sold during CY2018 (CY2019 sales are not known at this time) that are estimated to be installed in CY2020. We are calling these preliminary as several of the parameters used to estimate CY2020 carryover savings are based on deemed parameters from the year of install (Delta Watts, HOU and Peak CF, and Waste Heat Factors of Energy and Demand) which for CY2020 would be IL TRM v8. Since IL TRM v8 is not yet finalized, the evaluation team used v7 of the IL TRM to estimate these parameters. Hence the **preliminary** parameters for the partial CY2020 carryover savings are taken from:

- Delta Watts – Verified savings estimate from the year of installation (source: Illinois TRM v7[11]) – this value is subject to change and will ultimately use the values from Illinois TRM v8.
- Residential/Non-Residential Split – Verified savings from the year of purchase (source: Illinois TRM v6) – this value is not subject to change.
- HOU and Peak CF – Verified savings estimate from the year of installation (source: Illinois TRM v7) – this value is subject to change and will ultimately use the values from Illinois TRM v8.
- Energy and Demand IE – Verified savings estimate from the year of installation (source: Illinois TRM v7) – this value is subject to change and will ultimately use the values from Illinois TRM v8.
- Installation Rate – Verified savings estimate from the year of purchase (source: Illinois TRM v6) – this value is not subject to change.
- NTG – The deemed net-to-gross values from the year of purchase – this value is not subject to change.

Table 7-3 shows that in CY2020 a total of 315,491 bulbs that were purchased in CY2018 are expected to be installed within ComEd's service territory in CY2020. The table below provides both the gross and net energy and demand savings from these bulbs. The total preliminary net energy savings is estimated to be 8,451,628 kWh, 7,480 kW, 1,112 Summer Peak kW, and 1,073 Winter Peak kW which will be counted in CY2020.

[11] Since the IL TRM v8 is not yet finalized v7 was used as a proxy. It is for this reason these CY2020 savings are label as "preliminary".

Table 7-3. CY2020 Preliminary Carryover Savings Estimates from CY2018 Bulb Sales

Preliminary Partial CY2020 Carryover Savings	CY2018 Bulbs
Carryover Bulbs Installed During CY2019	315,491
Average Delta Watts	38.9
Average Daily Hours of Use	2.78
Summer Peak Load Coincidence Factor	0.419
Winter Peak Load Coincidence Factor	0.133
Energy Interactive Effects	1.06
Demand Interactive Effects	1.12
Gross kWh Impact Per Unit	43.1
Gross kW Impact Per Unit	0.038
Carryover Gross Energy Savings (kWh)	14,571,772
Carryover Gross Demand Savings (kW)	12,896
Carryover Gross Summer Peak Demand Savings (kW)	1,918
Carryover Gross Winter Peak Demand Savings (kW)	1,850
Net-to-Gross Ratio	0.58
Carryover Net Energy Savings (kWh)	8,451,628
Carryover Net Demand Savings (kW)	7,480
Carryover Net Summer Peak Demand Savings (kW)	1,112
Carryover Net Winter Peak Demand Savings (kW)	1,073
EUL Res	10.0
EUL NonRes	5.1

Note: CY2020 Preliminary Carryover excludes roughly 230 fixtures that are expected to be installed in Non-Res locations.
Source: Navigant team analysis

8. Appendix 2. Impact Analysis Detail

8.1 Program Volumetric Detail

During the CY2018 Residential Lighting Discounts Program a total of 11,251,649 lamps and fixtures were sold through the program, which is a 44% decrease from the bulbs and fixtures sold during the ninth program year (PY9). However, it is important to note that PY9 was a 19-month program year and with normalization, the total sales in PY9 fell by only 11%. CY2018 is the first year to fully exclude CFL lamps from the residential lighting program, which began phasing out in PY9.

Table 8-1 shows the volume of bulbs, by bulb type, incentivized through the Residential Lighting Discounts Program in PY3 through CY2018 (PY9 numbers represent sales over a 19-month period).

Table 8-1. PY3 – CY2018 Volumetric Findings Detail[12]

Program Year	Standard CFLs	Specialty CFLs	CFL Fixtures	LED Omni-Dir	LED Dir	LED Specialty	LED Fixtures	Coupons	Total
CY2018 Sales	0	0	0	7,800,621	1,905,419	866,560	679,049	0	11,251,649
PY9 Sales	2,625,479	0	0	11,905,275	3,309,608	1,388,782	831,268	0	20,060,412
PY8 Sales	7,205,656	0	0	3,896,077	1,578,687	*	302,241	0	12,982,661
PY7 Sales	10,347,580	989,999	0	471,710	427,824	*	0	0	12,237,113
PY6 Sales	8,965,546	2,125,179	0	0	0		0	0	11,090,725
PY5 Sales	9,633,227	1,197,896	8,767	9,472	18,758		24,268	5,506	10,897,894
PY4 Sales	11,419,752	1,097,670	84,539	2,592	22,327		16,551	5,599	12,649,030
PY3 Sales	9,893,196	1,217,723	86,943	0	0		0	0	11,197,862

* Prior to PY9 LED specialty bulbs were included in the LED Directional category.
Source: ComEd tracking data and Navigant team analysis.

9. Appendix 3. Total Resource Cost Detail

Table 9-1, below, shows the Total Resource Cost (TRC) table. It includes only the cost-effectiveness analysis inputs available at the time of finalizing this impact evaluation report. Additional required cost data (e.g., measure costs, program level incentive and non-incentive costs) are not included in this table and will be provided to evaluation later.

[12] PY9 consisted of a 19-month program year, all prior program years consisted of 12 months.

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ComEd Residential Lighting Discounts and Holiday Light Exchange Impact Evaluation Report

Table 9-1. Total Resource Cost Savings Summary

Program	End Use Type	Research Category	Measure	Quantity	Effective Useful Life	Verified Gross Savings (kWh)	Verified Gross Peak Demand Reduction (kW)	Gross Heating Penalty (Therms)	NTG	Verified Net Savings (kWh)	Verified Net Peak Demand Reduction (kW)	Net Heating Penalty (Therms)
Residential Lighting Discounts	Lighting	LED Lighting	Standard LED (Res)*	7,410,590	10.0	212,526,024	21,283	(8,256,297.28)	0.58	123,265,094	12,344	(4,788,652.42)
	Lighting	LED Lighting	Standard LED (Non-Res)*	390,031	4.6	52,215,054	10,461	(1,817,037.61)	0.58	30,284,731	6,068	(1,053,881.81)
	Lighting	LED Lighting	Directional LED (Res)	1,810,148	10.0	83,866,938	9,265	(3,258,096.87)	0.58	48,642,824	5,374	(1,889,696.18)
	Lighting	LED Lighting	Directional LED (Non-Res)	95,271	6.1	18,833,376	3,773	(655,384.81)	0.58	10,923,358	2,189	(380,123.19)
	Lighting	LED Lighting	Specialty LED (Res)	823,232	10.0	32,702,443	3,521	(1,270,437.80)	0.58	18,967,417	2,042	(736,853.92)
	Lighting	LED Lighting	Specialty LED (Non-Res)	43,328	4.4	6,223,484	1,247	(216,571.73)	0.58	3,609,621	723	(125,611.60)
	Lighting	LED Lighting	LED Fixtures (Res)	645,097	15.0	39,383,480	4,350	(1,068,879.01)	0.73	28,749,940	3,176	(780,281.68)
	Lighting	LED Lighting	LED Fixtures (Non-Res)	33,952	13.8	7,276,370	1,513	(188,067.17)	0.73	5,311,750	1,104	(137,289.03)
	Lighting	LED Lighting	Carryover (Res)*	1,449,907	4.9	42,945,862	4,104	(1,540,864.22)	0.63	26,969,909	2,577	(967,659.41)
	Lighting	LED Lighting	Carryover (Non-Res)*	61,539	3.5	7,850,696	1,476	(260,853.69)	0.61	4,809,360	901	(159,799.75)
Holiday Light Exchange	Holiday String Lighting	Holiday Lighting	Exchanged Incand C7/C9 Strands	170	7.0	8,590	0	0	0.80	6,872	0	0
	Holiday String Lighting	Holiday Lighting	Exchanged Incand Mini Strands	3,378	7.0	29,092	0	0	0.80	23,274	0	0
	Advanced Power Strips	Advanced Power Strip	Tier 1 Advanced Power Strip	440	7.0	17,160	1.94	NA	0.80	13,728.00	1.55	NA

* The CY2018 contribution to CPAS for these measures varies over time. See the CPAS tables in Section 4.

Source: ComEd tracking data and Navigant team analysis.

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Category	Type	Name	Description	Baseline Description	Measure Type	Vintage	Segment	Unit	Appl	Baseline	Measure	kWh %	Savs	S kW	W kW	S CF	W CF	Life
Appliances	Electronics	ENERGY STAR Air Purifier	One 120 CFM Air Purifier me	One Standard 120 CFM Air	Equipment	New	Manufactured Home	Per Air Cleaner	61%	1,072	430	60%	642	0.09	0.06	0.013%	0.010%	9.0
Appliances	Electronics	ENERGY STAR Air Purifier	One 120 CFM Air Purifier me	One Standard 120 CFM Air	Equipment	Turnover	Manufactured Home	Per Air Cleaner	61%	1,072	430	60%	642	0.09	0.06	0.013%	0.010%	9.0
Appliances	Electronics	ENERGY STAR Air Purifier	One 120 CFM Air Purifier me	One Standard 120 CFM Air	Equipment	New	Multi-Family	Per Air Cleaner	61%	1,072	430	60%	642	0.09	0.06	0.013%	0.010%	9.0
Appliances	Electronics	ENERGY STAR Air Purifier	One 120 CFM Air Purifier me	One Standard 120 CFM Air	Equipment	Turnover	Multi-Family	Per Air Cleaner	61%	1,072	430	60%	642	0.09	0.06	0.013%	0.010%	9.0
Appliances	Electronics	ENERGY STAR Air Purifier	One 120 CFM Air Purifier me	One Standard 120 CFM Air	Equipment	New	Single Family	Per Air Cleaner	61%	1,072	430	60%	642	0.09	0.06	0.013%	0.010%	9.0
Appliances	Electronics	ENERGY STAR Air Purifier	One 120 CFM Air Purifier me	One Standard 120 CFM Air	Equipment	Turnover	Single Family	Per Air Cleaner	61%	1,072	430	60%	642	0.09	0.06	0.013%	0.010%	9.0
Appliances	Electronics	ENERGY STAR Audio-Video Equipment	One DVD/Blu-Ray Player me	One Market Average DVD/I	Equipment	New	Manufactured Home	Per Device	43%	98	18	82%	80	0.00	0.00	0.000%	0.000%	5.0
Appliances	Electronics	ENERGY STAR Audio-Video Equipment	One DVD/Blu-Ray Player me	One Market Average DVD/I	Equipment	Turnover	Manufactured Home	Per Device	43%	98	18	82%	80	0.00	0.00	0.000%	0.000%	5.0
Appliances	Electronics	ENERGY STAR Audio-Video Equipment	One DVD/Blu-Ray Player me	One Market Average DVD/I	Equipment	New	Multi-Family	Per Device	43%	98	18	82%	80	0.00	0.00	0.000%	0.000%	5.0
Appliances	Electronics	ENERGY STAR Audio-Video Equipment	One DVD/Blu-Ray Player me	One Market Average DVD/I	Equipment	Turnover	Multi-Family	Per Device	43%	98	18	82%	80	0.00	0.00	0.000%	0.000%	5.0
Appliances	Electronics	ENERGY STAR Audio-Video Equipment	One DVD/Blu-Ray Player me	One Market Average DVD/I	Equipment	New	Single Family	Per Device	43%	98	18	82%	80	0.00	0.00	0.000%	0.000%	5.0
Appliances	Electronics	ENERGY STAR Audio-Video Equipment	One DVD/Blu-Ray Player me	One Market Average DVD/I	Equipment	Turnover	Single Family	Per Device	43%	98	18	82%	80	0.00	0.00	0.000%	0.000%	5.0
Appliances	Laundry	ENERGY STAR Clothes Dryer	One Electric Resistance Cloth	High Efficiency Clothes Dry	Equipment	New	Manufactured Home	Per Appliance	46%	700	554	21%	146	0.02	0.01	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Dryer	One Electric Resistance Cloth	High Efficiency Clothes Dry	Equipment	Turnover	Manufactured Home	Per Appliance	46%	700	554	21%	146	0.02	0.01	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Dryer	One Electric Resistance Cloth	High Efficiency Clothes Dry	Equipment	New	Multi-Family	Per Appliance	46%	700	554	21%	146	0.02	0.01	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Dryer	One Electric Resistance Cloth	High Efficiency Clothes Dry	Equipment	Turnover	Multi-Family	Per Appliance	46%	700	554	21%	146	0.02	0.01	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Dryer	One Electric Resistance Cloth	High Efficiency Clothes Dry	Equipment	New	Single Family	Per Appliance	46%	700	554	21%	146	0.02	0.01	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Dryer	One Electric Resistance Cloth	High Efficiency Clothes Dry	Equipment	Turnover	Single Family	Per Appliance	46%	700	554	21%	146	0.02	0.01	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Washer	One Clothes Washer meeting	One Clothes Washer meetin	Equipment	New	Manufactured Home	Per Appliance	54%	1,441	896	38%	545	0.09	0.05	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Washer	One Clothes Washer meeting	One Clothes Washer meetin	Equipment	Turnover	Manufactured Home	Per Appliance	54%	1,441	896	38%	545	0.09	0.05	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Washer	One Clothes Washer meeting	One Clothes Washer meetin	Equipment	New	Multi-Family	Per Appliance	54%	1,441	896	38%	545	0.09	0.05	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Washer	One Clothes Washer meeting	One Clothes Washer meetin	Equipment	Turnover	Multi-Family	Per Appliance	54%	1,441	896	38%	545	0.09	0.05	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Washer	One Clothes Washer meeting	One Clothes Washer meetin	Equipment	New	Single Family	Per Appliance	54%	1,441	896	38%	545	0.09	0.05	0.016%	0.009%	11.0
Appliances	Laundry	ENERGY STAR Clothes Washer	One Clothes Washer meeting	One Clothes Washer meetin	Equipment	Turnover	Single Family	Per Appliance	54%	1,441	896	38%	545	0.09	0.05	0.016%	0.009%	11.0
Appliances	Kitchen	ENERGY STAR Dishwasher	One Dishwasher meeting ENE	One Dishwasher meeting Fe	Equipment	New	Manufactured Home	Per Appliance	9%	307	267	13%	40	0.00	0.00	0.011%	0.012%	10.0
Appliances	Kitchen	ENERGY STAR Dishwasher	One Dishwasher meeting ENE	One Dishwasher meeting Fe	Equipment	Turnover	Manufactured Home	Per Appliance	9%	307	267	13%	40	0.00	0.00	0.011%	0.012%	10.0
Appliances	Kitchen	ENERGY STAR Dishwasher	One Dishwasher meeting ENE	One Dishwasher meeting Fe	Equipment	New	Multi-Family	Per Appliance	9%	307	267	13%	40	0.00	0.00	0.011%	0.012%	10.0
Appliances	Kitchen	ENERGY STAR Dishwasher	One Dishwasher meeting ENE	One Dishwasher meeting Fe	Equipment	Turnover	Multi-Family	Per Appliance	9%	307	267	13%	40	0.00	0.00	0.011%	0.012%	10.0
Appliances	Kitchen	ENERGY STAR Dishwasher	One Dishwasher meeting ENE	One Dishwasher meeting Fe	Equipment	New	Single Family	Per Appliance	9%	307	267	13%	40	0.00	0.00	0.011%	0.012%	10.0
Appliances	Kitchen	ENERGY STAR Dishwasher	One Dishwasher meeting ENE	One Dishwasher meeting Fe	Equipment	Turnover	Single Family	Per Appliance	9%	307	267	13%	40	0.00	0.00	0.011%	0.012%	10.0
Appliances	Kitchen	ENERGY STAR Freezer	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	New	Manufactured Home	Per Appliance	58%	565	500	12%	66	0.01	0.01	0.013%	0.009%	11.0
Appliances	Kitchen	ENERGY STAR Freezer	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	Turnover	Manufactured Home	Per Appliance	58%	565	500	12%	66	0.01	0.01	0.013%	0.009%	11.0
Appliances	Kitchen	ENERGY STAR Freezer	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	New	Multi-Family	Per Appliance	58%	565	500	12%	66	0.01	0.01	0.013%	0.009%	11.0
Appliances	Kitchen	ENERGY STAR Freezer	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	Turnover	Multi-Family	Per Appliance	58%	565	500	12%	66	0.01	0.01	0.013%	0.009%	11.0
Appliances	Kitchen	ENERGY STAR Freezer	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	New	Single Family	Per Appliance	58%	565	500	12%	66	0.01	0.01	0.013%	0.009%	11.0
Appliances	Kitchen	ENERGY STAR Freezer	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	Turnover	Single Family	Per Appliance	58%	565	500	12%	66	0.01	0.01	0.013%	0.009%	11.0
Appliances	Electronics	ENERGY STAR Imaging Equipment	One Personal Computer meeti	One Personal Computer mee	Equipment	New	Manufactured Home	Per Appliance	1%	300	172	43%	128	0.01	0.01	0.009%	0.005%	5.0
Appliances	Electronics	ENERGY STAR Imaging Equipment	One Personal Computer meeti	One Personal Computer mee	Equipment	Turnover	Manufactured Home	Per Appliance	1%	300	172	43%	128	0.01	0.01	0.009%	0.005%	5.0
Appliances	Electronics	ENERGY STAR Imaging Equipment	One Personal Computer meeti	One Personal Computer mee	Equipment	New	Multi-Family	Per Appliance	1%	300	172	43%	128	0.01	0.01	0.009%	0.005%	5.0
Appliances	Electronics	ENERGY STAR Imaging Equipment	One Personal Computer meeti	One Personal Computer mee	Equipment	Turnover	Multi-Family	Per Appliance	1%	300	172	43%	128	0.01	0.01	0.009%	0.005%	5.0
Appliances	Electronics	ENERGY STAR Imaging Equipment	One Personal Computer meeti	One Personal Computer mee	Equipment	New	Single Family	Per Appliance	1%	300	172	43%	128	0.01	0.01	0.009%	0.005%	5.0
Appliances	Electronics	ENERGY STAR Imaging Equipment	One Personal Computer meeti	One Personal Computer mee	Equipment	Turnover	Single Family	Per Appliance	1%	300	172	43%	128	0.01	0.01	0.009%	0.005%	5.0
Appliances	Electronics	ENERGY STAR Personal Computer	One Personal Computer meeti	One Personal Computer mee	Equipment	New	Manufactured Home	Per Appliance	35%	274	155	44%	120	0.02	0.00	0.016%	0.003%	4.0
Appliances	Electronics	ENERGY STAR Personal Computer	One Personal Computer meeti	One Personal Computer mee	Equipment	Turnover	Manufactured Home	Per Appliance	35%	274	155	44%	120	0.02	0.00	0.016%	0.003%	4.0
Appliances	Electronics	ENERGY STAR Personal Computer	One Personal Computer meeti	One Personal Computer mee	Equipment	New	Multi-Family	Per Appliance	35%	274	155	44%	120	0.02	0.00	0.016%	0.003%	4.0
Appliances	Electronics	ENERGY STAR Personal Computer	One Personal Computer meeti	One Personal Computer mee	Equipment	Turnover	Multi-Family	Per Appliance	35%	274	155	44%	120	0.02	0.00	0.016%	0.003%	4.0
Appliances	Electronics	ENERGY STAR Personal Computer	One Personal Computer meeti	One Personal Computer mee	Equipment	New	Single Family	Per Appliance	35%	274	155	44%	120	0.02	0.00	0.016%	0.003%	4.0
Appliances	Electronics	ENERGY STAR Personal Computer	One Personal Computer meeti	One Personal Computer mee	Equipment	Turnover	Single Family	Per Appliance	35%	274	155	44%	120	0.02	0.00	0.016%	0.003%	4.0
Appliances	Kitchen	ENERGY STAR Refrigerator	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	New	Manufactured Home	Per Appliance	54%	607	474	22%	134	0.01	0.00	0.010%	0.003%	14.0
Appliances	Kitchen	ENERGY STAR Refrigerator	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	Turnover	Manufactured Home	Per Appliance	54%	607	474	22%	134	0.01	0.00	0.010%	0.003%	14.0
Appliances	Kitchen	ENERGY STAR Refrigerator	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	New	Multi-Family	Per Appliance	54%	607	474	22%	134	0.01	0.00	0.010%	0.003%	14.0
Appliances	Kitchen	ENERGY STAR Refrigerator	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	Turnover	Multi-Family	Per Appliance	54%	607	474	22%	134	0.01	0.00	0.010%	0.003%	14.0
Appliances	Kitchen	ENERGY STAR Refrigerator	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	New	Single Family	Per Appliance	54%	607	474	22%	134	0.01	0.00	0.010%	0.003%	14.0
Appliances	Kitchen	ENERGY STAR Refrigerator	One Refrigerator/Freezer meet	One Refrigerator/Freezer mo	Equipment	Turnover	Single Family	Per Appliance	54%	607	474	22%	134	0.01	0.00	0.010%	0.003%	14.0
Appliances	Electronics	ENERGY STAR TV	One Television meeting ENE	One Television meeting EN	Equipment	New	Manufactured Home	Per Appliance	42%	109	71	35%	38	0.01	0.00	0.020%	0.012%	6.0
Appliances	Electronics	ENERGY STAR TV	One Television meeting ENE	One Television meeting EN	Equipment	Turnover	Manufactured Home	Per Appliance	42%	109	71	35%	38	0.01	0.00	0.020%	0.012%	6.0
Appliances	Electronics	ENERGY STAR TV	One Television meeting ENE	One Television meeting EN	Equipment	New	Multi-Family	Per Appliance	42%	109	71	35%	38	0.01	0.00	0.020%	0.012%	6.0
Appliances	Electronics	ENERGY STAR TV	One Television meeting ENE	One Television meeting EN	Equipment	Turnover	Multi-Family	Per Appliance	42%	109	71	35%	38	0.01	0.00	0.020%	0.012%	6.0
Appliances	Electronics	ENERGY STAR TV	One Television meeting ENE	One Television meeting EN	Equipment	New	Single Family	Per Appliance	42%	109	71	35%	38	0.01	0.00	0.020%	0.012%	6.0
Appliances	Electronics	ENERGY STAR TV	One Television meeting ENE	One Television meeting EN	Equipment	Turnover	Single Family	Per Appliance	42%	109	71	35%	38	0.01	0.00	0.020%	0.012%	6.0
Appliances	Laundry	Heat Pump Clothes Dryer	One Heat Pump Clothes Dryer	One Clothes Dryer meeting	Equipment	New	Manufactured Home	Per Appliance	54%	700	483	31%	216	0.03	0.02	0.016%	0.009%	12.0
Appliances	Laundry	Heat Pump Clothes Dryer	One Heat Pump Clothes Dryer	One Clothes Dryer meeting	Equipment	Turnover	Manufactured Home	Per Appliance	54%	700	483	31%	216	0.03	0.02	0.016%	0.009%	12.0
Appliances	Laundry	Heat Pump Clothes Dryer	One Heat Pump Clothes Dryer	One Clothes Dryer meeting	Equipment	New	Multi-Family	Per Appliance	54%	700	483	31%	216	0.03	0.02	0.016%	0.009%	12.0
Appliances	Laundry	Heat Pump Clothes Dryer	One Heat Pump Clothes Dryer	One Clothes Dryer meeting	Equipment	Turnover	Multi-Family	Per Appliance	54%	700	483	31%	216	0.03	0.02	0.016%	0.009%	12.0
Appliances	Laundry	Heat Pump Clothes Dryer	One Heat Pump Clothes Dryer	One Clothes Dryer meeting	Equipment	New	Single Family	Per Appliance	54%	700	483	31%	216	0.03	0.02	0.016%	0.009%	12.0
Appliances	Laundry	Heat Pump Clothes Dryer	One Heat Pump Clothes Dryer	One Clothes Dryer meeting	Equipment	Turnover	Single Family	Per Appliance	54%	700	483	31%	216	0.03	0.02	0.016%	0.009%	12.0
Appliances	Kitchen	High Efficiency Convection Oven	One Full-Size Convection Ov	One Standard Economy-Gra	Equipment	New	Manufactured Home	Per Unit	75%	422	337	20%	84	0.02	0.01	0.025%	0.008%	12.0
Appliances	Kitchen	High Efficiency Convection Oven	One Full-Size Convection Ov	One Standard Economy-Gra	Equipment	Turnover	Manufactured Home	Per Unit	75%	422	337	20%	84	0.02	0.01	0.025%	0.008%	12.0
Appliances	Kitchen	High Efficiency Convection Oven	One Full-Size Convection Ov	One Standard Economy-Gra	Equipment	New	Multi-Family	Per Unit	75%	422	337	20%	84	0.02	0.01	0.025%	0.008%	12.0
Appliances	Kitchen	High Efficiency Convection Oven	One Full-Size Convection Ov	One Standard Economy-Gra	Equipment	Turnover	Multi-Family	Per Unit	75%	422	337	20%	84	0.02	0.01	0.025%	0.008%	12.0
Appliances	Kitchen	High Efficiency Convection Oven	One Full-Size Convection Ov	One Standard Economy-Gra	Equipment	New	Single Family	Per Unit	73%	422	337	20%	84	0.02	0.01	0.025%	0.008%	12.0
Appliances	Kitchen	High Efficiency Convection Oven	One Full-Size Convection Ov	One Standard Economy-Gra	Equipment	Turnover	Single Family	Per Unit	73%	422	337	20%	84	0.02	0.01	0.025%	0.008%	12.0
Appliances	Kitchen	High Efficiency Induction Cooktop	One residential induction cook	One standard residential ele	Equipment	New	Manufactured Home	Per Appliance	80%	2,837	2,303	19%	534	0.13	0.03	0.024%	0.006%	10.0
Appliances	Kitchen	High Efficiency Induction Cooktop	One residential induction cook	One standard residential ele	Equipment	Turnover	Manufactured Home	Per Appliance	80%	2,837	2,303	19%	534	0.13	0.03	0.024%	0.006%	10.0
Appliances	Kitchen	High Efficiency Induction Cooktop	One residential induction cook	One standard residential ele	Equipment	New	Multi-Family	Per Appliance	80%	2,837	2,303	19%	534	0.13	0.03	0.024%	0.006%	10.0
Appliances	Kitchen	High Efficiency Induction Cooktop	One residential induction cook	One standard residential ele	Equipment	Turnover	Multi-Family	Per Appliance	80%	2,837	2,303	19%	534	0.13	0.03	0.024%	0.006%	10.0
Appliances	Kitchen	High Efficiency Induction Cooktop	One residential induction cook	One standard residential ele	Equipment	New	Single Family	Per Appliance	78%	2,837	2,303	19%	534	0.13	0.03	0.024%	0.006%	10.0
Appliances	Kitchen	High Efficiency Induction Cooktop	One residential induction cook	One standard residential ele	Equipment	Turnover	Single Family	Per Appliance	78%	2,837	2,303	19%	534	0.13	0.03	0.024%	0.006%	10.0
Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	No Refrigerator	Current Market Average Ref	Nonequipment	Existing	Manufactured Home	Per Appliance	1%	1,053	0	100%	1,053	0.11	0.04	0.010%	0.003%	5.0
Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	No Refrigerator	N/A - Retrofit Only	Nonequipment	New	Manufactured Home	Per Appliance	0%	1,053	0	100%	1,053	0.11	0.04	0.010%	0.003%	5.0
Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	No Refrigerator	Current Market Average Ref	Nonequipment	Existing	Multi-Family	Per Appliance	1%	1,053	0	100%	1,053	0.11	0.04	0.010%	0.003%	5.0
Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	No Refrigerator	N/A - Retrofit Only	Nonequipment	New	Multi-Family	Per Appliance	0%	1,053	0	100%	1,053	0.11	0.04	0.010%	0.003%	5.0
Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	No Refrigerator	Current Market Average Ref	Nonequipment	Existing	Single Family	Per Appliance	3%	1,053	0	100%	1,053	0.11	0.04	0.010%	0.003%	5.0
Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	No Refrigerator	N/A - Retrofit Only	Nonequipment	New	Single Family	Per Appliance	0%	1,053	0	100%	1,053	0.11	0.04	0.010%	0.003%	5.0
Appliances	Electronics	Smart Power Strip	One 7-Plug Smart Strip Plug	Standard Home Office Usag	Nonequipment	Existing	Manufactured Home	Per End Use Con	90%	1,878	1,824	3%	54	0.01	0.00	0.011%	0.009%	5.0
Appliances	Electronics	Smart Power Strip	One 7-Plug Smart Strip Plug	Standard Home Office Usag	Nonequipment	New	Manufactured Home	Per End Use Con	90%	1,878	1,824	3%	54	0.01	0.00	0.011%	0.009%	5.0
Appliances	Electronics	Smart Power Strip	One 7-Plug Smart Strip Plug	Standard Home Office Usag	Nonequipment	Existing	Multi-Family	Per End Use Con	90%	1,176	1,122	5%	54	0.01	0.00	0.011%	0.009%	5.0
Appliances	Electronics	Smart Power Strip	One 7-Plug Smart Strip Plug	Standard Home Office Usag	Nonequipment	New	Multi-Family	Per End Use Con	90%	1,176	1,122	5%	54	0.01	0.00	0.011%	0.009%	5.0
Appliances	Electronics	Smart Power Strip	One 7-Plug Smart Strip Plug	Standard Home Office Usag	Nonequipment	Existing	Single Family	Per End Use Con	23%	2,274	2,220	2%	54	0.01	0.00	0.011%	0.009%	5.0
Appliances	Electronics	Smart Power Strip	One 7-Plug Smart Strip Plug	Standard Home Office Usag	Nonequipment	New	Single Family	Per End Use Con	23%	2,274	2,220	2%	54	0.01	0.00	0.011%	0.009%	5.0
Building Envelope	Sealing	Air Sealing/Infiltration Control	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Manufactured Home	Per End Use Con	52%	4,950	4,603	7%	346	0.21	0.01	0.061%	0.002%	11.0
Building Envelope	Sealing	Air Sealing/Infiltration Control	Standard Heating and Cooling	N/A - Retrofit Measure Only	Nonequipment	New	Manufactured Home	Per End Use Con	52%	0	0	0%	0	0.00	0.00			11.0
Building Envelope	Sealing	Air Sealing/Infiltration Control	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Multi-Family	Per End Use Con	52%	3,610	3,358	7%	253	0.15	0.00	0.061%	0.002%	11.0
Building Envelope	Sealing	Air Sealing/Infiltration Control	Standard Heating and Cooling	N/A - Retrofit Measure Only	Nonequipment	New	Multi-Family	Per End Use Con	52%	0	0	0%	0	0.00	0.00			11.0
Building Envelope	Sealing	Air Sealing/Infiltration Control	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Single Family	Per End Use Con	21%	7,554	7,025	7%	529	0.32	0.02	0.060%	0.003%	11.0
Building Envelope	Sealing	Air Sealing/Infiltration Control	Standard Heating and Cooling	N/A - Retrofit Measure Only	Nonequipment	New	Single Family	Per End Use Con	21%	0	0	0%	0	0.00	0.00			11.0
Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	2%	6,112	5,790	5%	322	0.11	0.50	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	0%	6,112	5,790	5%	322	0.11	0.50	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	2%	4,573	4,250	7%	323	0.13	0.26	0.040%	0.080%	20.0
Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	0%	4,573	4,250	7%	323	0.13	0.26	0.040%	0.080%	20.0
Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	2%	8,909	8,380	6%	529	0.20	0.48	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	0%	8,909	8,380	6%	529	0.20	0.48	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	1%	5,959	5,801	3%	158	0.06	0.24	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	0%	5,959	5,801	3%	158	0.06	0.24	0.035%	0.154%	20.0

INPUTS

Name	S kW	W kW	kWh	Life
Energy Star Air Purifier	0.09	0.06	642	9
Energy Star Audio-Video Equipment	0.00	0.00	80	5
Energy Star Clothes Dryer	0.02	0.01	146	11
Energy Star Clothes Washer	0.09	0.05	545	11
Energy Star Dishwasher	0.00	0.00	40	10
Energy Star Freezer	0.01	0.01	66	11
Energy Star Imaging Equipment	0.01	0.01	128	5
Energy Star Personal Computer	0.02	0.00	120	4
Energy Star Refrigerator	0.01	0.00	134	14
Energy Star TV	0.01	0.00	38	6
Heat Pump Clothes Dryer	0.03	0.02	216	12
High Efficiency Convection Oven	0.02	0.01	84	12
High Efficiency Induction Cooktop	0.13	0.03	534	10
Removal of 2nd Refrigerator-Freezer	0.11	0.04	1,053	5
Smart Power Strip	0.01	0.00	54	5

Air Sealing-Infiltration Control	0.21	0.01	346	11
Air Sealing-Infiltration Control	0.15	0.00	253	11
Air Sealing-Infiltration Control	0.32	0.02	529	11

					R-12 to R-19			R-2 to R-12			R-2 to R-19		
Ceiling Insulation(R12 to R38)	0.11	0.50	322	20	0.05	0.26	164	0.35	1.49	976	0.40	1.75	1,140
Ceiling Insulation(R12 to R38)	0.13	0.26	323	20	0.07	0.13	166	0.37	0.76	942	0.44	0.89	1,108
Ceiling Insulation(R12 to R38)	0.20	0.48	529	20	0.10	0.24	265	0.58	1.43	1,569	0.68	1.67	1,834

Ceiling Insulation(R19 to R38)	0.06	0.24	158	20
Ceiling Insulation(R19 to R38)	0.06	0.13	157	20

Impacts (Based on Nexant's Sq Ft per Housing Type)

Summer kW			Winter kW			kWh		
Nexant	FPL	Diff	Nexant	FPL	Diff	Nexant	FPL	Diff
0.68	0.25	-64%	0.52	1.08	107%	1,140	702	-38%

Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	1%	4,425	4,268	4%	157	0.06	0.13	0.040%	0.080%	20.0
Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	0%	4,425	4,268	4%	157	0.06	0.13	0.040%	0.080%	20.0
Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	1%	8,664	8,400	3%	264	0.10	0.24	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	0%	8,664	8,400	3%	264	0.10	0.24	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	2%	7,006	5,708	19%	1,298	0.46	1.99	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	0%	7,006	5,708	19%	1,298	0.46	1.99	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	2%	5,405	4,140	23%	1,265	0.50	1.02	0.040%	0.080%	20.0
Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	0%	5,405	4,140	23%	1,265	0.50	1.02	0.040%	0.080%	20.0
Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	2%	10,310	8,212	20%	2,098	0.78	1.91	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	0%	10,310	8,212	20%	2,098	0.78	1.91	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	4%	5,857	5,811	1%	46	0.02	0.07	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	8%	5,857	5,811	1%	46	0.02	0.07	0.035%	0.154%	20.0
Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	4%	4,325	4,285	1%	40	0.02	0.00	0.040%	0.000%	20.0
Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	8%	4,325	4,285	1%	40	0.02	0.00	0.040%	0.000%	20.0
Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	4%	8,493	8,424	1%	69	0.03	0.06	0.037%	0.091%	20.0
Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	8%	8,493	8,424	1%	69	0.03	0.06	0.037%	0.091%	20.0
Building Envelope	Insulation	Duct Insulation	Standard Electric Heating and	Standard Electric Heating an	Nonequipment	Existing	Manufactured Home	Per End Use Con	0%	4,992	4,890	2%	102	0.06	0.00	0.060%	0.002%	15.0
Building Envelope	Insulation	Duct Insulation	Standard Electric Heating and	0	Nonequipment	New	Manufactured Home	Per End Use Con	0%	0	0	0%	0	0.00	0.00			15.0
Building Envelope	Insulation	Duct Insulation	Standard Electric Heating and	Standard Electric Heating an	Nonequipment	Existing	Multi-Family	Per End Use Con	0%	3,621	3,547	2%	74	0.04	0.00	0.060%	0.002%	15.0
Building Envelope	Insulation	Duct Insulation	Standard Electric Heating and	0	Nonequipment	New	Multi-Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			15.0
Building Envelope	Insulation	Duct Insulation	Standard Electric Heating and	Standard Electric Heating an	Nonequipment	Existing	Single Family	Per End Use Con	0%	7,403	7,252	2%	151	0.09	0.00	0.061%	0.001%	15.0
Building Envelope	Insulation	Duct Insulation	Standard Electric Heating and	0	Nonequipment	New	Single Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			15.0
Building Envelope	Roof	ENERGY STAR Certified Roof Products	Energy Star Certified Roof Pr	Standard Black Roof	Nonequipment	Existing	Manufactured Home	Per Home	54%	4,992	4,368	13%	624	0.38	0.01	0.060%	0.002%	20.0
Building Envelope	Roof	ENERGY STAR Certified Roof Products	Energy Star Certified Roof Pr	Standard Black Roof	Nonequipment	New	Manufactured Home	Per Home	54%	4,992	4,368	13%	624	0.38	0.01	0.060%	0.002%	20.0
Building Envelope	Roof	ENERGY STAR Certified Roof Products	Energy Star Certified Roof Pr	Standard Black Roof	Nonequipment	Existing	Multi-Family	Per Home	54%	3,621	3,169	13%	453	0.27	0.01	0.060%	0.002%	20.0
Building Envelope	Roof	ENERGY STAR Certified Roof Products	Energy Star Certified Roof Pr	Standard Black Roof	Nonequipment	New	Multi-Family	Per Home	54%	3,621	3,169	13%	453	0.27	0.01	0.060%	0.002%	20.0
Building Envelope	Roof	ENERGY STAR Certified Roof Products	Energy Star Certified Roof Pr	Standard Black Roof	Nonequipment	Existing	Single Family	Per Home	32%	7,403	6,478	13%	925	0.56	0.01	0.061%	0.001%	20.0
Building Envelope	Roof	ENERGY STAR Certified Roof Products	Energy Star Certified Roof Pr	Standard Black Roof	Nonequipment	New	Single Family	Per Home	32%	7,403	6,478	13%	925	0.56	0.01	0.061%	0.001%	20.0
Building Envelope	Insulation	ENERGY STAR Door	21ft2 of Opaque Door meeting	21ft2 of Opaque Door meeti	Nonequipment	Existing	Manufactured Home	Per 21 S.F.	14%	4,992	4,861	3%	131	0.02	0.08	0.014%	0.058%	20.0
Building Envelope	Insulation	ENERGY STAR Door	21ft2 of Opaque Door meeting	21ft2 of Code-Compliant Op	Nonequipment	New	Manufactured Home	Per 21 S.F.	14%	4,992	4,899	2%	93	0.01	0.05	0.014%	0.058%	20.0
Building Envelope	Insulation	ENERGY STAR Door	21ft2 of Opaque Door meeting	21ft2 of Opaque Door meeti	Nonequipment	Existing	Multi-Family	Per 21 S.F.	14%	3,621	3,491	4%	131	0.02	0.08	0.014%	0.058%	20.0
Building Envelope	Insulation	ENERGY STAR Door	21ft2 of Opaque Door meeting	21ft2 of Code-Compliant Op	Nonequipment	New	Multi-Family	Per 21 S.F.	14%	3,621	3,529	3%	93	0.01	0.05	0.014%	0.058%	20.0
Building Envelope	Insulation	ENERGY STAR Door	21ft2 of Opaque Door meeting	21ft2 of Opaque Door meeti	Nonequipment	Existing	Single Family	Per 21 S.F.	14%	7,403	7,273	2%	131	0.02	0.08	0.014%	0.058%	20.0
Building Envelope	Insulation	ENERGY STAR Door	21ft2 of Opaque Door meeting	21ft2 of Code-Compliant Op	Nonequipment	New	Single Family	Per 21 S.F.	14%	7,403	7,311	1%	93	0.01	0.05	0.014%	0.058%	20.0
Building Envelope	Window	ENERGY STAR Windows	100ft2 of Window meeting En	100ft2 of Window meeting I	Nonequipment	Existing	Manufactured Home	Per 100 ft2	19%	5,131	4,943	4%	188	0.02	0.06	0.013%	0.032%	20.0
Building Envelope	Window	ENERGY STAR Windows	100ft2 of Window meeting En	100ft2 of Code-Compliant W	Nonequipment	New	Manufactured Home	Per 100 ft2	19%	5,016	4,943	1%	73	0.00	0.01	0.000%	0.020%	20.0
Building Envelope	Window	ENERGY STAR Windows	100ft2 of Window meeting En	100ft2 of Window meeting I	Nonequipment	Existing	Multi-Family	Per 100 ft2	19%	4,025	3,878	4%	147	0.02	0.05	0.013%	0.032%	20.0
Building Envelope	Window	ENERGY STAR Windows	100ft2 of Window meeting En	100ft2 of Code-Compliant W	Nonequipment	New	Multi-Family	Per 100 ft2	19%	3,934	3,878	1%	56	0.00	0.01	0.000%	0.020%	20.0
Building Envelope	Window	ENERGY STAR Windows	100ft2 of Window meeting En	100ft2 of Window meeting I	Nonequipment	Existing	Single Family	Per 100 ft2	19%	6,546	6,324	3%	222	0.03	0.07	0.013%	0.032%	20.0
Building Envelope	Window	ENERGY STAR Windows	100ft2 of Window meeting En	100ft2 of Code-Compliant W	Nonequipment	New	Single Family	Per 100 ft2	19%	6,414	6,324	1%	90	0.00	0.02	0.000%	0.020%	20.0
Building Envelope	Insulation	Floor Insulation	Increased Floor Insulation (R-	Market Average Existing Fl	Nonequipment	Existing	Manufactured Home	Per Home	8%	11,408	11,377	0%	31	0.00	0.02	0.000%	0.062%	20.0
Building Envelope	Insulation	Floor Insulation	Increased Floor Insulation (R-	Code-Compliant Floor Insul	Nonequipment	New	Manufactured Home	Per Home	8%	11,408	11,408	0%	0	0.00	0.00			20.0
Building Envelope	Insulation	Floor Insulation	Increased Floor Insulation (R-	Market Average Existing Fl	Nonequipment	Existing	Multi-Family	Per Home	2%	9,273	9,272	0%	1	0.00	0.00	0.000%	0.062%	20.0
Building Envelope	Insulation	Floor Insulation	Increased Floor Insulation (R-	Code-Compliant Floor Insul	Nonequipment	New	Multi-Family	Per Home	2%	9,273	9,273	0%	0	0.00	0.00			20.0
Building Envelope	Insulation	Floor Insulation	Increased Floor Insulation (R-	Market Average Existing Fl	Nonequipment	Existing	Single Family	Per Home	2%	14,578	14,563	0%	15	0.00	0.01	0.000%	0.062%	20.0
Building Envelope	Insulation	Floor Insulation	Increased Floor Insulation (R-	Code-Compliant Floor Insul	Nonequipment	New	Single Family	Per Home	3%	14,578	14,578	0%	0	0.00	0.00			20.0
Building Envelope	Roof	Green Roof	Vegetated Roof Surface on to	Standard Black Roof	Nonequipment	Existing	Manufactured Home	Per Home	0%	4,992	4,261	15%	732	0.44	0.02	0.060%	0.002%	20.0
Building Envelope	Roof	Green Roof	Vegetated Roof Surface on to	Standard Black Roof	Nonequipment	New	Manufactured Home	Per Home	3%	4,992	4,261	15%	732	0.44	0.02	0.060%	0.002%	20.0
Building Envelope	Roof	Green Roof	Vegetated Roof Surface on to	Standard Black Roof	Nonequipment	Existing	Multi-Family	Per Home	0%	3,621	3,091	15%	531	0.32	0.01	0.060%	0.002%	20.0
Building Envelope	Roof	Green Roof	Vegetated Roof Surface on to	Standard Black Roof	Nonequipment	New	Multi-Family	Per Home	3%	3,621	3,091	15%	531	0.32	0.01	0.060%	0.002%	20.0
Building Envelope	Roof	Green Roof	Vegetated Roof Surface on to	Standard Black Roof	Nonequipment	Existing	Single Family	Per Home	0%	7,403	6,319	15%	1,085	0.66	0.01	0.061%	0.001%	20.0
Building Envelope	Roof	Green Roof	Vegetated Roof Surface on to	Standard Black Roof	Nonequipment	New	Single Family	Per Home	10%	7,403	6,319	15%	1,085	0.66	0.01	0.061%	0.001%	20.0
Building Envelope	Roof	Radiant Barrier	Radiant Barrier	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	1%	4,992	4,493	10%	499	0.17	0.24	0.034%	0.048%	20.0
Building Envelope	Roof	Radiant Barrier	Radiant Barrier	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	1%	4,992	4,493	10%	499	0.17	0.24	0.034%	0.048%	20.0
Building Envelope	Roof	Radiant Barrier	Radiant Barrier	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	1%	3,621	3,259	10%	362	0.12	0.17	0.034%	0.048%	20.0
Building Envelope	Roof	Radiant Barrier	Radiant Barrier	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	1%	3,621	3,259	10%	362	0.12	0.17	0.034%	0.048%	20.0
Building Envelope	Roof	Radiant Barrier	Radiant Barrier	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	2%	7,403	6,663	10%	740	0.25	0.36	0.034%	0.048%	20.0
Building Envelope	Roof	Radiant Barrier	Radiant Barrier	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	6%	7,403	6,663	10%	740	0.25	0.36	0.034%	0.048%	20.0
Building Envelope	Insulation	Sealed crawlspace	Increased Basement or Crawls	Market Average Existing Ex	Nonequipment	Existing	Manufactured Home	Per Home	6%	11,408	11,339	1%	69	0.01	0.04	0.010%	0.062%	11.0
Building Envelope	Insulation	Sealed crawlspace	Increased Basement or Crawls	Code-Compliant Exterior Bo	Nonequipment	New	Manufactured Home	Per Home	6%	11,408	11,408	0%	0	0.00	0.00			11.0
Building Envelope	Insulation	Sealed crawlspace	Increased Basement or Crawls	Market Average Existing Ex	Nonequipment	Existing	Multi-Family	Per Home	6%	9,273	9,271	0%	2	0.00	0.00	0.010%	0.062%	11.0
Building Envelope	Insulation	Sealed crawlspace	Increased Basement or Crawls	Code-Compliant Exterior Bo	Nonequipment	New	Multi-Family	Per Home	6%	9,273	9,273	0%	0	0.00	0.00			11.0
Building Envelope	Insulation	Sealed crawlspace	Increased Basement or Crawls	Market Average Existing Ex	Nonequipment	Existing	Single Family	Per Home	6%	14,578	14,545	0%	33	0.00	0.02	0.010%	0.062%	11.0
Building Envelope	Insulation	Sealed crawlspace	Increased Basement or Crawls	Code-Compliant Exterior Bo	Nonequipment	New	Single Family	Per Home	6%	14,578	14,578	0%	0	0.00	0.00			11.0
Building Envelope	Insulation	Spray Foam Insulation (Base R12)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	14%	6,112	5,131	16%	981	0.35	1.51	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R12)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	0%	6,112	5,131	16%	981	0.35	1.51	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R12)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	7%	4,573	3,808	17%	765	0.31	0.61	0.040%	0.080%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R12)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	0%	4,573	3,808	17%	765	0.31	0.61	0.040%	0.080%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R12)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	14%	8,909	7,696	14%	1,213	0.45	1.10	0.037%	0.091%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R12)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	0%	8,909	7,696	14%	1,213	0.45	1.10	0.037%	0.091%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R19)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	6%	5,959	5,129	14%	830	0.29	1.28	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R19)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	0%	5,959	5,129	14%	830	0.29	1.28	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R19)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	3%	4,425	3,811	14%	614	0.25	0.49	0.040%	0.080%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R19)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	0%	4,425	3,811	14%	614	0.25	0.49	0.040%	0.080%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R19)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	6%	8,664	7,696	11%	968	0.36	0.88	0.037%	0.091%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R19)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	0%	8,664	7,696	11%	968	0.36	0.88	0.037%	0.091%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R2)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	15%	7,006	5,141	27%	1,865	0.66	2.87	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R2)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	0%	7,006	5,141	27%	1,865	0.66	2.87	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R2)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	7%	5,405	3,791	30%	1,614	0.64	1.30	0.040%	0.080%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R2)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	0%	5,405	3,791	30%	1,614	0.64	1.30	0.040%	0.080%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R2)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	15%	10,310	7,702	25%	2,608	0.97	2.37	0.037%	0.091%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R2)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	0%	10,310	7,702	25%	2,608	0.97	2.37	0.037%	0.091%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R30)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Manufactured Home	Per Home	35%	5,857	5,130	12%	727	0.26	1.12	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R30)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Manufactured Home	Per Home	72%	5,857	5,130	12%	727	0.26	1.12	0.035%	0.154%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R30)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Multi-Family	Per Home	18%	4,325	3,811	12%	514	0.21	0.00	0.040%	0.000%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R30)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Multi-Family	Per Home	36%	4,325	3,811	12%	514	0.21	0.00	0.040%	0.000%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R30)	Increased Ceiling Insulation (I	Market Average Existing Ce	Nonequipment	Existing	Single Family	Per Home	35%	8,493	7,696	9%	797	0.30	0.00	0.037%	0.000%	20.0
Building Envelope	Insulation	Spray Foam Insulation (Base R30)	Increased Ceiling Insulation (I	Code-Compliant Ceiling Ins	Nonequipment	New	Single Family	Per Home	72%	8,493	7,696	9%	797	0.30	0.00	0.037%	0.000%	20.0
Building Envelope	Insulation	Storm Door	21ft2 of Opaque Door meeting	21ft2 of Opaque Door meeti	Nonequipment	Existing	Manufactured Home	Per 21 S.F.	0%	4,992	4,880	2%	113	0.02	0.07	0.017%	0.058%	20.0
Building Envelope	Insulation	Storm Door	21ft2 of Opaque Door meeting	21ft2 of Code-Compliant Op	Nonequipment	New	Manufactured Home	Per 21 S.F.	0%	4,992	4,918	1%	75	0.01	0.04	0.017%	0.058%	20.0
Building Envelope	Insulation	Storm Door	21ft2 of Opaque Door meeting	21ft2 of Opaque Door meeti	Nonequipment	Existing	Multi-Family	Per 21 S.F.	0%	3,621	3,509	3%	113	0.02	0.07	0.017%	0.058%	20.0
Building Envelope	Insulation	Storm Door	21ft2 of Opaque Door meeting	21ft2 of Code-Compliant Op	Nonequipment	New	Multi-Family	Per 21 S.F.	0%	3,621	3,547	2%	75	0.01	0.04	0.017%	0.058%	20.0
Building Envelope	Insulation	Storm Door	21ft2 of Opaque Door meeting	21ft2 of Opaque Door meeti	Nonequipment	Existing	Single Family	Per 21 S.F.	0%	7,403	7,291	2%	113	0.02	0.07	0.017%	0.058%	20.0
Building Envelope	Insulation	Storm Door	21ft2 of Opaque Door meeting	21ft2 of Code-Compliant Op	Nonequipment	New	Single Family	Per 21 S.F.	0%	7,403	7,329	1%	75	0.01	0.04	0.017%	0.058%	20.0
Building Envelope	Insulation	Wall Insulation	Increased Exterior Above-Gra	Market Average Existing Ex	Nonequipment	Existing	Manufactured Home	Per Home	7%	6,199	5,896	5%	303	0.02	0.17	0.006%	0.058%	20.0
Building Envelope	Insulation	Wall Insulation	Increased Exterior Above-Gra	Code-Compliant Exterior Al	Nonequipment	New	Manufactured Home	Per Home	7%	6,199	6,199	0%	0	0.00	0.00			20.0
Building Envelope	Insulation	Wall Insulation	Increased Exterior Above-Gra	Market Average Existing Ex	Nonequipment	Existing	Multi-Family	Per Home	15%	4,291	4,172	3%	119	0.01	0.07	0.006%	0.058%	20.0
Building Envelope	Insulation	Wall Insulation	Increased Exterior Above-Gra	Code-Compliant Exterior Al	Nonequipment	New	Multi-Family	Per Home	7%	4,291	4,291	0%	0	0.00	0.00			20.0
Building Envelope	Insulation	Wall Insulation	Increased Exterior Above-Gra	Market Average Existing Ex	Nonequipment	Existing	Single Family	Per Home	5%	8,224	7,790	5%	434	0.02	0.25	0.006%	0.058%	20.0
Building Envelope	Insulation	Wall Insulation	Increased Exterior Above-Gra	Code-Compliant Exterior Al	Nonequipment	New	Single Family	Per Home	7%	8,224	8,224	0%	0	0.00	0.00			20.0
Building Envelope	Window	Window Sun Protection	Window Film with SHGC of (	Standard Window with belo	Nonequipment	Existing	Manufactured Home	Per 100 ft2	30%	4,864	4,764	2%	101	0.15	(0.07)	0.150%	-0.069%	10.0
Building Envelope	Window	Window Sun Protection	Window Film with SHGC of (	Standard Window with belo	Nonequipment	New	Manufactured Home	Per 100 ft2	30%	4,864	4,764	2%	101	0.15	(0.07)	0.150%	-0.069%	10.0
Building Envelope	Window	Window Sun Protection	Window Film with SHGC of (	Standard Window with belo	Nonequipment	Existing	Multi-Family	Per 100 ft2	30%	3,541	3,416	4%	126	0.19	(0.09)	0.150%	-0.069%	10.0
Building Envelope	Window	Window Sun Protection	Window Film with SHGC of (	Standard Window with belo	Nonequipment	New	Multi-Family	Per 100 ft2	30%	3,541	3,416	4%	126	0.19	(0.09)	0.150%	-0.069%	10.0
Building Envelope	Window	Window Sun Protection	Window Film with SHGC of (	Standard Window with belo	Nonequipment	Existing	Single Family	Per 100 ft2	20%	7,311	7,160	2%	151	0.23	(0.10)	0.150%	-0.069%	10.0
Building Envelope	Window	Window Sun Protection	Window Film with SHGC of (	Standard Window with belo	Nonequipment	New	Single Family	Per 100 ft2	20%	7,311	7,160	2%	151	0.23	(0.10)	0.150%	-0.069%	10.0
HVAC	Unit	14 SEER ASHP from base electric resistance he	14 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	New	Manufactured Home	Per System	0%	9,922	7,810	21%	2,112	0.00	0.60	0.000%	0.028%	15.0

Ceiling Insulation(R19 to R38)	0.10	0.24	264	20
Ceiling Insulation(R2 to R38)	0.46	1.99	1,298	20
Ceiling Insulation(R2 to R38)	0.50	1.02	1,265	20
Ceiling Insulation(R2 to R38)	0.78	1.91	2,098	20
Ceiling Insulation(R30 to R38)	0.02	0.07	46	20
Ceiling Insulation(R30 to R38)	0.02	0.00	40	20
Ceiling Insulation(R30 to R38)	0.03	0.06	69	20
Duct Insulation	0.06	0.00	102	15
Duct Insulation	0.04	0.00	74	15
Duct Insulation	0.09	0.00	151	15
Energy Star Certified Roof Products	0.38	0.01	624	20
Energy Star Certified Roof Products	0.27	0.01	453	20
Energy Star Certified Roof Products	0.56	0.01	925	20
Energy Star Door	0.02	0.06	112	20
Energy Star Windows	0.00	0.01	73	20
Floor Insulation	0.00	0.02	31	20
Floor Insulation	0.00	0.00	1	20
Floor Insulation	0.00	0.01	15	20
Green Roof	0.44	0.02	732	20
Green Roof	0.32	0.01	531	20
Green Roof	0.66	0.01	1,085	20
Radiant Barrier	0.17	0.24	499	20
Radiant Barrier	0.12	0.17	362	20
Radiant Barrier	0.25	0.36	740	20
Sealed crawlspace	0.01	0.04	69	11
Sealed crawlspace	0.00	0.00	2	11
Sealed crawlspace	0.00	0.02	33	11
Spray Foam Insulation(Base R12)	0.35	1.51	981	20
Spray Foam Insulation(Base R12)	0.31	0.61	765	20
Spray Foam Insulation(Base R12)	0.45	1.10	1,213	20
Spray Foam Insulation(Base R19)	0.29	1.28	830	20
Spray Foam Insulation(Base R19)	0.25	0.49	614	20
Spray Foam Insulation(Base R19)	0.36	0.88	968	20
Spray Foam Insulation(Base R2)	0.66	2.87	1,865	20
Spray Foam Insulation(Base R2)	0.64	1.30	1,614	20
Spray Foam Insulation(Base R2)	0.97	2.37	2,608	20
Spray Foam Insulation(Base R30)	0.26	1.12	727	20
Spray Foam Insulation(Base R30)	0.21	0.00	514	20
Spray Foam Insulation(Base R30)	0.30	0.00	797	20
Storm Door	0.02	0.05	94	20
Wall Insulation	0.02	0.17	303	20
Wall Insulation	0.01	0.07	119	20
Wall Insulation	0.02	0.25	434	20
Window Sun Protection	0.15	(0.07)	101	10
Window Sun Protection	0.19	(0.09)	126	10
Window Sun Protection	0.23	(0.10)	151	10
14 SEER ASHP from base electric resistance he	0.00	0.60	2,112	15

0.68	0.43	-37%	0.52	0.87	68%	1,140	1,087	-5%
1.10	0.66	-40%	0.84	1.62	93%	1,834	1,780	-3%

R-2 to R-19

0.40	1.75	1,140	0.24	1.03	670.64	<-- imputed from FPL sg. Ft.
0.44	0.89	1,108				
0.68	1.67	1,834				

R-19 to R-30

0.04	0.17	112
0.04	0.13	117
0.07	0.18	195

Spray v. Blown-in

	0.24	1.01	659	218%	202%	205%				
	0.18	0.35	442	138%	135%	137%				
	0.25	0.62	684	125%	129%	129%				
	0.23	1.04	672	383%	433%	425%				
	0.19	0.36	457	317%	277%	291%				
	0.26	0.64	704	260%	267%	267%				
	0.20	0.88	567	43%	44%	44%				
	0.14	0.28	349	28%	27%	28%				
	0.19	0.46	510	24%	24%	24%				
R-2 to R-19	0.37	1.59	1,035	0.22	1.20	724	147%	308%	233%	<-- v. 2014
R-2 to R-19	0.39	0.81	1,000	0.27	0.62	706	225%	326%	240%	
R-2 to R-19	0.61	1.49	1,640	0.43	1.07	1,165	239%	255%	245%	
	0.24	1.05	681	1200%	1500%	1480%				
	0.19	0.00	474	950%	#DIV/0!	1185%				
	0.27	(0.06)	728	900%	-100%	1055%				

Mfg. Home Sq. Ft Adjust	**59%**

Spray Adjust (Manuf)	**68%**	**33%**	**43%**
Spray Adjust (MF)	**44%**	**31%**	**42%**
Spray Adjust (SF)	**42%**	**39%**	**41%**

2014

Multi-Family	0.12	0.19	294
Manufactured Home	0.15	0.39	311
Single Family	0.18	0.42	475

Source File: HVAC & Ceiling Insulation Adjusts

Sum kW		Win kW		kWh		Variance		
%	Adj	%	Adj	%	Adj			
	0.29		0.03		1,731	(0.29)	0.56	381

HVAC	Unit	14 SEER ASHP from base electric resistance he	14 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	Turnover	Manufactured Home	Per System	0%	9,922	7,810	21%	2,112	0.00	0.60	0.000%	0.028%	15.0	14 SEER ASHP from base electric resistance he	0.00	0.40	1,408	15		0.29		0.03		1,731	(0.29)	0.56	381
HVAC	Unit	14 SEER ASHP from base electric resistance he	14 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	New	Multi-Family	Per System	0%	6,614	5,206	21%	1,408	0.00	0.40	0.000%	0.028%	15.0	14 SEER ASHP from base electric resistance he	0.00	0.60	2,112	15		0.29		0.03		1,731	(0.29)	0.36	(323)
HVAC	Unit	14 SEER ASHP from base electric resistance he	14 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	Turnover	Multi-Family	Per System	0%	6,614	5,206	21%	1,408	0.00	0.40	0.000%	0.028%	15.0							0.29		0.03		1,731	(0.29)	0.36	(323)
HVAC	Unit	14 SEER ASHP from base electric resistance he	14 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	New	Single Family	Per System	0%	9,922	7,810	21%	2,112	0.00	0.60	0.000%	0.028%	15.0							0.43		0.05		2,597	(0.43)	0.54	(485)
HVAC	Unit	14 SEER ASHP from base electric resistance he	14 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	Turnover	Single Family	Per System	0%	9,922	7,810	21%	2,112	0.00	0.60	0.000%	0.028%	15.0							0.43		0.05		2,597	(0.43)	0.54	(485)
HVAC	Unit	15 SEER Air Source Heat Pump	15 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Manufactured Home	Per System	0%	7,810	7,564	3%	245	0.06	0.20	0.026%	0.083%	15.0	15 SEER Air Source Heat Pump	0.06	0.20	245	15	75%	0.07	317%	0.21	135%	257	(0.00)	(0.01)	(12)
HVAC	Unit	15 SEER Air Source Heat Pump	15 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Manufactured Home	Per System	0%	7,810	7,564	3%	245	0.06	0.20	0.026%	0.083%	15.0	15 SEER Air Source Heat Pump	0.07	0.22	301	15	75%	0.07	317%	0.21	135%	257	(0.00)	(0.01)	(12)
HVAC	Unit	15 SEER Air Source Heat Pump	15 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Multi-Family	Per System	0%	5,206	4,906	6%	301	0.07	0.22	0.023%	0.074%	15.0	15 SEER Air Source Heat Pump	0.11	0.35	396	15	75%	0.07	317%	0.23	135%	314	(0.00)	(0.01)	(13)
HVAC	Unit	15 SEER Air Source Heat Pump	15 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Multi-Family	Per System	0%	5,206	4,906	6%	301	0.07	0.22	0.023%	0.074%	15.0						75%	0.07	317%	0.23	135%	314	(0.00)	(0.01)	(13)
HVAC	Unit	15 SEER Air Source Heat Pump	15 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Single Family	Per System	0%	7,810	7,413	5%	396	0.11	0.35	0.028%	0.089%	15.0						75%	0.12	317%	0.37	135%	414	(0.00)	(0.01)	(18)
HVAC	Unit	15 SEER Air Source Heat Pump	15 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Single Family	Per System	0%	7,810	7,413	5%	396	0.11	0.35	0.028%	0.089%	15.0						75%	0.12	317%	0.37	135%	414	(0.00)	(0.01)	(18)
HVAC	Unit	15 SEER Central AC	15 SEER Central AC	Code-Compliant Central AC	Equipment	New	Manufactured Home	Per System	0%	6,306	6,117	3%	189	0.09	0.00	0.047%	0.000%	15.0	15 SEER Central AC	0.09	0.00	189	15	-47%	0.09			-32%	191	(0.00)	0.00	(2)
HVAC	Unit	15 SEER Central AC	15 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Manufactured Home	Per System	0%	6,306	6,117	3%	189	0.09	0.00	0.047%	0.000%	15.0	15 SEER Central AC	0.10	0.00	232	15	-47%	0.09			-32%	191	(0.00)	0.00	(2)
HVAC	Unit	15 SEER Central AC	15 SEER Central AC	Code-Compliant Central AC	Equipment	New	Multi-Family	Per System	0%	4,204	3,972	6%	232	0.10	0.00	0.042%	0.000%	15.0	15 SEER Central AC	0.15	0.00	306	15	-42%	0.10			-17%	233	(0.00)	0.00	(1)
HVAC	Unit	15 SEER Central AC	15 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Multi-Family	Per System	0%	4,204	3,972	6%	232	0.10	0.00	0.042%	0.000%	15.0						-42%	0.10			-17%	233	(0.00)	0.00	(1)
HVAC	Unit	15 SEER Central AC	15 SEER Central AC	Code-Compliant Central AC	Equipment	New	Single Family	Per System	0%	6,306	6,000	5%	306	0.15	0.00	0.050%	0.000%	15.0						-39%	0.15			-27%	307	(0.00)	0.00	(1)
HVAC	Unit	15 SEER Central AC	15 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Single Family	Per System	0%	6,306	6,000	5%	306	0.15	0.00	0.050%	0.000%	15.0						-39%	0.15			-27%	307	(0.00)	0.00	(1)
HVAC	Unit	16 SEER Air Source Heat Pump	16 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Manufactured Home	Per System	0%	7,810	7,332	6%	477	0.13	0.40	0.026%	0.083%	15.0	16 SEER Air Source Heat Pump	0.13	0.40	477	15	75%	0.13	317%	0.40	135%	482	(0.00)	(0.00)	(5)
HVAC	Unit	16 SEER Air Source Heat Pump	16 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Manufactured Home	Per System	0%	7,810	7,332	6%	477	0.13	0.40	0.026%	0.083%	15.0	16 SEER Air Source Heat Pump	0.14	0.43	586	15	75%	0.13	317%	0.40	135%	482	(0.00)	(0.00)	(5)
HVAC	Unit	16 SEER Air Source Heat Pump	16 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Multi-Family	Per System	0%	5,206	4,621	11%	586	0.14	0.43	0.023%	0.074%	15.0	16 SEER Air Source Heat Pump	0.22	0.69	772	15	75%	0.14	317%	0.43	135%	589	(0.00)	(0.00)	(3)
HVAC	Unit	16 SEER Air Source Heat Pump	16 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Multi-Family	Per System	0%	5,206	4,621	11%	586	0.14	0.43	0.023%	0.074%	15.0						75%	0.14	317%	0.43	135%	589	(0.00)	(0.00)	(3)
HVAC	Unit	16 SEER Air Source Heat Pump	16 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Single Family	Per System	0%	7,810	7,038	10%	772	0.22	0.69	0.028%	0.089%	15.0						75%	0.22	317%	0.69	135%	777	(0.00)	(0.00)	(5)
HVAC	Unit	16 SEER Air Source Heat Pump	16 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Single Family	Per System	0%	7,810	7,038	10%	772	0.22	0.69	0.028%	0.089%	15.0						75%	0.22	317%	0.69	135%	777	(0.00)	(0.00)	(5)
HVAC	Unit	16 SEER Central AC	16 SEER Central AC	Code-Compliant Central AC	Equipment	New	Manufactured Home	Per System	0%	6,306	5,952	6%	355	0.17	0.00	0.047%	0.000%	15.0	16 SEER Central AC	0.17	0.00	355	15	-47%	0.17			-32%	357	(0.00)	0.00	(3)
HVAC	Unit	16 SEER Central AC	16 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Manufactured Home	Per System	0%	6,306	5,952	6%	355	0.17	0.00	0.047%	0.000%	15.0	16 SEER Central AC	0.18	0.00	435	15	-47%	0.17			-32%	357	(0.00)	0.00	(3)
HVAC	Unit	16 SEER Central AC	16 SEER Central AC	Code-Compliant Central AC	Equipment	New	Multi-Family	Per System	0%	4,204	3,769	10%	435	0.18	0.00	0.042%	0.000%	15.0	16 SEER Central AC	0.29	0.00	573	15	-42%	0.18			-17%	436	(0.00)	0.00	(1)
HVAC	Unit	16 SEER Central AC	16 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Multi-Family	Per System	0%	4,204	3,769	10%	435	0.18	0.00	0.042%	0.000%	15.0						-42%	0.18			-17%	436	(0.00)	0.00	(1)
HVAC	Unit	16 SEER Central AC	16 SEER Central AC	Code-Compliant Central AC	Equipment	New	Single Family	Per System	0%	6,306	5,733	9%	573	0.29	0.00	0.050%	0.000%	15.0						-39%	0.29			-27%	575	(0.00)	0.00	(2)
HVAC	Unit	16 SEER Central AC	16 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Single Family	Per System	0%	6,306	5,733	9%	573	0.29	0.00	0.050%	0.000%	15.0						-39%	0.29			-27%	575	(0.00)	0.00	(2)
HVAC	Unit	17 SEER Air Source Heat Pump	17 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Manufactured Home	Per System	0%	7,810	7,127	9%	683	0.18	0.57	0.026%	0.083%	15.0	17 SEER Air Source Heat Pump	0.18	0.57	683	15	75%	0.18	317%	0.56	135%	681	0.00	0.01	2
HVAC	Unit	17 SEER Air Source Heat Pump	17 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Manufactured Home	Per System	0%	7,810	7,127	9%	683	0.18	0.57	0.026%	0.083%	15.0	17 SEER Air Source Heat Pump	0.19	0.62	838	15	75%	0.18	317%	0.56	135%	681	0.00	0.01	2
HVAC	Unit	17 SEER Air Source Heat Pump	17 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Multi-Family	Per System	0%	5,206	4,368	16%	838	0.19	0.62	0.023%	0.074%	15.0	17 SEER Air Source Heat Pump	0.31	0.98	1,104	15	75%	0.19	317%	0.61	135%	831	0.00	0.00	7
HVAC	Unit	17 SEER Air Source Heat Pump	17 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Multi-Family	Per System	0%	5,206	4,368	16%	838	0.19	0.62	0.023%	0.074%	15.0						75%	0.19	317%	0.61	135%	831	0.00	0.00	7
HVAC	Unit	17 SEER Air Source Heat Pump	17 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Single Family	Per System	0%	7,810	6,706	14%	1,104	0.31	0.98	0.028%	0.089%	15.0						75%	0.31	317%	0.97	135%	1,097	0.00	0.01	7
HVAC	Unit	17 SEER Air Source Heat Pump	17 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Single Family	Per System	0%	7,810	6,706	14%	1,104	0.31	0.98	0.028%	0.089%	15.0						75%	0.31	317%	0.97	135%	1,097	0.00	0.01	7
HVAC	Unit	17 SEER Central AC	17 SEER Central AC	Code-Compliant Central AC	Equipment	New	Manufactured Home	Per System	0%	6,306	5,786	8%	520	0.24	0.00	0.047%	0.000%	15.0	17 SEER Central AC	0.24	0.00	520	15	-47%	0.24			-32%	504	0.01	0.00	15
HVAC	Unit	17 SEER Central AC	17 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Manufactured Home	Per System	0%	6,306	5,786	8%	520	0.24	0.00	0.047%	0.000%	15.0	17 SEER Central AC	0.26	0.00	638	15	-47%	0.24			-32%	504	0.01	0.00	15
HVAC	Unit	17 SEER Central AC	17 SEER Central AC	Code-Compliant Central AC	Equipment	New	Multi-Family	Per System	0%	4,204	3,566	15%	638	0.26	0.00	0.042%	0.000%	15.0	17 SEER Central AC	0.42	0.00	840	15	-42%	0.26			-17%	616	0.01	0.00	22
HVAC	Unit	17 SEER Central AC	17 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Multi-Family	Per System	0%	4,204	3,566	15%	638	0.26	0.00	0.042%	0.000%	15.0						-42%	0.26			-17%	616	0.01	0.00	22
HVAC	Unit	17 SEER Central AC	17 SEER Central AC	Code-Compliant Central AC	Equipment	New	Single Family	Per System	0%	6,306	5,466	13%	840	0.42	0.00	0.050%	0.000%	15.0						-39%	0.41			-27%	812	0.01	0.00	28
HVAC	Unit	17 SEER Central AC	17 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Single Family	Per System	0%	6,306	5,466	13%	840	0.42	0.00	0.050%	0.000%	15.0						-39%	0.41			-27%	812	0.01	0.00	28
HVAC	Unit	18 SEER Air Source Heat Pump	18 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Manufactured Home	Per System	0%	7,810	6,977	11%	832	0.22	0.69	0.026%	0.083%	15.0	18 SEER Air Source Heat Pump	0.22	0.69	832	15	75%	0.22	317%	0.71	135%	858	(0.00)	(0.01)	(25)
HVAC	Unit	18 SEER Air Source Heat Pump	18 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Manufactured Home	Per System	0%	7,810	6,977	11%	832	0.22	0.69	0.026%	0.083%	15.0	18 SEER Air Source Heat Pump	0.24	0.75	1,021	15	75%	0.22	317%	0.71	135%	858	(0.00)	(0.01)	(25)
HVAC	Unit	18 SEER Air Source Heat Pump	18 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Multi-Family	Per System	0%	5,206	4,185	20%	1,021	0.24	0.75	0.023%	0.074%	15.0	18 SEER Air Source Heat Pump	0.38	1.19	1,346	15	75%	0.24	317%	0.77	135%	1,047	(0.01)	(0.02)	(25)
HVAC	Unit	18 SEER Air Source Heat Pump	18 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Multi-Family	Per System	0%	5,206	4,185	20%	1,021	0.24	0.75	0.023%	0.074%	15.0						75%	0.24	317%	0.77	135%	1,047	(0.01)	(0.02)	(25)
HVAC	Unit	18 SEER Air Source Heat Pump	18 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Single Family	Per System	0%	7,810	6,464	17%	1,346	0.38	1.19	0.028%	0.089%	15.0						75%	0.38	317%	1.22	135%	1,381	(0.01)	(0.02)	(36)
HVAC	Unit	18 SEER Air Source Heat Pump	18 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Single Family	Per System	0%	7,810	6,464	17%	1,346	0.38	1.19	0.028%	0.089%	15.0						75%	0.38	317%	1.22	135%	1,381	(0.01)	(0.02)	(36)
HVAC	Unit	18 SEER Central AC	18 SEER Central AC	Code-Compliant Central AC	Equipment	New	Manufactured Home	Per System	0%	6,306	5,651	10%	655	0.31	0.00	0.047%	0.000%	15.0	18 SEER Central AC	0.31	0.00	655	15	-47%	0.30			-32%	635	0.01	0.00	19
HVAC	Unit	18 SEER Central AC	18 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Manufactured Home	Per System	0%	6,306	5,651	10%	655	0.31	0.00	0.047%	0.000%	15.0	18 SEER Central AC	0.33	0.00	803	15	-47%	0.30			-32%	635	0.01	0.00	19
HVAC	Unit	18 SEER Central AC	18 SEER Central AC	Code-Compliant Central AC	Equipment	New	Multi-Family	Per System	0%	4,204	3,401	19%	803	0.33	0.00	0.042%	0.000%	15.0	18 SEER Central AC	0.53	0.00	1,058	15	-42%	0.33			-17%	775	0.01	0.00	28
HVAC	Unit	18 SEER Central AC	18 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Multi-Family	Per System	0%	4,204	3,401	19%	803	0.33	0.00	0.042%	0.000%	15.0						-42%	0.33			-17%	775	0.01	0.00	28
HVAC	Unit	18 SEER Central AC	18 SEER Central AC	Code-Compliant Central AC	Equipment	New	Single Family	Per System	0%	6,306	5,248	17%	1,058	0.53	0.00	0.050%	0.000%	15.0						-39%	0.51			-27%	1,023	0.02	0.00	35
HVAC	Unit	18 SEER Central AC	18 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Single Family	Per System	0%	6,306	5,248	17%	1,058	0.53	0.00	0.050%	0.000%	15.0						-39%	0.51			-27%	1,023	0.02	0.00	35
HVAC	Unit	21 SEER Air Source Heat Pump	21 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Manufactured Home	Per System	59%	7,810	6,581	16%	1,229	0.32	1.02	0.026%	0.083%	15.0	21 SEER Air Source Heat Pump	0.32	1.02	1,229	15	75%	0.33	317%	1.06	135%	1,286	(0.01)	(0.04)	(58)
HVAC	Unit	21 SEER Air Source Heat Pump	21 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Manufactured Home	Per System	59%	7,810	6,581	16%	1,229	0.32	1.02	0.026%	0.083%	15.0	21 SEER Air Source Heat Pump	0.35	1.11	1,508	15	75%	0.33	317%	1.06	135%	1,286	(0.01)	(0.04)	(58)
HVAC	Unit	21 SEER Air Source Heat Pump	21 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Multi-Family	Per System	59%	5,206	3,699	29%	1,508	0.35	1.11	0.023%	0.074%	15.0	21 SEER Air Source Heat Pump	0.56	1.76	1,986	15	75%	0.37	317%	1.16	135%	1,570	(0.02)	(0.05)	(62)
HVAC	Unit	21 SEER Air Source Heat Pump	21 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Multi-Family	Per System	59%	5,206	3,699	29%	1,508	0.35	1.11	0.023%	0.074%	15.0						75%	0.37	317%	1.16	135%	1,570	(0.02)	(0.05)	(62)
HVAC	Unit	21 SEER Air Source Heat Pump	21 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	New	Single Family	Per System	59%	7,810	5,823	25%	1,986	0.56	1.76	0.028%	0.089%	15.0						75%	0.58	317%	1.83	135%	2,072	(0.02)	(0.07)	(85)
HVAC	Unit	21 SEER Air Source Heat Pump	21 SEER Air Source Heat Pur	Code-Compliant ASHP, 14 S	Equipment	Turnover	Single Family	Per System	59%	7,810	5,823	25%	1,986	0.56	1.76	0.028%	0.089%	15.0						75%	0.58	317%	1.83	135%	2,072	(0.02)	(0.07)	(85)
HVAC	Unit	21 SEER ASHP from base electric resistance he	21 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	New	Manufactured Home	Per System	32%	9,922	5,437	45%	4,485	0.32	1.23	0.007%	0.027%	15.0	21 SEER ASHP from base electric resistance he	0.32	1.23	4,485	15		0.55		0.07		3,313	(0.23)	1.17	1,172
HVAC	Unit	21 SEER ASHP from base electric resistance he	21 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	Turnover	Manufactured Home	Per System	32%	9,922	5,437	45%	4,485	0.32	1.23	0.007%	0.027%	15.0	21 SEER ASHP from base electric resistance he	0.35	0.82	2,990	15		0.55		0.07		3,313	(0.23)	1.17	1,172
HVAC	Unit	21 SEER ASHP from base electric resistance he	21 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	New	Multi-Family	Per System	32%	6,614	3,625	45%	2,990	0.35	0.82	0.012%	0.027%	15.0	21 SEER ASHP from base electric resistance he	0.56	1.23	4,485	15		0.55		0.07		3,313	(0.20)	0.76	(323)
HVAC	Unit	21 SEER ASHP from base electric resistance he	21 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	Turnover	Multi-Family	Per System	32%	6,614	3,625	45%	2,990	0.35	0.82	0.012%	0.027%	15.0							0.55		0.07		3,313	(0.20)	0.76	(323)
HVAC	Unit	21 SEER ASHP from base electric resistance he	21 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	New	Single Family	Per System	41%	9,922	5,437	45%	4,485	0.56	1.23	0.012%	0.027%	15.0							0.82		0.10		4,970	(0.27)	1.13	(485)
HVAC	Unit	21 SEER ASHP from base electric resistance he	21 SEER ASHP from base ele	Base AC, 14 SEER, Electric	Equipment	Turnover	Single Family	Per System	41%	9,922	5,437	45%	4,485	0.56	1.23	0.012%	0.027%	15.0							0.82		0.10		4,970	(0.27)	1.13	(485)
HVAC	Unit	21 SEER Central AC	21 SEER Central AC	Code-Compliant Central AC	Equipment	New	Manufactured Home	Per System	78%	6,306	5,324	16%	982	0.46	0.00	0.047%	0.000%	15.0	21 SEER Central AC	0.46	0.00	982	15	(0.47)	0.45			(0.32)	953	0.01	0.00	29
HVAC	Unit	21 SEER Central AC	21 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Manufactured Home	Per System	78%	6,306	5,324	16%	982	0.46	0.00	0.047%	0.000%	15.0	21 SEER Central AC	0.50	0.00	1,205	15	(0.47)	0.45			(0.32)	953	0.01	0.00	29
HVAC	Unit	21 SEER Central AC	21 SEER Central AC	Code-Compliant Central AC	Equipment	New	Multi-Family	Per System	78%	4,204	2,999	29%	1,205	0.50	0.00	0.042%	0.000%	15.0	21 SEER Central AC	0.79	0.00	1,587	15	(0.42)	0.49			(0.17)	1,163	0.01	0.00	42
HVAC	Unit	21 SEER Central AC	21 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Multi-Family	Per System	78%	4,204	2,999	29%	1,205	0.50	0.00	0.042%	0.000%	15.0						(0.42)	0.49			(0.17)	1,163	0.01	0.00	42
HVAC	Unit	21 SEER Central AC	21 SEER Central AC	Code-Compliant Central AC	Equipment	New	Single Family	Per System	78%	6,306	4,719	25%	1,587	0.79	0.00	0.050%	0.000%	15.0						(0.39)	0.77			(0.27)	1,534	0.03	0.00	53
HVAC	Unit	21 SEER Central AC	21 SEER Central AC	Code-Compliant Central AC	Equipment	Turnover	Single Family	Per System	78%	6,306	4,719	25%	1,587	0.79	0.00	0.050%	0.000%	15.0						(0.39)	0.77			(0.27)	1,534	0.03	0.00	53
HVAC	Maintenance	Central AC Tune Up	Existing Typical Central AC S	Existing Typical Central AC	Nonequipment	Existing	Manufactured Home	Per End Use Con	0%	4,864	4,621	5%	243	0.15	0.00	0.062%	0.000%	2.0	Central AC Tune Up	0.15	0.00	243	2									
HVAC	Maintenance	Central AC Tune Up	Existing Typical Central AC S	N/A - Retrofit Only	Nonequipment	New	Manufactured Home	Per End Use Con	0%	0	0	0%	0	0.00	0.00			2.0	Central AC Tune Up	0.11	0.00	177	2									
HVAC	Maintenance	Central AC Tune Up	Existing Typical Central AC S	Existing Typical Central AC	Nonequipment	Existing	Multi-Family	Per End Use Con	0%	3,541	3,364	5%	177	0.11	0.00	0.062%	0.000%	2.0	Central AC Tune Up	0.23	0.00	366	2									
HVAC	Maintenance	Central AC Tune Up	Existing Typical Central AC S	N/A - Retrofit Only	Nonequipment	New	Multi-Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			2.0														
HVAC	Maintenance	Central AC Tune Up	Existing Typical Central AC S	Existing Typical Central AC	Nonequipment	Existing	Single Family	Per End Use Con	0%	7,311	6,946	5%	366	0.23	0.00	0.062%	0.000%	2.0														
HVAC	Maintenance	Central AC Tune Up	Existing Typical Central AC S	N/A - Retrofit Only	Nonequipment	New	Single Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			2.0														
HVAC	Duct	Duct Repair	Standard Electric Heating and	Standard Electric Heating an	Nonequipment	Existing	Manufactured Home	Per End Use Con	65%	4,992	4,393	12%	599	0.36	0.01	0.060%	0.002%	11.0	Duct Repair	0.36	0.01	599	11									
HVAC	Duct	Duct Repair	Standard Electric Heating and	N/A - Retrofit Only	Nonequipment	New	Manufactured Home	Per End Use Con	0%	0	0	0%	0	0.00	0.00			11.0	Duct Repair	0.26	0.01	435	11									
HVAC	Duct	Duct Repair	Standard Electric Heating and	Standard Electric Heating an	Nonequipment	Existing	Multi-Family	Per End Use Con	65%	3,621	3,187	12%	435	0.26	0.01	0.060%	0.002%	11.0	Duct Repair	0.54	0.01	888	11									
HVAC	Duct	Duct Repair	Standard Electric Heating and	N/A - Retrofit Only	Nonequipment	New	Multi-Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			11.0														
HVAC	Duct	Duct Repair	Standard Electric Heating and	Standard Electric Heating an	Nonequipment	Existing	Single Family	Per End Use Con	14%	7,403	6,515	12%	888	0.54	0.01	0.061%	0.001%	11.0														
HVAC	Duct	Duct Repair	Standard Electric Heating and	N/A - Retrofit Only	Nonequipment	New	Single Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			11.0														
HVAC	Fan	ENERGY STAR Ceiling Fan	60" Ceiling Fan Meeting ENE	Standard 60" Ceiling Fan	Equipment	New	Manufactured Home	Per Fan	34%	31	10	69%	21	0.00	0.00	0.000%	0.000%	20.0	Energy Star Ceiling Fan	0.00	0.00	21	20									
HVAC	Fan	ENERGY STAR Ceiling Fan	60" Ceiling Fan Meeting ENE	Standard 60" Ceiling Fan	Equipment	Turnover	Manufactured Home	Per Fan	34%	31	10	69%	21	0.00	0.00	0.000%	0.000%	20.0														
HVAC	Fan	ENERGY STAR Ceiling Fan	60" Ceiling Fan Meeting ENE	Standard 60" Ceiling Fan	Equipment	New	Multi-Family	Per Fan	34%	31	10	69%	21	0.00	0.00	0.000%	0.000%	20.0														
HVAC	Fan	ENERGY STAR Ceiling Fan	60" Ceiling Fan Meeting ENE	Standard 60" Ceiling Fan	Equipment	Turnover	Multi-Family	Per Fan	34%	31	10	69%	21	0.00	0.00	0.000%	0.000%	20.0														
HVAC	Fan	ENERGY STAR Ceiling Fan	60" Ceiling Fan Meeting ENE	Standard 60" Ceiling Fan	Equipment	New	Single Family	Per Fan	34%	31	10	69%	21	0.00	0.00	0.000%	0.000%	20.0														
HVAC	Fan	ENERGY STAR Ceiling Fan	60" Ceiling Fan Meeting ENE	Standard 60" Ceiling Fan	Equipment	Turnover	Single Family	Per Fan	34%	31	10	69%	21	0.00	0.00	0.000%	0.000%	20.0														
HVAC	Unit	ENERGY STAR Dehumidifier	One Dehumidifier meeting EN	One Dehumidifier meeting F	Equipment	New	Manufactured Home	Per Appliance	0%	858	643	25%	214	0.04	0.01	0.016%	0.003%	12.0	Energy Star Dehumidifier	0.04	0.01	214	12									
HVAC	Unit	ENERGY STAR Dehumidifier	One Dehumidifier meeting EN	One Dehumidifier meeting F	Equipment	Turnover	Manufactured Home	Per Appliance	0%	858	643	25%	214	0.04	0.01	0.016%	0.003%	12.0														
HVAC	Unit	ENERGY STAR Dehumidifier	One Dehumidifier meeting EN	One Dehumidifier meeting F	Equipment	New	Multi-Family	Per Appliance	1%	858	643	25%	214	0.04	0.01	0.016%	0.003%	12.0														
HVAC	Unit	ENERGY STAR Dehumidifier	One Dehumidifier meeting EN	One Dehumidifier meeting F	Equipment	Turnover	Multi-Family	Per Appliance	1%	858	643	25%	214	0.04	0.01	0.016%	0.003%	12.0														
HVAC	Unit	ENERGY STAR Dehumidifier	One Dehumidifier meeting EN	One Dehumidifier meeting F	Equipment	New	Single Family	Per Appliance	0%	858	643	25%	214	0.04	0.01	0.016%	0.003%	12.0														
HVAC	Unit	ENERGY STAR Dehumidifier	One Dehumidifier meeting EN	One Dehumidifier meeting F	Equipment	Turnover	Single Family	Per Appliance	0%	858	643	25%	214	0.04	0.01	0.016%	0.003%	12.0														
HVAC	Unit	ENERGY STAR Room AC	Energy Star Room AC, 1 Ton	Code-Compliant Room AC,	Equipment	New	Manufactured Home	Per Unit	66%	2,700	2,452	9%	247	0.12	0.00	0.047%	0.000%	9.0	Energy Star Room AC	0.12	0.00	247	9									
HVAC	Unit	ENERGY STAR Room AC	Energy Star Room AC, 1 Ton	Code-Compliant Room AC,	Equipment	Turnover	Manufactured Home	Per Unit	66%	2,700	2,452	9%	247	0.12	0.00	0.047%	0.000%	9.0														
HVAC	Unit	ENERGY STAR Room AC	Energy Star Room AC, 1 Ton	Code-Compliant Room AC,	Equipment	New	Multi-Family	Per Unit	66%	2,700	2,452	9%	247	0.10	0.00	0.042%	0.000%	9.0														
HVAC	Unit	ENERGY STAR Room AC	Energy Star Room AC, 1 Ton	Code-Compliant Room AC,	Equipment	Turnover	Multi-Family	Per Unit	66%	2,700	2,452	9%	247	0.10	0.00	0.042%	0.000%	9.0														
HVAC	Unit	ENERGY STAR Room AC	Energy Star Room AC, 1 Ton	Code-Compliant Room AC,	Equipment	New	Single Family	Per Unit	66%	2,700	2,452	9%	247	0.12	0.00	0.050%	0.000%	9.0														
HVAC	Unit	ENERGY STAR Room AC	Energy Star Room AC, 1 Ton	Code-Compliant Room AC,	Equipment	Turnover	Single Family	Per Unit	66%	2,700	2,452	9%	247	0.12	0.00	0.050%	0.000%	9.0														
HVAC	Unit	Ground Source Heat Pump	Ground Source Heat Pump	Base AC, 14 SEER, Electric	Equipment	New	Manufactured Home	Per Unit	3%	12,024	9,187	24%	2,837	0.54	1.67	0.019%	0.059%	22.0	Ground Source Heat Pump	0.54	1.67	2,837	22									
HVAC	Unit	Ground Source Heat Pump	Ground Source Heat Pump	Base AC, 14 SEER, Electric	Equipment	Turnover	Manufactured Home	Per Unit	3%	12,024	9,187	24%	2,837	0.54	1.67	0.019%	0.059%	22.0	Ground Source Heat Pump	0.31	0.96	1,631	22									
HVAC	Unit	Ground Source Heat Pump	Ground Source Heat Pump	Base AC, 14 SEER, Electric	Equipment	New	Multi-Family	Per Unit	3%	10,818	9,187	15%	1,631	0.31	0.96	0.019%	0.059%	22.0	Ground Source Heat Pump	0.54	1.67	2,837	22									
HVAC	Unit	Ground Source Heat Pump	Ground Source Heat Pump	Base AC, 14 SEER, Electric	Equipment	Turnover	Multi-Family	Per Unit	3%	10,818	9,187	15%	1,631	0.31	0.96	0.019%	0.059%	22.0														
HVAC	Unit	Ground Source Heat Pump	Ground Source Heat Pump	Base AC, 14 SEER, Electric	Equipment	New	Single Family	Per Unit	0%	12,024	9,187	24%	2,837	0.54	1.67	0.019%	0.059%	22.0														
HVAC	Unit	Ground Source Heat Pump	Ground Source Heat Pump	Base AC, 14 SEER, Electric	Equipment	Turnover	Single Family	Per Unit	0%	12,024	9,187	24%	2,837	0.54	1.67	0.019%	0.059%	22.0														

HVAC	Unit	Heat Pump Tune Up	Maintenace for Standard Heati	Standard Heating and Coolin	Nonequipment	Existing	Manufactured Home	Per End Use Con	0%	4,992	4,743	5%	250	0.15	0.01	0.060%	0.002%	2.0
HVAC	Unit	Heat Pump Tune Up	Maintenace for Standard Heati	N/A - Retrofit Only	Nonequipment	New	Manufactured Home	Per End Use Con	0%	0	0	0%	0	0.00	0.00			2.0
HVAC	Unit	Heat Pump Tune Up	Maintenace for Standard Heati	Standard Heating and Coolin	Nonequipment	Existing	Multi-Family	Per End Use Con	0%	3,621	3,440	5%	181	0.11	0.00	0.060%	0.002%	2.0
HVAC	Unit	Heat Pump Tune Up	Maintenace for Standard Heati	N/A - Retrofit Only	Nonequipment	New	Multi-Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			2.0
HVAC	Unit	Heat Pump Tune Up	Maintenace for Standard Heati	Standard Heating and Coolin	Nonequipment	Existing	Single Family	Per End Use Con	0%	7,403	7,033	5%	370	0.23	0.00	0.061%	0.001%	2.0
HVAC	Unit	Heat Pump Tune Up	Maintenace for Standard Heati	N/A - Retrofit Only	Nonequipment	New	Single Family	Per End Use Con	0%	0	0	0%	0	0.00	0.00			2.0
HVAC	Fan	HVAC ECM Motor	Variable Speed Electronically	Permanent Split Capacitor N	Nonequipment	Existing	Manufactured Home	Per Unit	77%	4,992	4,936	1%	56	0.01	0.02	0.017%	0.035%	15.0
HVAC	Fan	HVAC ECM Motor	Variable Speed Electronically	Permanent Split Capacitor N	Nonequipment	New	Manufactured Home	Per Unit	41%	4,992	4,936	1%	56	0.01	0.02	0.017%	0.035%	15.0
HVAC	Fan	HVAC ECM Motor	Variable Speed Electronically	Permanent Split Capacitor N	Nonequipment	Existing	Multi-Family	Per Unit	77%	3,621	3,565	2%	56	0.01	0.02	0.017%	0.035%	15.0
HVAC	Fan	HVAC ECM Motor	Variable Speed Electronically	Permanent Split Capacitor N	Nonequipment	New	Multi-Family	Per Unit	41%	3,621	3,565	2%	56	0.01	0.02	0.017%	0.035%	15.0
HVAC	Fan	HVAC ECM Motor	Variable Speed Electronically	Permanent Split Capacitor N	Nonequipment	Existing	Single Family	Per Unit	10%	7,403	7,347	1%	56	0.01	0.02	0.017%	0.035%	15.0
HVAC	Fan	HVAC ECM Motor	Variable Speed Electronically	Permanent Split Capacitor N	Nonequipment	New	Single Family	Per Unit	26%	7,403	7,347	1%	56	0.01	0.02	0.017%	0.035%	15.0
HVAC	Controls	Programmable Thermostat	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Manufactured Home	Per End Use Con	2%	4,992	4,861	3%	131	0.05	0.00	0.040%	0.000%	11.0
HVAC	Controls	Programmable Thermostat	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	New	Manufactured Home	Per End Use Con	2%	4,992	4,861	3%	131	0.05	0.00	0.040%	0.000%	11.0
HVAC	Controls	Programmable Thermostat	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Multi-Family	Per End Use Con	2%	3,621	3,526	3%	95	0.04	0.00	0.040%	0.000%	11.0
HVAC	Controls	Programmable Thermostat	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	New	Multi-Family	Per End Use Con	2%	3,621	3,526	3%	95	0.04	0.00	0.040%	0.000%	11.0
HVAC	Controls	Programmable Thermostat	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Single Family	Per End Use Con	2%	7,403	7,210	3%	194	0.08	0.00	0.040%	0.000%	11.0
HVAC	Controls	Programmable Thermostat	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	New	Single Family	Per End Use Con	2%	7,403	7,210	3%	194	0.08	0.00	0.040%	0.000%	11.0
HVAC	Controls	Smart Thermostat (EE ONLY)	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Manufactured Home	Per End Use Con	90%	4,992	4,688	6%	304	0.12	0.00	0.040%	0.000%	11.0
HVAC	Controls	Smart Thermostat (EE ONLY)	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	New	Manufactured Home	Per End Use Con	90%	4,992	4,688	6%	304	0.12	0.00	0.040%	0.000%	11.0
HVAC	Controls	Smart Thermostat (EE ONLY)	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Multi-Family	Per End Use Con	90%	3,621	3,401	6%	221	0.09	0.00	0.040%	0.000%	11.0
HVAC	Controls	Smart Thermostat (EE ONLY)	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	New	Multi-Family	Per End Use Con	90%	3,621	3,401	6%	221	0.09	0.00	0.040%	0.000%	11.0
HVAC	Controls	Smart Thermostat (EE ONLY)	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	Existing	Single Family	Per End Use Con	23%	7,403	6,952	6%	451	0.18	0.00	0.040%	0.000%	11.0
HVAC	Controls	Smart Thermostat (EE ONLY)	Standard Heating and Cooling	Standard Heating and Coolin	Nonequipment	New	Single Family	Per End Use Con	23%	7,403	6,952	6%	451	0.18	0.00	0.040%	0.000%	11.0
HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC Systen	Variable Refrigerant Flow (VI	Code-Compliant ASHP, 110	Equipment	New	Manufactured Home	Per Unit	8%	6,473	4,468	31%	2,005	0.53	1.67	0.026%	0.083%	13.0
HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC Systen	Variable Refrigerant Flow (VI	Code-Compliant ASHP, 110	Equipment	Turnover	Manufactured Home	Per Unit	7%	6,473	4,468	31%	2,005	0.53	1.67	0.026%	0.083%	13.0
HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC Systen	Variable Refrigerant Flow (VI	Code-Compliant ASHP, 110	Equipment	New	Multi-Family	Per Unit	8%	4,303	2,966	31%	1,337	0.31	0.98	0.023%	0.074%	13.0
HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC Systen	Variable Refrigerant Flow (VI	Code-Compliant ASHP, 110	Equipment	Turnover	Multi-Family	Per Unit	7%	4,303	2,966	31%	1,337	0.31	0.98	0.023%	0.074%	13.0
HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC Systen	Variable Refrigerant Flow (VI	Code-Compliant ASHP, 110	Equipment	New	Single Family	Per Unit	1%	6,617	4,612	30%	2,005	0.56	1.78	0.028%	0.089%	13.0
HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC Systen	Variable Refrigerant Flow (VI	Code-Compliant ASHP, 110	Equipment	Turnover	Single Family	Per Unit	1%	6,617	4,612	30%	2,005	0.56	1.78	0.028%	0.089%	13.0
Lighting	Fluorescent-CFL	CFL - 13W	13W CFL	EISA-2020 compliant baseli	Equipment	New	Manufactured Home	Per Lamp	0%	19	14	28%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 13W	13W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Manufactured Home	Per Lamp	0%	19	14	28%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 13W	13W CFL	EISA-2020 compliant baseli	Equipment	New	Multi-Family	Per Lamp	0%	19	14	28%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 13W	13W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Multi-Family	Per Lamp	0%	19	14	28%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 13W	13W CFL	EISA-2020 compliant baseli	Equipment	New	Single Family	Per Lamp	0%	19	14	28%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 13W	13W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Single Family	Per Lamp	0%	19	14	28%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood	15W CFL	EISA-2020 compliant baseli	Equipment	New	Manufactured Home	Per Lamp	0%	21	16	23%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood	15W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Manufactured Home	Per Lamp	0%	21	16	23%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood	15W CFL	EISA-2020 compliant baseli	Equipment	New	Multi-Family	Per Lamp	0%	21	16	23%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood	15W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Multi-Family	Per Lamp	0%	21	16	23%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood	15W CFL	EISA-2020 compliant baseli	Equipment	New	Single Family	Per Lamp	0%	21	16	23%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood	15W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Single Family	Per Lamp	0%	21	16	23%	5	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood (Exterior)	15W CFL	EISA-2020 compliant baseli	Equipment	New	Manufactured Home	Per Lamp	0%	62	14	77%	47	0.00	0.00	0.000%	0.000%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood (Exterior)	15W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Manufactured Home	Per Lamp	0%	62	14	77%	47	0.00	0.00	0.000%	0.000%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood (Exterior)	15W CFL	EISA-2020 compliant baseli	Equipment	New	Multi-Family	Per Lamp	0%	62	14	77%	47	0.00	0.00	0.000%	0.000%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood (Exterior)	15W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Multi-Family	Per Lamp	0%	62	14	77%	47	0.00	0.00	0.000%	0.000%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood (Exterior)	15W CFL	EISA-2020 compliant baseli	Equipment	New	Single Family	Per Lamp	0%	62	14	77%	47	0.00	0.00	0.000%	0.000%	7.8
Lighting	Fluorescent-CFL	CFL - 15W Flood (Exterior)	15W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Single Family	Per Lamp	0%	62	14	77%	47	0.00	0.00	0.000%	0.000%	7.8
Lighting	Fluorescent-CFL	CFL - 23W	23W CFL	EISA-2020 compliant baseli	Equipment	New	Manufactured Home	Per Lamp	0%	32	24	23%	7	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 23W	23W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Manufactured Home	Per Lamp	0%	32	24	23%	7	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 23W	23W CFL	EISA-2020 compliant baseli	Equipment	New	Multi-Family	Per Lamp	0%	32	24	23%	7	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 23W	23W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Multi-Family	Per Lamp	0%	32	24	23%	7	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 23W	23W CFL	EISA-2020 compliant baseli	Equipment	New	Single Family	Per Lamp	0%	32	24	23%	7	0.00	0.00	0.009%	0.009%	7.8
Lighting	Fluorescent-CFL	CFL - 23W	23W CFL	EISA-2020 compliant baseli	Equipment	Turnover	Single Family	Per Lamp	0%	32	24	23%	7	0.00	0.00	0.009%	0.009%	7.8
Lighting	Controls	Exterior Lighting Controls	Timer on Outdoor Lighting, C	120 Watts of Lighting, Mann	Nonequipment	Existing	Manufactured Home	Per End Use Con	0%	114	57	50%	57	0.00	0.00	0.000%	0.000%	10.0
Lighting	Controls	Exterior Lighting Controls	Timer on Outdoor Lighting, C	120 Watts of Lighting, Mann	Nonequipment	New	Manufactured Home	Per End Use Con	0%	114	57	50%	57	0.00	0.00	0.000%	0.000%	10.0
Lighting	Controls	Exterior Lighting Controls	Timer on Outdoor Lighting, C	120 Watts of Lighting, Mann	Nonequipment	Existing	Multi-Family	Per End Use Con	0%	114	57	50%	57	0.00	0.00	0.000%	0.000%	10.0
Lighting	Controls	Exterior Lighting Controls	Timer on Outdoor Lighting, C	120 Watts of Lighting, Mann	Nonequipment	New	Multi-Family	Per End Use Con	0%	114	57	50%	57	0.00	0.00	0.000%	0.000%	10.0
Lighting	Controls	Exterior Lighting Controls	Timer on Outdoor Lighting, C	120 Watts of Lighting, Mann	Nonequipment	Existing	Single Family	Per End Use Con	2%	114	57	50%	57	0.00	0.00	0.000%	0.000%	10.0
Lighting	Controls	Exterior Lighting Controls	Timer on Outdoor Lighting, C	120 Watts of Lighting, Mann	Nonequipment	New	Single Family	Per End Use Con	9%	114	57	50%	57	0.00	0.00	0.000%	0.000%	10.0
Lighting	Controls	Interior Lighting Controls	Switch Mounted Occupancy S	120 Watts of Lighting, Mann	Nonequipment	Existing	Manufactured Home	Per End Use Con	3%	127	91	29%	36	0.00	0.00	0.014%	0.010%	8.0
Lighting	Controls	Interior Lighting Controls	Switch Mounted Occupancy S	120 Watts of Lighting, No c	Nonequipment	New	Manufactured Home	Per End Use Con	15%	127	91	29%	36	0.00	0.00	0.014%	0.010%	8.0
Lighting	Controls	Interior Lighting Controls	Switch Mounted Occupancy S	120 Watts of Lighting, Mann	Nonequipment	Existing	Multi-Family	Per End Use Con	3%	127	91	29%	36	0.00	0.00	0.014%	0.010%	8.0
Lighting	Controls	Interior Lighting Controls	Switch Mounted Occupancy S	120 Watts of Lighting, No c	Nonequipment	New	Multi-Family	Per End Use Con	15%	127	91	29%	36	0.00	0.00	0.014%	0.010%	8.0
Lighting	Controls	Interior Lighting Controls	Switch Mounted Occupancy S	120 Watts of Lighting, Mann	Nonequipment	Existing	Single Family	Per End Use Con	3%	127	91	29%	36	0.00	0.00	0.014%	0.010%	8.0
Lighting	Controls	Interior Lighting Controls	Switch Mounted Occupancy S	120 Watts of Lighting, No c	Nonequipment	New	Single Family	Per End Use Con	15%	127	91	29%	36	0.00	0.00	0.014%	0.010%	8.0
Lighting	LED	LED - 14W	14W LED	23W CFL	Equipment	New	Manufactured Home	Per Lamp	50%	32	15	53%	17	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 14W	14W LED	23W CFL	Equipment	Turnover	Manufactured Home	Per Lamp	50%	32	15	53%	17	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 14W	14W LED	23W CFL	Equipment	New	Multi-Family	Per Lamp	50%	32	15	53%	17	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 14W	14W LED	23W CFL	Equipment	Turnover	Multi-Family	Per Lamp	50%	32	15	53%	17	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 14W	14W LED	23W CFL	Equipment	New	Single Family	Per Lamp	50%	32	15	53%	17	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 14W	14W LED	23W CFL	Equipment	Turnover	Single Family	Per Lamp	50%	32	15	53%	17	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED Specialty Lamps-5W Chandelier	5 W Chandelier LED	0	Equipment	New	Manufactured Home	Per Lamp	50%	13	5	58%	7	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED Specialty Lamps-5W Chandelier	5 W Chandelier LED	0	Equipment	Turnover	Manufactured Home	Per Lamp	50%	13	5	58%	7	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED Specialty Lamps-5W Chandelier	5 W Chandelier LED	0	Equipment	New	Multi-Family	Per Lamp	50%	13	5	58%	7	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED Specialty Lamps-5W Chandelier	5 W Chandelier LED	0	Equipment	Turnover	Multi-Family	Per Lamp	50%	13	5	58%	7	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED Specialty Lamps-5W Chandelier	5 W Chandelier LED	0	Equipment	New	Single Family	Per Lamp	50%	13	5	58%	7	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED Specialty Lamps-5W Chandelier	5 W Chandelier LED	0	Equipment	Turnover	Single Family	Per Lamp	50%	13	5	58%	7	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W	9W LED	13W CFL	Equipment	New	Manufactured Home	Per Lamp	50%	19	10	50%	10	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W	9W LED	13W CFL	Equipment	Turnover	Manufactured Home	Per Lamp	50%	19	10	50%	10	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W	9W LED	13W CFL	Equipment	New	Multi-Family	Per Lamp	50%	19	10	50%	10	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W	9W LED	13W CFL	Equipment	Turnover	Multi-Family	Per Lamp	50%	19	10	50%	10	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W	9W LED	13W CFL	Equipment	New	Single Family	Per Lamp	50%	19	10	50%	10	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W	9W LED	13W CFL	Equipment	Turnover	Single Family	Per Lamp	50%	19	10	50%	10	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	New	Manufactured Home	Per Lamp	50%	21	10	54%	11	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	Turnover	Manufactured Home	Per Lamp	50%	21	10	54%	11	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	New	Multi-Family	Per Lamp	50%	21	10	54%	11	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	Turnover	Multi-Family	Per Lamp	50%	21	10	54%	11	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	New	Single Family	Per Lamp	50%	21	10	54%	11	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	Turnover	Single Family	Per Lamp	50%	21	10	54%	11	0.00	0.00	0.009%	0.009%	10.0
Lighting	LED	LED - 9W Flood (Exterior)	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	New	Manufactured Home	Per Lamp	22%	62	9	86%	53	0.00	0.00	0.000%	0.000%	10.0
Lighting	LED	LED - 9W Flood (Exterior)	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	Turnover	Manufactured Home	Per Lamp	22%	62	9	86%	53	0.00	0.00	0.000%	0.000%	10.0
Lighting	LED	LED - 9W Flood (Exterior)	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	New	Multi-Family	Per Lamp	22%	62	9	86%	53	0.00	0.00	0.000%	0.000%	10.0
Lighting	LED	LED - 9W Flood (Exterior)	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	Turnover	Multi-Family	Per Lamp	22%	62	9	86%	53	0.00	0.00	0.000%	0.000%	10.0
Lighting	LED	LED - 9W Flood (Exterior)	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	New	Single Family	Per Lamp	22%	62	9	86%	53	0.00	0.00	0.000%	0.000%	10.0
Lighting	LED	LED - 9W Flood (Exterior)	ENERGY STAR Qualified 9V	15W CFL Flood	Equipment	Turnover	Single Family	Per Lamp	22%	62	9	86%	53	0.00	0.00	0.000%	0.000%	10.0
Lighting	LED	Linear LED	Linear LED	T8	Equipment	New	Manufactured Home	Per Lamp	79%	34	19	44%	15	0.00	0.00	0.000%	0.000%	15.0
Lighting	LED	Linear LED	Linear LED	T8	Equipment	Turnover	Manufactured Home	Per Lamp	79%	34	19	44%	15	0.00	0.00	0.000%	0.000%	15.0
Lighting	LED	Linear LED	Linear LED	T8	Equipment	New	Multi-Family	Per Lamp	79%	34	19	44%	15	0.00	0.00	0.000%	0.000%	15.0
Lighting	LED	Linear LED	Linear LED	T8	Equipment	Turnover	Multi-Family	Per Lamp	79%	34	19	44%	15	0.00	0.00	0.000%	0.000%	15.0
Lighting	LED	Linear LED	Linear LED	T8	Equipment	New	Single Family	Per Lamp	79%	34	19	44%	15	0.00	0.00	0.000%	0.000%	15.0
Lighting	LED	Linear LED	Linear LED	T8	Equipment	Turnover	Single Family	Per Lamp	79%	34	19	44%	15	0.00	0.00	0.000%	0.000%	15.0
Lighting	Fluorescent	Low Wattage T8 Fixture (Bulb)	Low Wattage (28w) T8 Fixtur	T8	Equipment	New	Manufactured Home	Per Lamp	0%	34	28	19%	6	0.00	0.00	0.000%	0.000%	15.0
Lighting	Fluorescent	Low Wattage T8 Fixture (Bulb)	Low Wattage (28w) T8 Fixtur	T8	Equipment	Turnover	Manufactured Home	Per Lamp	0%	34	28	19%	6	0.00	0.00	0.000%	0.000%	15.0
Lighting	Fluorescent	Low Wattage T8 Fixture (Bulb)	Low Wattage (28w) T8 Fixtur	T8	Equipment	New	Multi-Family	Per Lamp	0%	34	28	19%	6	0.00	0.00	0.000%	0.000%	15.0
Lighting	Fluorescent	Low Wattage T8 Fixture (Bulb)	Low Wattage (28w) T8 Fixtur	T8	Equipment	Turnover	Multi-Family	Per Lamp	0%	34	28	19%	6	0.00	0.00	0.000%	0.000%	15.0
Lighting	Fluorescent	Low Wattage T8 Fixture (Bulb)	Low Wattage (28w) T8 Fixtur	T8	Equipment	New	Single Family	Per Lamp	0%	34	28	19%	6	0.00	0.00	0.000%	0.000%	15.0

Heat Pump Tune Up	0.15	0.01	250	2
Heat Pump Tune Up	0.11	0.00	181	2
Heat Pump Tune Up	0.23	0.00	370	2
HVAC ECM Motor	0.01	0.02	56	15
Programmable Thermostat	0.05	0.00	131	11
Programmable Thermostat	0.04	0.00	95	11
Programmable Thermostat	0.08	0.00	194	11
Smart Thermostat	0.12	0.00	304	11
Smart Thermostat	0.09	0.00	221	11
Smart Thermostat	0.18	0.00	451	11
Variable Refrigerant Flow (VRF) HVAC Systen	0.53	1.67	2,005	13
Variable Refrigerant Flow (VRF) HVAC Systen	0.31	0.98	1,337	13
Variable Refrigerant Flow (VRF) HVAC Systen	0.56	1.78	2,005	13
Low Wattage T8 Fixture	0.00	0.00	6	15
CFL - 13W	0.00	0.00	5	8
CFL - 15W Flood	0.00	0.00	5	8
CFL - 15W Flood (Exterior)	0.00	0.00	47	8
CFL - 23W	0.00	0.00	7	8
Exterior Lighting Controls	0.00	0.00	57	10
Interior Lighting Controls	0.00	0.00	36	8
LED - 14W	0.00	0.00	17	10
LED Specialty Lamps - 5W Chandelier	0.00	0.00	7	10
LED - 9W	0.00	0.00	10	10
LED - 9W Flood	0.00	0.00	11	10
LED - 9W Flood (Exterior)	0.00	0.00	53	10
Linear LED	0.00	0.00	15	15

Lighting	Fluorescent	Low Wattage T8 Fixture (Bulb)	Low Wattage (28w) T8 Fixtun T8	Equipment	Turnover	Single Family	Per Lamp	0%	34	28	19%	6	0.00	0.00	0.000%	0.000%	15.0
Motor	Fan	ENERGY STAR Bathroom Ventilating Fan	Bathroom Exhaust Fan (Effici	Bathroom Exhaust Fan (Eff	Equipment	New	Manufactured Home	Per Fan	72%	9	4	63%	6	0.00	0.00	0.004%	0.014%	10.0
Motor	Fan	ENERGY STAR Bathroom Ventilating Fan	Bathroom Exhaust Fan (Effici	Bathroom Exhaust Fan (Eff	Equipment	Turnover	Manufactured Home	Per Fan	72%	9	4	63%	6	0.00	0.00	0.004%	0.014%	10.0
Motor	Fan	ENERGY STAR Bathroom Ventilating Fan	Bathroom Exhaust Fan (Effici	Bathroom Exhaust Fan (Eff	Equipment	New	Multi-Family	Per Fan	23%	9	4	63%	6	0.00	0.00	0.004%	0.014%	10.0
Motor	Fan	ENERGY STAR Bathroom Ventilating Fan	Bathroom Exhaust Fan (Effici	Bathroom Exhaust Fan (Eff	Equipment	Turnover	Multi-Family	Per Fan	23%	9	4	63%	6	0.00	0.00	0.004%	0.014%	10.0
Motor	Fan	ENERGY STAR Bathroom Ventilating Fan	Bathroom Exhaust Fan (Effici	Bathroom Exhaust Fan (Eff	Equipment	New	Single Family	Per Fan	61%	9	4	63%	6	0.00	0.00	0.004%	0.014%	10.0
Motor	Fan	ENERGY STAR Bathroom Ventilating Fan	Bathroom Exhaust Fan (Effici	Bathroom Exhaust Fan (Eff	Equipment	Turnover	Single Family	Per Fan	43%	9	4	63%	6	0.00	0.00	0.004%	0.014%	10.0
Motor	Fan	Solar Attic Fan	Standard Central Air Condition	Standard Central Air Conditi	Nonequipment	Existing	Manufactured Home	Per End Use Con	1%	4,864	4,573	6%	292	0.10	0.00	0.034%	0.000%	15.0
Motor	Fan	Solar Attic Fan	Standard Central Air Condition	Standard Central Air Conditi	Nonequipment	New	Manufactured Home	Per End Use Con	1%	4,864	4,573	6%	292	0.10	0.00	0.034%	0.000%	15.0
Motor	Fan	Solar Attic Fan	Standard Central Air Condition	Standard Central Air Conditi	Nonequipment	Existing	Multi-Family	Per End Use Con	1%	3,541	3,329	6%	212	0.07	0.00	0.034%	0.000%	15.0
Motor	Fan	Solar Attic Fan	Standard Central Air Condition	Standard Central Air Conditi	Nonequipment	New	Multi-Family	Per End Use Con	1%	3,541	3,329	6%	212	0.07	0.00	0.034%	0.000%	15.0
Motor	Fan	Solar Attic Fan	Standard Central Air Condition	Standard Central Air Conditi	Nonequipment	Existing	Single Family	Per End Use Con	2%	7,311	6,873	6%	439	0.15	0.00	0.034%	0.000%	15.0
Motor	Fan	Solar Attic Fan	Standard Central Air Condition	Standard Central Air Conditi	Nonequipment	New	Single Family	Per End Use Con	5%	7,311	6,873	6%	439	0.15	0.00	0.034%	0.000%	15.0
Motor	Pump	Solar Powered Pool Pumps	Solar Powered Pool Pump	Single Speed Pool Pump Mo	Equipment	New	Manufactured Home	Per Pool	0%	4,377	2,193	50%	2,183	0.67	0.34	0.030%	0.015%	10.0
Motor	Pump	Solar Powered Pool Pumps	Solar Powered Pool Pump	Single Speed Pool Pump Mo	Equipment	Turnover	Manufactured Home	Per Pool	0%	4,377	2,193	50%	2,183	0.67	0.34	0.030%	0.015%	10.0
Motor	Pump	Solar Powered Pool Pumps	Solar Powered Pool Pump	Single Speed Pool Pump Mo	Equipment	New	Multi-Family	Per Pool	0%	4,377	2,193	50%	2,183	0.67	0.34	0.030%	0.015%	10.0
Motor	Pump	Solar Powered Pool Pumps	Solar Powered Pool Pump	Single Speed Pool Pump Mo	Equipment	Turnover	Multi-Family	Per Pool	0%	4,377	2,193	50%	2,183	0.67	0.34	0.030%	0.015%	10.0
Motor	Pump	Solar Powered Pool Pumps	Solar Powered Pool Pump	Single Speed Pool Pump Mo	Equipment	New	Single Family	Per Pool	0%	4,377	2,193	50%	2,183	0.67	0.34	0.030%	0.015%	10.0
Motor	Pump	Solar Powered Pool Pumps	Solar Powered Pool Pump	Single Speed Pool Pump Mo	Equipment	Turnover	Single Family	Per Pool	0%	4,377	2,193	50%	2,183	0.67	0.34	0.030%	0.015%	10.0
Motor	Pump	Two Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	New	Manufactured Home	Per Pool	0%	4,377	3,331	24%	1,046	0.33	0.32	0.031%	0.030%	10.0
Motor	Pump	Two Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	Turnover	Manufactured Home	Per Pool	0%	4,377	3,331	24%	1,046	0.33	0.32	0.031%	0.030%	10.0
Motor	Pump	Two Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	New	Multi-Family	Per Pool	0%	4,377	3,331	24%	1,046	0.33	0.32	0.031%	0.030%	10.0
Motor	Pump	Two Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	Turnover	Multi-Family	Per Pool	0%	4,377	3,331	24%	1,046	0.33	0.32	0.031%	0.030%	10.0
Motor	Pump	Two Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	New	Single Family	Per Pool	0%	4,377	3,331	24%	1,046	0.33	0.32	0.031%	0.030%	10.0
Motor	Pump	Two Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	Turnover	Single Family	Per Pool	0%	4,377	3,331	24%	1,046	0.33	0.32	0.031%	0.030%	10.0
Motor	Pump	Variable Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	New	Manufactured Home	Per Pool	57%	4,377	1,215	72%	3,162	0.65	0.37	0.021%	0.012%	10.0
Motor	Pump	Variable Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	Turnover	Manufactured Home	Per Pool	57%	4,377	1,215	72%	3,162	0.65	0.37	0.021%	0.012%	10.0
Motor	Pump	Variable Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	New	Multi-Family	Per Pool	57%	4,377	1,215	72%	3,162	0.65	0.37	0.021%	0.012%	10.0
Motor	Pump	Variable Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	Turnover	Multi-Family	Per Pool	57%	4,377	1,215	72%	3,162	0.65	0.37	0.021%	0.012%	10.0
Motor	Pump	Variable Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	New	Single Family	Per Pool	57%	4,377	1,215	72%	3,162	0.65	0.37	0.021%	0.012%	10.0
Motor	Pump	Variable Speed Pool Pump	Dual Speed Pool Pump Motor	Single Speed Pool Pump Mo	Equipment	Turnover	Single Family	Per Pool	57%	4,377	1,215	72%	3,162	0.65	0.37	0.021%	0.012%	10.0
Water Heating	Ancillary	Drain Water Heat Recovery	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	Existing	Manufactured Home	Per End Use Con	10%	2,449	2,148	12%	301	0.03	0.06	0.009%	0.019%	15.0
Water Heating	Ancillary	Drain Water Heat Recovery	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	New	Manufactured Home	Per End Use Con	10%	2,449	2,148	12%	301	0.03	0.06	0.009%	0.019%	15.0
Water Heating	Ancillary	Drain Water Heat Recovery	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	Existing	Multi-Family	Per End Use Con	10%	1,654	1,451	12%	203	0.02	0.04	0.009%	0.019%	15.0
Water Heating	Ancillary	Drain Water Heat Recovery	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	New	Multi-Family	Per End Use Con	10%	1,654	1,451	12%	203	0.02	0.04	0.009%	0.019%	15.0
Water Heating	Ancillary	Drain Water Heat Recovery	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	Existing	Single Family	Per End Use Con	10%	1,931	1,693	12%	238	0.02	0.05	0.009%	0.019%	15.0
Water Heating	Ancillary	Drain Water Heat Recovery	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	New	Single Family	Per End Use Con	10%	1,931	1,693	12%	238	0.02	0.05	0.009%	0.019%	15.0
Water Heating	Ancillary	Faucet Aerator	Low-flow lavatory faucet aerat	Federal lavatory flow rate st	Nonequipment	Existing	Manufactured Home	Per unit (3)	41%	2,449	2,409	2%	40	0.00	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Faucet Aerator	Low-flow lavatory faucet aerat	Local standard for lavatory f	Nonequipment	New	Manufactured Home	Per unit (3)	18%	2,449	2,432	1%	17	0.00	0.00	0.009%	0.019%	10.0
Water Heating	Ancillary	Faucet Aerator	Low-flow lavatory faucet aerat	Federal lavatory flow rate st	Nonequipment	Existing	Multi-Family	Per unit (3)	41%	1,654	1,614	2%	40	0.00	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Faucet Aerator	Low-flow lavatory faucet aerat	Local standard for lavatory f	Nonequipment	New	Multi-Family	Per unit (3)	18%	1,654	1,637	1%	17	0.00	0.00	0.009%	0.019%	10.0
Water Heating	Ancillary	Faucet Aerator	Low-flow lavatory faucet aerat	Federal lavatory flow rate st	Nonequipment	Existing	Single Family	Per unit (3)	2%	1,931	1,880	3%	51	0.00	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Faucet Aerator	Low-flow lavatory faucet aerat	Local standard for lavatory f	Nonequipment	New	Single Family	Per unit (3)	14%	1,931	1,910	1%	21	0.00	0.00	0.009%	0.019%	10.0
Water Heating	Unit	Heat Pump Pool Heater	Heat Pump Swimming Pool H	Electric Resistance Swimmi	Equipment	New	Manufactured Home	Per Unit	44%	12,647	2,529	80%	10,118	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Heat Pump Pool Heater	Heat Pump Swimming Pool H	Electric Resistance Swimmi	Equipment	Turnover	Manufactured Home	Per Unit	44%	12,647	2,529	80%	10,118	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Heat Pump Pool Heater	Heat Pump Swimming Pool H	Electric Resistance Swimmi	Equipment	New	Multi-Family	Per Unit	51%	12,647	2,529	80%	10,118	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Heat Pump Pool Heater	Heat Pump Swimming Pool H	Electric Resistance Swimmi	Equipment	Turnover	Multi-Family	Per Unit	51%	12,647	2,529	80%	10,118	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Heat Pump Pool Heater	Heat Pump Swimming Pool H	Electric Resistance Swimmi	Equipment	New	Single Family	Per Unit	44%	12,647	2,529	80%	10,118	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Heat Pump Pool Heater	Heat Pump Swimming Pool H	Electric Resistance Swimmi	Equipment	Turnover	Single Family	Per Unit	44%	12,647	2,529	80%	10,118	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Heat Pump Water Heater	Heat Pump Water Heater (EF	Code-Compliant 50 Gallon I	Equipment	New	Manufactured Home	Per Water Heater	38%	1,751	656	63%	1,095	0.07	0.27	0.007%	0.025%	10.0
Water Heating	Unit	Heat Pump Water Heater	Heat Pump Water Heater (EF	Code-Compliant 50 Gallon I	Equipment	Turnover	Manufactured Home	Per Water Heater	38%	1,751	656	63%	1,095	0.07	0.27	0.007%	0.025%	10.0
Water Heating	Unit	Heat Pump Water Heater	Heat Pump Water Heater (EF	Code-Compliant 50 Gallon I	Equipment	New	Multi-Family	Per Water Heater	44%	1,765	662	63%	1,103	0.07	0.28	0.007%	0.025%	10.0
Water Heating	Unit	Heat Pump Water Heater	Heat Pump Water Heater (EF	Code-Compliant 50 Gallon I	Equipment	Turnover	Multi-Family	Per Water Heater	44%	1,765	662	63%	1,103	0.07	0.28	0.007%	0.025%	10.0
Water Heating	Unit	Heat Pump Water Heater	Heat Pump Water Heater (EF	Code-Compliant 50 Gallon I	Equipment	New	Single Family	Per Water Heater	38%	2,246	842	63%	1,404	0.09	0.35	0.007%	0.025%	10.0
Water Heating	Unit	Heat Pump Water Heater	Heat Pump Water Heater (EF	Code-Compliant 50 Gallon I	Equipment	Turnover	Single Family	Per Water Heater	38%	2,246	842	63%	1,404	0.09	0.35	0.007%	0.025%	10.0
Water Heating	Ancillary	Heat Trap	Heat Trap	Water Heater with 10% Less	Nonequipment	Existing	Manufactured Home	Per End Use Con	0%	2,449	2,356	4%	93	0.01	0.02	0.009%	0.019%	10.0
Water Heating	Ancillary	Heat Trap	Heat Trap	Water Heater with Federal S	Nonequipment	New	Manufactured Home	Per End Use Con	12%	2,449	2,356	4%	93	0.01	0.02	0.009%	0.019%	10.0
Water Heating	Ancillary	Heat Trap	Heat Trap	Water Heater with 10% Less	Nonequipment	Existing	Multi-Family	Per End Use Con	27%	1,654	1,560	6%	94	0.01	0.02	0.009%	0.019%	10.0
Water Heating	Ancillary	Heat Trap	Heat Trap	Water Heater with Federal S	Nonequipment	New	Multi-Family	Per End Use Con	12%	1,654	1,560	6%	94	0.01	0.02	0.009%	0.019%	10.0
Water Heating	Ancillary	Heat Trap	Heat Trap	Water Heater with 10% Less	Nonequipment	Existing	Single Family	Per End Use Con	2%	1,931	1,812	6%	119	0.01	0.02	0.009%	0.019%	10.0
Water Heating	Ancillary	Heat Trap	Heat Trap	Water Heater with Federal S	Nonequipment	New	Single Family	Per End Use Con	9%	1,931	1,812	6%	119	0.01	0.02	0.009%	0.019%	10.0
Water Heating	Insulation	Hot Water Pipe Insulation	1' of Insulated Pipe in Uncond	1' of Pipe in Unconditioned !	Nonequipment	Existing	Manufactured Home	Per S.F.	34%	2,449	2,262	8%	187	0.02	0.04	0.009%	0.019%	13.0
Water Heating	Insulation	Hot Water Pipe Insulation	1' of Insulated Pipe in Uncond	N/A - Retrofit Only	Nonequipment	New	Manufactured Home	Per S.F.	15%	2,449	2,262	8%	187	0.02	0.04	0.009%	0.019%	13.0
Water Heating	Insulation	Hot Water Pipe Insulation	1' of Insulated Pipe in Uncond	1' of Pipe in Unconditioned !	Nonequipment	Existing	Multi-Family	Per S.F.	34%	1,655	1,528	8%	127	0.01	0.02	0.009%	0.019%	13.0
Water Heating	Insulation	Hot Water Pipe Insulation	1' of Insulated Pipe in Uncond	N/A - Retrofit Only	Nonequipment	New	Multi-Family	Per S.F.	15%	1,655	1,528	8%	127	0.01	0.02	0.009%	0.019%	13.0
Water Heating	Insulation	Hot Water Pipe Insulation	1' of Insulated Pipe in Uncond	1' of Pipe in Unconditioned !	Nonequipment	Existing	Single Family	Per S.F.	2%	1,932	1,784	8%	148	0.01	0.03	0.009%	0.019%	13.0
Water Heating	Insulation	Hot Water Pipe Insulation	1' of Insulated Pipe in Uncond	N/A - Retrofit Only	Nonequipment	New	Single Family	Per S.F.	11%	1,932	1,784	8%	148	0.01	0.03	0.009%	0.019%	13.0
Water Heating	Unit	Instantaneous Hot Water System	Instantaneous Hot Water Syste	Standard Efficiency Tank W	Equipment	New	Manufactured Home	Per Water Heater	100%	1,800	1,695	6%	105	(0.00)	0.03	-0.002%	0.028%	20.0
Water Heating	Unit	Instantaneous Hot Water System	Instantaneous Hot Water Syste	Standard Efficiency Tank W	Equipment	Turnover	Manufactured Home	Per Water Heater	100%	1,800	1,695	6%	105	(0.00)	0.03	-0.002%	0.028%	20.0
Water Heating	Unit	Instantaneous Hot Water System	Instantaneous Hot Water Syste	Standard Efficiency Tank W	Equipment	New	Multi-Family	Per Water Heater	100%	1,814	1,708	6%	106	(0.00)	0.03	-0.002%	0.028%	20.0
Water Heating	Unit	Instantaneous Hot Water System	Instantaneous Hot Water Syste	Standard Efficiency Tank W	Equipment	Turnover	Multi-Family	Per Water Heater	100%	1,814	1,708	6%	106	(0.00)	0.03	-0.002%	0.028%	20.0
Water Heating	Unit	Instantaneous Hot Water System	Instantaneous Hot Water Syste	Standard Efficiency Tank W	Equipment	New	Single Family	Per Water Heater	100%	2,308	2,173	6%	135	(0.00)	0.04	-0.002%	0.028%	20.0
Water Heating	Unit	Instantaneous Hot Water System	Instantaneous Hot Water Syste	Standard Efficiency Tank W	Equipment	Turnover	Single Family	Per Water Heater	100%	2,308	2,173	6%	135	(0.00)	0.04	-0.002%	0.028%	20.0
Water Heating	Ancillary	Low Flow Showerhead	Low-Flow Handheld Showerh	Standard Handheld Showerh	Nonequipment	Existing	Manufactured Home	Per End Use Con	36%	2,449	2,258	8%	191	0.02	0.04	0.009%	0.019%	9.0
Water Heating	Ancillary	Low Flow Showerhead	Low-Flow Handheld Showerh	Standard Handheld Showerh	Nonequipment	New	Manufactured Home	Per End Use Con	80%	2,449	2,258	8%	191	0.02	0.04	0.009%	0.019%	9.0
Water Heating	Ancillary	Low Flow Showerhead	Low-Flow Handheld Showerh	Standard Handheld Showerh	Nonequipment	Existing	Multi-Family	Per End Use Con	36%	1,654	1,462	12%	192	0.02	0.04	0.009%	0.019%	9.0
Water Heating	Ancillary	Low Flow Showerhead	Low-Flow Handheld Showerh	Standard Handheld Showerh	Nonequipment	New	Multi-Family	Per End Use Con	80%	1,654	1,462	12%	192	0.02	0.04	0.009%	0.019%	9.0
Water Heating	Ancillary	Low Flow Showerhead	Low-Flow Handheld Showerh	Standard Handheld Showerh	Nonequipment	Existing	Single Family	Per End Use Con	2%	1,931	1,686	13%	245	0.02	0.05	0.009%	0.019%	9.0
Water Heating	Ancillary	Low Flow Showerhead	Low-Flow Handheld Showerh	Standard Handheld Showerh	Nonequipment	New	Single Family	Per End Use Con	80%	1,931	1,686	13%	245	0.02	0.05	0.009%	0.019%	9.0
Water Heating	Unit	Solar Pool Heater	Solar Swimming Pool Heater	Electric Resistance Swimmi	Equipment	New	Manufactured Home	Per Unit	13%	12,647	1,757	86%	10,890	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Solar Pool Heater	Solar Swimming Pool Heater	Electric Resistance Swimmi	Equipment	Turnover	Manufactured Home	Per Unit	13%	12,647	1,757	86%	10,890	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Solar Pool Heater	Solar Swimming Pool Heater	Electric Resistance Swimmi	Equipment	New	Multi-Family	Per Unit	6%	12,647	1,757	86%	10,890	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Solar Pool Heater	Solar Swimming Pool Heater	Electric Resistance Swimmi	Equipment	Turnover	Multi-Family	Per Unit	6%	12,647	1,757	86%	10,890	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Solar Pool Heater	Solar Swimming Pool Heater	Electric Resistance Swimmi	Equipment	New	Single Family	Per Unit	13%	12,647	1,757	86%	10,890	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Solar Pool Heater	Solar Swimming Pool Heater	Electric Resistance Swimmi	Equipment	Turnover	Single Family	Per Unit	13%	12,647	1,757	86%	10,890	0.00	0.00	0.000%	0.000%	15.0
Water Heating	Unit	Solar Water Heater	Solar Powered 50 Gallon Elec	Code-Compliant 50 Gallon I	Equipment	New	Manufactured Home	Per Water Heater	22%	1,751	409	77%	1,343	0.10	0.11	0.007%	0.008%	15.0
Water Heating	Unit	Solar Water Heater	Solar Powered 50 Gallon Elec	Code-Compliant 50 Gallon I	Equipment	Turnover	Manufactured Home	Per Water Heater	22%	1,751	409	77%	1,343	0.10	0.11	0.007%	0.008%	15.0
Water Heating	Unit	Solar Water Heater	Solar Powered 50 Gallon Elec	Code-Compliant 50 Gallon I	Equipment	New	Multi-Family	Per Water Heater	11%	1,765	412	77%	1,353	0.10	0.11	0.007%	0.008%	15.0
Water Heating	Unit	Solar Water Heater	Solar Powered 50 Gallon Elec	Code-Compliant 50 Gallon I	Equipment	Turnover	Multi-Family	Per Water Heater	11%	1,765	412	77%	1,353	0.10	0.11	0.007%	0.008%	15.0
Water Heating	Unit	Solar Water Heater	Solar Powered 50 Gallon Elec	Code-Compliant 50 Gallon I	Equipment	New	Single Family	Per Water Heater	22%	2,246	524	77%	1,722	0.13	0.14	0.007%	0.008%	15.0
Water Heating	Unit	Solar Water Heater	Solar Powered 50 Gallon Elec	Code-Compliant 50 Gallon I	Equipment	Turnover	Single Family	Per Water Heater	22%	2,246	524	77%	1,722	0.13	0.14	0.007%	0.008%	15.0
Water Heating	Ancillary	Thermostatic Shower Restriction Valve	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	Existing	Manufactured Home	Per Valve	0%	2,449	2,389	2%	60	0.01	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Thermostatic Shower Restriction Valve	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	New	Manufactured Home	Per Valve	16%	2,449	2,389	2%	60	0.01	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Thermostatic Shower Restriction Valve	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	Existing	Multi-Family	Per Valve	0%	1,654	1,594	4%	60	0.01	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Thermostatic Shower Restriction Valve	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	New	Multi-Family	Per Valve	16%	1,654	1,594	4%	60	0.01	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Thermostatic Shower Restriction Valve	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	Existing	Single Family	Per Valve	2%	1,931	1,854	4%	77	0.01	0.01	0.009%	0.019%	10.0
Water Heating	Ancillary	Thermostatic Shower Restriction Valve	Hot Water Loop with 50 Gallo	Standard Hot Water Loop wi	Nonequipment	New	Single Family	Per Valve	12%	1,931	1,854	4%	77	0.01	0.01	0.009%	0.019%	10.0
Water Heating	Insulation	Water Heater Blanket	50 Gallon Electric Resistance	Market Average 50 Gallon E	Nonequipment	Existing	Manufactured Home	Per End Use Con	9%	2,449	2,213	10%	236	0.02	0.05	0.009%	0.019%	7.0
Water Heating	Insulation	Water Heater Blanket	50 Gallon Electric Resistance	Code-Compliant 50 Gallon I	Nonequipment	New	Manufactured Home	Per End Use Con	2%	2,449	2,223	9%	226	0.02	0.04	0.009%	0.019%	7.0
Water Heating	Insulation	Water Heater Blanket	50 Gallon Electric Resistance	Market Average 50 Gallon E	Nonequipment	Existing	Multi-Family	Per End Use Con	9%	1,654	1,418	14%	236	0.02	0.05	0.009%	0.019%	7.0
Water Heating	Insulation	Water Heater Blanket	50 Gallon Electric Resistance	Code-Compliant 50 Gallon I	Nonequipment	New	Multi-Family	Per End Use Con	2%	1,654	1,428	14%	226	0.02	0.04	0.009%	0.019%	7.0
Water Heating	Insulation	Water Heater Blanket	50 Gallon Electric Resistance	Market Average 50 Gallon E	Nonequipment	Existing	Single Family	Per End Use Con	9%	1,931	1,695	12%	236	0.02	0.05	0.009%	0.019%	7.0
Water Heating	Insulation	Water Heater Blanket	50 Gallon Electric Resistance	Code-Compliant 50 Gallon I	Nonequipment	New	Single Family	Per End Use Con	2%	1,931	1,705	12%	226	0.02	0.04	0.009%	0.019%	7.0
Water Heating	Ancillary	Water Heater Thermostat Setback	50 Gallon Electric Resistance	Market Average 50 Gallon E	Nonequipment	Existing	Manufactured Home	Per Unit	0%	2,449	2,412	1%	37	0.00	0.01	0.009%	0.019%	4.0
Water Heating	Ancillary	Water Heater Thermostat Setback	50 Gallon Electric Resistance	Code-Compliant 50 Gallon I	Nonequipment	New	Manufactured Home	Per Unit	1%	2,449	2,412	1%	37	0.00	0.01	0.009%	0.019%	4.0
Water Heating	Ancillary	Water Heater Thermostat Setback	50 Gallon Electric Resistance	Market Average 50 Gallon E	Nonequipment	Existing	Multi-Family	Per Unit	0%	1,654	1,617	2%	37	0.00	0.01	0.009%	0.019%	4.0
Water Heating	Ancillary	Water Heater Thermostat Setback	50 Gallon Electric Resistance	Code-Compliant 50 Gallon I	Nonequipment	New	Multi-Family	Per Unit	1%	1,654	1,617	2%	37	0.00	0.01	0.009%	0.019%	4.0

Energy Star Bathroom Ventilating Fan	0.00	0.00	6	10
Solar Attic Fan	0.10	0.00	292	15
Solar Attic Fan	0.07	0.00	212	15
Solar Attic Fan	0.15	0.00	439	15
Solar Powered Pool Pumps	0.67	0.34	2,183	10
Two Speed Pool Pump	0.33	0.32	1,046	10
Variable Speed Pool Pump	0.65	0.37	3,162	10
Drain Water Heat Recovery	0.03	0.06	301	15
Drain Water Heat Recovery	0.02	0.04	203	15
Drain Water Heat Recovery	0.02	0.05	238	15
Faucet Aerator	0.00	0.01	28	10
Faucet Aerator	0.00	0.01	28	10
Faucet Aerator	0.00	0.01	36	10
Heat Pump Pool Heater	0.00	0.00	10,118	15
Heat Pump Water Heater	0.07	0.27	1,095	10
Heat Pump Water Heater	0.07	0.28	1,103	10
Heat Pump Water Heater	0.09	0.35	1,404	10
Heat Trap	0.01	0.02	93	10
Heat Trap	0.01	0.02	94	10
Heat Trap	0.01	0.02	119	10
Hot Water Pipe Insulation	0.02	0.04	187	13
Hot Water Pipe Insulation	0.01	0.02	127	13
Hot Water Pipe Insulation	0.01	0.03	148	13
Instantaneous Hot Water System	0.00	0.03	105	20
Instantaneous Hot Water System	0.00	0.03	106	20
Instantaneous Hot Water System	0.00	0.04	135	20
Low Flow Showerhead	0.02	0.04	191	9
Low Flow Showerhead	0.02	0.04	192	9
Low Flow Showerhead	0.02	0.05	245	9
Solar Pool Heater	0.00	0.00	10,890	15
Solar Water Heater	0.10	0.11	1,343	15
Solar Water Heater	0.10	0.11	1,353	15
Solar Water Heater	0.13	0.14	1,722	15
Solar Water Heater - FPL M&V	0.15	0.19	1,227	
Thermostatic Shower Restriction Valve	0.01	0.01	60	10
Thermostatic Shower Restriction Valve	0.01	0.01	60	10
Thermostatic Shower Restriction Valve	0.01	0.01	77	10
Water Heater Blanket	0.02	0.05	236	7
Water Heater Blanket	0.02	0.05	236	7
Water Heater Blanket	0.02	0.05	236	7
Water Heater Thermostat Setback	0.00	0.01	37	4

Water Heating	Ancillary	Water Heater Thermostat Setback	50 Gallon Electric Resistance	Market Average 50 Gallon E	Nonequipment	Existing	Single Family	Per Unit	2%	1,931	1,894	2%	37	0.00	0.01	0.009%	0.019%	4.0						
Water Heating	Ancillary	Water Heater Thermostat Setback	50 Gallon Electric Resistance	Code-Compliant 50 Gallon I	Nonequipment	New	Single Family	Per Unit	9%	1,931	1,894	2%	37	0.00	0.01	0.009%	0.019%	4.0						
Water Heating	Controls	Water Heater Timeclock	Water Heater Timeclock	Water Heater with 10% Less	Nonequipment	Existing	Manufactured Home	Per End Use Con	48%	2,449	2,327	5%	122	0.00	0.00	0.000%	0.000%	7.0	Water Heater Timeclock	0.00	0.00	122	7
Water Heating	Controls	Water Heater Timeclock	Water Heater Timeclock	Water Heater with Federal S	Nonequipment	New	Manufactured Home	Per End Use Con	45%	2,449	2,327	5%	122	0.00	0.00	0.000%	0.000%	7.0	Water Heater Timeclock	0.00	0.00	83	7
Water Heating	Controls	Water Heater Timeclock	Water Heater Timeclock	Water Heater with 10% Less	Nonequipment	Existing	Multi-Family	Per End Use Con	21%	1,654	1,571	5%	83	0.00	0.00	0.000%	0.000%	7.0	Water Heater Timeclock	0.00	0.00	97	7
Water Heating	Controls	Water Heater Timeclock	Water Heater Timeclock	Water Heater with Federal S	Nonequipment	New	Multi-Family	Per End Use Con	45%	1,654	1,571	5%	83	0.00	0.00	0.000%	0.000%	7.0					
Water Heating	Controls	Water Heater Timeclock	Water Heater Timeclock	Water Heater with 10% Less	Nonequipment	Existing	Single Family	Per End Use Con	22%	1,931	1,834	5%	97	0.00	0.00	0.000%	0.000%	7.0					
Water Heating	Controls	Water Heater Timeclock	Water Heater Timeclock	Water Heater with Federal S	Nonequipment	New	Single Family	Per End Use Con	18%	1,931	1,834	5%	97	0.00	0.00	0.000%	0.000%	7.0					
Whole Home	Controls	Home Energy Management System	Typical HVAC by Building Ty	Typical HVAC by Building `	Nonequipment	Existing	Manufactured Home	Per End Use Con	7%	4,992	4,627	7%	366	0.06	0.03	0.015%	0.008%	11.0	Home Energy Management System	0.06	0.03	366	11
Whole Home	Controls	Home Energy Management System	Typical HVAC by Building Ty	Typical HVAC by Building `	Nonequipment	New	Manufactured Home	Per End Use Con	7%	4,992	4,627	7%	366	0.06	0.04	0.015%	0.010%	11.0	Home Energy Management System	0.04	0.02	264	11
Whole Home	Controls	Home Energy Management System	Typical HVAC by Building Ty	Typical HVAC by Building `	Nonequipment	Existing	Multi-Family	Per End Use Con	3%	3,621	3,357	7%	264	0.04	0.02	0.015%	0.008%	11.0	Home Energy Management System	0.08	0.04	534	11
Whole Home	Controls	Home Energy Management System	Typical HVAC by Building Ty	Typical HVAC by Building `	Nonequipment	New	Multi-Family	Per End Use Con	3%	3,621	3,357	7%	264	0.04	0.03	0.015%	0.010%	11.0					
Whole Home	Controls	Home Energy Management System	Typical HVAC by Building Ty	Typical HVAC by Building `	Nonequipment	Existing	Single Family	Per End Use Con	1%	7,403	6,869	7%	534	0.08	0.04	0.015%	0.008%	11.0					
Whole Home	Controls	Home Energy Management System	Typical HVAC by Building Ty	Typical HVAC by Building `	Nonequipment	New	Single Family	Per End Use Con	1%	7,403	6,869	7%	534	0.08	0.05	0.015%	0.010%	11.0					

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#	ID	Code	No	Category	Type	Measure Name	Sum kW Red @ Meter	Win kW Red @ Meter	Ann kWh Red @ Meter	Load Shifting %	Rate Class	Measure Life
1	RM0N101	RM0N	101	Appliances	Electronics	ENERGY STAR Air Purifier	0.09	0.06	642	0%	RS	9
2	RM0E101	RM0E	101	Appliances	Electronics	ENERGY STAR Air Purifier	0.09	0.06	642	0%	RS	9
3	RMFN101	RMFN	101	Appliances	Electronics	ENERGY STAR Air Purifier	0.09	0.06	642	0%	RS	9
4	RMFE101	RMFE	101	Appliances	Electronics	ENERGY STAR Air Purifier	0.09	0.06	642	0%	RS	9
5	RSFN101	RSFN	101	Appliances	Electronics	ENERGY STAR Air Purifier	0.09	0.06	642	0%	RS	9
6	RSFE101	RSFE	101	Appliances	Electronics	ENERGY STAR Air Purifier	0.09	0.06	642	0%	RS	9
7	RM0N102	RM0N	102	Appliances	Electronics	ENERGY STAR Audio-Video Equipment	0.00	0.00	80	0%	RS	5
8	RM0E102	RM0E	102	Appliances	Electronics	ENERGY STAR Audio-Video Equipment	0.00	0.00	80	0%	RS	5
9	RMFN102	RMFN	102	Appliances	Electronics	ENERGY STAR Audio-Video Equipment	0.00	0.00	80	0%	RS	5
10	RMFE102	RMFE	102	Appliances	Electronics	ENERGY STAR Audio-Video Equipment	0.00	0.00	80	0%	RS	5
11	RSFN102	RSFN	102	Appliances	Electronics	ENERGY STAR Audio-Video Equipment	0.00	0.00	80	0%	RS	5
12	RSFE102	RSFE	102	Appliances	Electronics	ENERGY STAR Audio-Video Equipment	0.00	0.00	80	0%	RS	5
13	RM0N103	RM0N	103	Appliances	Laundry	ENERGY STAR Clothes Dryer	0.02	0.01	146	0%	RS	11
14	RM0E103	RM0E	103	Appliances	Laundry	ENERGY STAR Clothes Dryer	0.02	0.01	146	0%	RS	11
15	RMFN103	RMFN	103	Appliances	Laundry	ENERGY STAR Clothes Dryer	0.02	0.01	146	0%	RS	11
16	RMFE103	RMFE	103	Appliances	Laundry	ENERGY STAR Clothes Dryer	0.02	0.01	146	0%	RS	11
17	RSFN103	RSFN	103	Appliances	Laundry	ENERGY STAR Clothes Dryer	0.02	0.01	146	0%	RS	11
18	RSFE103	RSFE	103	Appliances	Laundry	ENERGY STAR Clothes Dryer	0.02	0.01	146	0%	RS	11
19	RM0N104	RM0N	104	Appliances	Laundry	ENERGY STAR Clothes Washer	0.09	0.05	545	0%	RS	11
20	RM0E104	RM0E	104	Appliances	Laundry	ENERGY STAR Clothes Washer	0.09	0.05	545	0%	RS	11
21	RMFN104	RMFN	104	Appliances	Laundry	ENERGY STAR Clothes Washer	0.09	0.05	545	0%	RS	11
22	RMFE104	RMFE	104	Appliances	Laundry	ENERGY STAR Clothes Washer	0.09	0.05	545	0%	RS	11
23	RSFN104	RSFN	104	Appliances	Laundry	ENERGY STAR Clothes Washer	0.09	0.05	545	0%	RS	11
24	RSFE104	RSFE	104	Appliances	Laundry	ENERGY STAR Clothes Washer	0.09	0.05	545	0%	RS	11
25	RM0N105	RM0N	105	Appliances	Kitchen	ENERGY STAR Dishwasher	0.00	0.00	40	0%	RS	10
26	RM0E105	RM0E	105	Appliances	Kitchen	ENERGY STAR Dishwasher	0.00	0.00	40	0%	RS	10
27	RMFN105	RMFN	105	Appliances	Kitchen	ENERGY STAR Dishwasher	0.00	0.00	40	0%	RS	10
28	RMFE105	RMFE	105	Appliances	Kitchen	ENERGY STAR Dishwasher	0.00	0.00	40	0%	RS	10
29	RSFN105	RSFN	105	Appliances	Kitchen	ENERGY STAR Dishwasher	0.00	0.00	40	0%	RS	10
30	RSFE105	RSFE	105	Appliances	Kitchen	ENERGY STAR Dishwasher	0.00	0.00	40	0%	RS	10
31	RM0N106	RM0N	106	Appliances	Kitchen	ENERGY STAR Freezer	0.01	0.01	66	0%	RS	11
32	RM0E106	RM0E	106	Appliances	Kitchen	ENERGY STAR Freezer	0.01	0.01	66	0%	RS	11
33	RMFN106	RMFN	106	Appliances	Kitchen	ENERGY STAR Freezer	0.01	0.01	66	0%	RS	11
34	RMFE106	RMFE	106	Appliances	Kitchen	ENERGY STAR Freezer	0.01	0.01	66	0%	RS	11
35	RSFN106	RSFN	106	Appliances	Kitchen	ENERGY STAR Freezer	0.01	0.01	66	0%	RS	11
36	RSFE106	RSFE	106	Appliances	Kitchen	ENERGY STAR Freezer	0.01	0.01	66	0%	RS	11
37	RM0N107	RM0N	107	Appliances	Electronics	ENERGY STAR Imaging Equipment	0.01	0.01	128	0%	RS	5
38	RM0E107	RM0E	107	Appliances	Electronics	ENERGY STAR Imaging Equipment	0.01	0.01	128	0%	RS	5
39	RMFN107	RMFN	107	Appliances	Electronics	ENERGY STAR Imaging Equipment	0.01	0.01	128	0%	RS	5
40	RMFE107	RMFE	107	Appliances	Electronics	ENERGY STAR Imaging Equipment	0.01	0.01	128	0%	RS	5
41	RSFN107	RSFN	107	Appliances	Electronics	ENERGY STAR Imaging Equipment	0.01	0.01	128	0%	RS	5
42	RSFE107	RSFE	107	Appliances	Electronics	ENERGY STAR Imaging Equipment	0.01	0.01	128	0%	RS	5
43	RM0N108	RM0N	108	Appliances	Electronics	ENERGY STAR Personal Computer	0.02	0.00	120	0%	RS	4
44	RM0E108	RM0E	108	Appliances	Electronics	ENERGY STAR Personal Computer	0.02	0.00	120	0%	RS	4
45	RMFN108	RMFN	108	Appliances	Electronics	ENERGY STAR Personal Computer	0.02	0.00	120	0%	RS	4
46	RMFE108	RMFE	108	Appliances	Electronics	ENERGY STAR Personal Computer	0.02	0.00	120	0%	RS	4
47	RSFN108	RSFN	108	Appliances	Electronics	ENERGY STAR Personal Computer	0.02	0.00	120	0%	RS	4
48	RSFE108	RSFE	108	Appliances	Electronics	ENERGY STAR Personal Computer	0.02	0.00	120	0%	RS	4
49	RM0N109	RM0N	109	Appliances	Kitchen	ENERGY STAR Refrigerator	0.01	0.00	134	0%	RS	14
50	RM0E109	RM0E	109	Appliances	Kitchen	ENERGY STAR Refrigerator	0.01	0.00	134	0%	RS	14
51	RMFN109	RMFN	109	Appliances	Kitchen	ENERGY STAR Refrigerator	0.01	0.00	134	0%	RS	14
52	RMFE109	RMFE	109	Appliances	Kitchen	ENERGY STAR Refrigerator	0.01	0.00	134	0%	RS	14
53	RSFN109	RSFN	109	Appliances	Kitchen	ENERGY STAR Refrigerator	0.01	0.00	134	0%	RS	14
54	RSFE109	RSFE	109	Appliances	Kitchen	ENERGY STAR Refrigerator	0.01	0.00	134	0%	RS	14
55	RM0N110	RM0N	110	Appliances	Electronics	ENERGY STAR TV	0.01	0.00	38	0%	RS	6
56	RM0E110	RM0E	110	Appliances	Electronics	ENERGY STAR TV	0.01	0.00	38	0%	RS	6
57	RMFN110	RMFN	110	Appliances	Electronics	ENERGY STAR TV	0.01	0.00	38	0%	RS	6
58	RMFE110	RMFE	110	Appliances	Electronics	ENERGY STAR TV	0.01	0.00	38	0%	RS	6
59	RSFN110	RSFN	110	Appliances	Electronics	ENERGY STAR TV	0.01	0.00	38	0%	RS	6
60	RSFE110	RSFE	110	Appliances	Electronics	ENERGY STAR TV	0.01	0.00	38	0%	RS	6
61	RM0N111	RM0N	111	Appliances	Laundry	Heat Pump Clothes Dryer	0.03	0.02	216	0%	RS	12
62	RM0E111	RM0E	111	Appliances	Laundry	Heat Pump Clothes Dryer	0.03	0.02	216	0%	RS	12
63	RMFN111	RMFN	111	Appliances	Laundry	Heat Pump Clothes Dryer	0.03	0.02	216	0%	RS	12
64	RMFE111	RMFE	111	Appliances	Laundry	Heat Pump Clothes Dryer	0.03	0.02	216	0%	RS	12
65	RSFN111	RSFN	111	Appliances	Laundry	Heat Pump Clothes Dryer	0.03	0.02	216	0%	RS	12
66	RSFE111	RSFE	111	Appliances	Laundry	Heat Pump Clothes Dryer	0.03	0.02	216	0%	RS	12
67	RM0N112	RM0N	112	Appliances	Kitchen	High Efficiency Convection Oven	0.02	0.01	84	0%	RS	12
68	RM0E112	RM0E	112	Appliances	Kitchen	High Efficiency Convection Oven	0.02	0.01	84	0%	RS	12
69	RMFN112	RMFN	112	Appliances	Kitchen	High Efficiency Convection Oven	0.02	0.01	84	0%	RS	12
70	RMFE112	RMFE	112	Appliances	Kitchen	High Efficiency Convection Oven	0.02	0.01	84	0%	RS	12
71	RSFN112	RSFN	112	Appliances	Kitchen	High Efficiency Convection Oven	0.02	0.01	84	0%	RS	12
72	RSFE112	RSFE	112	Appliances	Kitchen	High Efficiency Convection Oven	0.02	0.01	84	0%	RS	12
73	RM0N113	RM0N	113	Appliances	Kitchen	High Efficiency Induction Cooktop	0.13	0.03	534	0%	RS	10
74	RM0E113	RM0E	113	Appliances	Kitchen	High Efficiency Induction Cooktop	0.13	0.03	534	0%	RS	10
75	RMFN113	RMFN	113	Appliances	Kitchen	High Efficiency Induction Cooktop	0.13	0.03	534	0%	RS	10
76	RMFE113	RMFE	113	Appliances	Kitchen	High Efficiency Induction Cooktop	0.13	0.03	534	0%	RS	10
77	RSFN113	RSFN	113	Appliances	Kitchen	High Efficiency Induction Cooktop	0.13	0.03	534	0%	RS	10
78	RSFE113	RSFE	113	Appliances	Kitchen	High Efficiency Induction Cooktop	0.13	0.03	534	0%	RS	10
79	RM0E114	RM0E	114	Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	0.11	0.04	1,053	0%	RS	5
80	RM0N114	RM0N	114	Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	0.11	0.04	1,053	0%	RS	5
81	RMFE114	RMFE	114	Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	0.11	0.04	1,053	0%	RS	5
82	RMFN114	RMFN	114	Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	0.11	0.04	1,053	0%	RS	5
83	RSFE114	RSFE	114	Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	0.11	0.04	1,053	0%	RS	5
84	RSFN114	RSFN	114	Appliances	Kitchen	Removal of 2nd Refrigerator/Freezer	0.11	0.04	1,053	0%	RS	5
85	RM0E115	RM0E	115	Appliances	Electronics	Smart Power Strip	0.01	0.00	54	0%	RS	5
86	RM0N115	RM0N	115	Appliances	Electronics	Smart Power Strip	0.01	0.00	54	0%	RS	5
87	RMFE115	RMFE	115	Appliances	Electronics	Smart Power Strip	0.01	0.00	54	0%	RS	5
88	RMFN115	RMFN	115	Appliances	Electronics	Smart Power Strip	0.01	0.00	54	0%	RS	5
89	RSFE115	RSFE	115	Appliances	Electronics	Smart Power Strip	0.01	0.00	54	0%	RS	5
90	RSFN115	RSFN	115	Appliances	Electronics	Smart Power Strip	0.01	0.00	54	0%	RS	5
91	RM0E201	RM0E	201	Building Envelope	Sealing	Air Sealing/Infiltration Control	0.12	0.00	204	0%	RS	11
92	RMFE201	RMFE	201	Building Envelope	Sealing	Air Sealing/Infiltration Control	0.15	0.00	253	0%	RS	11
93	RSFE201	RSFE	201	Building Envelope	Sealing	Air Sealing/Infiltration Control	0.32	0.02	529	0%	RS	11
94	RM0E202	RM0E	202	Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	0.07	0.29	190	0%	RS	20
95	RM0N202	RM0N	202	Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	0.07	0.29	190	0%	RS	20
96	RMFE202	RMFE	202	Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	0.13	0.26	323	0%	RS	20
97	RMFN202	RMFN	202	Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	0.13	0.26	323	0%	RS	20
98	RSFE202	RSFE	202	Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	0.20	0.48	529	0%	RS	20
99	RSFN202	RSFN	202	Building Envelope	Insulation	Ceiling Insulation (R12 to R38)	0.20	0.48	529	0%	RS	20
100	RM0E203	RM0E	203	Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	0.03	0.14	93	0%	RS	20
101	RM0N203	RM0N	203	Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	0.03	0.14	93	0%	RS	20
102	RMFE203	RMFE	203	Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	0.06	0.13	157	0%	RS	20
103	RMFN203	RMFN	203	Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	0.06	0.13	157	0%	RS	20
104	RSFE203	RSFE	203	Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	0.10	0.24	264	0%	RS	20
105	RSFN203	RSFN	203	Building Envelope	Insulation	Ceiling Insulation (R19 to R38)	0.10	0.24	264	0%	RS	20
106	RM0E204	RM0E	204	Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	0.27	1.17	763	0%	RS	20
107	RM0N204	RM0N	204	Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	0.27	1.17	763	0%	RS	20
108	RMFE204	RMFE	204	Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	0.50	1.02	1,265	0%	RS	20
109	RMFN204	RMFN	204	Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	0.50	1.02	1,265	0%	RS	20
110	RSFE204	RSFE	204	Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	0.78	1.91	2,098	0%	RS	20
111	RSFN204	RSFN	204	Building Envelope	Insulation	Ceiling Insulation (R2 to R38)	0.78	1.91	2,098	0%	RS	20
112	RM0E205	RM0E	205	Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	0.01	0.04	27	0%	RS	20
113	RM0N205	RM0N	205	Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	0.01	0.04	27	0%	RS	20
114	RMFE205	RMFE	205	Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	0.02	0.00	40	0%	RS	20
115	RMFN205	RMFN	205	Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	0.02	0.00	40	0%	RS	20
116	RSFE205	RSFE	205	Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	0.03	0.06	69	0%	RS	20
117	RSFN205	RSFN	205	Building Envelope	Insulation	Ceiling Insulation (R30 to R38)	0.03	0.06	69	0%	RS	20
118	RM0E206	RM0E	206	Building Envelope	Insulation	Duct Insulation	0.04	0.00	60	0%	RS	15
119	RMFE206	RMFE	206	Building Envelope	Insulation	Duct Insulation	0.04	0.00	74	0%	RS	15
120	RSFE206	RSFE	206	Building Envelope	Insulation	Duct Insulation	0.09	0.00	151	0%	RS	15
121	RM0E207	RM0E	207	Building Envelope	Roof	ENERGY STAR Certified Roof Products	0.22	0.01	367	0%	RS	20
122	RM0N207	RM0N	207	Building Envelope	Roof	ENERGY STAR Certified Roof Products	0.22	0.01	367	0%	RS	20
123	RMFE207	RMFE	207	Building Envelope	Roof	ENERGY STAR Certified Roof Products	0.27	0.01	453	0%	RS	20
124	RMFN207	RMFN	207	Building Envelope	Roof	ENERGY STAR Certified Roof Products	0.27	0.01	453	0%	RS	20
125	RSFE207	RSFE	207	Building Envelope	Roof	ENERGY STAR Certified Roof Products	0.56	0.01	925	0%	RS	20
126	RSFN207	RSFN	207	Building Envelope	Roof	ENERGY STAR Certified Roof Products	0.56	0.01	925	0%	RS	20
127	RM0E208	RM0E	208	Building Envelope	Insulation	ENERGY STAR Door	0.02	0.08	131	0%	RS	20
128	RM0N208	RM0N	208	Building Envelope	Insulation	ENERGY STAR Door	0.01	0.05	93	0%	RS	20
129	RMFE208	RMFE	208	Building Envelope	Insulation	ENERGY STAR Door	0.02	0.08	131	0%	RS	20
130	RMFN208	RMFN	208	Building Envelope	Insulation	ENERGY STAR Door	0.01	0.05	93	0%	RS	20
131	RSFE208	RSFE	208	Building Envelope	Insulation	ENERGY STAR Door	0.02	0.08	131	0%	RS	20
132	RSFN208	RSFN	208	Building Envelope	Insulation	ENERGY STAR Door	0.01	0.05	93	0%	RS	20
133	RM0E209	RM0E	209	Building Envelope	Window	ENERGY STAR Windows	0.02	0.06	188	0%	RS	20
134	RM0N209	RM0N	209	Building Envelope	Window	ENERGY STAR Windows	0.00	0.01	73	0%	RS	20
135	RMFE209	RMFE	209	Building Envelope	Window	ENERGY STAR Windows	0.02	0.05	147	0%	RS	20
136	RMFN209	RMFN	209	Building Envelope	Window	ENERGY STAR Windows	0.00	0.01	56	0%	RS	20
137	RSFE209	RSFE	209	Building Envelope	Window	ENERGY STAR Windows	0.03	0.07	222	0%	RS	20
138	RSFN209	RSFN	209	Building Envelope	Window	ENERGY STAR Windows	0.00	0.02	90	0%	RS	20
139	RM0E210	RM0E	210	Building Envelope	Insulation	Floor Insulation	0.00	0.01	18	0%	RS	20
140	RMFE210	RMFE	210	Building Envelope	Insulation	Floor Insulation	0.00	0.00	1	0%	RS	20
141	RSFE210	RSFE	210	Building Envelope	Insulation	Floor Insulation	0.00	0.01	15	0%	RS	20
142	RM0E211	RM0E	211	Building Envelope	Roof	Green Roof	0.26	0.01	430	0%	RS	20
143	RM0N211	RM0N	211	Building Envelope	Roof	Green Roof	0.26	0.01	430	0%	RS	20
144	RMFE211	RMFE	211	Building Envelope	Roof	Green Roof	0.32	0.01	531	0%	RS	20
145	RMFN211	RMFN	211	Building Envelope	Roof	Green Roof	0.32	0.01	531	0%	RS	20
146	RSFE211	RSFE	211	Building Envelope	Roof	Green Roof	0.66	0.01	1,085	0%	RS	20
147	RSFN211	RSFN	211	Building Envelope	Roof	Green Roof	0.66	0.01	1,085	0%	RS	20
148	RM0E212	RM0E	212	Building Envelope	Roof	Radiant Barrier	0.10	0.14	294	0%	RS	20
149	RM0N212	RM0N	212	Building Envelope	Roof	Radiant Barrier	0.10	0.14	294	0%	RS	20
150	RMFE212	RMFE	212	Building Envelope	Roof	Radiant Barrier	0.12	0.17	362	0%	RS	20
151	RMFN212	RMFN	212	Building Envelope	Roof	Radiant Barrier	0.12	0.17	362	0%	RS	20
152	RSFE212	RSFE	212	Building Envelope	Roof	Radiant Barrier	0.25	0.36	740	0%	RS	20
153	RSFN212	RSFN	212	Building Envelope	Roof	Radiant Barrier	0.25	0.36	740	0%	RS	20
154	RM0E213	RM0E	213	Building Envelope	Insulation	Sealed crawlspace	0.00	0.03	40	0%	RS	11
155	RMFE213	RMFE	213	Building Envelope	Insulation	Sealed crawlspace	0.00	0.00	2	0%	RS	11
156	RSFE213	RSFE	213	Building Envelope	Insulation	Sealed crawlspace	0.00	0.02	33	0%	RS	11
157	RM0E214	RM0E	214	Building Envelope	Insulation	Spray Foam Insulation (Base R12)	0.14	0.29	248	0%	RS	20
158	RM0N214	RM0N	214	Building Envelope	Insulation	Spray Foam Insulation (Base R12)	0.14	0.29	248	0%	RS	20

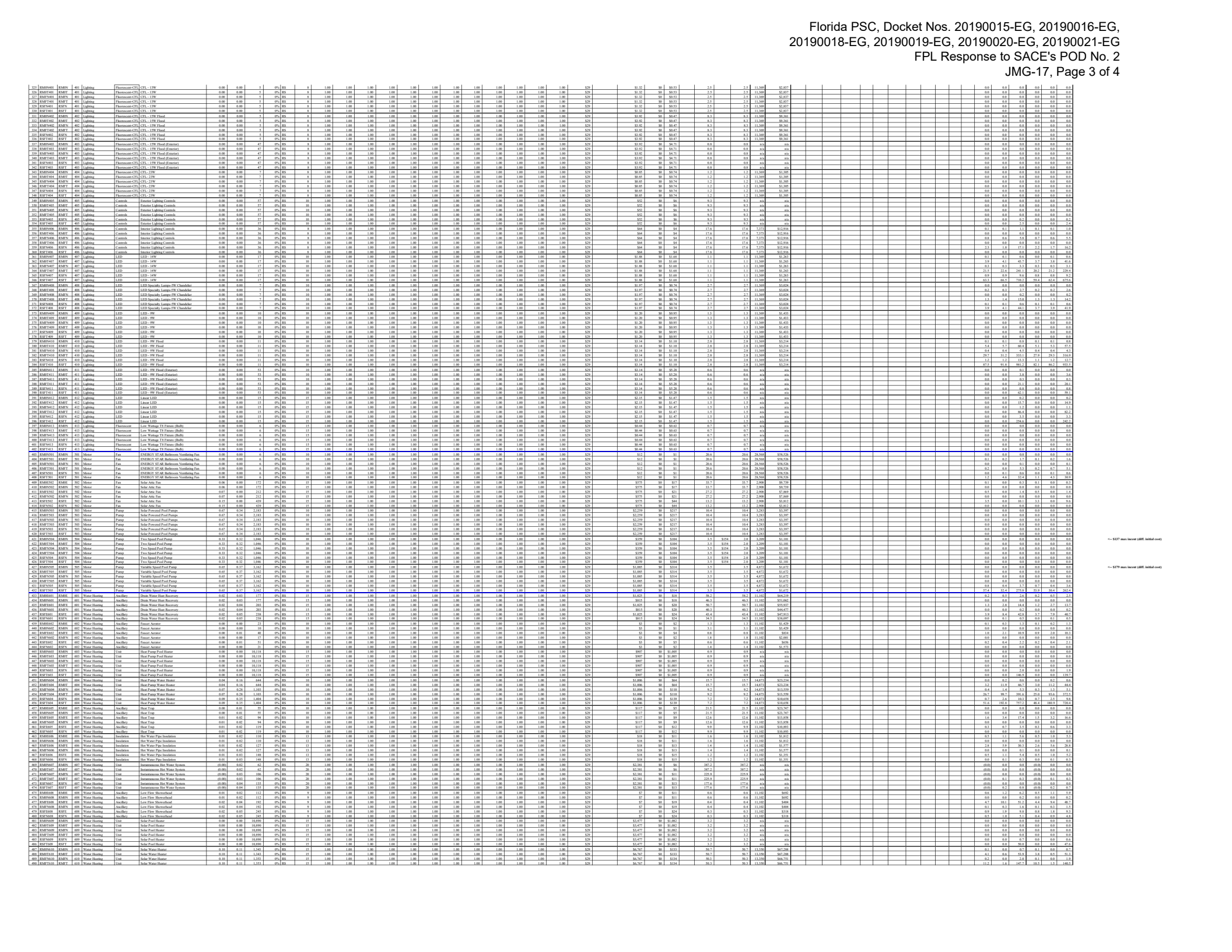
#	Billing kW/Mo January	Billing kW/Mo February	Billing kW/Mo March	Billing kW/Mo April	Billing kW/Mo May	Billing kW/Mo June	Billing kW/Mo July	Billing kW/Mo August	Billing kW/Mo September	Billing kW/Mo October	Billing kW/Mo November	Billing kW/Mo December	Admin 1-Time Cost	Admin Recurring Cost	Participant Equipment Cost	Part. O&M Cost	Bill Savs	RIM Max Incent	RIM Simple Payback	TRC Max Incent	TRC Simple Payback	kWh / kW	$$$ / kW
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$64		0.0		0.0	7,546	$0
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$64		0.0		0.0	7,546	$0
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$64		0.0		0.0	7,546	$0
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$64		0.0		0.0	7,546	$0
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$64		0.0		0.0	7,546	$0
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$64		0.0		0.0	7,546	$0
7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$135	$0	$8		16.9		16.9	n/a	n/a
8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$135	$0	$8		16.9		16.9	n/a	n/a
9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$135	$0	$8		16.9		16.9	n/a	n/a
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$135	$0	$8		16.9		16.9	n/a	n/a
11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$135	$0	$8		16.9		16.9	n/a	n/a
12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$135	$0	$8		16.9		16.9	n/a	n/a
13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$249	$0	$14		17.2		17.2	6,359	$10,848
14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$249	$0	$14		17.2		17.2	6,359	$10,848
15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$249	$0	$14		17.2		17.2	6,359	$10,848
16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$249	$0	$14		17.2		17.2	6,359	$10,848
17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$249	$0	$14		17.2		17.2	6,359	$10,848
18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$249	$0	$14		17.2		17.2	6,359	$10,848
19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$58	$0	$54		1.1		1.1	6,359	$681
20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$58	$0	$54		1.1		1.1	6,359	$681
21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$58	$0	$54		1.1		1.1	6,359	$681
22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$58	$0	$54		1.1		1.1	6,359	$681
23	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$58	$0	$54		1.1		1.1	6,359	$681
24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$58	$0	$54		1.1		1.1	6,359	$681
25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$4		0.0		0.0	9,134	$0
26	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$4		0.0		0.0	9,134	$0
27	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$4		0.0		0.0	9,134	$0
28	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$4		0.0		0.0	9,134	$0
29	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$4		0.0		0.0	9,134	$0
30	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$4		0.0		0.0	9,134	$0
31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$90	$0	$7		13.8		13.8	7,695	$10,557
32	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$90	$0	$7		13.8		13.8	7,695	$10,557
33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$90	$0	$7		13.8		13.8	7,695	$10,557
34	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$90	$0	$7		13.8		13.8	7,695	$10,557
35	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$90	$0	$7		13.8		13.8	7,695	$10,557
36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$90	$0	$7		13.8		13.8	7,695	$10,557
37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$13		0.0		0.0	11,030	$0
38	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$13		0.0		0.0	11,030	$0
39	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$13		0.0		0.0	11,030	$0
40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$13		0.0		0.0	11,030	$0
41	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$13		0.0		0.0	11,030	$0
42	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$13		0.0		0.0	11,030	$0
43	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$30	$0	$12		2.5		2.5	6,307	$1,570
44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$30	$0	$12		2.5		2.5	6,307	$1,570
45	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$30	$0	$12		2.5		2.5	6,307	$1,570
46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$30	$0	$12		2.5		2.5	6,307	$1,570
47	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$30	$0	$12		2.5		2.5	6,307	$1,570
48	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$30	$0	$12		2.5		2.5	6,307	$1,570
49	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$122	$0	$13		9.2		9.2	9,580	$8,755
50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$122	$0	$13		9.2		9.2	9,580	$8,755
51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$122	$0	$13		9.2		9.2	9,580	$8,755
52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$122	$0	$13		9.2		9.2	9,580	$8,755
53	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$122	$0	$13		9.2		9.2	9,580	$8,755
54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$122	$0	$13		9.2		9.2	9,580	$8,755
55	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$93	$0	$4		24.5		24.5	5,000	$12,178
56	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$93	$0	$4		24.5		24.5	5,000	$12,178
57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$93	$0	$4		24.5		24.5	5,000	$12,178
58	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$93	$0	$4		24.5		24.5	5,000	$12,178
59	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$93	$0	$4		24.5		24.5	5,000	$12,178
60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$93	$0	$4		24.5		24.5	5,000	$12,178
61	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$850	$0	$21		39.6		39.6	6,359	$25,015
62	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$850	$0	$21		39.6		39.6	6,359	$25,015
63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$850	$0	$21		39.6		39.6	6,359	$25,015
64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$850	$0	$21		39.6		39.6	6,359	$25,015
65	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$850	$0	$21		39.6		39.6	6,359	$25,015
66	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$850	$0	$21		39.6		39.6	6,359	$25,015
67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$653	$0	$8		77.9		77.9	4,030	$31,191
68	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$653	$0	$8		77.9		77.9	4,030	$31,191
69	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$653	$0	$8		77.9		77.9	4,030	$31,191
70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$653	$0	$8		77.9		77.9	4,030	$31,191
71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$653	$0	$8		77.9		77.9	4,030	$31,191
72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$653	$0	$8		77.9		77.9	4,030	$31,191
73	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$227	$0	$53		4.3		4.3	4,217	$1,789
74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$227	$0	$53		4.3		4.3	4,217	$1,789
75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$227	$0	$53		4.3		4.3	4,217	$1,789
76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$227	$0	$53		4.3		4.3	4,217	$1,789
77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$227	$0	$53		4.3		4.3	4,217	$1,789
78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$227	$0	$53		4.3		4.3	4,217	$1,789
79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$50	$0	$105		0.5		0.5	9,580	$455
80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$50	$0	$105		0.5		0.5	9,580	$455
81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$50	$0	$105		0.5		0.5	9,580	$455
82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$50	$0	$105		0.5		0.5	9,580	$455
83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$50	$0	$105		0.5		0.5	9,580	$455
84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$50	$0	$105		0.5		0.5	9,580	$455
85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$10	$0	$5		1.9		1.9	9,078	$1,687
86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$10	$0	$5		1.9		1.9	9,078	$1,687
87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$10	$0	$5		1.9		1.9	9,078	$1,687
88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$10	$0	$5		1.9		1.9	9,078	$1,687
89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$10	$0	$5		1.9		1.9	9,078	$1,687
90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$10	$0	$5		1.9		1.9	9,078	$1,687
91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$213	$0	$20		10.5		10.5	1,648	$1,722
92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$343	$0	$25		13.7		13.7	1,651	$2,243
93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$578	$0	$53		11.0		11.0	1,674	$1,831
94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$434	$0	$19		23.1		23.1	2,824	$6,467
95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$434	$0	$19		23.1		23.1	2,824	$6,467
96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$699	$0	$32		21.8		21.8	2,505	$5,424
97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$699	$0	$32		21.8		21.8	2,505	$5,424
98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$842	$0	$53		16.0		16.0	2,689	$4,281
99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$842	$0	$53		16.0		16.0	2,689	$4,281
100	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$372	$0	$9		40.3		40.3	2,824	$11,311
101	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$372	$0	$9		40.3		40.3	2,824	$11,311
102	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$599	$0	$16		38.4		38.4	2,505	$9,563
103	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$599	$0	$16		38.4		38.4	2,505	$9,563
104	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$722	$0	$26		27.5		27.5	2,689	$7,350
105	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$722	$0	$26		27.5		27.5	2,689	$7,350
106	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$523	$0	$76		6.9	$373	2.0	2,824	$1,934
107	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$523	$0	$76		6.9	$373	2.0	2,824	$1,934
108	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$842	$0	$126		6.7	$594	2.0	2,505	$1,668
109	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$842	$0	$126		6.7	$594	2.0	2,505	$1,668
110	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,014	$0	$208		4.9	$602	2.0	2,689	$1,300
111	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,014	$0	$208		4.9	$602	2.0	2,689	$1,300
112	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$274	$0	$3		103.2		103.2	2,824	$28,936
113	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$274	$0	$3		103.2		103.2	2,824	$28,936
114	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$442	$0	$4		111.3		111.3	2,505	$27,689
115	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$442	$0	$4		111.3		111.3	2,505	$27,689
116	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$532	$0	$7		77.7		77.7	2,689	$20,746
117	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$532	$0	$7		77.7		77.7	2,689	$20,746
118	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$465	$0	$6		77.9		77.9	1,662	$12,863
119	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,259	$0	$7		171.2		171.2	1,656	$28,161
120	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,516	$0	$15		100.8		100.8	1,640	$16,422
121	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$36		0.0		0.0	1,662	$0
122	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$36		0.0		0.0	1,662	$0
123	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$45		0.0		0.0	1,656	$0
124	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$45		0.0		0.0	1,656	$0
125	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$92		0.0		0.0	1,640	$0
126	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$0	$0	$92		0.0		0.0	1,640	$0
127	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$278	$0	$13		21.4		21.4	6,972	$14,819
128	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$278	$0	$9		30.2		30.2	6,972	$20,881
129	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$278	$0	$13		21.4		21.4	6,972	$14,819
130	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$278	$0	$9		30.2		30.2	6,972	$20,881
131	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$278	$0	$13		21.4		21.4	6,972	$14,819
132	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$278	$0	$9		30.2		30.2	6,972	$20,881
133	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$360	$0	$19		19.3		19.3	7,941	$15,206
134	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$360	$0	$7		49.6		49.6	n/a	n/a
135	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$360	$0	$15		24.7		24.7	7,941	$19,447
136	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$360	$0	$6		64.7		64.7	n/a	n/a
137	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$360	$0	$22		16.3		16.3	7,941	$12,877
138	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$360	$0	$9		40.3		40.3	n/a	n/a
139	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,135	$0	$2		626.5		626.5	n/a	n/a
140	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,829	$0	$0		18,408.4		18,408.4	n/a	n/a
141	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$2,201	$0	$1		1,477.5		1,477.5	n/a	n/a
142	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$13,440	$0	$43		314.4		314.4	1,662	$51,918
143	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$13,440	$0	$43		314.4		314.4	1,662	$51,918
144	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$21,656	$0	$53		410.9		410.9	1,656	$67,597
145	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$21,656	$0	$53		410.9		410.9	1,656	$67,597
146	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$26,073	$0	$108		241.9		241.9	1,640	$39,420
147	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$26,073	$0	$108		241.9		241.9	1,640	$39,420
148	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$701	$0	$29		24.0		24.0	2,908	$6,938
149	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$701	$0	$29		24.0		24.0	2,908	$6,938
150	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,155	$0	$36		32.1		32.1	2,908	$9,275
151	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,155	$0	$36		32.1		32.1	2,908	$9,275
152	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,414	$0	$74		19.2		19.2	2,908	$5,552
153	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,414	$0	$74		19.2		19.2	2,908	$5,552
154	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$2,835	$0	$4		705.0		705.0	9,840	$689,100
155	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$4,568	$0	$0		20,717.1		20,717.1	9,840	$20,249,160
156	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$5,500	$0	$3		1,662.8		1,662.8	9,840	$1,625,232
157	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,595	$0	$25		64.8		64.8	1,779	$11,455
158	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29		$1,595	$0	$25		64.8		64.8	1,779	$11,455

#	Incentive Non-Recurring Cost	Incentive recurring Cost	kWh % Rev Loss & Bill Savings	External Non-Recurring Credit	NPV Total Benefits	NPV Lost Revs Energy	NPV Lost Revs Demand	NPV Part, Bill Savings	NPV Admin/Cap At $1	NPV Incentiv At $1	NPV O&M At $1	New or Existing Program	Tech Potential S MW (Gen)	Tech Potential W MW (Gen)	Tech Potential GWH (Gen)	Tech Potential S MW (Mtr)	Tech Potential W MW (Mtr)	Tech Potential GWH (Mtr)
1												New	0.0	0.0	0.0	0.0	0.0	0.0
2													0.1	0.1	1.0	0.1	0.1	1.0
3													0.0	0.0	0.1	0.0	0.0	0.1
4													0.7	0.5	5.5	0.7	0.5	5.2
5													0.0	0.0	0.1	0.0	0.0	0.1
6													1.3	0.9	9.6	1.2	0.9	9.2
7												New	0.0	0.0	0.2	0.0	0.0	0.2
8													0.0	0.0	13.4	0.0	0.0	12.8
9													0.0	0.0	1.0	0.0	0.0	0.9
10													0.0	0.0	73.3	0.0	0.0	69.7
11													0.0	0.0	2.9	0.0	0.0	2.8
12													0.0	0.0	215.2	0.0	0.0	204.7
13												New	0.0	0.0	0.3	0.0	0.0	0.2
14													2.9	1.7	18.5	2.8	1.6	17.6
15													0.2	0.1	1.0	0.2	0.1	1.0
16													12.2	7.1	76.4	11.4	6.6	72.6
17													0.6	0.4	3.9	0.6	0.3	3.7
18													46.2	26.9	290.0	43.4	25.2	275.9
19												New	0.0	0.0	0.1	0.0	0.0	0.1
20													0.7	0.4	4.1	0.6	0.4	3.9
21													0.0	0.0	0.2	0.0	0.0	0.2
22													2.7	1.6	17.2	2.6	1.5	16.3
23													0.1	0.1	0.9	0.1	0.1	0.9
24													10.8	6.3	67.5	10.1	5.9	64.2
25												New	0.0	0.0	0.0	0.0	0.0	0.0
26													0.1	0.1	0.7	0.1	0.1	0.7
27													0.0	0.0	0.1	0.0	0.0	0.1
28													0.5	0.6	4.9	0.5	0.6	4.7
29													0.0	0.0	0.2	0.0	0.0	0.2
30													1.7	1.9	15.7	1.6	1.8	14.9
31												New	0.0	0.0	0.1	0.0	0.0	0.1
32													0.5	0.4	4.2	0.5	0.4	4.0
33													0.0	0.0	0.1	0.0	0.0	0.1
34													1.4	1.0	10.7	1.3	0.9	10.2
35													0.1	0.1	1.0	0.1	0.1	0.9
36													9.7	6.7	73.4	9.1	6.3	69.9
37												New	0.0	0.0	0.0	0.0	0.0	0.0
38													0.0	0.0	0.1	0.0	0.0	0.1
39													0.0	0.0	0.0	0.0	0.0	0.0
40													0.0	0.0	0.5	0.0	0.0	0.5
41													0.0	0.0	0.0	0.0	0.0	0.0
42													0.1	0.1	1.6	0.1	0.1	1.5
43												New	0.0	0.0	0.1	0.0	0.0	0.0
44													0.6	0.1	3.9	0.6	0.1	3.7
45													0.0	0.0	0.3	0.0	0.0	0.3
46													3.5	0.8	22.0	3.3	0.7	21.0
47													0.2	0.0	0.9	0.1	0.0	0.9
48													11.1	2.4	68.8	10.4	2.2	65.5
49												New	0.1	0.0	0.5	0.0	0.0	0.5
50													3.8	1.3	35.8	3.6	1.2	34.0
51													0.4	0.1	3.4	0.3	0.1	3.3
52													26.4	8.8	249.5	24.8	8.3	237.4
53													0.8	0.3	7.5	0.7	0.2	7.2
54													56.7	18.9	535.7	53.2	17.7	509.6
55												New	0.0	0.0	0.0	0.0	0.0	0.0
56													0.5	0.3	2.3	0.4	0.3	2.2
57													0.0	0.0	0.2	0.0	0.0	0.2
58													2.6	1.6	12.9	2.4	1.5	12.2
59													0.1	0.1	0.5	0.1	0.1	0.4
60													7.0	4.2	34.7	6.6	4.0	33.0
61												New	0.1	0.0	0.5	0.1	0.0	0.5
62													6.1	3.6	38.5	5.8	3.3	36.6
63													0.3	0.2	2.2	0.3	0.2	2.1
64													25.4	14.7	159.3	23.8	13.8	151.5
65													1.3	0.8	8.2	1.2	0.7	7.8
66													96.4	56.0	605.0	90.5	52.6	575.6
67												New	0.0	0.0	0.0	0.0	0.0	0.0
68													0.3	0.1	1.4	0.3	0.1	1.3
69													0.0	0.0	0.0	0.0	0.0	0.0
70													0.2	0.1	0.8	0.2	0.1	0.7
71													0.0	0.0	0.1	0.0	0.0	0.1
72													2.4	0.8	9.7	2.3	0.8	9.2
73												New	0.0	0.0	0.1	0.0	0.0	0.1
74													1.3	0.3	5.3	1.2	0.3	5.0
75													0.1	0.0	0.5	0.1	0.0	0.5
76													8.9	2.1	36.9	8.3	2.0	35.1
77													0.3	0.1	1.3	0.3	0.1	1.2
78													22.5	5.4	93.5	21.1	5.1	89.0
79												New	0.4	0.1	3.4	0.3	0.1	3.2
80													0.0	0.0	0.0	0.0	0.0	0.0
81													2.5	0.8	23.6	2.3	0.8	22.4
82													0.0	0.0	0.0	0.0	0.0	0.0
83													16.4	5.5	155.2	15.4	5.1	147.6
84													0.0	0.0	0.0	0.0	0.0	0.0
85												New	0.2	0.1	1.6	0.2	0.1	1.5
86													0.0	0.0	0.0	0.0	0.0	0.0
87													1.6	1.2	14.0	1.5	1.1	13.4
88													0.0	0.0	0.2	0.0	0.0	0.2
89													0.6	0.5	5.3	0.6	0.4	5.0
90													0.0	0.0	0.1	0.0	0.0	0.1
91												Existing	12.1	2.6	22.2	11.4	2.4	21.1
92													63.0	17.3	119.8	59.1	16.3	114.0
93													80.2	26.8	157.8	75.2	25.2	150.1
94												New	0.1	1.1	1.5	0.1	1.0	1.4
95													0.0	0.0	0.0	0.0	0.0	0.0
96													1.2	8.8	11.3	1.1	8.2	10.7
97													0.0	0.0	0.0	0.0	0.0	0.0
98													3.1	12.9	20.4	2.9	12.1	19.4
99													0.0	0.0	0.0	0.0	0.0	0.0
100												New	0.0	0.3	0.3	0.0	0.3	0.3
101													0.0	0.0	0.0	0.0	0.0	0.0
102													0.2	1.6	2.0	0.2	1.5	1.9
103													0.0	0.0	0.0	0.0	0.0	0.0
104													0.6	3.1	4.6	0.6	2.9	4.3
105													0.0	0.0	0.0	0.0	0.0	0.0
106												New	0.8	2.2	4.4	0.8	2.0	4.2
107													0.0	0.0	0.0	0.0	0.0	0.0
108													5.3	15.4	27.1	4.9	14.4	25.8
109													0.0	0.0	0.0	0.0	0.0	0.0
110													12.7	31.5	63.1	12.0	29.6	60.0
111													0.0	0.0	0.0	0.0	0.0	0.0
112												New	0.0	1.1	1.1	0.0	1.0	1.0
113													0.0	0.0	0.0	0.0	0.0	0.0
114													0.0	0.0	0.0	0.0	0.0	0.0
115													0.0	0.0	0.0	0.0	0.0	0.0
116													0.0	5.2	5.2	0.0	4.9	4.9
117													0.0	0.0	0.0	0.0	0.0	0.0
118													0.0	0.0	0.0	0.0	0.0	0.0
119													0.0	0.0	0.0	0.0	0.0	0.0
120													0.0	0.0	0.0	0.0	0.0	0.0
121													27.6	5.7	50.3	25.9	5.3	47.9
122													0.4	0.0	0.7	0.4	0.0	0.6
123													139.6	40.1	267.5	131.0	37.6	254.5
124													2.0	0.7	4.0	1.8	0.7	3.8
125													247.2	82.2	486.2	232.0	77.2	462.5
126													3.5	1.3	7.1	3.3	1.3	6.8
127													0.3	1.5	3.1	0.3	1.4	3.0
128													0.0	0.0	0.0	0.0	0.0	0.0
129													1.9	18.6	30.3	1.8	17.4	28.8
130													0.0	0.2	0.2	0.0	0.2	0.2
131													3.1	55.0	74.7	2.9	51.6	71.1
132													0.0	0.6	0.6	0.0	0.6	0.6
133													0.4	2.7	6.1	0.4	2.5	5.8
134													0.0	0.0	0.0	0.0	0.0	0.0
135													2.2	47.8	68.2	2.1	44.8	64.9
136													0.0	0.3	0.5	0.0	0.2	0.4
137													7.2	46.3	102.0	6.7	43.5	97.0
138													0.0	0.3	0.6	0.0	0.3	0.6
139													0.0	0.0	0.0	0.0	0.0	0.0
140													0.0	0.0	0.0	0.0	0.0	0.0
141													0.0	0.0	0.0	0.0	0.0	0.0
142													0.1	0.0	0.2	0.1	0.0	0.2
143													0.0	0.0	0.0	0.0	0.0	0.0
144													0.7	0.2	1.3	0.6	0.2	1.2
145													0.1	0.0	0.2	0.1	0.0	0.2
146													0.6	0.2	1.2	0.6	0.2	1.1
147													1.3	0.5	2.5	1.2	0.5	2.4
148													0.2	0.1	0.6	0.2	0.1	0.6
149													0.0	0.0	0.0	0.0	0.0	0.0
150													0.9	0.5	3.2	0.9	0.4	3.0
151													0.0	0.0	0.1	0.0	0.0	0.0
152													6.0	4.3	20.7	5.6	4.0	19.7
153													0.3	0.2	1.0	0.3	0.2	1.0
154													0.0	0.6	0.0	0.0	0.6	0.0
155													0.0	0.2	0.0	0.0	0.2	0.0
156													0.0	13.5	0.3	0.0	12.7	0.3
157												New	6.2	20.6	32.7	5.8	19.4	31.1
158													0.0	0.0	0.0	0.0	0.0	0.0

kW	1.0654
kWh	1.0511

	RS-1
2020	9.9
2021	10.0
2022	9.9
2023	10.9
2024	11.0
2025	11.2
2026	11.4
2027	11.5
2028	11.8
2029	12.0

159	RMFE214	RMFE	214	Building Envelope	Insulation	Spray Foam Insulation (Base R12)	0.14	0.19	319	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$32	136.6		136.6	2,347	$31,852		16.2	44.9	79.2	15.2	42.1	75.3
160	RMFN214	RMFN	214	Building Envelope	Insulation	Spray Foam Insulation (Base R12)	0.14	0.19	319	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$32	136.6		136.6	2,347	$31,852		0.0	0.0	0.0	0.0	0.0	0.0
161	RSFE214	RSFE	214	Building Envelope	Insulation	Spray Foam Insulation (Base R12)	0.19	0.43	495	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$49	105.9		105.9	2,619	$27,566		73.5	125.7	280.0	69.0	118.0	266.4
162	RSFN214	RSFN	214	Building Envelope	Insulation	Spray Foam Insulation (Base R12)	0.19	0.43	495	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$49	105.9		105.9	2,619	$27,566		0.0	0.0	0.0	0.0	0.0	0.0
163	RM0E215	RM0E	215	Building Envelope	Insulation	Spray Foam Insulation (Base R19)	0.12	0.24	210	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,595	$0	$21	76.5		76.5	1,779	$13,528	New	1.9	7.5	10.0	1.8	7.1	9.6
164	RM0N215	RM0N	215	Building Envelope	Insulation	Spray Foam Insulation (Base R19)	0.12	0.24	210	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,595	$0	$21	76.5		76.5	1,779	$13,528		0.0	0.0	0.0	0.0	0.0	0.0
165	RMFE215	RMFE	215	Building Envelope	Insulation	Spray Foam Insulation (Base R19)	0.11	0.15	256	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$25	170.2		170.2	2,347	$39,686		5.3	8.4	19.8	5.0	7.8	18.9
166	RMFN215	RMFN	215	Building Envelope	Insulation	Spray Foam Insulation (Base R19)	0.11	0.15	256	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$25	170.2		170.2	2,347	$39,686		0.0	0.0	0.0	0.0	0.0	0.0
167	RSFE215	RSFE	215	Building Envelope	Insulation	Spray Foam Insulation (Base R19)	0.15	0.35	395	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$39	132.8		132.8	2,619	$34,542		22.4	24.4	72.6	21.1	22.9	69.1
168	RSFN215	RSFN	215	Building Envelope	Insulation	Spray Foam Insulation (Base R19)	0.15	0.35	395	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$39	132.8		132.8	2,619	$34,542		0.0	0.0	0.0	0.0	0.0	0.0
169	RM0E216	RM0E	216	Building Envelope	Insulation	Spray Foam Insulation (Base R2)	0.26	0.55	471	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,595	$0	$47	34.1		34.1	1,779	$6,024	New	11.2	26.9	54.0	10.5	25.3	51.4
170	RM0N216	RM0N	216	Building Envelope	Insulation	Spray Foam Insulation (Base R2)	0.26	0.55	471	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,595	$0	$47	34.1		34.1	1,779	$6,024		0.0	0.0	0.0	0.0	0.0	0.0
171	RMFE216	RMFE	216	Building Envelope	Insulation	Spray Foam Insulation (Base R2)	0.29	0.40	672	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$67	64.8		64.8	2,347	$15,097		39.0	71.8	158.0	36.6	67.4	150.4
172	RMFN216	RMFN	216	Building Envelope	Insulation	Spray Foam Insulation (Base R2)	0.29	0.40	672	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$67	64.8		64.8	2,347	$15,097		0.0	0.0	0.0	0.0	0.0	0.0
173	RSFE216	RSFE	216	Building Envelope	Insulation	Spray Foam Insulation (Base R2)	0.41	0.93	1,063	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$106	49.3		49.3	2,619	$12,821		147.7	291.5	626.8	138.7	273.6	596.3
174	RSFN216	RSFN	216	Building Envelope	Insulation	Spray Foam Insulation (Base R2)	0.41	0.93	1,063	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$106	49.3		49.3	2,619	$12,821		0.0	0.0	0.0	0.0	0.0	0.0
175	RM0E217	RM0E	217	Building Envelope	Insulation	Spray Foam Insulation (Base R30)	0.10	0.21	184	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,595	$0	$18	87.5		87.5	1,779	$15,456	New	9.6	44.4	50.0	9.0	41.6	47.6
176	RM0N217	RM0N	217	Building Envelope	Insulation	Spray Foam Insulation (Base R30)	0.10	0.21	184	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,316	$0	$18	72.1		72.1	1,779	$12,751		0.2	1.8	1.4	0.2	1.7	1.3
177	RMFE217	RMFE	217	Building Envelope	Insulation	Spray Foam Insulation (Base R30)	0.09	0.00	214	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,323	$0	$21	203.3		203.3	2,347	$47,407		24.0	0.0	59.4	22.6	0.0	56.5
178	RMFN217	RMFN	217	Building Envelope	Insulation	Spray Foam Insulation (Base R30)	0.09	0.00	214	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$3,566	$0	$21	167.7		167.7	2,347	$39,110		0.8	0.0	1.9	0.7	0.0	1.8
179	RSFE217	RSFE	217	Building Envelope	Insulation	Spray Foam Insulation (Base R30)	0.12	0.00	325	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$5,205	$0	$32	161.2		161.2	2,619	$41,954		114.6	0.0	304.1	107.6	0.0	289.3
180	RSFN217	RSFN	217	Building Envelope	Insulation	Spray Foam Insulation (Base R30)	0.12	0.00	325	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$4,294	$0	$32	133.0		133.0	2,619	$34,611		2.4	0.0	6.5	2.3	0.0	6.2
181	RM0E218	RM0E	218	Building Envelope	Insulation	Storm Door	0.02	0.07	113	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$329	$0	$11	29.4		29.4	5,956	$17,416		0.0	0.0	0.0	0.0	0.0	0.0
182	RM0N218	RM0N	218	Building Envelope	Insulation	Storm Door	0.01	0.04	75	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$329	$0	$7	44.4		44.4	5,956	$26,288		0.0	0.0	0.0	0.0	0.0	0.0
183	RMFE218	RMFE	218	Building Envelope	Insulation	Storm Door	0.02	0.07	113	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$329	$0	$11	29.4		29.4	5,956	$17,416		0.0	0.0	0.0	0.0	0.0	0.0
184	RMFN218	RMFN	218	Building Envelope	Insulation	Storm Door	0.01	0.04	75	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$329	$0	$7	44.4		44.4	5,956	$26,288		0.0	0.0	0.0	0.0	0.0	0.0
185	RSFE218	RSFE	218	Building Envelope	Insulation	Storm Door	0.02	0.07	113	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$329	$0	$11	29.4		29.4	5,956	$17,416		0.0	0.0	0.0	0.0	0.0	0.0
186	RSFN218	RSFN	218	Building Envelope	Insulation	Storm Door	0.01	0.04	75	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$329	$0	$7	44.4		44.4	5,956	$26,288		0.0	0.0	0.0	0.0	0.0	0.0
187	RM0E219	RM0E	219	Building Envelope	Insulation	Wall Insulation	0.01	0.10	178	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$742	$0	$18	41.9		41.9	18,120	$75,425		0.8	4.8	6.6	0.8	4.5	6.3
188	RMFE219	RMFE	219	Building Envelope	Insulation	Wall Insulation	0.01	0.07	119	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,228	$0	$12	103.9		103.9	18,120	$186,979		5.3	88.0	105.8	4.9	82.6	100.7
189	RSFE219	RSFE	219	Building Envelope	Insulation	Wall Insulation	0.02	0.25	434	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,886	$0	$43	43.8		43.8	18,120	$78,755		10.5	52.2	74.7	9.9	49.0	71.1
190	RM0E220	RM0E	220	Building Envelope	Window	Window Sun Protection	0.09	(0.04)	59	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$405	$0	$6	68.9		68.9	665	$4,548		4.5	(2.1)	3.0	4.2	(1.9)	2.8
191	RM0N220	RM0N	220	Building Envelope	Window	Window Sun Protection	0.09	(0.04)	59	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$405	$0	$6	68.9		68.9	665	$4,548		0.0	0.0	0.0	0.0	0.0	0.0
192	RMFE220	RMFE	220	Building Envelope	Window	Window Sun Protection	0.19	(0.09)	126	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$652	$0	$12	52.2		52.2	665	$3,449		40.8	(18.7)	26.8	38.3	(17.5)	25.5
193	RMFN220	RMFN	220	Building Envelope	Window	Window Sun Protection	0.19	(0.09)	126	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$652	$0	$12	52.2		52.2	665	$3,449		0.0	0.0	0.0	0.0	0.0	0.0
194	RSFE220	RSFE	220	Building Envelope	Window	Window Sun Protection	0.23	(0.10)	151	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,100	$0	$15	73.4		73.4	665	$4,844		51.9	(23.8)	34.0	48.7	(22.3)	32.4
195	RSFN220	RSFN	220	Building Envelope	Window	Window Sun Protection	0.23	(0.10)	151	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1,100	$0	$15	73.4		73.4	665	$4,844		0.0	0.0	0.0	0.0	0.0	0.0
196	RM0N301	RM0N	301	HVAC	Unit	14 SEER ASHP from base electric resistance he	0.00	0.35	1,242	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$276	$0	$123	2.2	$32	2.0	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
197	RM0T301	RM0T	301	HVAC	Unit	14 SEER ASHP from base electric resistance he	0.00	0.35	1,242	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$276	$0	$123	2.2	$32	2.0	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
198	RMFN301	RMFN	301	HVAC	Unit	14 SEER ASHP from base electric resistance he	0.00	0.40	1,408	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$313	$0	$140	2.2	$36	2.0	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
199	RMFT301	RMFT	301	HVAC	Unit	14 SEER ASHP from base electric resistance he	0.00	0.40	1,408	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$313	$0	$140	2.2	$36	2.0	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
200	RSFN301	RSFN	301	HVAC	Unit	14 SEER ASHP from base electric resistance he	0.00	0.60	2,112	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$469	$0	$210	2.2	$55	2.0	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
201	RSFT301	RSFT	301	HVAC	Unit	14 SEER ASHP from base electric resistance he	0.00	0.60	2,112	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$469	$0	$210	2.2	$55	2.0	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
202	RM0N302	RM0N	302	HVAC	Unit	15 SEER Air Source Heat Pump	0.04	0.12	144	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$571	$0	$14	39.8		39.8	3,818	$15,110		0.0	0.0	0.0	0.0	0.0	0.0
203	RM0T302	RM0T	302	HVAC	Unit	15 SEER Air Source Heat Pump	0.04	0.12	144	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$571	$0	$14	39.8		39.8	3,818	$15,110		0.0	0.0	0.0	0.0	0.0	0.0
204	RMFN302	RMFN	302	HVAC	Unit	15 SEER Air Source Heat Pump	0.07	0.22	301	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$447	$0	$30	15.0		15.0	4,310	$6,403		0.0	0.0	0.0	0.0	0.0	0.0
205	RMFT302	RMFT	302	HVAC	Unit	15 SEER Air Source Heat Pump	0.07	0.22	301	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$447	$0	$30	15.0		15.0	4,310	$6,403		0.0	0.0	0.0	0.0	0.0	0.0
206	RSFN302	RSFN	302	HVAC	Unit	15 SEER Air Source Heat Pump	0.11	0.35	396	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$474	$0	$39	12.0		12.0	3,574	$4,274		0.0	0.0	0.0	0.0	0.0	0.0
207	RSFT302	RSFT	302	HVAC	Unit	15 SEER Air Source Heat Pump	0.11	0.35	396	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$474	$0	$39	12.0		12.0	3,574	$4,274		0.0	0.0	0.0	0.0	0.0	0.0
208	RM0N303	RM0N	303	HVAC	Unit	15 SEER Central AC	0.05	0.00	111	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$398	$0	$11	36.1		36.1	2,133	$7,639		0.0	0.0	0.0	0.0	0.0	0.0
209	RM0T303	RM0T	303	HVAC	Unit	15 SEER Central AC	0.05	0.00	111	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$398	$0	$11	36.1		36.1	2,133	$7,639		0.0	0.0	0.0	0.0	0.0	0.0
210	RMFN303	RMFN	303	HVAC	Unit	15 SEER Central AC	0.10	0.00	232	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$332	$0	$23	14.4		14.4	2,408	$3,446		0.0	0.0	0.0	0.0	0.0	0.0
211	RMFT303	RMFT	303	HVAC	Unit	15 SEER Central AC	0.10	0.00	232	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$332	$0	$23	14.4		14.4	2,408	$3,446		0.0	0.0	0.0	0.0	0.0	0.0
212	RSFN303	RSFN	303	HVAC	Unit	15 SEER Central AC	0.15	0.00	306	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$371	$0	$30	12.2		12.2	1,997	$2,424		0.0	0.0	0.0	0.0	0.0	0.0
213	RSFT303	RSFT	303	HVAC	Unit	15 SEER Central AC	0.15	0.00	306	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$371	$0	$30	12.2		12.2	1,997	$2,424		0.0	0.0	0.0	0.0	0.0	0.0
214	RM0N304	RM0N	304	HVAC	Unit	16 SEER Air Source Heat Pump	0.07	0.23	281	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,191	$0	$28	42.7		42.7	3,818	$16,194		0.0	0.0	0.0	0.0	0.0	0.0
215	RM0T304	RM0T	304	HVAC	Unit	16 SEER Air Source Heat Pump	0.07	0.23	281	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,191	$0	$28	42.7		42.7	3,818	$16,194		0.0	0.0	0.0	0.0	0.0	0.0
216	RMFN304	RMFN	304	HVAC	Unit	16 SEER Air Source Heat Pump	0.14	0.43	586	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,148	$0	$58	19.7		19.7	4,310	$8,445		0.0	0.0	0.0	0.0	0.0	0.0
217	RMFT304	RMFT	304	HVAC	Unit	16 SEER Air Source Heat Pump	0.14	0.43	586	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,148	$0	$58	19.7		19.7	4,310	$8,445		0.0	0.0	0.0	0.0	0.0	0.0
218	RSFN304	RSFN	304	HVAC	Unit	16 SEER Air Source Heat Pump	0.22	0.69	772	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,385	$0	$77	18.1		18.1	3,574	$6,414		0.0	0.0	0.0	0.0	0.0	0.0
219	RSFT304	RSFT	304	HVAC	Unit	16 SEER Air Source Heat Pump	0.22	0.69	772	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,385	$0	$77	18.1		18.1	3,574	$6,414		0.0	0.0	0.0	0.0	0.0	0.0
220	RM0N305	RM0N	305	HVAC	Unit	16 SEER Central AC	0.10	0.00	209	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$838	$0	$21	40.4		40.4	2,133	$8,568		0.0	0.0	0.0	0.0	0.0	0.0
221	RM0T305	RM0T	305	HVAC	Unit	16 SEER Central AC	0.10	0.00	209	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$838	$0	$21	40.4		40.4	2,133	$8,568		0.0	0.0	0.0	0.0	0.0	0.0
222	RMFN305	RMFN	305	HVAC	Unit	16 SEER Central AC	0.18	0.00	435	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$649	$0	$43	15.0		15.0	2,408	$3,592		0.0	0.0	0.0	0.0	0.0	0.0
223	RMFT305	RMFT	305	HVAC	Unit	16 SEER Central AC	0.18	0.00	435	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$649	$0	$43	15.0		15.0	2,408	$3,592		0.0	0.0	0.0	0.0	0.0	0.0
224	RSFN305	RSFN	305	HVAC	Unit	16 SEER Central AC	0.29	0.00	573	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$726	$0	$57	12.8		12.8	1,997	$2,530		0.0	0.0	0.0	0.0	0.0	0.0
225	RSFT305	RSFT	305	HVAC	Unit	16 SEER Central AC	0.29	0.00	573	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$726	$0	$57	12.8		12.8	1,997	$2,530		0.0	0.0	0.0	0.0	0.0	0.0
226	RM0N306	RM0N	306	HVAC	Unit	17 SEER Air Source Heat Pump	0.11	0.33	402	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,825	$0	$40	45.7		45.7	3,818	$17,340		0.0	0.0	0.0	0.0	0.0	0.0
227	RM0T306	RM0T	306	HVAC	Unit	17 SEER Air Source Heat Pump	0.11	0.33	402	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,825	$0	$40	45.7		45.7	3,818	$17,340		0.0	0.0	0.0	0.0	0.0	0.0
228	RMFN306	RMFN	306	HVAC	Unit	17 SEER Air Source Heat Pump	0.19	0.62	838	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,837	$0	$83	22.1		22.1	4,310	$9,449		0.0	0.0	0.0	0.0	0.0	0.0
229	RMFT306	RMFT	306	HVAC	Unit	17 SEER Air Source Heat Pump	0.19	0.62	838	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,837	$0	$83	22.1		22.1	4,310	$9,449		0.0	0.0	0.0	0.0	0.0	0.0
230	RSFN306	RSFN	306	HVAC	Unit	17 SEER Air Source Heat Pump	0.31	0.98	1,104	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,250	$0	$110	20.5		20.5	3,574	$7,285		0.0	0.0	0.0	0.0	0.0	0.0
231	RSFT306	RSFT	306	HVAC	Unit	17 SEER Air Source Heat Pump	0.31	0.98	1,104	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,250	$0	$110	20.5		20.5	3,574	$7,285		0.0	0.0	0.0	0.0	0.0	0.0
232	RM0N307	RM0N	307	HVAC	Unit	17 SEER Central AC	0.14	0.00	306	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,744	$0	$30	57.4		57.4	2,133	$12,165		0.0	0.0	0.0	0.0	0.0	0.0
233	RM0T307	RM0T	307	HVAC	Unit	17 SEER Central AC	0.14	0.00	306	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,744	$0	$30	57.4		57.4	2,133	$12,165		0.0	0.0	0.0	0.0	0.0	0.0
234	RMFN307	RMFN	307	HVAC	Unit	17 SEER Central AC	0.26	0.00	638	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,565	$0	$63	24.7		24.7	2,408	$5,908		0.0	0.0	0.0	0.0	0.0	0.0
235	RMFT307	RMFT	307	HVAC	Unit	17 SEER Central AC	0.26	0.00	638	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,565	$0	$63	24.7		24.7	2,408	$5,908		0.0	0.0	0.0	0.0	0.0	0.0
236	RSFN307	RSFN	307	HVAC	Unit	17 SEER Central AC	0.42	0.00	840	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,350	$0	$83	28.2		28.2	1,997	$5,584		0.0	0.0	0.0	0.0	0.0	0.0
237	RSFT307	RSFT	307	HVAC	Unit	17 SEER Central AC	0.42	0.00	840	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,350	$0	$83	28.2		28.2	1,997	$5,584		0.0	0.0	0.0	0.0	0.0	0.0
238	RM0N308	RM0N	308	HVAC	Unit	18 SEER Air Source Heat Pump	0.13	0.41	490	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,125	$0	$49	43.7		43.7	3,818	$16,566		0.0	0.0	0.0	0.0	0.0	0.0
239	RM0T308	RM0T	308	HVAC	Unit	18 SEER Air Source Heat Pump	0.13	0.41	490	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,125	$0	$49	43.7		43.7	3,818	$16,566		0.0	0.0	0.0	0.0	0.0	0.0
240	RMFN308	RMFN	308	HVAC	Unit	18 SEER Air Source Heat Pump	0.24	0.75	1,021	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,733	$0	$101	26.9		26.9	4,310	$11,534		0.0	0.0	0.0	0.0	0.0	0.0
241	RMFT308	RMFT	308	HVAC	Unit	18 SEER Air Source Heat Pump	0.24	0.75	1,021	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,733	$0	$101	26.9		26.9	4,310	$11,534		0.0	0.0	0.0	0.0	0.0	0.0
242	RSFN308	RSFN	308	HVAC	Unit	18 SEER Air Source Heat Pump	0.38	1.19	1,346	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,013	$0	$134	22.5		22.5	3,574	$8,004		0.0	0.0	0.0	0.0	0.0	0.0
243	RSFT308	RSFT	308	HVAC	Unit	18 SEER Air Source Heat Pump	0.38	1.19	1,346	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,013	$0	$134	22.5		22.5	3,574	$8,004		0.0	0.0	0.0	0.0	0.0	0.0
244	RM0N309	RM0N	309	HVAC	Unit	18 SEER Central AC	0.18	0.00	385	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,541	$0	$38	66.4		66.4	2,133	$14,074		0.0	0.0	0.0	0.0	0.0	0.0
245	RM0T309	RM0T	309	HVAC	Unit	18 SEER Central AC	0.18	0.00	385	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,541	$0	$38	66.4		66.4	2,133	$14,074		0.0	0.0	0.0	0.0	0.0	0.0
246	RMFN309	RMFN	309	HVAC	Unit	18 SEER Central AC	0.33	0.00	803	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,426	$0	$80	30.4		30.4	2,408	$7,273		0.0	0.0	0.0	0.0	0.0	0.0
247	RMFT309	RMFT	309	HVAC	Unit	18 SEER Central AC	0.33	0.00	803	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,426	$0	$80	30.4		30.4	2,408	$7,273		0.0	0.0	0.0	0.0	0.0	0.0
248	RSFN309	RSFN	309	HVAC	Unit	18 SEER Central AC	0.53	0.00	1,058	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,333	$0	$105	31.7		31.7	1,997	$6,290		0.0	0.0	0.0	0.0	0.0	0.0
249	RSFT309	RSFT	309	HVAC	Unit	18 SEER Central AC	0.53	0.00	1,058	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,333	$0	$105	31.7		31.7	1,997	$6,290		0.0	0.0	0.0	0.0	0.0	0.0
250	RM0N310	RM0N	310	HVAC	Unit	21 SEER Air Source Heat Pump	0.19	0.60	723	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,725	$0	$72	37.9		37.9	3,818	$14,390		0.0	0.1	0.1	0.0	0.1	0.1
251	RM0T310	RM0T	310	HVAC	Unit	21 SEER Air Source Heat Pump	0.19	0.60	723	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,725	$0	$72	37.9		37.9	3,818	$14,390		2.1	3.6	7.6	2.0	3.4	7.2
252	RMFN310	RMFN	310	HVAC	Unit	21 SEER Air Source Heat Pump	0.35	1.11	1,508	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,539	$0	$150	30.3		30.3	4,310	$12,974		0.1	0.5	0.4	0.1	0.5	0.4
253	RMFT310	RMFT	310	HVAC	Unit	21 SEER Air Source Heat Pump	0.35	1.11	1,508	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,539	$0	$150	30.3		30.3	4,310	$12,974		6.0	28.8	27.0	5.6	27.1	25.7
254	RSFN310	RSFN	310	HVAC	Unit	21 SEER Air Source Heat Pump	0.56	1.76	1,986	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,740	$0	$197	24.0		24.0	3,574	$8,529		1.2	4.3	4.3	1.1	4.0	4.1
255	RSFT310	RSFT	310	HVAC	Unit	21 SEER Air Source Heat Pump	0.56	1.76	1,986	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,740	$0	$197	24.0		24.0	3,574	$8,529		90.2	258.5	314.6	84.7	242.7	299.3
256	RM0N311	RM0N	311	HVAC	Unit	21 SEER ASHP from base electric resistance he	0.19	0.72	2,638	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,001	$0	$262	11.5		11.5	13,934	$15,848		0.0	0.0	0.2	0.0	0.0	0.2
257	RM0T311	RM0T	311	HVAC	Unit	21 SEER ASHP from base electric resistance he	0.19	0.72	2,638	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,001	$0	$262	11.5		11.5	13,934	$15,848		1.4	2.1	12.8	1.3	2.0	12.2
258	RMFN311	RMFN	311	HVAC	Unit	21 SEER ASHP from base electric resistance he	0.35	0.82	2,990	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,852	$0	$297	16.3		16.3	8,546	$13,869		0.0	0.1	0.4	0.0	0.1	0.4
259	RMFT311	RMFT	311	HVAC	Unit	21 SEER ASHP from base electric resistance he	0.35	0.82	2,990	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,852	$0	$297	16.3		16.3	8,546	$13,869		3.6	6.9	27.6	3.4	6.5	26.2
260	RSFN311	RSFN	311	HVAC	Unit	21 SEER ASHP from base electric resistance he	0.56	1.23	4,485	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$5,209	$0	$445	11.7		11.7	8,069	$9,373		1.0	1.2	5.8	0.9	1.1	5.5
261	RSFT311	RSFT	311	HVAC	Unit	21 SEER ASHP from base electric resistance he	0.56	1.23	4,485	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$5,209	$0	$445	11.7		11.7	8,069	$9,373		71.3	84.7	427.6	66.9	79.5	406.9
262	RM0N312	RM0N	312	HVAC	Unit	21 SEER Central AC	0.27	0.00	578	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,670	$0	$57	64.0		64.0	2,133	$13,554		0.5	0.0	1.1	0.5	0.0	1.0
263	RM0T312	RM0T	312	HVAC	Unit	21 SEER Central AC	0.27	0.00	578	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,670	$0	$57	64.0		64.0	2,133	$13,554		35.3	0.0	74.3	33.1	0.0	70.7
264	RMFN312	RMFN	312	HVAC	Unit	21 SEER Central AC	0.50	0.00	1,205	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,217	$0	$120	35.2		35.2	2,408	$8,428		5.2	0.0	12.4	4.9	0.0	11.8
265	RMFT312	RMFT	312	HVAC	Unit	21 SEER Central AC	0.50	0.00	1,205	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$4,217	$0	$120	35.2		35.2	2,408	$8,428		375.0	0.0	890.8	352.0	0.0	847.5
266	RSFN312	RSFN	312	HVAC	Unit	21 SEER Central AC	0.79	0.00	1,587	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$5,194	$0	$158	32.9		32.9	1,997	$6,534		14.4	0.0	28.5	13.6	0.0	27.1
267	RSFT312	RSFT	312	HVAC	Unit	21 SEER Central AC	0.79	0.00	1,587	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$5,194	$0	$158	32.9		32.9	1,997	$6,534		1,063.6	0.0	2,095.1	998.3	0.0	1,993.3
268	RM0E313	RM0E	313	HVAC	Maintenance	Central AC Tune Up	0.09	0.00	143	0%	RS	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$14	12.3		12.3	1,620	$1,981		0.0	0.0	0.0	0.0	0.0	0.0
269	RMFE313	RMFE	313	HVAC	Maintenance	Central AC Tune Up	0.11	0.00	177	0%	RS	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$18	9.9		9.9	1,620	$1,601		0.0	0.0	0.0	0.0	0.0	0.0
270	RSFE313	RSFE	313	HVAC	Maintenance	Central AC Tune Up	0.23	0.00	366	0%	RS	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$36	4.8		4.8	1,620	$775		0.0	0.0	0.0	0.0	0.0	0.0
271	RM0E314	RM0E	314	HVAC	Duct	Duct Repair	0.21	0.01	352	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$162	$0	$35	4.6	$93	2.0	1,662	$763		28.4	6.0	52.1	26.7	5.6	49.5
272	RMFE314	RMFE	314	HVAC	Duct	Duct Repair	0.26	0.01	435	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$162	$0	$43	3.7	$76	2.0	1,656	$617		150.4	43.2	288.2	141.2	40.5	274.2
273	RSFE314	RSFE	314	HVAC	Duct	Duct Repair	0.54	0.01	888	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$162	$0	$88	1.8		1.8	1,640	$299		99.0	32.1	193.8	92.9	30.2	184.4
274	RM0N315	RM0N	315	HVAC	Fan	ENERGY STAR Ceiling Fan	0.00	0.00	21	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$45	$0	$2	21.1		21.1	n/a	n/a		0.0	0.0	0.0	0.0	0.0	0.0
275	RM0T315	RM0T	315	HVAC	Fan	ENERGY STAR Ceiling Fan	0.00	0.00	21	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$45	$0	$2	21.1		21.1	n/a	n/a		0.0	0.0	1.1	0.0	0.0	1.1
276	RMFN315	RMFN	315	HVAC	Fan	ENERGY STAR Ceiling Fan	0.00	0.00	21	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$45	$0	$2	21.1		21.1	n/a	n/a		0.0	0.0	0.2	0.0	0.0	0.1
277	RMFT315	RMFT	315	HVAC	Fan	ENERGY STAR Ceiling Fan	0.00	0.00	21	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$45	$0	$2	21.1		21.1	n/a	n/a		0.0	0.0	11.5	0.0	0.0	11.0
278	RSFN315	RSFN	315	HVAC	Fan	ENERGY STAR Ceiling Fan	0.00	0.00	21	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$45	$0	$2	21.1		21.1	n/a	n/a		0.0	0.0	0.5	0.0	0.0	0.5
279	RSFT315	RSFT	315	HVAC	Fan	ENERGY STAR Ceiling Fan	0.00	0.00	21	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$45	$0	$2	21.1		21.1	n/a	n/a		0.0	0.0	36.5	0.0	0.0	34.7
280	RM0N316	RM0N	316	HVAC	Unit	ENERGY STAR Dehumidifier	0.04	0.01	214	0%	RS	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$20	$0	$21	0.9		0.9	6,097	$569		0.0	0.0	0.0	0.0	0.0	0.0
281	RM0T316	RM0T	316	HVAC	Unit	ENERGY STAR Dehumidifier	0.04	0.01	214	0%	RS	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$20	$0	$21	0.9		0.9	6,097	$569		0.0	0.0	0.1	0.0	0.0	0.1
282	RMFN316	RMFN	316	HVAC	Unit	ENERGY STAR Dehumidifier	0.04	0.01	214	0%	RS	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$20	$0	$21	0.9		0.9	6,097	$569		0.0	0.0	0.0	0.0	0.0	0.0
283	RMFT316	RMFT	316	HVAC	Unit	ENERGY STAR Dehumidifier	0.04	0.01	214	0%	RS	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$20	$0	$21	0.9		0.9	6,097	$569		0.2	0.0	1.4	0.2	0.0	1.4
284	RSFN316	RSFN	316	HVAC	Unit	ENERGY STAR Dehumidifier	0.04	0.01	214	0%	RS	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$20	$0	$21	0.9		0.9	6,097	$569		0.0	0.0	0.0	0.0	0.0	0.0
285	RSFT316	RSFT	316	HVAC	Unit	ENERGY STAR Dehumidifier	0.04	0.01	214	0%	RS	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$20	$0	$21	0.9		0.9	6,097	$569		0.4	0.1	2.6	0.4	0.1	2.5
286	RM0N317	RM0N	317	HVAC	Unit	ENERGY STAR Room AC	0.12	0.00	247	0%	RS	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$19	$0	$25	0.8		0.8	2,133	$161		0.0	0.0	0.0	0.0	0.0	0.0
287	RM0T317	RM0T	317	HVAC	Unit	ENERGY STAR Room AC	0.12	0.00	247	0%	RS	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$19	$0	$25	0.8		0.8	2,133	$161		1.4	0.0	2.9	1.3	0.0	2.8
288	RMFN317	RMFN	317	HVAC	Unit	ENERGY STAR Room AC	0.10	0.00	247	0%	RS	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$19	$0	$25	0.8		0.8	2,408	$182		0.1	0.0	0.1	0.1	0.0	0.1
289	RMFT317	RMFT	317	HVAC	Unit	ENERGY STAR Room AC	0.10	0.00	247	0%	RS	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$19	$0	$25	0.8		0.8	2,408	$182		3.8	0.0	9.0	3.5	0.0	8.5
290	RSFN317	RSFN	317	HVAC	Unit	ENERGY STAR Room AC	0.12	0.00	247	0%	RS	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$19	$0	$25	0.8		0.8	1,997	$151		0.1	0.0	0.3	0.1	0.0	0.2
291	RSFT317	RSFT	317	HVAC	Unit	ENERGY STAR Room AC	0.12	0.00	247	0%	RS	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$19	$0	$25	0.8		0.8	1,997	$151		9.2	0.0	18.0	8.6	0.0	17.2
292	RM0N318	RM0N	318	HVAC	Unit	Ground Source Heat Pump	0.32	0.98	1,669	0%	RS	22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$8,612	$0	$166	52.0		52.0	5,270	$27,199		0.0	0.0	0.0	0.0	0.0	0.0
293	RM0T318	RM0T	318	HVAC	Unit	Ground Source Heat Pump	0.32	0.98	1,669	0%	RS	22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$8,612	$0	$166	52.0		52.0	5,270	$27,199		0.1	0.2	0.4	0.1	0.2	0.4
294	RMFN318	RMFN	318	HVAC	Unit	Ground Source Heat Pump	0.31	0.96	1,631	0%	RS	22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$13,840	$0	$162	85.4		85.4	5,270	$44,708		0.0	0.0	0.0	0.0	0.0	0.0
295	RMFT318	RMFT	318	HVAC	Unit	Ground Source Heat Pump	0.31	0.96	1,631	0%	RS	22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$13,840	$0	$162	85.4		85.4	5,270	$44,708		0.1	0.6	0.8	0.1	0.6	0.8
296	RSFN318	RSFN	318	HVAC	Unit	Ground Source Heat Pump	0.54	1.67	2,837	0%	RS	22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$14,640	$0	$282	52.0		52.0	5,270	$27,199		0.0	0.0	0.0	0.0	0.0	0.0
297	RSFT318	RSFT	318	HVAC	Unit	Ground Source Heat Pump	0.54	1.67	2,837	0%	RS	22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$14,640	$0	$282	52.0		52.0	5,270	$27,199		0.0	0.0	0.0	0.0	0.0	0.0
298	RM0E319	RM0E	319	HVAC	Unit	Heat Pump Tune Up	0.09	0.00	147	0%	RS	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$15	12.0		12.0	1,662	$1,981		0.0	0.0	0.0	0.0	0.0	0.0
299	RMFE319	RMFE	319	HVAC	Unit	Heat Pump Tune Up	0.11	0.00	181	0%	RS	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$18	9.7		9.7	1,656	$1,601		0.0	0.0	0.0	0.0	0.0	0.0
300	RSFE319	RSFE	319	HVAC	Unit	Heat Pump Tune Up	0.23	0.00	370	0%	RS	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$37	4.8		4.8	1,640	$775		0.0	0.0	0.0	0.0	0.0	0.0
301	RM0E320	RM0E	320	HVAC	Fan	HVAC ECM Motor	0.01	0.01	33	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$287	$0	$3	87.2		87.2	5,831	$50,486		0.0	8.4	2.9	0.0	7.9	2.8
302	RM0N320	RM0N	320	HVAC	Fan	HVAC ECM Motor	0.01	0.01	33	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$287	$0	$3	87.2		87.2	5,831	$50,486		0.0	0.0	0.0	0.0	0.0	0.0
303	RMFE320	RMFE	320	HVAC	Fan	HVAC ECM Motor	0.01	0.02	56	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$287	$0	$6	51.3		51.3	5,831	$29,700		0.0	106.8	37.4	0.0	100.3	35.6
304	RMFN320	RMFN	320	HVAC	Fan	HVAC ECM Motor	0.01	0.02	56	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$287	$0	$6	51.3		51.3	5,831	$29,700		0.0	0.2	0.1	0.0	0.2	0.1
305	RSFE320	RSFE	320	HVAC	Fan	HVAC ECM Motor	0.01	0.02	56	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$287	$0	$6	51.3		51.3	5,831	$29,700		0.0	43.8	15.3	0.0	41.1	14.6
306	RSFN320	RSFN	320	HVAC	Fan	HVAC ECM Motor	0.01	0.02	56	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$287	$0	$6	51.3		51.3	5,831	$29,700		0.0	1.3	0.4	0.0	1.2	0.4
307	RM0E321	RM0E	321	HVAC	Controls	Programmable Thermostat	0.03	0.00	77	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$8	22.9		22.9	2,506	$5,699		0.1	0.0	0.3	0.1	0.0	0.3
308	RM0N321	RM0N	321	HVAC	Controls	Programmable Thermostat	0.03	0.00	77	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$33	$0	$8	4.3		4.3	2,506	$1,075		0.0	0.0	0.0	0.0	0.0	0.0
309	RMFE321	RMFE	321	HVAC	Controls	Programmable Thermostat	0.04	0.00	95	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$9	18.6		18.6	2,506	$4,622		0.5	0.0	1.5	0.5	0.0	1.5
310	RMFN321	RMFN	321	HVAC	Controls	Programmable Thermostat	0.04	0.00	95	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$33	$0	$9	3.5		3.5	2,506	$872		0.0	0.0	0.0	0.0	0.0	0.0
311	RSFE321	RSFE	321	HVAC	Controls	Programmable Thermostat	0.08	0.00	194	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$175	$0	$19	9.1		9.1	2,506	$2,261		1.8	0.0	5.5	1.7	0.0	5.2
312	RSFN321	RSFN	321	HVAC	Controls	Programmable Thermostat	0.08	0.00	194	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$33	$0	$19	1.7		1.7	2,506	$426		0.0	0.0	0.0	0.0	0.0	0.0
313	RM0E322	RM0E	322	HVAC	Controls	Smart Thermostat (EE ONLY)	0.07	0.00	179	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$274	$0	$18	15.4		15.4	2,506	$3,837		11.6	0.0	32.2	10.9	0.0	30.6
314	RM0N322	RM0N	322	HVAC	Controls	Smart Thermostat (EE ONLY)	0.07	0.00	179	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$132	$0	$18	7.4		7.4	2,506	$1,849		0.0	0.0	0.0	0.0	0.0	0.0
315	RMFE322	RMFE	322	HVAC	Controls	Smart Thermostat (EE ONLY)	0.09	0.00	221	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$274	$0	$22	12.5		12.5	2,506	$3,112		60.3	0.0	173.8	56.6	0.0	165.3
316	RMFN322	RMFN	322	HVAC	Controls	Smart Thermostat (EE ONLY)	0.09	0.00	221	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$132	$0	$22	6.0		6.0	2,506	$1,499		0.0	0.0	0.1	0.0	0.0	0.1
317	RSFE322	RSFE	322	HVAC	Controls	Smart Thermostat (EE ONLY)	0.18	0.00	451	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$274	$0	$45	6.1		6.1	2,506	$1,522		48.7	0.0	146.3	45.7	0.0	139.2
318	RSFN322	RSFN	322	HVAC	Controls	Smart Thermostat (EE ONLY)	0.18	0.00	451	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$132	$0	$45	2.9	$43	2.0	2,506	$733		0.0	0.0	0.0	0.0	0.0	0.0
319	RM0N323	RM0N	323	HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC System	0.31	0.98	1,179	0%	RS	13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,486	$0	$117	12.7		12.7	3,818	$4,812		0.0	0.0	0.0	0.0	0.0	0.0
320	RM0T323	RM0T	323	HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC System	0.31	0.98	1,179	0%	RS	13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,887	$0	$117	16.1		16.1	3,818	$6,108		1.0	1.6	2.6	0.9	1.5	2.5
321	RMFN323	RMFN	323	HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC System	0.31	0.98	1,337	0%	RS	13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$1,965	$0	$133	14.8		14.8	4,310	$6,337		0.0	0.3	0.3	0.0	0.3	0.3
322	RMFT323	RMFT	323	HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC System	0.31	0.98	1,337	0%	RS	13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,646	$0	$133	19.9		19.9	4,310	$8,532		2.3	14.0	15.0	2.2	13.2	14.3
323	RSFN323	RSFN	323	HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC System	0.56	1.78	2,005	0%	RS	13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$2,527	$0	$199	12.7		12.7	3,574	$4,505		0.0	0.1	0.1	0.0	0.1	0.1
324	RSFT323	RSFT	323	HVAC	Unit	Variable Refrigerant Flow (VRF) HVAC System	0.56	1.78	2,005	0%	RS	13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$19	$3,207	$0	$199	16.1		16.1	3,574	$5,718		0.3	6.2	3.6	0.3	5.8	3.4



491	RSFN610	RSFN	610	Water Heating	Unit	Solar Water Heater	0.13	0.14	1,722	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$6,767	$0	$171	39.6	39.6	13,350	$52,471	0.9	0.1	11.9	0.8	0.1	11.3
492	RSFT610	RSFT	610	Water Heating	Unit	Solar Water Heater	0.13	0.14	1,722	0%	RS	15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$6,767	$0	$171	39.6	39.6	13,350	$52,471	66.2	9.3	874.1	62.2	8.7	831.6
493	RM0E611	RM0E	611	Water Heating	Ancillary	Thermostatic Shower Restriction Valve	0.00	0.01	35	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$30	$0	$4	8.6	8.6	11,102	$9,433	0.0	0.0	0.0	0.0	0.0	0.0
494	RM0N611	RM0N	611	Water Heating	Ancillary	Thermostatic Shower Restriction Valve	0.00	0.01	35	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$30	$0	$4	8.6	8.6	11,102	$9,433	0.0	0.0	0.0	0.0	0.0	0.0
495	RMFE611	RMFE	611	Water Heating	Ancillary	Thermostatic Shower Restriction Valve	0.01	0.01	60	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$30	$0	$6	5.0	5.0	11,102	$5,505	0.0	0.0	0.0	0.0	0.0	0.0
496	RMFN611	RMFN	611	Water Heating	Ancillary	Thermostatic Shower Restriction Valve	0.01	0.01	60	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$30	$0	$6	5.0	5.0	11,102	$5,505	0.0	0.0	0.0	0.0	0.0	0.0
497	RSFE611	RSFE	611	Water Heating	Ancillary	Thermostatic Shower Restriction Valve	0.01	0.01	77	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$30	$0	$8	3.9	3.9	11,102	$4,327	0.3	0.6	3.0	0.3	0.5	2.8
498	RSFN611	RSFN	611	Water Heating	Ancillary	Thermostatic Shower Restriction Valve	0.01	0.01	77	0%	RS	10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$30	$0	$8	3.9	3.9	11,102	$4,327	0.0	0.0	0.0	0.0	0.0	0.0
499	RM0E612	RM0E	612	Water Heating	Insulation	Water Heater Blanket	0.01	0.03	139	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$168	$0	$14	12.2	12.2	11,102	$13,406	0.2	0.4	2.0	0.2	0.4	1.9
500	RM0N612	RM0N	612	Water Heating	Insulation	Water Heater Blanket	0.01	0.03	133	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$168	$0	$13	12.7	12.7	11,102	$14,014	0.0	0.0	0.0	0.0	0.0	0.0
501	RMFE612	RMFE	612	Water Heating	Insulation	Water Heater Blanket	0.02	0.05	236	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$168	$0	$23	7.2	7.2	11,102	$7,887	1.5	3.2	16.4	1.4	3.0	15.6
502	RMFN612	RMFN	612	Water Heating	Insulation	Water Heater Blanket	0.02	0.04	226	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$168	$0	$22	7.5	7.5	11,102	$8,244	0.0	0.0	0.0	0.0	0.0	0.0
503	RSFE612	RSFE	612	Water Heating	Insulation	Water Heater Blanket	0.02	0.05	236	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$168	$0	$23	7.2	7.2	11,102	$7,887	3.7	8.0	40.5	3.5	7.5	38.5
504	RSFN612	RSFN	612	Water Heating	Insulation	Water Heater Blanket	0.02	0.04	226	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$168	$0	$22	7.5	7.5	11,102	$8,244	0.0	0.0	0.1	0.0	0.0	0.1
505	RM0E613	RM0E	613	Water Heating	Ancillary	Water Heater Thermostat Setback	0.00	0.00	22	0%	RS	4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1.65	$0	$2	0.8	0.8	11,102	$851	0.0	0.0	0.0	0.0	0.0	0.0
506	RM0N613	RM0N	613	Water Heating	Ancillary	Water Heater Thermostat Setback	0.00	0.00	22	0%	RS	4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1.65	$0	$2	0.8	0.8	11,102	$851	0.0	0.0	0.0	0.0	0.0	0.0
507	RMFE613	RMFE	613	Water Heating	Ancillary	Water Heater Thermostat Setback	0.00	0.01	37	0%	RS	4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1.65	$0	$4	0.5	0.5	11,102	$501	0.0	0.0	0.0	0.0	0.0	0.0
508	RMFN613	RMFN	613	Water Heating	Ancillary	Water Heater Thermostat Setback	0.00	0.01	37	0%	RS	4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1.65	$0	$4	0.5	0.5	11,102	$501	0.0	0.0	0.0	0.0	0.0	0.0
509	RSFE613	RSFE	613	Water Heating	Ancillary	Water Heater Thermostat Setback	0.00	0.01	37	0%	RS	4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1.65	$0	$4	0.5	0.5	11,102	$501	0.1	0.2	1.1	0.1	0.2	1.0
510	RSFN613	RSFN	613	Water Heating	Ancillary	Water Heater Thermostat Setback	0.00	0.01	37	0%	RS	4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$1.65	$0	$4	0.5	0.5	11,102	$501	0.0	0.0	0.0	0.0	0.0	0.0
511	RM0E614	RM0E	614	Water Heating	Controls	Water Heater Timeclock	0.00	0.00	72	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$143	$0	$7	20.0	20.0	n/a	n/a	0.0	0.0	5.0	0.0	0.0	4.7
512	RM0N614	RM0N	614	Water Heating	Controls	Water Heater Timeclock	0.00	0.00	72	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$143	$0	$7	20.0	20.0	n/a	n/a	0.0	0.0	0.0	0.0	0.0	0.0
513	RMFE614	RMFE	614	Water Heating	Controls	Water Heater Timeclock	0.00	0.00	83	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$143	$0	$8	17.4	17.4	n/a	n/a	0.0	0.0	11.6	0.0	0.0	11.0
514	RMFN614	RMFN	614	Water Heating	Controls	Water Heater Timeclock	0.00	0.00	83	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$143	$0	$8	17.4	17.4	n/a	n/a	0.0	0.0	0.0	0.0	0.0	0.0
515	RSFE614	RSFE	614	Water Heating	Controls	Water Heater Timeclock	0.00	0.00	97	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$143	$0	$10	14.9	14.9	n/a	n/a	0.0	0.0	38.5	0.0	0.0	36.7
516	RSFN614	RSFN	614	Water Heating	Controls	Water Heater Timeclock	0.00	0.00	97	0%	RS	7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$29	$143	$0	$10	14.9	14.9	n/a	n/a	0.0	0.0	0.0	0.0	0.0	0.0
517	RM0E701	RM0E	701	Whole Home	Controls	Home Energy Management System	0.03	0.02	215	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$481	$0	$21	22.5	22.5	6,534	$14,624	0.4	1.5	3.4	0.4	1.4	3.2
518	RM0N701	RM0N	701	Whole Home	Controls	Home Energy Management System	0.03	0.02	215	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$481	$0	$21	22.5	22.5	6,562	$14,687	0.0	0.0	0.0	0.0	0.0	0.0
519	RMFE701	RMFE	701	Whole Home	Controls	Home Energy Management System	0.04	0.02	264	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$481	$0	$26	18.3	18.3	6,534	$11,905	0.9	5.4	8.6	0.9	5.0	8.2
520	RMFN701	RMFN	701	Whole Home	Controls	Home Energy Management System	0.04	0.03	264	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$481	$0	$26	18.3	18.3	6,562	$11,956	0.0	0.1	0.1	0.0	0.1	0.1
521	RSFE701	RSFE	701	Whole Home	Controls	Home Energy Management System	0.08	0.04	534	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$481	$0	$53	9.1	9.1	6,534	$5,884	0.9	10.5	9.2	0.9	9.8	8.7
522	RSFN701	RSFN	701	Whole Home	Controls	Home Energy Management System	0.08	0.05	534	0%	RS	11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$481	$0	$53	9.1	9.1	6,562	$5,910	0.0	0.2	0.1	0.0	0.2	0.1
523	RM0N702	RM0N	702	Whole Home	Performance	BuildSmart	0.36	0.13	1,068	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$1,190	$0	$106	11.2	11.2	2,983	$3,324	0.0	0.0	0.0	0.0	0.0	0.0
524	RMFN702	RMFN	702	Whole Home	Performance	BuildSmart	0.36	0.13	1,068	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$1,190	$0	$106	11.2	11.2	2,983	$3,324	0.0	0.0	0.0	0.0	0.0	0.0
525	RSFN702	RSFN	702	Whole Home	Performance	BuildSmart	0.36	0.13	1,068	0%	RS	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	$159	$1,190	$0	$106	11.2	11.2	2,983	$3,324	0.0	0.0	0.0	0.0	0.0	0.0

Manufactured Home Sq. Ft Adjust	59%	<-- Adjusted measures = yellow highlighted

FPL 001411

2019--15-EG

Measure Name	EndUse	Algorithm	Parameter	Attribute	Units	Source
Energy Star Clothes Dryer	Appliances	delta_kWh = Cycleswash × %dry/wash × Loadavg × (1/CEFbase - 1/CEFee)	Number of washing machine cycles per year (cycleswash)	271	Cycles/Year	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Weight of average dryer load, in pounds per load (loadavg)	8.45	lbs/load	Based on ENERGY STAR test procedures. https://www.energystar.gov/index.cfm?c=clothesdry.pr_crit_clothes_dryers
			Combined Energy Factor of Baseline Dryer (dryercefbase)	3.11	lbs/kWh	Federal Standard, Code of Federal Regulations, 10 CFR 430.32(h)(3)
			Combined Energy Factor of ENERGY STAR Dryer (dryercefestar)	3.93	lbs/kWh	https://www.energystar.gov/sites/default/files/specs/ENERGY%20STAR%20Final%20Version%201%200%20Clothes%20Dryers%20Program%20Requirements.pdf
			Percentage of homes with dryer that use dryer for each wash cycle (pctdrywash)	0.95	percent dry / wash	PA TRM, June 2016. TRM Reference from 2011-04 Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial
Energy Star Clothes Washer	Appliances	delta_kWh = [(CAPY/MEF)_base - (CAPY/MEF)_efficient]*Cycles	Existing Unknown Washer Type Modified Energy Factor (washmefbase)	0.79	(ft3 * cycle / kWh)	The "Residential Retrofit High Impact Measure Evaluation Report", CPUC available at http://www2.epa.gov/sites/production/files/documents/CA_PUC_Assessment.pdf
			Number of washing machine cycles per year (cycleswash)	271	Cycles/Year	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Change Case Unknown Washer Type Modified Energy Factor (washmefestar)	1.27	(ft3 * cycle / kWh)	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Clothes Washer Capacity (washcapy)	4.2	ft3	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
Energy Star Dishwasher	Appliances	delta_kWh = (ENERGYBASE - ENERGYEFF)	Baseline Dishwasher Energy Consumption (dishuecbase)	307	Annual KWh	ENERGY STAR Certified Residential Dishwasher Qualified Product List, Average of all models, Accessed 12/29/15
			Efficient Dishwasher Energy Consumption (dishuecestar)	266.70	Annual kWh	ENERGY STAR Certified Residential Dishwasher Qualified Product List, Average of all models, Accessed 12/29/15
Energy Star Freezer	Appliances	delta_kWh = UEC_base - UEC_efficient	Freezer Unit Energy Consumption Baseline (freeuecbase)	565.4	Annual kWh	PA TRM 2014 and Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Freezer Unit Energy Consumption ENERGY STAR (freeuecestar)	499.8	Annual kWh	PA TRM 2014 and Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
Energy Star Refrigerator	Appliances	delta_kWh = UEC_base - UEC_efficient	Refrigerator Unit Energy Consumption Baseline (refuecbase)	607.13	Annual kWh	PA TRM 2014 and Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Refrigerator Unit Energy Consumption ENERGY STAR (refuecestar)	473.63	Annual kWh	PA TRM 2014 and Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
Heat Pump Clothes Dryer	Appliances	delta_kWh = Cycleswash × %dry/wash × Loadavg × (1/CEFbase - 1/CEFee)	Number of washing machine cycles per year (cycleswash)	271	Cycles/Year	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Percentage of homes with dryer that use dryer for each wash cycle (pctdrywash)	0.95	percent dry / wash	PA TRM, June 2016. TRM Reference from 2011-04 Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial
			Weight of average dryer load, in pounds per load (loadavg)	8.45	lbs/load	Based on ENERGY STAR test procedures. https://www.energystar.gov/index.cfm?c=clothesdry.pr_crit_clothes_dryers
			Combined Energy Factor of Heat Pump Dryer (dryercefashp)	4.5	lbs/kWh	ENERGY STAR product finder, whirlpool heat pump model WED7990FW
			Combined Energy Factor of Baseline Dryer (dryercefbase)	3.11	lbs/kWh	Federal Standard, Code of Federal Regulations, 10 CFR 430.32(h)(3)
Removal of 2nd Refrigerator-Freezer	Appliances	delta_kWh = In-Situ UEC * Part-Use Factor (U)	Refrigerator Replaced by Recycling (oldrefuecbase)	1238.33	Annual kWh	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Freezer Replaced by Recycling Part-use Factor (oldfreepuf)	0.88	% of time 2nd Freez used	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Freezer Replaced by Recycling (oldfreeuecbase)	1231.92	Annual kWh	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			Refrigerator Replaced by Recycling Part-use Factor (oldrefpuf)	0.85	% of time 2nd Ref used	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
High Efficiency Convection Oven	Cooking	delta_kWh = ENERGYBASE x Savings Factor	Baseline Convection Oven Energy Consumption (ENERGYBase_Res)	421.5	kWh/year	FEECA Gulf 2017 Data
			Savings Factor	0.2	%	https://www.energy.gov/energysaver/articles/cooking-some-energy-saving-tips
High Efficiency Induction Cooktop	Cooking	delta_kWh = (kWbase - kWee) x Hours x Rapid_Cook_Factor x HVAC_cooling	Residential Cooking Hours of Use (cookhou)	540	hours	Americans' Eating Patterns and Time Spent on Food: the 2014 Eating & Health Module Data, U.S. Department of Agricture, Karen S. Hamrick and Ket McClelland, July 2016.
			Wattage for Baseline Cooktop (cookkwbase)	5.1	kW	Food Service Technology Assessment Report, Fisher-Nickel, kW_EE is productivity enhancement adjusted.
			Rapid Cook Factor (cookrap)	1	N/A	Americans' Eating Patterns and Time Spent on Food: the 2014 Eating & Health Module Data, U.S. Department of Agricture, Karen S. Hamrick and Ket McClelland, July 2016.
			Wattage for Efficienct Cooktop (cookkweff)	4.14	kW	Food Service Technology Assessment Report, Fisher-Nickel, kW_EE is productivity enhancement adjusted.
			Cooking Interactive Factor for HVAC Cooling (cookifx)	1.03	N/A	HVAC Interactive Factors developed based on the HVAC Interaction Factor extracted from the Arkansas Food Service Deemed Savings table.
			Electric Water Heater Baseline unit energy factor (EFBASE)	0.945		Federal Standard (assume 50 gallon)
			Efficient Heat Pump Water Heater Energy Factor (EFEFF)	2.5		Engineering estimate based on available models

Heat Pump Water Heater	Domestic Hot Water	delta_kWh = [((1/EF_base) - (1/(EF_eff * PAF))) * (GPD * Household) * 365 * 8.3 * (water temp)]/3412 btu/kWh	HP Water Heater water temperature delta between inlet and outlet (TDELTA) in FL Zone 1	45.76	°F	Average Groundwater temperature of Florida https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/ex/jne_henrys_map.html. Assumed water heater setpoint is 125 F
			HP Water Heater water temperature delta between inlet and outlet (TDELTA) in FL Zone 2	50.85	°F	Average Groundwater temperature of Florida https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/ex/jne_henrys_map.html. Assumed water heater setpoint is 125 F
			Gallons per day of hot water use per person (GPD)	17.3	Gallons/Person/ Day	Residential End Uses of Water, Version 2. Water Research Foundation, April 2016, http://www.waterrf.org/PublicReportLibrary/4309A.pdf .
			Average number of people per Single Family Home (Household)	3.02	people/household	Gulf Saturation Survey 2013
			Average number of people per Multi-Family unit (Household)	2.37	people/household	Gulf Saturation Survey 2013
			Average number of people per Manufactured Home (Household)	2.35	people/household	Gulf Saturation Survey 2013
			HP Water Heater COP Performance Adjustment Factor (PAF)	1.01		Arkansas TRM, based on average ambient air temperature and DOE guidance (assume unconditioned garage). Air temp based on avg Florida climate data (http://www.ncdc.noaa.gov/cag/)
			Days per year (daysperyear)	365	days/year	Standard
			Water density	8.3	lbs/ gal	Standard
Instantaneous Hot Water System	Domestic Hot Water	delta_kWh = (1/ EFbase - 1/EFefficient) * (GPD * Household * 365 * y_Water * (TOUT – Tin) * 1.0)/3,412	Instantaneous Hot Water System Energy Factor Rating for Baseline equipment (EFBASE)	0.9227		Federal minimum uniform energy factor for a 40 gallon electric storage water heater with a medium draw pattern = 0.9307-(.0002*40)
			Temperature of Instantaneous Hot Water System Tank (TOUT)	125	°F	Illinois TRM, Version 5.0,Volume 3: Residential Measures, Final February 11th, 2016; Effective: June 1st, 2016, Section 5.4.2, page 167
			Gallons per day of hot water use per person (GPD)	17.3	Gallons/Person/ Day	Residential End Uses of Water, Version 2. Water Research Foundation, April 2016, http://www.waterrf.org/PublicReportLibrary/4309A.pdf .
			Assumed temperature of water entering house (Tcold) in FL Zone 1 (FPL)	79.24	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-North	74.15	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-Central	77.43	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Density of Water (wdensity)	8.33	lbs/gal	Wisconsin FoTechnical Reference Manual
			Average number of people per Single Family Home (Household)	3.02	people/household	Gulf Saturation Survey 2013
			Average number of people per Multi-Family unit (Household)	2.37	people/household	Gulf Saturation Survey 2013
			Average number of people per Manufactured Home (Household)	2.35	people/household	Gulf Saturation Survey 2013
			Instantaneous Hot Water System Energy Factor Rating for Efficient equipment (EFEFF)	0.98		CPUC DEER Database; EUL/RUL values, updated October 2008
Solar Water Heater	Domestic Hot Water	delta_kWh = [(1/EFbase - 1/Efee) x GPD x Household x 365 x 8.3 x 1 x (Thot - Tcold)] / 3412	Efficient Solar Water Heater Energy Factor (EFEFF)	4.05		The average rating for all evaluated water heaters across the 3 zones in Florida, per FSEC calculator
			Temperature of Hot Water Heater (THOT)	125	°F	Illinois TRM, Version 5.0,Volume 3: Residential Measures, Final February 11th, 2016; Effective: June 1st, 2016, Section 5.4.2, page 167
			Residential Water Heater Baseline Efficiency, 50 Gallon (EFBASE)	0.945		Federal Standard 2015 (assume 50 gallon)
			Gallons per day of hot water use per person (GPD)	17.3	Gallons/Person/ Day	Residential End Uses of Water, Version 2. Water Research Foundation, April 2016, http://www.waterrf.org/PublicReportLibrary/4309A.pdf .
			Average number of people per Single Family Home (Household)	3.02	people/household	Gulf Saturation Survey 2013
			Average number of people per Multi-Family unit (Household)	2.37	people/household	Gulf Saturation Survey 2013
			Average number of people per Manufactured Home (Household)	2.35	people/household	Gulf Saturation Survey 2013
			Assumed temperature of water entering house (Tcold) in FL Zone 1 (FPL)	79.24	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-North	74.15	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-Central	77.43	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls

Drain Water Heat Recovery	Domestic Hot Water	delta_kWh = DHW_baseUEC x SVGE	Baseline DHW UEC, single family (DHW_baseUEC_single)	1,931	kWh/year	Gulf Power B17 LoadMap
			Baseline DHW UEC, multifamily (DHW_baseUEC_multi)	1,654	kWh/year	Gulf Power B17 LoadMap
			Baseline DHW UEC, manufactured home (DHW_baseUEC_mh)	2,449	kWh/year	Gulf Power B17 LoadMap
			Drain Water Heat Recovery Energy Savings Factor (SVGE)	0.12	%	Minnesota 2016 Statewide TRM V1.3, Residential Hot Water - Drainpipe Heat Exchanger with Electric Water Heater (adjusted for Florida groundwater temp)
Faucet Aerator	Domestic Hot Water	delta_kWh = [((GPMbase-GPMlow) × Tperson/day × Npersons × 365 × DF × (Tout-Tin) x 8.3(Btu/(gal-deg F))/(#faucets × 3412(Btu/kWh) × RE)]	Gallons per minute of baseline showerhead (GPMbase_fa)	1.5	gallons/min	Miami-Dade Water-Use Efficiency Standards Manual
			Gallons per minute, market baseline existing homes (GPMbase_existing)	2.2	gallons / min (gpm)	1994 Federal Standards
			Gallons per minute of low flow showerhead (GPMlow_fa)	1	Gallons per minute of low flow showerhead (GPMlow_fa)	Miami-Dade Water-use Regulations, 2009
			Average time of shower usage per person (Tperson/day_fa)	4.5	minutes/day	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017,Table 2-66, default value.
			Average number of people per Single Family household (Npersons)	3.02	people/household	Gulf Saturation Survey 2013
			Average number of people per Multi-Family household (Npersons)	2.37	people/household	Gulf Saturation Survey 2013
			Average number of people per Manufactured Home household (Npersons)	2.35	people/household	Gulf Saturation Survey 2013
			Percentage of water flowing down drain (DF)	0.75	%	Illinois TRM Effective June 1, 2013.
			Assumed temperature of water used by faucet (Tout_fa)	93	deg F	PA TRM, June 2016, Errata Update February 2017,Table 2-66, kitchen value used.
			Assumed temperature of water entering house (Tcold) in FL Zone 1 (FPL)	79.24	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-North	74.15	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-Central	77.43	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Average number of faucets in the home (#faucets_fa)	3	faucets/house	Assumed 1 kitchen and two bath, on average
			Recovery efficiency of electric water heater (RE)	0.98		PA TRM, June 2016, Errata Update February 2017,Table 2-67, default value.
			Density of water	8.3	lbs/gal	
			Btu per kWh	3412	BTU/kWh	
			Days per year (daysperyear)	365	days/year	Standard
Heat Trap	Domestic Hot Water	delta_kWh = Billsave/Elecprice * AdjFactor	Heat Trap Water Heating Bill Save (Billsave)	15	$ annually	U.S. Department of Energy: https://www.energy.gov/energysaver/articles/15-ways-save-your-water-heating-bill
			Florida Average Residential Price of Electricity (Elecprice)	11.94	Cents per kWh (Residential, December 2017)	https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a
			Energy savings from Heat Trap	125.63	kWh	Calculation from DOE Heat Trap Water Heating Bill Save & Florida Average Residential Electricity Tarriff Data
			Adjust Factor for Single Family in FL Zone 2	1.05		Deemed savings adjustment based on building type and climate zone
			Adjust Factor for Multi-Family in FL Zone 2	0.83		Deemed savings adjustment based on building type and climate zone
			Adjust Factor for Manufactured Home in FL Zone 2	0.82		Deemed savings adjustment based on building type and climate zone
			Adjust Factor for Single Family in FL Zone 1	0.95		Deemed savings adjustment based on building type and climate zone
			Adjust Factor for Multi-Family in FL Zone 1	0.74		Deemed savings adjustment based on building type and climate zone
			Adjust Factor for Manufactured Home in FL Zone 1	0.74		Deemed savings adjustment based on building type and climate zone
Hot Water Pipe Insulation	Domestic Hot Water	delta_kWh = ((1/Rexist – 1/Rnew) * (L * C) * T * Hours)/ RE_DHW / BTU_conv	Temperature difference between water in pipe and ambient air (T)	60	deg F	Assumes 125 F water leaving the hot water tank and average temperature of basement of 65 F.
			R-value of existing pipe plus installed insulation (Rnew)	5	hr-deg F-ft/Btu	Estimated value based on recommendation of Illinois TRM. Supported by minimum set by 2012 IECC = R-3. U.S. Department of Energy, August 2012.
			Btu per kWh	3412	BTU/kWh	
			Circumference of piping ©	0.196	ft	Assumes 3/4" diameter pipe.
			Length of piping insulated (L)	6	ft	Default assumed value used in Illinois TRM.
			Assumed R-value of existing uninsulated piping (Rexist)	1	hr-deg F-ft/Btu	Navigant Consulting Inc., April 2009; "Measures and Assumptions for Demand Side Management (DSM) Planning; Appendix C Substantiation Sheets", p77.
			DHW Recovery efficiency (RE_DHW)	0.98		Electric water heaters have recovery efficiency of 98%.
			Hours per year	8760	hours	

			Gallons per minute of baseline showerhead (GPMbase)	2.5	gallons/min	Federal Standard Maximum Showerhead Flow Rate
			Average number of people per Single Family household (Npersons)	3.02	people/household	Gulf Saturation Survey 2013
			Average number of people per Multi-Family household (Npersons)	2.37	people/household	Gulf Saturation Survey 2013
			Average number of people per Manufactured Home household (Npersons)	2.35	people/household	Gulf Saturation Survey 2013
			Recovery efficiency of electric water heater (RE)	0.98		PA TRM, June 2016, Errata Update February 2017,Table 2-67, default value.
			Days per year (daysperyear)	365	days/year	Standard
Low Flow Showerhead	Domestic Hot Water	delta_kWh = kWh = [((GPMbase-GPMlow) × Tperson/day × Npersons × Nshowers/day x 365 × (Tout-Tin) x 8.3(Btu/(gal-deg F))/(#showers × 3412(Btu/kWh) × RE)]	Average number of showers in the home (#showers)	1.3	showers/house	PA TRM, June 2016, Errata Update February 2017,Table 2-67, default value for single family home.
			Assumed temperature of water entering house (Tcold) in FL Zone 1 (FPL)	79.24	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-North	74.15	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-Central	77.43	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water used by showerhead (Tout)	104	deg F	PA TRM, June 2016, Errata Update February 2017,Table 2-68.
			Btu per kWh	3412	BTU/kWh	
			Average time of shower usage per person (Tperson/day)	7.8	minutes/day	PA TRM, June 2016, Errata Update February 2017,Table 2-67, default value.
			Density of water	8.3	lbs/gal	
			Gallons per minute of low flow showerhead (GPMlow)	1.5	gallons/min	PA TRM, June 2016, Errata Update February 2017,Table 2-67, default value.
			Average number of showers per person per day (Nshowers/day)	0.6	showers/person/day	PA TRM, June 2016, Errata Update February 2017,Table 2-67, default value.
			Unit conversion (kWh/Btu)	0.000293083	kWh/Btu	
			Unit conversion	8.3	BTU/gal - deg F	
			Average number of showerhead fixtures per home (S/home)	1.3	showerheads/home	PA TRM, June 2016, Errata Update February 2017,Table 2-68.
			Average number of showers per person per day (N_showers-day)	0.6	showers/day/person	PA TRM, June 2016, Errata Update February 2017,Table 2-68.
			Average number of people per Single Family household (Npersons)	3.02	people/household	Gulf Saturation Survey 2013
			Average number of people per Multi-Family household (Npersons)	2.37	people/household	Gulf Saturation Survey 2013
			Average number of people per Manufactured Home household (Npersons)	2.35	people/household	Gulf Saturation Survey 2013
Thermostatic Shower Restriction Valve	Domestic Hot Water	delta_kWh = GPM_base / 60 x UH x UE x (T_out - T_in) x (N_persons x N_showers-day)/ (S/home) x WasteSeconds / RE x 365	Recovery efficiency of electric water heaters (RE)	0.98		PA TRM, June 2016, Errata Update February 2017,Table 2-68, default value.
			Unit conversion (sec/min)	60	sec/min	
			Assumed temperature of water used by showerhead (T_out)	104	deg F	PA TRM, June 2016, Errata Update February 2017,Table 2-68.
			Days per year (daysperyear)	365	days/year	Standard
			Gallons per minute of baseline showerhead (GPM_base)	2.5	gallons/min	Federal Standard Maximum Showerhead Flow Rate
			Time that water runs without being used (WasteScends)	59	sec	PA TRM, June 2016, Errata Update February 2017,Table 2-68.
			Assumed temperature of water entering house (Tcold) in FL Zone 1 (FPL)	79.24	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-North	74.15	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-Central	77.43	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Heat Transfer Coefficient of Unwrapped Tank (UBASE)	0.12	BTU/Hr-deg F-ft2	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017, Table 2-62 default assumed value
			Piping and Insulation Hours of Use (HOU)	8760	Hours	Pennsylvania 2015 Statewide TRM, Section 2.3.6, Table 2-60
			Heat Transfer Coefficient of Wrapped Tank (UINSUL)	0.05	BTU/Hr-deg F-ft2	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017, Table 2-62 default assumed value

Water Heater Blanket	Domestic Hot Water	delta_kWh = {[(UBASE x ABASE) - (UINSUL x AINSUL)] x (THOT - TAMBIENT) / (3412 x EFBASE)} x HOU	Temperature of Hot Water Heater (THOT)	125	°F	Illinois TRM, Version 5.0,Volume 3: Residential Measures, Final February 11th, 2016; Effective: June 1st, 2016, Section 5.4.2, page 167
			Piping and Insulation Coincidence Factor (CF)	1		Pennsylvania 2015 Statewide TRM, Section 2.3.6, Table 2-60
			Electric Resistance Water Heater Existing Efficiency, 50 Gallon (EFBASE)	0.8505		Assumed 10% less efficient than baseline
			Surface Area of Unwrapped Water Heater Tank (ABASE)	23.18	ft2	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017,Table 2-63, assumed 40 gallon tank.
			Assumed temperature of water entering house (Tcold) in FL Zone 1 (FPL)	79.24	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-North	74.15	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Assumed temperature of water entering house (Tcold) in FL Zone 2-Central	77.43	°F	FSEC Solar Water Heater Calculator, http://www.fsec.ucf.edu/en/consumer/solar_hot_water/homes/calculator/SHW-calculator_simple.xls
			Surface Area of Wrapped Water Heater Tank (AINSUL)	25.31	ft2	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017,Table 2-63, assumed 40 gallon tank
			Electric Resistance Water Heater Baseline Efficiency, 50 Gallon (EFBASE)	0.945	%	Code
Water Heater Thermostat Setback	Domestic Hot Water	delta_kWh = [ABASE x (Thot, pre - Thot, post) x 8760]/(RTANK xTETANK x 3412)	Thermal Efficiency of Water Heater Tank (TETANK)	0.98		Pennsylvania 2016 Statewide TRM, Section 2.3.6, Table 2-64
			Temperature of Hot Water Heater Prior to Setback (THOT, PRE)	130	°F	Pennsylvania 2016 Statewide TRM, Section 2.3.6, Table 2-64
			R-Value of Unwrapped Tank (RTANK)	8.3	°F·ft2·hr/BTU	Pennsylvania 2016 Statewide TRM, Section 2.3.6, Table 2-64
			Temperature of Hot Water Heater (THOT)	125	°F	Illinois TRM, Version 5.0,Volume 3: Residential Measures, Final February 11th, 2016; Effective: June 1st, 2016, Section 5.4.2, page 167
			Surface Area of Unwrapped Water Heater Tank (ABASE)	23.18	ft2	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017,Table 2-63, assumed 40 gallon tank.
Water Heater Timeclock	Domestic Hot Water	delta_kWh = DHW_baseUEC x SVGE	Percent savings from timer (Savings_factor_timeclock)	0.05	%	ENERGYSTAR website, accessed 11/21/17. https://energystar.zendesk.com/hc/en-us/articles/212111687-Are-there-timers-for-hot-water-heaters-Are-they-beneficial-
			Baseline DHW UEC, single family (DHW_baseUEC_single)	1,931	kWh/year	Gulf Power B17 LoadMap
			Baseline DHW UEC, multifamily (DHW_baseUEC_multi)	1,654	kWh/year	Gulf Power B17 LoadMap
			Baseline DHW UEC, manufactured home (DHW_baseUEC_mh)	2,449	kWh/year	Gulf Power B17 LoadMap
Energy Star Air Purifier	Electronics	delta_kWh = kWhBase - kWhESTAR	Baseline Air Purifier Consumption (airpurbase)	1,072	kWh	Illinois 2015 Statewide Technical Reference Manual, Section 5.1.1
			Efficient Air Purifier Consumption (airpurestar)	430	kWh	ENERGY STAR Certified Room Air Cleaners Qualified Products List, Average of all models between CADR 101 and 150, Accessed 1/5/16
Energy Star Audio-Video Equipment	Electronics	delta_kWh = [(P_Active_Base - P_Active_ES)*H_Active + (P_Idle_Base - P_Idle_ES)*H_Idle + (P_Sleep_Base - P_Sleep_ES)*H_Sleep]/WhperkWh	Baseline Home Audio System Sleep Power (audiosleepbase)	1.8	W	Lawrence Berkeley National Laboratory Standby Power Study
			Residential Home Audio System Sleep Time (audiosleephou)	6450	Hours	2011 IESO Prescriptive Measures and Assumptions pg. 49
			Efficient Home Audio System Active Power (audioonestar)	5	W	ENERGY STAR AV Version 3.0 Program Requirements (Rev Dec-2014)
			Watt-hours per kilowatt-hour conversion factor	1000	watt-hours/kWh	
			Baseline Home Audio System Idle Power (audioidlebase)	33.99	W	Lawrence Berkeley National Laboratory Standby Power Study
			Residential Home Audio System Active Time (audioonhou)	1580	Hours	2011 IESO Prescriptive Measures and Assumptions pg. 49
			Baseline Home Audio System Active Power (audioonbase)	39.16	W	Lawrence Berkeley National Laboratory Standby Power Study
			Efficient Home Audio System Sleep Power (audiosleepestar)	1	W	ENERGY STAR AV Version 3.0 Program Requirements (Rev Dec-2014)
			Efficient Home Audio System Idle Power (audioidleestar)	5	W	ENERGY STAR AV Version 3.0 Program Requirements (Rev Dec-2014)
			Residential Home Audio System Idle Time (audioidlehou)	730	Hours	2011 IESO Prescriptive Measures and Assumptions pg. 49
Energy Star Imaging Equipment	Electronics	delta_kWh = [(speed*0.35-3)*weeks/year] - [(speed * 0.13 +	Image speed per minute (imgspeed)	25	pages per minute	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute
			weeks	52.1	weeks/year	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute
			Base speed parameter 2 (imgbase2)	3	N/A	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute

Energy Star Imaging Equipment	Electronics	0.05)*weeks/year]	Change speed parameter 1(imgestar1)	0.13	N/A	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute
			Base speed parameter (imgbase1)	0.35	N/A	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute
			Change speed parameter 2 (imgestar2)	0.05	N/A	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute
Energy Star Personal Computer	Electronics	delta_kWh = [(P_Idle_Base - P_Idle_ES)*Hours_Idle + (P_Sleep_Base - P_Sleep_ES)*Hours_Sleep+(P_Off_Base - P_Off_ES)*Hours_Off] / WhperkWh	Watt-hours per kilowatt-hour	1000	w/kWh	Conversion factor
			Efficient Residential Desktop Off Power (deskoffeff)	0.413926941	Watts	ENERGY STAR Office Equipment Savings Calculator updated October 2016, default value. ENERGY STAR Computer 6.1 Program Requirements.
			Residential Desktop Idle Hours (deskidlehou)	5628	Hours	ENERGY STAR Office Equipment Savings Calculator, October 2016; Office Technology Energy Use and Savings Potential in New York, Lawrence Berkeley Laboratory. LBL-36752.
			Baseline Residential Desktop Off Power (deskoffbase)	1	Watts	ENERGY STAR Office Equipment Savings Calculator updated October 2016, default value. EPA research on available products, 2013
			Baseline Residential Desktop Idle Power (deskidlebase)	48	Watts	ENERGY STAR Office Equipment Savings Calculator updated October 2016, default value. EPA research on available products, 2013
			Efficient Residential Desktop Sleep Power (desksleepeff)	2	Watts	ENERGY STAR Office Equipment Savings Calculator updated October 2016, default value. ENERGY STAR Computer 6.1 Program Requirements.
			Baseline Residential Desktop Sleep Power (desksleepbase)	2	Watts	ENERGY STAR Office Equipment Savings Calculator updated October 2016, default value. EPA research on available products, 2013
			Residential Desktop Hours Off (deskoffhou)	2326	Hours	ENERGY STAR Office Equipment Savings Calculator, October 2016; Office Technology Energy Use and Savings Potential in New York, Lawrence Berkeley Laboratory. LBL-36752.
			Residential Desktop Sleep Hours (desksleephou)	806	Hours	ENERGY STAR Office Equipment Savings Calculator, October 2016; Office Technology Energy Use and Savings Potential in New York, Lawrence Berkeley Laboratory. LBL-36752.
			Efficient Residential Desktop Idle Power (deskidleeff)	27	Watts	ENERGY STAR Office Equipment Savings Calculator updated October 2016, default value. ENERGY STAR Computer 6.1 Program Requirements.
Energy Star TV	Electronics	delta_kWh = (Wbase, active - Wee, active)/(1000W/kW) * HOUactive * daysused	Residential Television Active Time (tvhou)	5	Hours/Day	Pennsylvania 2016 Statewide TRM, Section 2.5.1, Table 2-98
			Efficient Television Power Draw (tvpowestar)	0.038833333	kW	Pennsylvania 2016 Statewide TRM, Section 2.5.1, Table 2-99
			Baseline Television Power Draw (tvpowbase)	0.059833333	kW	Pennsylvania 2016 Statewide TRM, Section 2.5.1, Table 2-99
			Television days used (tvdays)	365	days	ENERGY STAR Office Equipment Calculator, updated October 2016. Used Multifunction device inputs for laser, color, 25 pages per minute
Smart Power Strip	Electronics	delta_kWh = ((kW_comp,idle x HOU_comp,idle) + (kW_TV,idle x HOU_TV,idle))/2 x 365 x ISR	Idle kW of computer system (KW_comp,idle)	0.00539	kW	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017, Section 2.5.3, Table 2-104.
			Smart Strip Plug In-Service Rate (ISR)	1		Pennsylvania 2016 Statewide TRM, Section 2.5.3, Table 2-104
			Daily hours of computer idle time (HOU_comp,idle)	20	hours/day	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017, Section 2.5.3, Table 2-104.
			Days per year (daysperyear)	365	days/year	Standard
			Idle kW of TV system (KW_TV,idle)	0.00935	kW	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017, Section 2.5.3, Table 2-104.
			Daily hours of TV idle time (HOU_TV,idle)	20	hours/day	Pennsylvania Statewide TRM, June 2016, Errata Update February 2017, Section 2.5.3, Table 2-104.
14 SEER ASHP from base electric resistance heating	HVAC	delta_kWh_cool = TONS x EFLHCOOL x (12/SEERBASE - 12/SEEREFF) delta_kWh_heat = TONS x EFLHEAT x (12/SEERBASE - 12/SEEREFF)	Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Electric Resistance Coil HSPF	3.41	BTU/W·hr	Engineering Standard
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			14 SEER Residential Air Source Heat Pump, <65,000 BTU, Efficient HSPF (HSPFEFF14SEER)	8.2	BTU/W·hr	Measure Defintion
			Residential Split AC Baseline Efficiency (SEERBASE)	14	BTU/W·hr	Minimum Federal Standard (US Department of Energy, Energy Efficiency & Renewable Energy)
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			14 SEER Residential Air Source Heat Pump, <65,000 BTU, Efficient SEER (SEEREFF)	14		US Federal Standard

15 SEER Air Source Heat Pump	HVAC	delta_kWh_cool = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool delta_kWh_heat = CAPY_heat/(1000 W/kW)×(1/HSPF_base - 1/HSPF_eff)×EFLH_heat	Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Air Source Heat Pump, Heating Seasonal Performance Factor EE Unit, 15 SEER (HSPFEFF)	8.5	BTU/W·hr	Measure Defintion
			Heating Seasonal Performance Factor baseline (HSPFBASE)	8.2		U.S. Federal Standard
			Air Source Heat Pump heating capacity (CAPY_HEAT)	12000	Btu/ton	Conversion factor
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Cooling capacity of the HP (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Air Source Heat Pump, <65,000 BTU, Efficient 15 SEER (SEEREFF)	15		Measure Definition
15 SEER Central AC	HVAC	delta_kWh = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool	Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Central AC, <65,000 BTU, Efficient 15 SEER (SEEREFF)	15		Measure Definition
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Cooling capacity of the CAC (CAPY_COOL)	12000	Btu/ton	Conversion factor
16 SEER Air Source Heat Pump	HVAC	delta_kWh_cool = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool delta_kWh_heat = CAPY_heat/(1000 W/kW)×(1/HSPF_base - 1/HSPF_eff)×EFLH_heat	Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Air Source Heat Pump heating capacity (CAPY_HEAT)	12000	Btu/ton	Conversion factor
			Cooling capacity of the HP (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Air Source Heat Pump, <65,000 BTU, Efficient 16 SEER (SEEREFF)	16		Measure Definition
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Air Source Heat Pump, Heating Seasonal Performance Factor EE Unit, 16 SEER (HSPFEFF)	9		Measure Defintion
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Heating Seasonal Performance Factor baseline (HSPFBASE)	8.2		U.S. Federal Standard
16 SEER Central AC	HVAC	delta_kWh = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool	Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Cooling capacity of the CAC (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Central AC, <65,000 BTU, Efficient 16 SEER (SEEREFF)	16		Measure Definition
			Air Source Heat Pump heating capacity (CAPY_HEAT)	12000	Btu/ton	Conversion factor
			Air Source Heat Pump, Heating Seasonal Performance Factor EE Unit, 17 SEER (HSPFEFF)	9.5		Measure Defintion
		delta_kWh_cool = CAPY_cool/(1000 W/kW)×(1/SEER_base -	Single Family HVAC equipment tonnage	3	ton	Engineering Assumption

17 SEER Air Source Heat Pump	HVAC	1/SEER_eff)×EFLH_cool delta_kWh_heat = CAPY_heat/(1000 W/kW)×(1/HSPF_base - 1/HSPF_eff)×EFLH_heat	Heating Seasonal Performance Factor baseline (HSPFBASE)	8.2		U.S. Federal Standard
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Cooling capacity of the HP (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Air Source Heat Pump, <65,000 BTU, Efficient 17 SEER (SEEREFF)	17		Measure Definition
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
17 SEER Central AC	HVAC	delta_kWh = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool	Cooling capacity of the CAC (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Central AC, <65,000 BTU, Efficient 17 SEER (SEEREFF)	17		Measure Definition
18 SEER Air Source Heat Pump	HVAC	delta_kWh_cool = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool delta_kWh_heat = CAPY_heat/(1000 W/kW)×(1/HSPF_base - 1/HSPF_eff)×EFLH_heat	Air Source Heat Pump, <65,000 BTU, Efficient 18 SEER (SEEREFF)	18		Measure Definition
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Air Source Heat Pump heating capacity (CAPY_HEAT)	12000	Btu/ton	Conversion factor
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Heating Seasonal Performance Factor baseline (HSPFBASE)	8.2		U.S. Federal Standard
			Cooling capacity of the HP (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Air Source Heat Pump, Heating Seasonal Performance Factor EE Unit, 18 SEER (HSPFEFF)	9.5		Measure Defintion
18 SEER Central AC	HVAC	delta_kWh = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool	Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Cooling capacity of the CAC (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Central AC, <65,000 BTU, Efficient 18 SEER (SEEREFF)	18		Measure Definition
21 SEER Air Source Heat Pump	HVAC	delta_kWh_cool = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool delta_kWh_heat = CAPY_heat/(1000 W/kW)×(1/HSPF_base - 1/HSPF_eff)×EFLH_heat	Heating Seasonal Performance Factor baseline (HSPFBASE)	8.2		U.S. Federal Standard
			Air Source Heat Pump, Heating Seasonal Performance Factor EE Unit, 21 SEER (HSPFEFF)	10	BTU/W·hr	Measure Defintion
			Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Cooling capacity of the HP (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Air Source Heat Pump heating capacity (CAPY_HEAT)	12000	Btu/ton	Conversion factor
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Air Source Heat Pump, <65,000 BTU, Efficient 21 SEER (SEEREFF)	21		Measure Definition

			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
21 SEER ASHP from base electric resistance heating	HVAC	delta_kWh_cool = TONS x EFLHCOOL x (12/SEERBASE - 12/SEEREFF) delta_kWh_heat = TONS x EFLHEAT x (12/SEERBASE - 12/SEEREFF)	Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Electric Resistance Coil HSPF	3.41	BTU/W·hr	Engineering Standard
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			21 SEER Residential Air Source Heat Pump, <65,000 BTU, Efficient HSPF (HSPFEFF21SEER)	10	BTU/W·hr	Measure Defintion
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
			Residential Split AC Baseline Efficiency (SEERBASE)	14	BTU/W·hr	Minimum Federal Standard (US Department of Energy, Energy Efficiency & Renewable Energy)
			21 SEER Residential Air Source Heat Pump, <65,000 BTU, Efficient SEER (SEEREFF)	21		Measure Defintion
21 SEER Central AC	HVAC	delta_kWh = CAPY_cool/(1000 W/kW)×(1/SEER_base - 1/SEER_eff)×EFLH_cool	Single Family HVAC equipment tonnage	3	ton	Engineering Assumption
			Seasonal Energy Efficiency Ratio baseline CAC or HP (SEER_base)	14		US Federal Standard
			Multi-Family HVAC equipment tonnage	2	ton	Engineering Assumption
			Central AC, <65,000 BTU, Efficient 21 SEER (SEEREFF)	21		Measure Definition
			Cooling capacity of the CAC (CAPY_COOL)	12000	Btu/ton	Conversion factor
			Manufactured Home HVAC equipment tonnage	3	ton	Engineering Assumption
Energy Star Room AC	HVAC	delta_kWh = [Tons x EFLHCOOL x (12/SEERBASE - 12/SEEREFF)]	Energy Star Room AC Capacity (TONS)	1	Tons	Measure Definition
			Efficient Energy Star Packaged AC Efficiency (SEEREFF)	12	BTU/W·hr	Measure Definition
			Residential Packaged AC Baseline Efficiency (SEERBASE)	10.9	BTU/W·hr	Minimum Federal Standard as of 6/1/14 (10 CFR 430.32(b)), assume 1 ton unit without reverse cycle, with louvered sides
Ground Source Heat Pump	HVAC	delta_kWh = TONS x EFLHCOOL x (12/SEERBASE - 12/SEEREFF) delta_kWh = TONS x EFLHEAT x (1/HSPFBASE - 1/HSPFEFF)	Ground Source Heat Pump, Closed Loop, <135,000 BTU, Efficient COP (COPEFF)	3.6	BTU/W·hr	AHRI Database, Average 2.5 Ton Unit
			GSHP Capacity (TONS)	4	Tons	Measure Definition
			HVAC Effective Full Load Cooling Hours (EFLHCOOL)	See Table Below	Hours	Based on Full Load Hour assumptions taken from the ENERGY STAR calculator (http://www.energystar.gov/ia/business/bulk_purchasing/bpsavings_calc/Calc_CAC.xls) and reduced by 33% due to assumption that the average air conditioning is oversized by 50% (Neme, Proctor, Nadal, 1999; "National Energy Savings Potential From Addressing Residential HVAC Installation Problems").
			Ground Source Heat Pump, Closed Loop, <135,000 BTU, Efficient EER (EEREFF)	15	BTU/W·hr	AHRI Database, Average 6 Ton Unit
			Residential Split HP Baseline Heating Efficiency (HSPFBASE)	8.2	BTU/W·hr	Minimum Federal Standard (US Department of Energy, Energy Heating Efficiency & Renewable Energy)
			HVAC Effective Full Load Heating Hours (EFLHHEAT)	See Table Below	Hours	Based on Full Load Hour assumptions taken from the ENERGY STAR calculator
			Residential Split HP Baseline Cooling Efficiency (SEERBASE)	14		Minimum Federal Standard (US Department of Energy, Energy Cooling Efficiency & Renewable Energy)
Variable Refrigerant Flow (VRF) HVAC Systems	HVAC	delta_kWh = kWh_eval x AdjFactor	Verified energy savings for VRF heat pump mesure (delta_kWh)	1108.4	kWh	Evaluation of Georgia Power Company's 2014 Residential DSM Programs. Nexant, July 2015.
			VRF Adjustment Factor - Single Family in FL Zone 2	1.54		Adjust verified savings based on building type and climate zone
			VRF Adjustment Factor - Multi-Family in FL Zone 2	1.03		Adjust verified savings based on building type and climate zone
			VRF Adjustment Factor - Manufactured Home in FL Zone 2	1.54		Adjust verified savings based on building type and climate zone
			VRF Adjustment Factor - Single Family in FL Zone 1	1.81		Adjust verified savings based on building type and climate zone
			VRF Adjustment Factor - Multi-Family in FL Zone 1	1.21		Adjust verified savings based on building type and climate zone
			VRF Adjustment Factor - Manufactured Home in FL Zone 1	1.81		Adjust verified savings based on building type and climate zone
Air Sealing-Infiltration Control	HVAC	delta_kWh = EUI x AREA x SVG = UEC x SVG	Air Sealing Energy Savings Factor (SVGE)	See Table Below	%	US Department of Energy, Energy Star, "Methodology for Estimated Energy Savings from Cost-Effective Air Sealing and Insulating".
			Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model

Ceiling Insulation(R12 to R38)	HVAC	Building Simulation Modeling (BEOpt model)	Zone 2 Heating load change case (R12-R38) modeled for single family (Z2HeatChangeSingleR12)	2969	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Existing Residential Ceiling Insulation, R-Value (RBASE)	See Table Below	°F·ft2·hr/BTU	US Energy Information Administration, 2009 Residential Energy Consumption Survey, Table HC-2.10 (Released April 2013)
			Zone 2 Heating load base case (R12-R38) modeled for multi-family (Z2HeatBaseMultiR12)	1210	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R12-R38) modeled for multi-family (Z2HeatChangeMultiR12)	971	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load base case (R12-R38) modeled for manufactured home (Z2HeatBaseMHR12)	1284.87	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load change case (R12-R38) modeled for manufactured home (Z2HeatChangeMHR12)	1033.21	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load base case (R12-R38) modeled for single family (Z2HeatBaseSingleR12)	3373	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	12	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Cooling load change case (R12-R38) modeled for manufactured home (Z2CoolChangeMHR12)	3167.64	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R12-R38) modeled for single family (Z2CoolChangeSingleR12)	4153	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R12-R38) modeled for manufactured home (Z2CoolBaseMHR12)	3433.18	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load base case (R12-R38) modeled for single family (Z2CoolBaseSingleR12)	4592	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R12-R38) modeled for multi-family (Z2CoolBaseMultiR12)	2248	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R12-R38) modeled for multi-family (Z2CoolChangeMultiR12)	1965	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
Ceiling Insulation(R19 to R38)	HVAC	Building Simulation Modeling (BEOpt	Zone 2 Heating load change case (R19-R38) modeled for multi-family (Z2HeatChangeMultiR19)	986	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load change case (R19-R38) modeled for manufactured home (Z2HeatChangeMHR19)	1044.34	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	19	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R19-R38) modeled for single family (Z2HeatChangeSingleR19)	2998	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R19-R38) modeled for single family (Z2HeatBaseSingleR19)	3204	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R19-R38) modeled for manufactured home (Z2HeatBaseMHR19)	1166.67	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition

Ceiling Insulation(R19 to R38)	HVAC	model)	Zone 2 Heating load base case (R19-R38) modeled for multi-family (Z2HeatBaseMultiR19)	1106	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R19-R38) modeled for manufactured home (Z2CoolBaseMHR19)	3312.24	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load base case (R19-R38) modeled for multi-family (Z2CoolBaseMultiR19)	2129	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R19-R38) modeled for single family (Z2CoolChangeSingleR19)	4176	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load change case (R19-R38) modeled for manufactured home (Z2CoolChangeMHR19)	3180.16	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R19-R38) modeled for multi-family (Z2CoolChangeMultiR19)	1984	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R19-R38) modeled for single family (Z2CoolBaseSingleR19)	4396	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
Ceiling Insulation(R2 to R38)	HVAC	Building Simulation Modeling (BEOpt model)	Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	2	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load base case (R2-R38) modeled for manufactured home (Z2HeatBaseMHR2)	1965.61	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load base case (R2-R38) modeled for single family (Z2HeatBaseSingleR2)	4437	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load change case (R2-R38) modeled for multi-family (Z2HeatChangeMultiR2)	930	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load change case (R2-R38) modeled for single family (Z2HeatChangeSingleR2)	2907	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R2-R38) modeled for multi-family (Z2HeatBaseMultiR2)	1806	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load change case (R2-R38) modeled for manufactured home (Z2HeatChangeMHR2)	1011.34	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R2-R38) modeled for manufactured home (Z2CoolChangeMHR2)	3118.02	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load base case (R2-R38) modeled for multi-family (Z2CoolBaseMultiR2)	2975	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R2-R38) modeled for multi-family (Z2CoolChangeMultiR2)	1902	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R2-R38) modeled for single family (Z2CoolChangeSingleR2)	4068	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R2-R38) modeled for manufactured home (Z2CoolBaseMHR2)	4171.36	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load base case (R2-R38) modeled for single family (Z2CoolBaseSingleR2)	5774	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load change case (R30-R38) modeled for multi-family (Z2HeatChangeMultiR30)	991	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units

Ceiling Insulation(R30 to R38)	HVAC	Building Simulation Modeling (BEOpt model)	Zone 2 Heating load base case (R30-R38) modeled for multi-family (Z2HeatBaseMultiR30)	1025	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load base case (R30-R38) modeled for manufactured home (Z2HeatBaseMHR30)	1087.53	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load change case (R30-R38) modeled for manufactured home (Z2HeatChangeMHR30)	1052.37	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load base case (R30-R38) modeled for single family (Z2HeatBaseSingleR30)	3083	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	30	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R30-R38) modeled for single family (Z2HeatChangeSingleR30)	3021	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Cooling load base case (R30-R38) modeled for manufactured home (Z2CoolBaseMHR30)	3232.91	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R30-R38) modeled for single family (Z2CoolChangeSingleR30)	4200	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load change case (R30-R38) modeled for multi-family (Z2CoolChangeMultiR30)	1994	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R30-R38) modeled for single family (Z2CoolBaseSingleR30)	4261	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R30-R38) modeled for multi-family (Z2CoolBaseMultiR30)	2035	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R30-R38) modeled for manufactured home (Z2CoolChangeMHR30)	3196.37	kwh	BEOpt model for a 1,375 sq ft manufactured home
Central AC Tune Up	HVAC	delta_kWh = EUI x AREA x SVGE	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			AC Maintenance Energy Savings Factor (SVGE)	0.05	%	Illinois 2015 Statewide TRM Version 4.0, Section 5.3.10
Duct Insulation	HVAC	delta_kWh = EUI x AREA x SVG	Duct Insulation Energy Savings Factor (SVGE)	0.02	%	Pennsylvania Public Utility Commission, Energy Efficiency Potential Study for Pennsylvania Final Report, 2015, Appendix D
			Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
Duct Repair	HVAC	delta_kWh = EUI x AREA x SVG	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Duct Sealing Energy Savings Factor (SVGE)	0.12	%	Regional Technical Forum - Residential: Heating/Cooling - Duct Sealing SF V2.0
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
Energy Star Certified Roof Products	HVAC	delta_kWh = ENERGYBASE x (AREA / NFLOORS) x SVG	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Energy Star Certified Roof Savings (SVG)	0.125		https://www.energystar.gov/products/building_products/roof_products
			Average Premise Area (AREA)	See Table Below	Square Feet	End-Use Study
			Baseline Untreated Roof Energy Consumption (ENERGYBASE)	See Table Below	kWh/ft2	US Department of Energy Cool Roof Calculator
			Average Premise Number of Floors (NFLOORS)	See Table Below		End-Use Study
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Door Insulated Area (A)	21	ft2	Measure Definition
			Efficiency of Heating System (EFF)	1.92		Illinois TRM Version 6.0, Volume 3: Residential Measures, 5.6.4 Wall and Ceiling/Attic Insulation

Energy Star Door	HVAC	delta_kWh = [(UBASE - 1/REFF) x A x 24 x CDD / EFF] / 1,000,000 x 293.07 delta_kWh = [(UBASE - 1/REFF) x A x 24 x HDD / EFF] / 1,000,000 x 293.07	Cooling Degree Days (CDD)	See Table Below		ASHRAE 90.1
			Efficient Residential Doors, U-Value (UBASE)	0.17		Energy Star Qualification Criteria for Doors V6.0
			Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Baseline Residential Doors, U-Value (UBASE)	See Table Below	BTU/°F·ft2·hr	IECC 2012
			Existing Residential Doors, U-Value (UBASE)	0.21		Energy Star Qualification Criteria for Doors V5.0
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Heating Degree Days (HDD)	See Table Below		ASHRAE 90.1
Energy Star Windows	HVAC	delta_kWh = {[(UBASE - UEFF) x A x 24 x CDD / EFF] / 1,000,000 x 293.07} delta_kWh = {[(UBASE - UEFF) x A x 24 x HDD / EFF] / 1,000,000 x 293.07}	Cooling Degree Days (CDD)	See Table Below		ASHRAE 90.1
			Energy Star Window U-Value (UEFF)	0.27		Energy Star Qualification Criteria for Windows V6.0
			Efficiency of Cooling System (EFF)	11.7		Indiana TRM Version 2.1, July 15, 2015
			Efficiency of HVAC System (EFF)	1.92		Illinois TRM Version 6.0, Volume 3: Residential Measures, 5.6.4 Wall and Ceiling/Attic Insulation
			Energy Star Windows, SHGC (SHGCEFF)	0.21	%	Measure Definition
			Baseline Residential Windows, SHGC (SHGCBASE)	0.25	%	IECC 2012
			Baseline Residential Windows, U-Value (UBASE)	0.4	BTU/°F·ft2·hr	IECC 2012
			Existing Window U-Value (UBASE)	0.65		IECC 2009, Zone 2
			Window Insulated Area (A)	100	ft2	Measure Definition
			Heating Degree Days (HDD)	See Table Below		ASHRAE 90.1
Floor Insulation	HVAC	Building Simulation Modeling (BEOpt model)	Zone 1 Total load base case modeled for single family (Z1LoadBaseSingleFL)	14,578.00	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 1 Net savings modeled for single family (Z1SaveFL)	15	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Total load base case modeled for single family (Z2LoadBaseSingleFL)	13,883.00	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Net savings modeled for single family (Z2SaveSingleFL)	73	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 1 Total load base case modeled for multi-family (Z1LoadBaseMultiFL)	9,273.00	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 1 Net savings modeled for multi-family (Z1SaveMultiFL)	1	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Total load base case modeled for multi-family (Z2LoadBaseMultiFL)	8,350.00	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Net savings modeled for multi-family (Z2SaveMultiFL)	30	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 1 Total load base case modeled for manufactured home (Z1LoadBaseMHFL)	11,408.00	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 1 Net savings modeled for manufactured home (Z1SaveMHFL)	31	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Total load base case modeled for manufactured home (Z2LoadBaseMHFL)	10,090.00	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Net savings modeled for manufactured home (Z2SaveMHFL)	59	kwh	BEOpt model for a 1,375 sq ft manufactured home
Green Roof	HVAC	delta_kWh = ENERGYBASE x (AREA / NFLOORS) x SVG	Average Premise Number of Floors (NFLOORS)	See Table Below		End-Use Study
			Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Green Roof Savings (SVG)	0.147	%	National Resources Defense Council
			Baseline Untreated Roof Energy Consumption (ENERGYBASE)	See Table Below	kWh/ft2	US Department of Energy Cool Roof Calculator
			Average Premise Area (AREA)	See Table Below	Square Feet	End-Use Study
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model

Heat Pump Tune Up	HVAC	delta_kWh = EUI x AREA x SVGE	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			HP Maintenance Energy Savings Factor (SVGE)	0.05	%	Illinois 2015 Statewide TRM Version 4.0, Section 5.3.10
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
Home Energy Management System	HVAC	delta_kWh = EUI x AREA x SVGE	Average Premise Area (AREA)	See Table Below	Square Feet	End-Use Study
			Energy Management System Energy Savings Factor (SVGEE)	0.0712	%	PG&E Characterization and Potential of Home Energy Management (HEM) Technology
			HVAC Effective Full Load Cooling Hours (EFLHCOOL)	See Table Below	Hours	End-Use Study
			Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			HVAC Effective Full Load Heating Hours (EFLHHEAT)	See Table Below	Hours	End-Use Study
HVAC ECM Motor	HVAC	delta_kWh = (kWBASE - kWEFF) x LF x EFLH x (1 + IFE)	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Circulating Fans Energy Interactive Factor (IFE)	See Table Below	%	Pennsylvania 2016 Statewide TRM, Section 3.3.3, Table 3-66
			Permanent Split Capacitor Fan Motor Electric Demand (kWBASE)	0.048	kW	Pennsylvania 2016 Statewide TRM, Section 3.5.2, Table 3-91
			Circulating Fans Demand Interactive Factor (IFD)	0.3	%	Pennsylvania 2016 Statewide TRM, Section 3.3.3, Table 3-66
			Electronically Commutated Fan Motor Electric Demand (kWEFF)	0.03	kW	Pennsylvania 2016 Statewide TRM, Section 3.5.2, Table 3-91
			HVAC Effective Full Load Cooling Hours (EFLHCOOL)	See Table Below	Hours	End-Use Study
			Circulating Fan Load Factor (LF)	0.9		Pennsylvania 2016 Statewide TRM, Section 3.3.3, Table 3-66
			HVAC Effective Full Load Heating Hours (EFLHHEAT)	See Table Below	Hours	End-Use Study
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
Programmable Thermostat	HVAC	delta_kWh = UEC x SVGE x ADJ	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Smart Thermostat Savings Factor (SVGE)	0.04	%	Gulf Power Smart Rate Pilot Impact Analysis, 2018
			Programmable Thermostat Adjustment Factor (ADJ)	0.43	%	GA Power TRM, programmable t-stat adjustment relative to smart t-stats
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
Radiant Barrier	HVAC	delta_kWh = SpaceHeatUECbase - SpaceHeatUECefficient delta_kWh = SpaceCoolUECbase - SpaceCoolUECefficient	Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Savings Factor	0.1	%	Florida Solar Energy Center, Consumer Dacts about Radiant Barriers, http://www.fsec.ucf.edu/en/publications/pdf/FSEC-FS-37-88.pdf
Sealed crawlspace	HVAC	delta_kWh = KWH_floor ins x SAV_Crawl	KWH_floor ins	See Floor Insulation Impacts		Building Simulation Modeling
			SAV_Crawl	2.22	%	Arkansas TRM - ratio of modeled savings for crawlspace sealing to floor insulation
Smart Thermostat	HVAC	delta_kWh = EUI x AREA x SVG	Space Cooling Unit Energy Consumption (SpaceCoolUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Smart Thermostat Savings Factor (SVGE)	0.04	%	Gulf Power Smart Rate Pilot Impact Analysis, 2018
			Space Heating Unit Energy Consumption (SpaceHeatUEC)	See Table Below	kWh	Gulf UEC/BE-opt model
			Zone 2 Heating load change case (R12-R38 Open Cell Spray Foam) modeled for single family (Z2HeatChangeSingleR12Foam)	2955	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R12-R38) modeled for multi-family (Z2HeatBaseMultiR12)	1210	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	12	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load base case (R12-R38) modeled for single family (Z2HeatBaseSingleR12)	3373	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R12-R38) modeled for manufactured home (Z2HeatBaseMHR12)	1284.87	kwh	BEOpt model for a 1,375 sq ft manufactured home

Spray Foam Insulation(Base R12)	HVAC	Building Simulation Modeling (BEOpt model)	Zone 2 Heating load change case (R12-R38 Open Cell Spray Foam) modeled for multi-family (Z2HeatChangeMultiR12Foam)	865	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R12-R38 Open Cell Spray Foam) modeled for manufactured home (Z2HeatChangeMHR12Foam)	912.08	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R12-R38 Open Cell Spray Foam) modeled for manufactured home (Z2CoolChangeMHR12Foam)	2770.42	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R12-R38 Open Cell Spray Foam) modeled for single family (Z2CoolChangeSingleR12Foam)	3760	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R12-R38) modeled for multi-family (Z2CoolBaseMultiR12)	2248	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R12-R38 Open Cell Spray Foam) modeled for multi-family (Z2CoolChangeMultiR12Foam)	1759	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R12-R38) modeled for single family (Z2CoolBaseSingleR12)	4592	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R12-R38) modeled for manufactured home (Z2CoolBaseMHR12)	3433.18	kwh	BEOpt model for a 1,375 sq ft manufactured home
Spray Foam Insulation(Base R19)	HVAC	Building Simulation Modeling (BEOpt model)	Zone 2 Heating load base case (R19-R38) modeled for single family (Z2HeatBaseSingleR19)	3204	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R19-R38) modeled for manufactured home (Z2HeatBaseMHR19)	1166.67	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	19	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load base case (R19-R38) modeled for multi-family (Z2HeatBaseMultiR19)	1106	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R19-R38 Open Cell Spray Foam) modeled for manufactured home (Z2HeatChangeMHR19Foam)	912.08	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load change case (R19-R38 Open Cell Spray Foam) modeled for multi-family (Z2HeatChangeMultiR19Foam)	866	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load change case (R19-R38 Open Cell Spray Foam) modeled for single family (Z2HeatChangeSingleR19Foam)	2957	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R19-R38) modeled for multi-family (Z2CoolBaseMultiR19)	2129	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R19-R38 Open Cell Spray Foam) modeled for manufactured home (Z2CoolChangeMHR19Foam)	2770.42	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load base case (R19-R38) modeled for manufactured home (Z2CoolBaseMHR19)	3312.24	kwh	BEOpt model for a 1,375 sq ft manufactured home

			Zone 2 Cooling load change case (R19-R38 Open Cell Spray Foam) modeled for multi-family (Z2CoolChangeMultiR19Foam)	1766	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load change case (R19-R38 Open Cell Spray Foam) modeled for single family (Z2CoolChangeSingleR19Foam)	3763	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R19-R38) modeled for single family (Z2CoolBaseSingleR19)	4396	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
Spray Foam Insulation(Base R2)	HVAC	Building Simulation Modeling (BEOpt model)	Zone 2 Heating load base case (R2-R38) modeled for multi-family (Z2HeatBaseMultiR2)	1806	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load base case (R2-R38) modeled for single family (Z2HeatBaseSingleR2)	4437	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load base case (R2-R38) modeled for manufactured home (Z2HeatBaseMHR2)	1965.61	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load change case (R2-R38 Open Cell Spray Foam) modeled for single family (Z2HeatChangeSingleR2Foam)	2960	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load change case (R2-R38 Open Cell Spray Foam) modeled for multi-family (Z2HeatChangeMultiR2Foam)	865	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	2	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R2-R38 Open Cell Spray Foam) modeled for manufactured home (Z2HeatChangeMHR2Foam)	912.86	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R2-R38 Open Cell Spray Foam) modeled for multi-family (Z2CoolChangeMultiR2Foam)	1760	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R2-R38) modeled for single family (Z2CoolBaseSingleR2)	5774	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load change case (R2-R38 Open Cell Spray Foam) modeled for single family (Z2CoolChangeSingleR2Foam)	3766	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load change case (R2-R38 Open Cell Spray Foam) modeled for manufactured home (Z2CoolChangeMHR2Foam)	2780	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load base case (R2-R38) modeled for multi-family (Z2CoolBaseMultiR2)	2975	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R2-R38) modeled for manufactured home (Z2CoolBaseMHR2)	4171.36	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating load base case (R30-R38) modeled for multi-family (Z2HeatBaseMultiR30)	1025	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating load base case (R30-R38) modeled for manufactured home (Z2HeatBaseMHR30)	1087.53	kwh	BEOpt model for a 1,375 sq ft manufactured home

Spray Foam Insulation(Base R30)	HVAC	Building Simulation Modeling (BEOpt model)	Zone 2 Heating load change case (R30-R38 Open Cell Spray Foam) modeled for manufactured home (Z2HeatChangeMHR30Foam)	915.2	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Efficient Residential Ceiling Insulation, R-Value (REFF)	38	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load base case (R30-R38) modeled for single family (Z2HeatBaseSingleR30)	3083	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating load change case (R30-R38 Open Cell Spray Foam) modeled for multi-family (Z2HeatChangeMultiR30Foam)	866	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Baseline Residential Ceiling Insulation, R-Value (RBASE)	30	°F·ft2·hr/BTU	Measure Definition
			Zone 2 Heating load change case (R30-R38 Open Cell Spray Foam) modeled for single family (Z2HeatChangeSingleR30Foam)	2960	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load base case (R30-R38) modeled for multi-family (Z2CoolBaseMultiR30)	2035	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R30-R38) modeled for manufactured home (Z2CoolBaseMHR30)	3232.91	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R30-R38 Open Cell Spray Foam) modeled for manufactured home (Z2CoolChangeMHR30Foam)	2769.82	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling load change case (R30-R38 Open Cell Spray Foam) modeled for single family (Z2CoolChangeSingleR30Foam)	3766	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling load change case (R30-R38 Open Cell Spray Foam) modeled for multi-family (Z2CoolChangeMultiR30Foam)	1765	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling load base case (R30-R38) modeled for single family (Z2CoolBaseSingleR30)	4261	kWh	BEOpt model for a 2,250 sq ft, 1 story single family
Storm Door	HVAC	delta_kWh = [(UBASE - UEFF) x A x 24 x CDD x DUA] / 1,000 x nCool delta_kWh = [(UBASE - UEFF) x A x 24 x HDD / EFF] / 1,000,000 x 293.07	Existing Residential Doors, U-Value (UBASE)	1.1		IECC 2009
			Efficient Residential Doors, U-Value (UBASE)	0.17		Energy Star Qualification Criteria for Doors V6.0
			Cooling Degree Days (CDD)	See Table Below		ASHRAE 90.1
			Baseline Residential Doors, U-Value (UBASE)	0.4	BTU/°F·ft2·hr	IECC 2012
			New Residential Doors, U-Value (UBASE)	0.21		Energy Star Qualification Criteria for Doors V5.0
			Door Insulated Area (A)	21	ft2	Measure Definition
			Seasonal Energy Efficiency Ratio of cooling system (ηCool)	13	kBtu/kWh	Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 6.0
			Discretionary Use Adjustment (DUA)	0.75		Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 6.0
			Efficiency of Heating System (EFF)	1.92		Illinois TRM Version 6.0, Volume 3: Residential Measures, 5.6.4 Wall and Ceiling/Attic Insulation
			Heating Degree Days (HDD)	See Table Below		ASHRAE 90.1
			Zone 1 Cooling base load modeled for single family (Z1CoolBaseSFWL)	8068	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 1 Cooling change load modeled for single family (Z1CoolChgSFWL)	7714	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 1 Cooling base load modeled for multi-family (Z1CoolBaseMFWL)	4260	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 1 Cooling change load modeled for multi-family (Z1CoolChgMFWL)	4163	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units

Wall Insulation	HVAC	Building Simulation Modeling (BEOpt model)	Zone 1 Cooling base load modeled for manufactured home (Z1CoolBaseMHWL)	6102	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 1 Cooling change load modeled for manufactured home (Z1CoolChgMHWL)	5858	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling base load modeled for single family (Z2CoolBaseSFWL)	4420	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling change load modeled for single	4177	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Cooling base load modeled for multi-family (Z2CoolBaseMFWL)	2231	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling change load modeled for multi-family (Z2CoolChgMFWL)	2175	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Cooling base load modeled for manufactured home (Z2CoolBaseMHWL)	3409	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Cooling change load modeled for manufactured home (Z2CoolChgMHWL)	3246	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 1 Heating base load modeled for single family (Z1HeatBaseSFWL)	156	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 1 Heating change load modeled for single family (Z1HeatChgSFWL)	76	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 1 Heating base load modeled for multi-family (Z1HeatBaseMFWL)	31	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 1 Heating change load modeled for multi-family (Z1HeatChgMFWL)	9	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 1 Heating base load modeled for manufactured home (Z1HeatBaseMHWL)	97	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 1 Heating change load modeled for manufactured home (Z1HeatChgMHWL)	38	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating base load modeled for single family (Z2HeatBaseSFWL)	3212	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating change load modeled for single family (Z2HeatChgSFWL)	2342	kwh	BEOpt model for a 2,250 sq ft, 1 story single family
			Zone 2 Heating base load modeled for multi-family (Z2HeatBaseMFWL)	1199	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating change load modeled for multi-family (Z2HeatChgMFWL)	864	kwh	BEOpt model for a 1,300 sq ft multi-family, the middle unit of 3 side-by-side units
			Zone 2 Heating base load modeled for manufactured home (Z2HeatBaseMHWL)	2027	kwh	BEOpt model for a 1,375 sq ft manufactured home
			Zone 2 Heating change load modeled for manufactured home (Z2HeatChgMHWL)	1331	kwh	BEOpt model for a 1,375 sq ft manufactured home
Window Sun Protection	HVAC	delta_kWh =CAPY x (1/EER) x EFLH x ((1-SHGCBASE) - (1-SHGCEFF))	Window Shade Film SHGC (SHGCEFF)	0.35	%	Measure Definition
			HVAC Effective Full Load Cooling Hours (EFLHCOOL)	See Table Below	Hours	End-Use Study
			Average HVAC Capacity by Building Type (CAPY)	See Table Below	Btu/hr	End-Use Study
			Average HVAC Efficiency by Building Type (EER)	See Table Below	BTU/W·hr	End-Use Study
			Existing Residential Windows, SHGC (SHGCBASE)	0.33	%	Assumed for below code windows
CFL - 15W Flood	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	CFL 15W Power of Efficient Lamp (kWEFF)	15	W	Measure Definition
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			CFL 15W Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	19.5	W	Measure Definition
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
CFL - 15W Flood (Exterior)	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	Residential Energy Interactive Factor - Exterior (IFENERGY)	0		N/A for exterior lighting
			CFL 15W Flood Exterior Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	19.5	W	Measure Definition
			CFL 15W Flood Exterior Power of Efficient Lamp (kWEFF)	15	W	Measure Definition

			Residential Exterior Lighting Hours of Use (HOU)	1423.5	Hours	Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-5
CFL-13W	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	CFL 13W Power of Efficient Lamp (kWEFF)	13	W	Measure Definition
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			CFL 13W Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	18	W	Estimated 2020 baseline lamp consumption
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
CFL-23W	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	CFL 23W Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	30	W	Measure Definition
			CFL 23W Power of Efficient Lamp (kWEFF)	23	W	Measure Definition
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
LED - 14W	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			LED 14W Power of Efficient Lamp (kWEFF)	14	W	Measure Definition
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
			LED 14W Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	30	W	Measure Definition
LED - 9W	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	LED 9W Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	18	W	Measure Definition
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			LED 9W Power of Efficient Lamp (kWEFF)	9	W	Measure Definition
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
LED - 9W Flood	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			LED 9W Flood Power of Efficient Lamp (kWEFF)	9	W	Measure Definition
			LED 9W Flood Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	19.5	W	Measure Definition
LED - 9W Flood (Exterior)	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	LED 9W Flood Exterior Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	19.5	W	Measure Definition
			Residential Exterior Lighting Hours of Use (HOU)	1423.5	Hours	Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-5
			LED 9W Flood Exterior Power of Efficient Lamp (kWEFF)	9	W	Measure Definition
			Residential Energy Interactive Factor (IFENERGY)	0		N/A for exterior lighting
LED-5W Chandelier	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	LED 5W Chandelier Power of Efficient Lamp (kWEFF)	5	W	Measure Definition
			LED 5W Chandelier Power of EISA-2020 Compliant Baseline Equipment (kWBASE)	12	W	Measure Definition
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
Linear LED	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	Power of standard wattage T8 fixture (kWBASE)	32	W	Wisconsin FoTechnical Reference Manual
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
			Power of linear LED lamp (kWEFF)	18	W	Measure Definition
Low Wattage T8 Fixture	Lighting	delta_kWh = (kWBASE - kWEFF) x HOU x (1 + IFENERGY) / 1000	Power of low wattage T8 fixture (kWEFF)	26	W	Measure Definition
			Lighting Hours of Use (HOU)	902	Hours	Indiana TRM Version 2.1, July 15, 2015
			Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			Power of T8 Baseline Equipment (kWBASE)	32	W	Wisconsin FoTechnical Reference Manual
Exterior Lighting Controls	Lighting	delta_kWh = kWCONTROLLED x HOU x SVGEE	Residential Exterior Lighting Hours of Use (HOU)	949	Hours	CEE Residential Lighting Controls Market Characterization, 2014
			Residential Exterior Lighting Controls Savings Factor (SVGEE)	0.5	%	CEE Residential Lighting Controls Market Characterization, 2014
			Total Lighting Load Connected to Control (kWCONTROLLED)	0.12	kW	Measure Definition

Interior Lighting Controls	Lighting	delta_kWh = kWCONTROLLED x HOU x (SVGEE - SVGBASE) x (1 + IFENERGY)]	Residential Energy Interactive Factor (IFENERGY)	0.172857143		Pennsylvania 2016 Statewide TRM, Section 2.1.1, Table 2-6
			Code Required Controls Saving Factor (SVGBASE)	See Table Below	%	Engineering Assumption
			Total Lighting Load Connected to Control (kWCONTROLLED)	0.12	kW	Measure Definition
			Lighting Hours of Use (HOU)	902	Hours	End-Use Study
			Residential Occupancy Sensor Savings Factor (SVGEE)	0.29	%	Pennsylvania 2016 Statewide TRM, Section 2.1.2, Table 2-7
Energy Star Bathroom Ventilating Fan	Miscellaneous	delta_kWh = CFM * [(1/EFFBASE) - (1/EFFEFF)] / 1000 * HOU	Bathroom Exhaust Fan Hours of Operation (exfanhou)	350	Hours	Codes and Standards Enahncement Initative for PY2004: Title 24 Standards Development, PG&E
			Bathroom Exhaust Fan Baseline Efficiency (exfanparambase)	3.1	CFM/Watt	Illinois 2015 Statewide Technical Reference Manual, Section 5.3.9
			Existing Bathroom Exhaust Fan Efficiency (EFFBASE)	2.79	CFM/Watt	Illinois 2015 Statewide Technical Reference Manual, Section 5.3.9
			Capacity of Bathroom Exhaust Fan (exfancfm)	83.5	CFM	Codes and Standards Enahncement Initative for PY2004: Title 24 Standards Development, PG&E (avg of high CFM and low CFM)
			Efficient Bathroom Exhaust Fan Efficiency (exfanparamestar)	8.3	CFM/Watt	Illinois 2015 Statewide Technical Reference Manual, Section 5.3.9
Energy Star Ceiling Fan	Miscellaneous	delta_kWh = {[%LOW x (LOWBASE - LOWEFF)] + [%MED x (MEDBASE - MEDEFF)] + [%HIGH x (HIGHBASE - HIGHEFF)]} x HOU x 365 / 1000	Minimum Airflow of Medium Setting (fancfmmed)	3000	CFM	ENERGY STAR Qualification Criteria for Ceiling Fans
			ENERGY STAR Airflow Efficiency of High Setting (fanestarhigh)	218.23	CFM/W	ENERGY STAR Qualification Criteria for Ceiling Fans
			Percentage of High Setting Use (fanpcthigh)	0.2	%	Pennsylvania 2016 Statewide TRM, Section 2.4.10, Table 2-96
			Ceiling fan daily hours of use (fanhouday)	3	hours / day	Pennsylvania 2016 Statewide TRM, Section 2.4.10, Table 2-96
			ENERGY STAR Airflow Efficiency of Medium Setting (fanestarmed)	358.99	CFM/W	ENERGY STAR Qualification Criteria for Ceiling Fans
			Minimum Airflow of Low Setting (fancfmlow)	1250	CFM	ENERGY STAR Qualification Criteria for Ceiling Fans
			ENERGY STAR Airflow Efficiency of Low Setting (fanestarlow)	492.12	CFM/W	ENERGY STAR Qualification Criteria for Ceiling Fans
			Percentage of Medium Setting Use (fanpctmed)	0.4	%	Pennsylvania 2016 Statewide TRM, Section 2.4.10, Table 2-96
			Minimum Airflow of High Setting (fancfmhigh)	5000	CFM	ENERGY STAR Qualification Criteria for Ceiling Fans
			Baseline Airflow Efficiency of Low Setting (fanbaselow)	155	CFM/W	ENERGY STAR Qualification Criteria for Ceiling Fans
			Baseline Airflow Efficiency of High Setting (fanbasehigh)	75	CFM/W	ENERGY STAR Qualification Criteria for Ceiling Fans
			Percentage of Low Setting Use (fanpctlow)	0.4	%	Pennsylvania 2016 Statewide TRM, Section 2.4.10, Table 2-96
			Baseline Airflow Efficiency of Medium Setting (fanbasemed)	100	CFM/W	ENERGY STAR Qualification Criteria for Ceiling Fans
Energy Star Dehumidifier	Miscellaneous	delta_kWh = (CAPY x Conv_L / Hrs) x HOU x [(1/EFFBASE) - (1/EFFEFF)]	Baseline Dehumidifier Efficiency (dehumparambase)	1.5	liters/kWh	Federal Standard, 35-45 pints/day
			Liters per pint (literconpint)	0.473	liters/pint	General reference
			Dehumidifier Hours of Use (dehumhou)	1632	Hours	Pennsylvania 2016 Statewide TRM, Section 2.4.8, Page 162
			Hours per day (hrsday)	24	hours per day	General reference
			Efficient Dehumidifier Efficiency (dehumparamestar)	2	liters/kWh	ENERGY STAR Certified Dehumidifiers Qualified Products List, Average of all models within 10% of average CAPY, Accessed 12/29/15
			Dehumidifier Capacity (dehumcap)	40	Pints/Day	ENERGY STAR Certified Dehumidifiers Qualified Products List, Average of all models, Accessed 12/29/15
Heat Pump Pool Heater	Miscellaneous	delta_kWh = Pool_base x Pool_ashp	Estimated heat pump pool heater savings factor (poolashpf)	0.8	%	https://www.energy.gov/energysaver/heat-pump-swimming-pool-heaters
			Estimated electric pool heater consumption w/ cover (Pool_base) in FL Zone 2	11,765	kWh/ year	https://www.energy.gov/energysaver/heat-pump-swimming-pool-heaters
			Estimated electric pool heater consumption w/ cover (Pool_base) in FL Zone 1	12,647	kWh/ year	https://www.energy.gov/energysaver/heat-pump-swimming-pool-heaters
Solar Pool Heater	Miscellaneous	delta_kWh = Pool_base x Pool_solar	Estimated heat pump pool heater savings factor (pool_solar)	0.86	%	Calculated using: https://www.riverpoolsandspas.com/blog/how-much-money-does-swimming-pool-heat-pumps-really-save
			Estimated electric pool heater consumption w/ cover (Pool_base) in FL Zone 2	11,765	kWh/ year	https://www.energy.gov/energysaver/heat-pump-swimming-pool-heaters
			Estimated electric pool heater consumption w/ cover (Pool_base) in FL Zone 1	12,647	kWh/ year	https://www.energy.gov/energysaver/heat-pump-swimming-pool-heaters
		kWh = [1/EF_single x poolvol x poolturn x pooldays/1,000] -	Solar Capacity Factor (Solar_Cap)	0.19	%	
			Single-Speed pump energy factor(EF_single)	2.4	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Days of Pool Pump Operation (pooldays)	212.8	days per year	ENERGY STAR Pool Pump Calculator, Updated 2013

Solar Powered Pool Pumps	Miscellaneous	[1/EF_single x poolvol x poolturn x pooldays/1,000 * Solar_Cap]	Pump time to complete one turnover (turntime)	12	hours	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pool Volume (poolvol)	22000	gal	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pool turnovers per day (poolturn)	1.5		Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
Two Speed Pool Pump	Miscellaneous	kWh = [1/EF_single x poolvol x poolturn x pooldays/1,000] - [(1/EF_high x (HOU_high/turntime) + 1/EF_low x (HOU_low/turntime)) x poolvol x poolturn x pooldays/1,000]	Pump high speed daily operating hours (HOU_high)	2	hours/day	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Single-Speed pump energy factor(EF_single)	2.4	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump time to complete one turnover (turntime)	12	hours	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump high speed energy factor(EF_high)	3.75	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pool turnovers per day (poolturn)	1.5		Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Days of Pool Pump Operation (pooldays)	212.8	days per year	ENERGY STAR Pool Pump Calculator, Updated 2013
			Pump low speed daily operating hours (HOU_low)	10	hours/day	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pool Volume (poolvol)	22000	gal	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump low speed energy factor(EF_low)	7.26	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
Variable Speed Pool Pump	Miscellaneous	kWh = [1/EF_single x poolvol x poolturn x pooldays/1,000] - [(1/EF_high x (HOU_high/turntime) + 1/EF_low x (HOU_low/turntime)) x poolvol x poolturn x pooldays/1,000]	Single-Speed pump energy factor(EF_single)	2.4	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump time to complete one turnover (turntime)	12	hours	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pool Volume (poolvol)	22000	gal	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump low speed energy factor(EF_low)	7.26	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump high speed daily operating hours (HOU_high)	1	hours/day	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Days of Pool Pump Operation (pooldays)	212.8	days per year	ENERGY STAR Pool Pump Calculator, Updated 2013
			Pump low speed daily operating hours (HOU_low)	11	hours/day	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pump high speed energy factor(EF_high)	3.75	gal/W*hour	Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
			Pool turnovers per day (poolturn)	1.5		Arkansas TRM, Version 6.1, Section 3.7.12, based on ENERGY STAR Pool Pump Savings Calculator updated December 2013
Solar Attic Fan	Miscellaneous	delta_kWh = EUI x AREA x SVGE	Average Premise Area (AREA)	See Table Below	Square Feet	End-Use Study
			Solar Attic Fan Energy Savings Factor (SVGE)	0.06	%	Parker, Danny and Sherwin, John. "Performance Assessment of Photovoltaic Attic Ventilator Fans". Florida Solar Energy Center. May, 2000.
			Miscellaneous Energy Use Intensity (EUIMiscellaneous)	See Table Below	kWh/ft2/yr	FEECA Gulf 2017 Data

General Building
Characteristics_Zone 1 & Zone 2

	Average Premise Area (AREA)	Source	Average Premise Number of Floors (NFLOORS)	Source
Single Family	2,208	Adjust mean from Gulf based on ratios derived from FPL	1.4	US Energy Information Administration, 2015 Residential Energy Consumption Survey, Calculated based on South Atlantic Division
Multi-Family	1,310	Adjust mean from Gulf based on ratios derived from FPL	1	US Energy Information Administration, 2015 Residential Energy Consumption Survey, Calculated based on South Atlantic Division
Manufactured Home	1,382	Adjust mean from Gulf based on ratios derived from FPL	1	US Energy Information Administration, 2015 Residential Energy Consumption Survey, Calculated based on South Atlantic Division

FL Zone 2 Energy Use Intensity (EUI)
(kWh/ft2)

	All	Space Heating	Space Cooling	Domestic Hot Water	Lighting	Cooking
Single Family	9	1.3	1.7	0.9	0.2	0.6
Multi-Family	9	1.9	1.4	1.3	0.2	0.5
Manufactured Home	14	2.9	1.8	1.8	0.3	0.8

FL Zone 1 Energy Use Intensity (EUI)
(kWh/ft2) FPL

	All	Space Heating	Space Cooling	Domestic Hot Water	Lighting	Cooking
Single Family	10	0.04	3.3	0.9	0.2	0.6
Multi-Family	9	0.06	2.7	1.3	0.2	0.5
Manufactured Home	13	0.1	3.5	1.8	0.3	0.8

FL Zone 2 HVAC Parameter

	FL Zone 2, EFLHCOOL	FL Zone 2, EFLHHEAT	CAPY	EER	IFE
Single Family	1,493	889	36,000	11.7	0.3
Multi-Family	1,493	889	24,000	11.7	0.3
Manufactured Home	1,493	889	36,000	11.7	0.3
Source	*Based on Full Load Hour assumptions taken from the ENERGY STAR calculator (http://www.energystar.gov/ia/business/bulk_purchasing/bpsavings_calc/Calc_CAC.xls) and reduced by 33% due to assumption that the average air conditioning is oversized by 50% (Neme, Proctor, Nadal, 1999; "National Energy Savings Potential From Addressing Residential HVAC Installation Problems").*	*Based on Full Load Hour assumptions taken from the ENERGY STAR calculator*	*Engineering Assumption*	*Indiana TRM Version 2.1, July 15, 2015*	*Pennsylvania 2016 Statewide TRM, Section 3.3.3, Table 3-66*

FL Zone 1 HVAC Parameter

	FL Zone 1, EFLHCOOL	FL Zone 1, EFLHHEAT	CAPY	EER	IFE
Single Family	2,452	342	36,000	11.7	0.3
Multi-Family	2,452	342	24,000	11.7	0.3
Manufactured Home	2,452	342	36,000	11.7	0.3
Source	*Adjusted by sales distribution from FPL*	*Adjusted by sales distribution from FPL*	*Engineering Assumption*	*Indiana TRM Version 2.1, July 15, 2015*	*Pennsylvania 2016 Statewide TRM, Section 3.3.3, Table 3-66*

Lighting Parameter_Zone 1 & Zone 2

	HOU	SVGBASE
Single Family	902	0.00
Multi-Family	902	0.00
Manufactured Home	902	0.00
Source	*Indiana TRM Version 2.1, July 15, 2015*	*Engineering Assumption*

Water Heater Parameter_Zone 1 &
Zone 2

	Annual Gallons of Hot Water Use (HW) (Gallons)
Single Family	19,064
Multi-Family	14,986
Manufactured Home	14,866
Source	*Residential End Uses of Water, Version 2. Water Research Foundation, April 2016, http://www.waterrf.org/PublicReportLibrary/4309A.pdf, and Gulf Saturation Survey 2013.*

Insulation Parameter_Zone 1 & Zone
2

	Existing Residential Above-Grade Wall Insulation, R-Value (RBASE)	Existing Residential Ceiling Insulation, R-Value (RBASE)	Existing Residential Floor Insulation, R-Value (RBASE)
Single Family	43%	43%	43%
Multi-Family	43%	43%	43%
Manufactured Home	43%	43%	43%
Source	*US Energy Information Administration, 2015 Residential Energy Consumption Survey, Table HC-2.7 (Released Feb 2017)*	*US Energy Information Administration, 2015 Residential Energy Consumption Survey, Table HC-2.7 (Released Feb 2017)*	*US Energy Information Administration, 2015 Residential Energy Consumption Survey, Table HC-2.7 (Released Feb 2017)*

FL Zone 2 Weather Dependent
Parameter

Parameter	FL Zone 2	FL Zone 1
Heating Degree Days (HDD)	528	215
Source	*ASHRAE 90.1: Tampa Intl.AP, FL*	*Adjusted number derived from National Weather Service Forecast Office based on sales distribution of FPL*
Cooling Degree Days (CDD)	3,517	4,268
Source	*ASHRAE 90.1: Tampa Intl.AP, FL*	*Adjusted number derived from National Weather Service Forecast Office based on sales distribution of FPL*
Dusk-to-Dawn Hours of Use (HOU)	4,018	4,018
Sources	*Based on average civil twilight times across Florida from U.S. Naval Observatory*	*Based on average civil twilight times across Florida from U.S. Naval Observatory*
Air Sealing Energy Savings Factor (SVGE)	0.09	0.07

Sources	*US Department of Energy, Energy Star, "Methodology for Estimated Energy Savings from Cost-Effective Air Sealing and Insulating".*	*US Department of Energy, Energy Star, "Methodology for Estimated Energy Savings from Cost-Effective Air Sealing and Insulating".*
Baseline Untreated Roof Energy Consumption (ENERGYBASE)	1.80	1.80
Sources		

NOTE: HDD and CDD values will be updated for each Zone 2 utility to specific values for that utility

Florida Power & Light Company
Docket No. 20190015-EG
SACE's First Set of Interrogatories
Interrogatory No. 9
Page 1 of 1

QUESTION:
Please identify FPL's year by year assumptions regarding line loss that were used to convert savings on the customers' side of the meter to generation, for as many future years as have been forecast. Please include assumptions for both energy and peak demand, and specify whether these assumptions are based on average or marginal line loss rates. Please specify whether each value is in nominal dollars or in real, inflation-adjusted dollars for a given year. Please also identify the source of these assumptions.

RESPONSE:
FPL utilizes a peak demand line loss factor of 6.14% and an energy line loss factor of 4.86%. Both of these values are based off a line loss study of FPL's system usage that uses average annual usage and usage on peak. FPL does not produce forecasts or projections of future line losses.

DECLARATION

I sponsored the answers to Interrogatory Nos. 1-12, 18-20, 25-28, and 40-47 and co-sponsored the answers to Interrogatory Nos. 13 and 21 from Southern Alliance for Clean Energy's First Set of Interrogatories to Florida Power & Light Company in Docket Nos. 20190015-EG, and the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.

Andrew W. Whitley

Date: 5/20/2019

Totals	670	133	105

TRC Economic Potential

Test performed 2-28-2019

		Measure Name	TRC	Part	RIM	Totals		
						AE	SkW	WkW
Single Family	Turnover	Energy Star Dishwasher	#DIV/0!	83	0.80	2,019,979	221.159	240.421
Multi-Family	Turnover	Energy Star Dishwasher	#DIV/0!	83	0.80	778,473	85.232	92.655
Manufactured Home	Turnover	Energy Star Dishwasher	#DIV/0!	83	0.80	296,362	32.447	35.274
Single Family	New	Energy Star Dishwasher	#DIV/0!	83	0.80	36,688	4.017	4.367
Multi-Family	New	Energy Star Dishwasher	#DIV/0!	83	0.80	14,139	1.548	1.683
Manufactured Home	New	Energy Star Dishwasher	#DIV/0!	83	0.80	5,383	0.589	0.641
Single Family	Turnover	Energy Star Air Purifier	#DIV/0!	1,188	0.80	6,123,580	811.461	585.544
Multi-Family	Turnover	Energy Star Air Purifier	#DIV/0!	1,188	0.80	2,916,903	386.531	278.918
Manufactured Home	Turnover	Energy Star Air Purifier	#DIV/0!	1,188	0.80	3,344,341	443.172	319.790
Single Family	New	Energy Star Air Purifier	#DIV/0!	1,188	0.80	111,220	14.738	10.635
Multi-Family	New	Energy Star Air Purifier	#DIV/0!	1,188	0.80	52,979	7.020	5.066
Manufactured Home	New	Energy Star Air Purifier	#DIV/0!	1,188	0.80	60,742	8.049	5.808
Single Family	Turnover	Energy Star Imaging Equipment	#DIV/0!	111	0.66	393,636	35.688	20.838
Multi-Family	Turnover	Energy Star Imaging Equipment	#DIV/0!	111	0.66	145,760	13.215	7.716
Manufactured Home	Turnover	Energy Star Imaging Equipment	#DIV/0!	111	0.66	2,190	0.199	0.116
Single Family	New	**Energy Star Imaging Equipment**	#DIV/0!	111	0.66	7,149	0.648	0.378
Multi-Family	New	Energy Star Imaging Equipment	#DIV/0!	111	0.66	2,647	0.240	0.140
Manufactured Home	New	Energy Star Imaging Equipment	#DIV/0!	111.39	0.66	40	0.004	0.002
Single Family	Existing	**Energy Star Certified Roof Products**	#DIV/0!	3,176	1.46	66,318,496	25,632.870	22,081.494
Multi-Family	Existing	Energy Star Certified Roof Products	#DIV/0!	2,065.50	1.43	39,468,205	15,394.717	12,939.736
Manufactured Home	Existing	Energy Star Certified Roof Products	#DIV/0!	3,107.14	1.43	8,883,279	3,565.067	2,767.995
Single Family	New	Energy Star Certified Roof Products	#DIV/0!	3,176.35	1.46	1,311,352	516.230	423.104
Multi-Family	New	Energy Star Certified Roof Products	#DIV/0!	2,065.50	1.43	779,696	304.014	255.783
Manufactured Home	New	**Energy Star Certified Roof Products**	#DIV/0!	3,107	1.43	74,450	32.518	19.391
Single Family	Existing	Low Flow Showerhead	10.19	460	0.81	1,621,337	146.035	314.355
Single Family	New	Low Flow Showerhead	10.19	460	0.81	1,130,801	101.852	219.247
Multi-Family	Existing	Low Flow Showerhead	8.01	356	0.81	9,251,295	833.272	1,793.702
Multi-Family	New	Low Flow Showerhead	8.01	356	0.81	378,008	34.048	73.291
Manufactured Home	Existing	Low Flow Showerhead	7.95	353	0.81	1,464,535	131.912	283.954
Manufactured Home	New	Low Flow Showerhead	7.95	353	0.81	59,602	5.368	11.556
Single Family	Existing	Faucet Aerator	5.91	108	0.82	387,775	34.927	75.184
Multi-Family	Turnover	14 SEER ASHP from base electric resistance heating	5.38	9,992	0.87	0	0.000	0.000
Multi-Family	New	14 SEER ASHP from base electric resistance heating	5.38	9,992	0.87	0	0.000	0.000
Single Family	Turnover	14 SEER ASHP from base electric resistance heating	5.38	14,988	0.86	0	0.000	0.000
Manufactured Home	Turnover	14 SEER ASHP from base electric resistance heating	5.38	14,988	0.86	0	0.000	0.000
Single Family	New	14 SEER ASHP from base electric resistance heating	5.38	14,988	0.86	0	0.000	0.000
Manufactured Home	New	14 SEER ASHP from base electric resistance heating	5.38	14,988	0.86	0	0.000	0.000
Single Family	Turnover	Low Wattage T8 Fixture	5.18	18	0.67	0	0.000	0.000
Multi-Family	Turnover	**Low Wattage T8 Fixture**	5.18	18	0.67	0	0.000	0.000
Manufactured Home	Turnover	Low Wattage T8 Fixture	5.18	18	0.67	0	0.000	0.000
Single Family	New	**Low Wattage T8 Fixture**	5.18	18	0.67	0	0.000	0.000
Multi-Family	New	Low Wattage T8 Fixture	5.18	18	0.67	0	0.000	0.000
Manufactured Home	New	Low Wattage T8 Fixture	5.18	18	0.67	0	0.000	0.000
Multi-Family	Existing	Faucet Aerator	4.65	82	0.82	2,038,556	183.615	395.249
Manufactured Home	Existing	Faucet Aerator	4.62	82	0.83	332,686	29.965	64.503
Manufactured Home	Existing	Hot Water Pipe Insulation	4.35	437	0.88	1,219,377	109.830	236.421
Manufactured Home	New	Hot Water Pipe Insulation	4.35	437	0.88	5,677	0.511	1.101
Single Family	Turnover	**Energy Star Dehumidifier**	4.25	459	0.89	310,164	50.870	9.636
Multi-Family	Turnover	Energy Star Dehumidifier	4.25	459	0.89	361,826	59.343	11.241
Manufactured Home	Turnover	Energy Star Dehumidifier	4.25	459.15	0.89	48,790	8.002	1.516
Single Family	New	Energy Star Dehumidifier	4.25	459	0.89	5,633	0.924	0.175
Multi-Family	New	Energy Star Dehumidifier	4.25	459	0.89	6,572	1.078	0.204
Manufactured Home	New	Energy Star Dehumidifier	4.25	459.15	0.89	886	0.145	0.028
Single Family	Turnover	Energy Star Room AC	4.11	209	1.51	570,848	352.408	0.000
Multi-Family	Turnover	Energy Star Room AC	4.11	209	1.51	294,327	181.700	0.000
Manufactured Home	Turnover	**Energy Star Room AC**	4.11	209	1.51	336,324	207.627	0.000
Single Family	New	Energy Star Room AC	4.11	209	1.51	11,403	7.040	0.000
Multi-Family	New	**Energy Star Room AC**	4.11	209	1.51	6,256	3.862	0.000
Manufactured Home	New	Energy Star Room AC	4.11	209	1.51	7,371	4.550	0.000
Single Family	Turnover	LED - 9W Flood (Exterior)	3.77	98.35	0.59	9,749,217	0.000	0.000
Multi-Family	Turnover	LED - 9W Flood (Exterior)	3.77	98	0.59	3,532,325	0.000	0.000
Manufactured Home	Turnover	LED - 9W Flood (Exterior)	3.77	98	0.59	847,758	0.000	0.000
Single Family	New	LED - 9W Flood (Exterior)	3.77	98.35	0.59	177,071	0.000	0.000
Multi-Family	New	LED - 9W Flood (Exterior)	3.77	98	0.59	64,156	0.000	0.000
Manufactured Home	New	LED - 9W Flood (Exterior)	3.77	98	0.59	15,398	0.000	0.000
Single Family	Turnover	Heat Pump Pool Heater	3.72	25,351	0.67	25,740,485	0.000	0.000
Multi-Family	Turnover	Heat Pump Pool Heater	3.72	25,351	0.67	0	0.000	0.000
Manufactured Home	Turnover	Heat Pump Pool Heater	3.72	25,350.59	0.67	0	0.000	0.000
Single Family	New	Heat Pump Pool Heater	3.72	25,350.59	0.67	467,515	0.000	0.000
Multi-Family	New	Heat Pump Pool Heater	3.72	25,350.59	0.67	0	0.000	0.000
Manufactured Home	New	Heat Pump Pool Heater	3.72	25,350.59	0.67	0	0.000	0.000

Single Family	Existing	**Hot Water Pipe Insulation**	3.43	330	0.88	843,352	75.961	163.515
Single Family	New	**Hot Water Pipe Insulation**	3.43	330	0.88	62,380	5.619	12.095
Single Family	Turnover	Energy Star Clothes Washer	3.37	1,027	0.88	8,783,986	1,381.385	802.315
Multi-Family	Turnover	**Energy Star Clothes Washer**	3.37	1,027	0.88	2,522,882	396.753	230.436
Manufactured Home	Turnover	Energy Star Clothes Washer	3.37	1,027	0.88	722,359	113.600	65.979
Single Family	New	Energy Star Clothes Washer	3.37	1,027	0.88	159,540	25.090	14.572
Multi-Family	New	**Energy Star Clothes Washer**	3.37	1,027	0.88	45,822	7.206	4.185
Manufactured Home	New	Energy Star Clothes Washer	3.37	1,027	0.88	13,120	2.063	1.198
Single Family	Existing	Ceiling Insulation(R2 to R38)	3.28	10,630	1.39	9,003,485	2,497.337	3,654.809
Single Family	New	Ceiling Insulation(R2 to R38)	3.28	10,630	1.39	0	0.000	0.000
Multi-Family	Existing	Hot Water Pipe Insulation	2.94	273	0.88	5,022,465	452.378	973.788
Multi-Family	New	Hot Water Pipe Insulation	2.94	273	0.88	22,998	2.071	4.459
Single Family	New	Programmable Thermostat	2.85	136.76	2.02	0	0.000	0.000
Manufactured Home	New	Programmable Thermostat	2.79	131.10	2.02	0	0.000	0.000
Single Family	Turnover	LED - 14W	2.56	28	0.76	111,434,528	9,801.920	10,291.411
Multi-Family	Turnover	LED - 14W	2.56	28	0.76	40,374,829	3,551.420	3,728.772
Manufactured Home	Turnover	LED - 14W	2.56	28	0.76	9,689,959	852.341	894.905
Single Family	New	LED - 14W	2.56	28	0.76	2,023,944	178.029	186.919
Multi-Family	New	LED - 14W	2.56	28	0.76	733,313	64.503	67.724
Manufactured Home	New	LED - 14W	2.56	28	0.76	175,995	15.481	16.254
Single Family	Existing	Duct Repair	2.50	1,789	1.43	26,378,017	10,262.990	8,685.380
Single Family	New	Faucet Aerator	2.47	38	0.83	0	0.000	0.000
Single Family	Turnover	**Linear LED**	2.47	37	0.67	39,941,856	0.000	0.002
Multi-Family	Turnover	**Linear LED**	2.47	37	0.67	14,471,687	0.000	0.001
Manufactured Home	Turnover	Linear LED	2.47	37	0.67	3,473,205	0.000	0.000
Single Family	New	Linear LED	2.47	37.19	0.67	725,449	0.000	0.000
Multi-Family	New	Linear LED	2.47	37.19	0.67	262,844	0.000	0.000
Manufactured Home	New	Linear LED	2.47	37	0.67	63,083	0.000	0.000
Manufactured Home	Existing	Duct Repair	2.39	1,727.15	1.39	9,572,226	3,841.558	2,982.668
Multi-Family	Existing	Ceiling Insulation(R2 to R38)	2.38	5,536	1.39	5,184,208	1,478.495	1,985.103
Multi-Family	New	Ceiling Insulation(R2 to R38)	2.38	5,536	1.39	0	0.000	0.000
Manufactured Home	Existing	Ceiling Insulation(R2 to R38)	2.32	5,624	1.39	835,969	191.416	421.939
Manufactured Home	New	Ceiling Insulation(R2 to R38)	2.32	5,624	1.39	0	0.000	0.000
Single Family	Existing	**Removal of 2nd Refrigerator-Freezer**	2.32	732	0.68	24,526,160	2,560.126	852.973
Multi-Family	Existing	Removal of 2nd Refrigerator-Freezer	2.32	731.53	0.68	3,675,376	383.648	127.823
Manufactured Home	Existing	Removal of 2nd Refrigerator-Freezer	2.32	731.53	0.68	608,721	63.540	21.170
Single Family	New	Removal of 2nd Refrigerator-Freezer	2.32	731.53	0.68	0	0.000	0.000
Multi-Family	New	Removal of 2nd Refrigerator-Freezer	2.32	732	0.68	0	0.000	0.000
Manufactured Home	New	Removal of 2nd Refrigerator-Freezer	2.32	732	0.68	0	0.000	0.000
Single Family	Turnover	LED - 9W	2.26	15.24	0.76	0	0.000	0.000
Multi-Family	Turnover	LED - 9W	2.26	15	0.76	0	0.000	0.000
Manufactured Home	Turnover	LED - 9W	2.26	15	0.76	0	0.000	0.000
Single Family	New	LED - 9W	2.26	15	0.76	0	0.000	0.000
Multi-Family	New	LED - 9W	2.26	15	0.76	0	0.000	0.000
Manufactured Home	New	LED - 9W	2.26	15	0.76	0	0.000	0.000
Single Family	Turnover	CFL - 15W Flood (Exterior)	2.03	62	0.56	0	0.000	0.000
Multi-Family	Turnover	CFL - 15W Flood (Exterior)	2.03	62	0.56	0	0.000	0.000
Manufactured Home	Turnover	**CFL - 15W Flood (Exterior)**	2.03	62	0.56	0	0.000	0.000
Single Family	New	CFL - 15W Flood (Exterior)	2.03	62	0.56	0	0.000	0.000
Multi-Family	New	CFL - 15W Flood (Exterior)	2.03	62	0.56	0	0.000	0.000
Manufactured Home	New	CFL - 15W Flood (Exterior)	2.03	62	0.56	0	0.000	0.000
Multi-Family	New	Faucet Aerator	1.93	28	0.82	0	0.000	0.000
Manufactured Home	New	Faucet Aerator	1.92	27.48	0.82	0	0.000	0.000
Single Family	Turnover	CFL-23W	1.87	9	0.72	0	0.000	0.000
Multi-Family	Turnover	CFL-23W	1.87	8.82	0.72	0	0.000	0.000
Manufactured Home	Turnover	CFL-23W	1.87	9	0.72	0	0.000	0.000
Single Family	New	CFL-23W	1.87	9	0.72	0	0.000	0.000
Multi-Family	New	CFL-23W	1.87	9	0.72	0	0.000	0.000
Manufactured Home	New	CFL-23W	1.87	9	0.72	0	0.000	0.000
Multi-Family	New	**Programmable Thermostat**	1.85	46	2.02	0	0.000	0.000
Single Family	Existing	Water Heater Thermostat Setback	1.78	16	0.72	164,418	14.809	31.878
Multi-Family	Existing	Water Heater Thermostat Setback	1.78	16	0.72	0	0.000	0.000
Manufactured Home	Existing	**Water Heater Thermostat Setback**	1.78	16	0.72	0	0.000	0.000
Single Family	New	**Water Heater Thermostat Setback**	1.78	16	0.72	0	0.000	0.000
Multi-Family	New	Water Heater Thermostat Setback	1.78	16	0.72	0	0.000	0.000
Manufactured Home	New	Water Heater Thermostat Setback	1.78	16	0.72	0	0.000	0.000
Single Family	New	Smart Thermostat	1.66	111	2.02	100,696	0.000	0.000
Manufactured Home	New	Smart Thermostat	1.62	98.18	2.02	0	0.000	0.000
Multi-Family	Existing	Duct Repair	1.60	803	1.40	42,529,184	16,588.663	13,943.284
Single Family	Turnover	Variable Speed Pool Pump	1.56	2,492	1.43	34,556,258	18,780.574	0.000
Multi-Family	Turnover	Variable Speed Pool Pump	1.56	2,492	1.43	0	0.000	0.000
Manufactured Home	Turnover	Variable Speed Pool Pump	1.56	2,492.18	1.43	0	0.000	0.000
Single Family	New	Variable Speed Pool Pump	1.56	2,492.18	1.43	627,633	341.105	0.000
Multi-Family	New	Variable Speed Pool Pump	1.56	2,492.18	1.43	0	0.000	0.000
Manufactured Home	New	Variable Speed Pool Pump	1.56	2,492	1.43	0	0.000	0.000
Single Family	Turnover	Two Speed Pool Pump	1.56	824.36	1.43	0	0.000	0.000
Multi-Family	Turnover	Two Speed Pool Pump	1.56	824.36	1.43	0	0.000	0.000
Manufactured Home	Turnover	**Two Speed Pool Pump**	1.56	824	1.43	0	0.000	0.000
Single Family	New	Two Speed Pool Pump	1.56	824	1.43	0	0.000	0.000
Multi-Family	New	Two Speed Pool Pump	1.56	824	1.43	0	0.000	0.000
Manufactured Home	New	Two Speed Pool Pump	1.56	824	1.43	0	0.000	0.000

Single Family	Existing	Energy Star Windows	1.36	1,227.17	1.15	29,482,119	3,879.099	6,629.561
Multi-Family	Existing	Energy Star Windows	1.36	1,227.17	1.15	22,464,499	3,110.257	2,404.453
Manufactured Home	Existing	Energy Star Windows	1.36	1,227.17	1.15	3,854,808	539.020	321.550
Manufactured Home	Existing	ENERGY STAR Certified Home	1.12	5,317.91	1.41	0	0.000	0.000
Manufactured Home	New	ENERGY STAR Certified Home	1.12	5,317.91	1.41	0	0.000	0.000
Single Family	Existing	Ceiling Insulation(R12 to R38)	1.11	608	1.51	2,470,639	907.034	1,057.420
Single Family	New	Ceiling Insulation(R12 to R38)	1.11	608	1.51	0	0.000	0.000
Multi-Family	New	Smart Thermostat	1.08	(100)	2.02	5,458	0.000	0.000
Single Family	Turnover	LED Specialty Lamps-5W Chandelier	1.07	8	0.76	6,918,212	608.535	638.924
Multi-Family	Turnover	LED Specialty Lamps-5W Chandelier	1.07	7.97	0.76	2,506,599	220.484	231.494
Manufactured Home	Turnover	LED Specialty Lamps-5W Chandelier	1.07	7.97	0.76	601,584	52.916	55.559
Single Family	New	LED Specialty Lamps-5W Chandelier	1.07	8	0.76	125,653	11.053	11.605
Multi-Family	New	LED Specialty Lamps-5W Chandelier	1.07	8	0.76	45,526	4.005	4.205
Manufactured Home	New	**LED Specialty Lamps-5W Chandelier**	1.07	8	0.76	10,926	0.961	1.009
Single Family	Turnover	Solar Pool Heater	1.05	17,934.11	0.67	8,760,745	0.000	0.000
Multi-Family	Turnover	Solar Pool Heater	1.05	17,934	0.67	0	0.000	0.000
Manufactured Home	Turnover	Solar Pool Heater	1.05	17,934	0.67	0	0.000	0.000
Single Family	New	Solar Pool Heater	1.05	17,934	0.67	159,118	0.000	0.000
Multi-Family	New	Solar Pool Heater	1.05	17,934	0.67	0	0.000	0.000
Manufactured Home	New	Solar Pool Heater	1.05	17,934	0.67	0	0.000	0.000
Single Family	Turnover	**LED - 9W Flood**	0.99	11	0.75			
Multi-Family	Turnover	LED - 9W Flood	0.99	11	0.75			
Manufactured Home	Turnover	LED - 9W Flood	0.99	11.27	0.75			
Single Family	New	LED - 9W Flood	0.99	11.27	0.75			
Multi-Family	New	LED - 9W Flood	0.99	11.27	0.75			
Manufactured Home	New	LED - 9W Flood	0.99	11.27	0.75			
Single Family	Turnover	High Efficiency Induction Cooktop	0.86	259	0.97			
Multi-Family	Turnover	High Efficiency Induction Cooktop	0.86	259	0.97			
Manufactured Home	Turnover	High Efficiency Induction Cooktop	0.86	259	0.97			
Single Family	New	High Efficiency Induction Cooktop	0.86	259	0.97			
Multi-Family	New	**High Efficiency Induction Cooktop**	0.86	259	0.97			
Manufactured Home	New	High Efficiency Induction Cooktop	0.86	259	0.97			
Single Family	Turnover	CFL-13W	0.85	3.63	0.72			
Multi-Family	Turnover	CFL-13W	0.85	4	0.72			
Manufactured Home	Turnover	CFL-13W	0.85	4	0.72			
Single Family	New	CFL-13W	0.85	4	0.72			
Multi-Family	New	CFL-13W	0.85	4	0.72			
Manufactured Home	New	CFL-13W	0.85	4	0.72			
Single Family	Existing	**Thermostatic Shower Restriction Valve**	0.85	59	0.82			
Single Family	New	Thermostatic Shower Restriction Valve	0.85	58.82	0.82			
Multi-Family	Existing	Ceiling Insulation(R12 to R38)	0.83	(289.22)	1.51			
Multi-Family	New	Ceiling Insulation(R12 to R38)	0.83	(289)	1.51			
Manufactured Home	Existing	Air Sealing-Infiltration Control	0.82	(22)	1.25			
Single Family	Existing	ENERGY STAR Certified Home	0.81	(2,097.64)	1.41			
Single Family	New	ENERGY STAR Certified Home	0.81	(2,097.64)	1.41			
Multi-Family	Existing	ENERGY STAR Certified Home	0.80	(1,527.57)	1.41			
Multi-Family	New	ENERGY STAR Certified Home	0.80	(1,527.57)	1.41			
Manufactured Home	Existing	Ceiling Insulation(R12 to R38)	0.78	(454.38)	1.51			
Manufactured Home	New	Ceiling Insulation(R12 to R38)	0.78	(454)	1.51			
Single Family	Existing	Spray Foam Insulation(Base R2)	0.75	(3,933)	1.51			
Single Family	New	Spray Foam Insulation(Base R2)	0.75	(3,932.98)	1.51			
Single Family	Turnover	21 SEER ASHP from base electric resistance heating	0.72	3,312.72	0.95			
Manufactured Home	Turnover	21 SEER ASHP from base electric resistance heating	0.72	3,313	0.95			
Single Family	New	21 SEER ASHP from base electric resistance heating	0.72	3,313	0.95			
Manufactured Home	New	21 SEER ASHP from base electric resistance heating	0.72	3,313	0.95			
Manufactured Home	Existing	Wall Insulation	0.70	(888.55)	1.40			
Multi-Family	Existing	Thermostatic Shower Restriction Valve	0.67	22	0.83			
Multi-Family	New	Thermostatic Shower Restriction Valve	0.67	22.27	0.83			
Single Family	Existing	Smart Thermostat	0.67	(420)	1.69			
Single Family	Existing	Ceiling Insulation(R19 to R38)	0.66	(800)	1.53			
Single Family	New	Ceiling Insulation(R19 to R38)	0.66	(800)	1.53			
Manufactured Home	Existing	Thermostatic Shower Restriction Valve	0.66	21	0.82			
Manufactured Home	New	Thermostatic Shower Restriction Valve	0.66	21.20	0.82			
Manufactured Home	Existing	Smart Thermostat	0.65	(433)	1.69			
Single Family	Turnover	15 SEER Central AC	0.61	(606)	1.68			
Manufactured Home	Turnover	15 SEER Central AC	0.61	(606)	1.68			
Single Family	New	15 SEER Central AC	0.61	(606)	1.68			
Manufactured Home	New	15 SEER Central AC	0.61	(606)	1.68			
Single Family	Existing	Wall Insulation	0.61	(2,094.16)	1.40			
Manufactured Home	Existing	Radiant Barrier	0.61	(1,569)	1.52			
Manufactured Home	New	Radiant Barrier	0.61	(1,569)	1.52			
Single Family	Existing	Smart Power Strip	0.61	9.55	0.69			
Multi-Family	Existing	Smart Power Strip	0.61	9.55	0.69			
Manufactured Home	Existing	Smart Power Strip	0.61	9.55	0.69			
Single Family	New	Smart Power Strip	0.61	9.55	0.69			
Multi-Family	New	Smart Power Strip	0.61	9.55	0.69			
Manufactured Home	New	Smart Power Strip	0.61	9.55	0.69			
Manufactured Home	Existing	Spray Foam Insulation(Base R2)	0.60	(6,163.65)	1.51			
Manufactured Home	New	Spray Foam Insulation(Base R2)	0.60	(6,163.65)	1.51			
Single Family	Turnover	16 SEER Central AC	0.59	(1,250)	1.68			
Manufactured Home	Turnover	16 SEER Central AC	0.59	(1,250)	1.68			

Single Family	New	16 SEER Central AC	0.59	(1,250)	1.68
Manufactured Home	New	16 SEER Central AC	0.59	(1,250)	1.68
Multi-Family	Existing	Air Sealing-Infiltration Control	0.58	(398)	1.26
Manufactured Home	New	Home Energy Management System	0.58	(29)	0.88
Manufactured Home	Existing	Home Energy Management System	0.58	(29)	0.87
Multi-Family	Existing	Spray Foam Insulation(Base R2)	0.56	(6,559.10)	1.51
Multi-Family	New	Spray Foam Insulation(Base R2)	0.56	(6,559.10)	1.51
Single Family	Existing	Air Sealing-Infiltration Control	0.54	(802.16)	1.27
Single Family	Turnover	15 SEER Air Source Heat Pump	0.53	(571)	1.19
Manufactured Home	Turnover	15 SEER Air Source Heat Pump	0.53	(570.61)	1.19
Single Family	New	15 SEER Air Source Heat Pump	0.53	(570.61)	1.19
Manufactured Home	New	15 SEER Air Source Heat Pump	0.53	(571)	1.19
Single Family	Existing	Radiant Barrier	0.53	(2,337.59)	1.52
Single Family	New	**Radiant Barrier**	0.53	(2,338)	1.52
Single Family	New	Home Energy Management System	0.52	(206)	0.88
Single Family	Existing	Home Energy Management System	0.52	(205.86)	0.87
Multi-Family	Turnover	21 SEER ASHP from base electric resistance heating	0.52	(2,949)	0.95
Multi-Family	New	21 SEER ASHP from base electric resistance heating	0.52	(2,949)	0.95
Single Family	Turnover	**Solar Powered Pool Pumps**	0.52	(3,926)	1.43
Multi-Family	Turnover	Solar Powered Pool Pumps	0.52	(3,926)	1.43
Manufactured Home	Turnover	Solar Powered Pool Pumps	0.52	(3,926)	1.43
Single Family	New	**Solar Powered Pool Pumps**	0.52	(3,926)	1.43
Multi-Family	New	Solar Powered Pool Pumps	0.52	(3,926)	1.43
Manufactured Home	New	Solar Powered Pool Pumps	0.52	(3,925.74)	1.43
Multi-Family	Existing	Ceiling Insulation(R19 to R38)	0.50	(1,060)	1.53
Multi-Family	New	Ceiling Insulation(R19 to R38)	0.50	(1,060)	1.53
Single Family	Existing	**Energy Star Door**	0.48	(433)	1.34
Multi-Family	Existing	Energy Star Door	0.48	(433)	1.34
Manufactured Home	Existing	Energy Star Door	0.48	(433)	1.34
Single Family	Turnover	Energy Star Refrigerator	0.46	(73)	0.84
Multi-Family	Turnover	Energy Star Refrigerator	0.46	(73)	0.84
Manufactured Home	Turnover	**Energy Star Refrigerator**	0.46	(73)	0.84
Single Family	New	Energy Star Refrigerator	0.46	(73)	0.84
Multi-Family	New	Energy Star Refrigerator	0.46	(73)	0.84
Manufactured Home	New	Energy Star Refrigerator	0.46	(73)	0.84
Multi-Family	Turnover	15 SEER Central AC	0.46	(721)	1.67
Multi-Family	New	15 SEER Central AC	0.46	(721)	1.67
Single Family	Turnover	Heat Pump Water Heater	0.45	(739)	0.84
Single Family	New	**Heat Pump Water Heater**	0.45	(739)	0.84
Manufactured Home	Existing	Ceiling Insulation(R19 to R38)	0.45	(1,231)	1.53
Manufactured Home	New	Ceiling Insulation(R19 to R38)	0.45	(1,231)	1.53
Single Family	Existing	Programmable Thermostat	0.45	(394.28)	1.69
Manufactured Home	Existing	Programmable Thermostat	0.44	(399.95)	1.69
Multi-Family	Turnover	16 SEER Central AC	0.44	(1,450)	1.68
Multi-Family	New	16 SEER Central AC	0.44	(1,450)	1.68
Multi-Family	Existing	**Smart Thermostat**	0.43	(631)	1.69
Multi-Family	Existing	Radiant Barrier	0.42	(2,401.94)	1.52
Multi-Family	New	**Radiant Barrier**	0.42	(2,402)	1.52
Single Family	Turnover	16 SEER Air Source Heat Pump	0.38	(2,655)	1.19
Manufactured Home	Turnover	16 SEER Air Source Heat Pump	0.38	(2,655)	1.19
Single Family	New	16 SEER Air Source Heat Pump	0.38	(2,655)	1.19
Manufactured Home	New	16 SEER Air Source Heat Pump	0.38	(2,655)	1.19
Multi-Family	New	Home Energy Management System	0.37	(651)	0.88
Multi-Family	Existing	Home Energy Management System	0.37	(651.37)	0.87
Single Family	New	Energy Star Windows	0.37	(466)	0.92
Multi-Family	New	Energy Star Windows	0.37	(466)	0.92
Manufactured Home	New	Energy Star Windows	0.37	(466)	0.92
Multi-Family	Turnover	15 SEER Air Source Heat Pump	0.37	(870)	1.19
Multi-Family	New	15 SEER Air Source Heat Pump	0.37	(870)	1.19
Single Family	Existing	**Storm Door**	0.36	(709)	1.37
Multi-Family	Existing	Storm Door	0.36	(708.79)	1.37
Manufactured Home	Existing	Storm Door	0.36	(709)	1.37
Multi-Family	Turnover	Heat Pump Water Heater	0.36	(1,386)	0.84
Multi-Family	New	Heat Pump Water Heater	0.36	(1,386)	0.84
Manufactured Home	Turnover	Heat Pump Water Heater	0.35	(1,405)	0.84
Manufactured Home	New	Heat Pump Water Heater	0.35	(1,405)	0.84
Single Family	New	Energy Star Door	0.34	(609.29)	1.34
Multi-Family	New	Energy Star Door	0.34	(609.29)	1.34
Manufactured Home	New	Energy Star Door	0.34	(609.29)	1.34
Single Family	Turnover	17 SEER Air Source Heat Pump	0.34	(4,715)	1.19
Manufactured Home	Turnover	17 SEER Air Source Heat Pump	0.34	(4,715)	1.19
Single Family	New	17 SEER Air Source Heat Pump	0.34	(4,715)	1.19
Manufactured Home	New	17 SEER Air Source Heat Pump	0.34	(4,715)	1.19
Single Family	Existing	Heat Trap	0.34	(171)	0.83
Single Family	New	Heat Trap	0.34	(171)	0.83
Multi-Family	Existing	Wall Insulation	0.33	(2,849.86)	1.39
Single Family	Turnover	Energy Star Personal Computer	0.32	(39.49)	0.72
Multi-Family	Turnover	**Energy Star Personal Computer**	0.32	(39)	0.72
Manufactured Home	Turnover	Energy Star Personal Computer	0.32	(39)	0.72
Single Family	New	**Energy Star Personal Computer**	0.32	(39)	0.72
Multi-Family	New	Energy Star Personal Computer	0.32	(39)	0.72

Manufactured Home	New	**Energy Star Personal Computer**	0.32	(39)	0.72
Single Family	Existing	Water Heater Blanket	0.31	(263)	0.77
Multi-Family	Existing	**Water Heater Blanket**	0.31	(263)	0.77
Manufactured Home	Existing	Water Heater Blanket	0.31	(263)	0.77
Multi-Family	Turnover	16 SEER Air Source Heat Pump	0.30	(2,610)	1.19
Multi-Family	New	16 SEER Air Source Heat Pump	0.30	(2,610)	1.19
Single Family	New	Water Heater Blanket	0.30	(279)	0.77
Multi-Family	New	Water Heater Blanket	0.30	(279)	0.77
Manufactured Home	New	Water Heater Blanket	0.30	(279)	0.77
Multi-Family	Existing	Programmable Thermostat	0.29	(485.28)	1.69
Single Family	Turnover	18 SEER Air Source Heat Pump	0.29	(7,032.71)	1.19
Manufactured Home	Turnover	**18 SEER Air Source Heat Pump**	0.29	(7,033)	1.19
Single Family	New	18 SEER Air Source Heat Pump	0.29	(7,033)	1.19
Manufactured Home	New	18 SEER Air Source Heat Pump	0.29	(7,033)	1.19
Multi-Family	Turnover	17 SEER Air Source Heat Pump	0.28	(4,404)	1.19
Multi-Family	New	17 SEER Air Source Heat Pump	0.28	(4,404)	1.19
Single Family	Turnover	**21 SEER Air Source Heat Pump**	0.27	(11,675)	1.20
Manufactured Home	Turnover	21 SEER Air Source Heat Pump	0.27	(11,674.87)	1.20
Single Family	New	21 SEER Air Source Heat Pump	0.27	(11,674.87)	1.20
Manufactured Home	New	21 SEER Air Source Heat Pump	0.27	(11,674.87)	1.20
Multi-Family	Existing	Heat Trap	0.27	(228)	0.82
Multi-Family	New	Heat Trap	0.27	(228)	0.82
Manufactured Home	Existing	Heat Trap	0.26	(230)	0.83
Manufactured Home	New	Heat Trap	0.26	(230)	0.83
Single Family	Turnover	CFL - 15W Flood	0.26	(7)	0.72
Multi-Family	Turnover	CFL - 15W Flood	0.26	(7)	0.72
Manufactured Home	Turnover	CFL - 15W Flood	0.26	(7)	0.72
Single Family	New	CFL - 15W Flood	0.26	(6.95)	0.72
Multi-Family	New	CFL - 15W Flood	0.26	(6.95)	0.72
Manufactured Home	New	CFL - 15W Flood	0.26	(6.95)	0.72
Single Family	Existing	Ceiling Insulation(R30 to R38)	0.26	(1,442)	1.53
Single Family	New	Ceiling Insulation(R30 to R38)	0.26	(1,442)	1.53
Multi-Family	Turnover	17 SEER Central AC	0.26	(4,474)	1.68
Multi-Family	New	17 SEER Central AC	0.26	(4,474.05)	1.68
Single Family	Turnover	17 SEER Central AC	0.26	(6,720)	1.68
Manufactured Home	Turnover	**17 SEER Central AC**	0.26	(6,720)	1.68
Single Family	New	17 SEER Central AC	0.26	(6,720)	1.68
Manufactured Home	New	17 SEER Central AC	0.26	(6,720.43)	1.68
Single Family	Existing	Solar Attic Fan	0.26	(1,463.94)	1.23
Single Family	New	Solar Attic Fan	0.26	(1,463.94)	1.23
Single Family	New	**Variable Refrigerant Flow (VRF) HVAC Systems**	0.25	(4,859)	0.78
Manufactured Home	New	Variable Refrigerant Flow (VRF) HVAC Systems	0.25	(4,859)	0.78
Single Family	Turnover	Energy Star Freezer	0.25	(186.64)	0.84
Multi-Family	Turnover	Energy Star Freezer	0.25	(186.64)	0.84
Manufactured Home	Turnover	Energy Star Freezer	0.25	(186.64)	0.84
Single Family	New	Energy Star Freezer	0.25	(186.64)	0.84
Multi-Family	New	Energy Star Freezer	0.25	(186.64)	0.84
Manufactured Home	New	Energy Star Freezer	0.25	(186.64)	0.84
Single Family	Existing	Spray Foam Insulation(Base R12)	0.25	(13,894.18)	1.39
Single Family	New	Spray Foam Insulation(Base R12)	0.25	(13,894)	1.39
Single Family	Existing	Exterior Lighting Controls	0.24	(77.83)	0.59
Multi-Family	Existing	Exterior Lighting Controls	0.24	(77.83)	0.59
Manufactured Home	Existing	Exterior Lighting Controls	0.24	(77.83)	0.59
Single Family	New	Exterior Lighting Controls	0.24	(77.83)	0.59
Multi-Family	New	Exterior Lighting Controls	0.24	(77.83)	0.59
Manufactured Home	New	Exterior Lighting Controls	0.24	(77.83)	0.59
Single Family	New	Storm Door	0.24	(885)	1.37
Multi-Family	New	Storm Door	0.24	(884.91)	1.37
Manufactured Home	New	Storm Door	0.24	(884.91)	1.37
Manufactured Home	Existing	Spray Foam Insulation(Base R12)	0.23	(12,441)	1.39
Manufactured Home	New	Spray Foam Insulation(Base R12)	0.23	(12,441)	1.39
Single Family	New	Energy Star Ceiling Fan	0.23	(86)	0.74
Multi-Family	New	Energy Star Ceiling Fan	0.23	(86)	0.74
Manufactured Home	New	Energy Star Ceiling Fan	0.23	(86)	0.74
Single Family	Turnover	Energy Star Ceiling Fan	0.23	(86)	0.74
Multi-Family	Turnover	Energy Star Ceiling Fan	0.23	(86)	0.74
Manufactured Home	Turnover	Energy Star Ceiling Fan	0.23	(86)	0.74
Single Family	Turnover	18 SEER Central AC	0.23	(9,861)	1.68
Manufactured Home	Turnover	18 SEER Central AC	0.23	(9,861)	1.68
Single Family	New	**18 SEER Central AC**	0.23	(9,861)	1.68
Manufactured Home	New	18 SEER Central AC	0.23	(9,861)	1.68
Single Family	Turnover	21 SEER Central AC	0.22	(15,518)	1.68
Manufactured Home	Turnover	21 SEER Central AC	0.22	(15,518)	1.68
Single Family	New	21 SEER Central AC	0.22	(15,518.30)	1.68
Manufactured Home	New	21 SEER Central AC	0.22	(15,518)	1.68
Multi-Family	New	Variable Refrigerant Flow (VRF) HVAC Systems	0.22	(4,289)	0.78
Multi-Family	Turnover	18 SEER Air Source Heat Pump	0.21	(7,397.51)	1.19
Multi-Family	New	18 SEER Air Source Heat Pump	0.21	(7,398)	1.19
Single Family	Turnover	Energy Star Clothes Dryer	0.21	(598)	0.88
Multi-Family	Turnover	Energy Star Clothes Dryer	0.21	(598)	0.88
Manufactured Home	Turnover	Energy Star Clothes Dryer	0.21	(598)	0.88

Single Family	New	Energy Star Clothes Dryer	0.21	(598)	0.88
Multi-Family	New	Energy Star Clothes Dryer	0.21	(598)	0.88
Manufactured Home	New	Energy Star Clothes Dryer	0.21	(598)	0.88
Multi-Family	Turnover	18 SEER Central AC	0.21	(7,337)	1.68
Multi-Family	New	18 SEER Central AC	0.21	(7,337)	1.68
Multi-Family	Existing	Spray Foam Insulation(Base R12)	0.20	(12,451)	1.39
Multi-Family	New	Spray Foam Insulation(Base R12)	0.20	(12,451)	1.39
Single Family	Turnover	Variable Refrigerant Flow (VRF) HVAC Systems	0.20	(7,404)	0.78
Manufactured Home	Turnover	Variable Refrigerant Flow (VRF) HVAC Systems	0.20	(7,404)	0.78
Manufactured Home	Existing	Spray Foam Insulation(Base R19)	0.20	(13,507)	1.53
Manufactured Home	New	Spray Foam Insulation(Base R19)	0.20	(13,507)	1.53
Multi-Family	Existing	Ceiling Insulation(R30 to R38)	0.19	(1,319)	1.53
Multi-Family	New	Ceiling Insulation(R30 to R38)	0.19	(1,319)	1.53
Single Family	Existing	Spray Foam Insulation(Base R19)	0.19	(15,543)	1.53
Single Family	New	**Spray Foam Insulation(Base R19)**	0.19	(15,543)	1.53
Multi-Family	Turnover	21 SEER Air Source Heat Pump	0.19	(12,941)	1.20
Multi-Family	New	21 SEER Air Source Heat Pump	0.19	(12,940.77)	1.20
Multi-Family	Turnover	21 SEER Central AC	0.18	(13,167)	1.68
Multi-Family	New	21 SEER Central AC	0.18	(13,167)	1.68
Manufactured Home	New	Drain Water Heat Recovery	0.18	(2,128.22)	0.92
Manufactured Home	Existing	Ceiling Insulation(R30 to R38)	0.17	(1,425)	1.53
Manufactured Home	New	Ceiling Insulation(R30 to R38)	0.17	(1,425)	1.53
Manufactured Home	Existing	Solar Attic Fan	0.17	(1,693.72)	1.23
Manufactured Home	New	Solar Attic Fan	0.17	(1,693.72)	1.23
Manufactured Home	New	Spray Foam Insulation(Base R30)	0.17	(13,227)	1.53
Single Family	New	Spray Foam Insulation(Base R30)	0.16	(13,304)	1.53
Multi-Family	Turnover	**Variable Refrigerant Flow (VRF) HVAC Systems**	0.16	(6,835)	0.78
Manufactured Home	Existing	Spray Foam Insulation(Base R30)	0.16	(14,224.83)	1.53
Multi-Family	Existing	**Spray Foam Insulation(Base R19)**	0.16	(13,481)	1.53
Multi-Family	New	Spray Foam Insulation(Base R19)	0.16	(13,481)	1.53
Multi-Family	Turnover	Ground Source Heat Pump	0.15	(43,274)	1.42
Multi-Family	New	Ground Source Heat Pump	0.15	(43,274)	1.42
Manufactured Home	Existing	Drain Water Heat Recovery	0.14	(2,914)	0.92
Single Family	New	Drain Water Heat Recovery	0.14	(2,323)	0.92
Single Family	Turnover	Ground Source Heat Pump	0.14	(46,264)	1.42
Manufactured Home	Turnover	Ground Source Heat Pump	0.14	(46,264)	1.42
Single Family	New	Ground Source Heat Pump	0.14	(46,264)	1.42
Manufactured Home	New	**Ground Source Heat Pump**	0.14	(46,264)	1.42
Single Family	Existing	Spray Foam Insulation(Base R30)	0.13	(16,710.96)	1.53
Single Family	Existing	Interior Lighting Controls	0.13	(178.89)	0.79
Multi-Family	Existing	Interior Lighting Controls	0.13	(178.89)	0.79
Manufactured Home	Existing	Interior Lighting Controls	0.13	(178.89)	0.79
Single Family	New	Interior Lighting Controls	0.13	(178.89)	0.79
Multi-Family	New	Interior Lighting Controls	0.13	(178.89)	0.79
Manufactured Home	New	Interior Lighting Controls	0.13	(178.89)	0.79
Single Family	Turnover	Energy Star Bathroom Ventilating Fan	0.13	(33)	0.71
Multi-Family	Turnover	Energy Star Bathroom Ventilating Fan	0.13	(33.02)	0.71
Manufactured Home	Turnover	Energy Star Bathroom Ventilating Fan	0.13	(33.02)	0.71
Single Family	New	Energy Star Bathroom Ventilating Fan	0.13	(33.02)	0.71
Multi-Family	New	Energy Star Bathroom Ventilating Fan	0.13	(33)	0.71
Manufactured Home	New	**Energy Star Bathroom Ventilating Fan**	0.13	(33)	0.71
Multi-Family	Existing	Solar Attic Fan	0.12	(1,817.96)	1.23
Multi-Family	New	Solar Attic Fan	0.12	(1,817.96)	1.23
Multi-Family	New	Drain Water Heat Recovery	0.12	(2,427)	0.92
Manufactured Home	Existing	Water Heater Timeclock	0.12	(366.88)	0.55
Manufactured Home	New	Water Heater Timeclock	0.12	(366.88)	0.55
Multi-Family	Existing	Window Sun Protection	0.12	(2,281)	2.73
Multi-Family	New	Window Sun Protection	0.12	(2,281.34)	2.73
Multi-Family	New	Spray Foam Insulation(Base R30)	0.11	(14,147)	1.53
Single Family	Existing	Drain Water Heat Recovery	0.11	(3,108)	0.92
Single Family	Turnover	Solar Water Heater	0.11	(19,843)	0.80
Single Family	New	**Solar Water Heater**	0.11	(19,843)	0.80
Multi-Family	Existing	Spray Foam Insulation(Base R30)	0.11	(14,256.20)	1.53
Single Family	Turnover	**Heat Pump Clothes Dryer**	0.10	(2,641)	0.90
Multi-Family	Turnover	**Heat Pump Clothes Dryer**	0.10	(2,641)	0.90
Manufactured Home	Turnover	Heat Pump Clothes Dryer	0.10	(2,641)	0.90
Single Family	New	Heat Pump Clothes Dryer	0.10	(2,641)	0.90
Multi-Family	New	Heat Pump Clothes Dryer	0.10	(2,641)	0.90
Manufactured Home	New	**Heat Pump Clothes Dryer**	0.10	(2,641)	0.90
Manufactured Home	Existing	Heat Pump Tune Up	0.10	(289.90)	0.94
Single Family	Existing	HVAC ECM Motor	0.10	(927)	1.12
Multi-Family	Existing	HVAC ECM Motor	0.10	(927)	1.12
Manufactured Home	Existing	HVAC ECM Motor	0.10	(927)	1.12
Single Family	New	HVAC ECM Motor	0.10	(927)	1.12
Multi-Family	New	HVAC ECM Motor	0.10	(926.75)	1.12
Manufactured Home	New	HVAC ECM Motor	0.10	(926.75)	1.12
Multi-Family	Existing	Drain Water Heat Recovery	0.10	(3,212)	0.92
Single Family	Existing	Water Heater Timeclock	0.09	(403)	0.55
Single Family	New	Water Heater Timeclock	0.09	(402.66)	0.55
Single Family	Existing	**Heat Pump Tune Up**	0.09	(289)	0.85
Manufactured Home	Existing	Window Sun Protection	0.09	(2,447)	2.73

Manufactured Home	New	Window Sun Protection	0.09	(2,447.16)	2.73
Multi-Family	Turnover	**Solar Water Heater**	0.09	(21,012)	0.80
Multi-Family	New	Solar Water Heater	0.09	(21,012)	0.80
Manufactured Home	Turnover	Solar Water Heater	0.09	(21,047)	0.80
Manufactured Home	New	Solar Water Heater	0.09	(21,047)	0.80
Single Family	Existing	Window Sun Protection	0.09	(3,922)	2.73
Single Family	New	Window Sun Protection	0.09	(3,922.19)	2.73
Multi-Family	Existing	Water Heater Timeclock	0.08	(422)	0.55
Multi-Family	New	Water Heater Timeclock	0.08	(421.80)	0.55
Single Family	Turnover	Energy Star TV	0.07	(306)	0.85
Multi-Family	Turnover	Energy Star TV	0.07	(306)	0.85
Manufactured Home	Turnover	Energy Star TV	0.07	(306)	0.85
Single Family	New	Energy Star TV	0.07	(306)	0.85
Multi-Family	New	Energy Star TV	0.07	(306)	0.85
Manufactured Home	New	Energy Star TV	0.07	(306)	0.85
Manufactured Home	Existing	Duct Insulation	0.07	(4,564)	1.34
Multi-Family	Existing	Heat Pump Tune Up	0.07	(307.43)	0.92
Single Family	Existing	Duct Insulation	0.06	(5,256.51)	1.36
Single Family	Existing	Central AC Tune Up	0.06	(311.92)	1.03
Single Family	Turnover	**High Efficiency Convection Oven**	0.06	(2,230)	1.04
Multi-Family	Turnover	High Efficiency Convection Oven	0.06	(2,230)	1.04
Manufactured Home	Turnover	**High Efficiency Convection Oven**	0.06	(2,230)	1.04
Single Family	New	High Efficiency Convection Oven	0.06	(2,230)	1.04
Multi-Family	New	High Efficiency Convection Oven	0.06	(2,230)	1.04
Manufactured Home	New	High Efficiency Convection Oven	0.06	(2,230)	1.04
Single Family	Turnover	**Energy Star Audio-Video Equipment**	0.05	(434)	0.53
Multi-Family	Turnover	Energy Star Audio-Video Equipment	0.05	(434)	0.53
Manufactured Home	Turnover	Energy Star Audio-Video Equipment	0.05	(434)	0.53
Single Family	New	Energy Star Audio-Video Equipment	0.05	(434)	0.53
Multi-Family	New	Energy Star Audio-Video Equipment	0.05	(434)	0.53
Manufactured Home	New	Energy Star Audio-Video Equipment	0.05	(434)	0.53
Multi-Family	Existing	Duct Insulation	0.05	(4,440.84)	1.34
Manufactured Home	Existing	Central AC Tune Up	0.04	(322.05)	1.03
Manufactured Home	Existing	Green Roof	0.04	(81,805)	1.43
Manufactured Home	New	Green Roof	0.04	(81,804.92)	1.43
Single Family	Existing	Green Roof	0.04	(93,789)	1.46
Single Family	New	Green Roof	0.04	(93,789)	1.46
Single Family	Turnover	**Instantaneous Hot Water System**	0.03	(8,366)	0.90
Single Family	New	Instantaneous Hot Water System	0.03	(8,366)	0.90
Multi-Family	Existing	Central AC Tune Up	0.03	(327.53)	1.03
Multi-Family	Turnover	Instantaneous Hot Water System	0.03	(8,481)	0.90
Multi-Family	New	**Instantaneous Hot Water System**	0.03	(8,481)	0.90
Multi-Family	Existing	Green Roof	0.03	(78,574.35)	1.43
Multi-Family	New	Green Roof	0.03	(78,574.35)	1.43
Manufactured Home	Turnover	**Instantaneous Hot Water System**	0.03	(8,485)	0.90
Manufactured Home	New	**Instantaneous Hot Water System**	0.03	(8,485)	0.90
Single Family	Existing	Floor Insulation	0.03	(7,953)	1.17
Manufactured Home	Existing	Floor Insulation	0.02	(6,988)	1.17
Single Family	Existing	Sealed crawlspace	0.01	(20,200)	1.15
Manufactured Home	Existing	Sealed crawlspace	0.01	(17,725.63)	1.15
Multi-Family	Existing	Floor Insulation	0.01	(6,723)	1.17
Multi-Family	Existing	Sealed crawlspace	0.01	(16,934)	1.15
Single Family	New	Air Sealing-Infiltration Control	0.00	(2,164)	#DIV/0!
Multi-Family	New	Air Sealing-Infiltration Control	0.00	(1,284)	#DIV/0!
Manufactured Home	New	Air Sealing-Infiltration Control	0.00	(1,354)	#DIV/0!
Single Family	New	Central AC Tune Up	0.00	(342.19)	#DIV/0!
Multi-Family	New	Central AC Tune Up	0.00	(342)	#DIV/0!
Manufactured Home	New	Central AC Tune Up	0.00	(342.19)	#DIV/0!
Single Family	New	Duct Insulation	0.00	(5,670)	#DIV/0!
Multi-Family	New	Duct Insulation	0.00	(4,710)	#DIV/0!
Manufactured Home	New	Duct Insulation	0.00	(4,968)	#DIV/0!
Single Family	New	Duct Repair	0.00	(1,028.51)	#DIV/0!
Multi-Family	New	Duct Repair	0.00	(1,028.51)	#DIV/0!
Manufactured Home	New	Duct Repair	0.00	(1,028.51)	#DIV/0!
Single Family	New	Floor Insulation	0.00	(8,233)	#DIV/0!
Multi-Family	New	Floor Insulation	0.00	(6,839)	#DIV/0!
Manufactured Home	New	Floor Insulation	0.00	(7,215)	#DIV/0!
Single Family	New	Heat Pump Tune Up	0.00	(342)	#DIV/0!
Multi-Family	New	**Heat Pump Tune Up**	0.00	(342)	#DIV/0!
Manufactured Home	New	Heat Pump Tune Up	0.00	(342)	#DIV/0!
Single Family	New	Sealed crawlspace	0.00	(20,570.25)	#DIV/0!
Multi-Family	New	Sealed crawlspace	0.00	(17,085.97)	#DIV/0!
Manufactured Home	New	**Sealed crawlspace**	0.00	(18,025)	#DIV/0!
Single Family	New	Wall Insulation	0.00	(7,054.70)	#DIV/0!
Multi-Family	New	Wall Insulation	0.00	(4,592.52)	#DIV/0!
Manufactured Home	New	Wall Insulation	0.00	(4,717.04)	#DIV/0!