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 (SACE only)
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 (SACE only)
In re: Commission Review of Numeric Conservation Goals JEA	DOCKET NO. 20190020-EG (SACE only)
In re: Commission Review of Numeric Conservation Goals Tampa Electric Company	DOCKET NO. 20190021-EG

SOUTHERN ALLIANCE FOR CLEAN ENERGY'S AND LEAGUE OF UNITED LATIN AMERICAN CITIZENS' POST-HEARING STATEMENT AND BRIEF

The Southern Alliance for Clean Energy, Inc. ("SACE") and Florida League of United Latin American Citizens, also known as LULAC Florida Corp. ("LULAC"), by and through its undersigned counsel, and pursuant to Order No. PSC-2019-0062-PCO-EG, Order Consolidating Dockets and Establishing Procedure, hereby submit their Post-Hearing Issue Statement and Brief.

EXECUTIVE SUMMARY

Zero is not a goal. JEA, Orlando Utilities Commission ("Orlando"), Gulf Power Company ("Gulf"), and Florida Power & Light ("FPL")[1] have all proposed goals of zero energy savings over the next ten years under the Florida Energy Efficiency and Conservation Act ("Energy Efficiency Act"). The Legislature never intended zero to be a goal. The fact that the utilities have proposed zero or near zero goals is a clear indication that the Rate Impact test[2] ("Lost Sales test") has outlived its usefulness to the Florida Public Services Commission ("Commission"). If the utilities' proposed goals are approved, more than six million hard-working families would effectively lose access to utility-sponsored energy efficiency programs—programs that are intended to help customers reduce energy use and save money on electricity bills. Low-income customers will be most affected by the utilities' shamefully low goals. Many low-income families reside in older homes, which are often poorly insulated, have outdated appliances, and rely on less efficient heating and cooling systems. During times of extreme hot or cold weather, these inefficient homes incur much higher energy bills, which can force painful decisions between leaving the home at unhealthy temperatures, having their electricity service disconnected, or even forgoing food or medicine in order to pay energy costs. Yet, the very methodologies the utilities used to establish their goals eliminate all low cost, high

[1] Florida Power & Light technically proposed a goal of 1.023 GWh, Koch, Vol. 1 at 58 (stated in MWh), which is equivalent to less than 10 residential homes, Koch, Vol. 1 at 103, out of more than 10 million people served, Exhibit 279 (schedule 2.1). This represents a cut of 99.8% from FPL's 2014 goals. Koch, Vol. 1 at 118. Given how small these proposed energy savings goals are, and that they are incidental savings to demand response measures and not from energy efficiency, Koch, Vol. 1 at 101, they will be referred to as zero throughout the brief unless otherwise noted.

[2] The term Rate Impact Measure, or RIM, does not appear in any Florida rule or cost-effectiveness manual ("Rate Impact test" does). *See* Cost Effectiveness Manual for Demand Side Management Programs and Self Service Wheeling Proposals.

impact measures. Cost-effective measures not only reduce energy use for customers and help hard working families save money on bills, but also lower overall system costs that the utility would otherwise recover from all customers. Instead, the utilities hide behind methodologies that result in zero or near zero goals. This was never the intent of the statute. We can and must do better.

The Energy Efficiency Act specifically calls for increasing the "efficiency of energy consumption," § 366.82(2), Fla. Stat., which plainly means helping customers reduce energy waste and save money on bills. The very idea of energy efficiency is to help customers cut energy waste, yet the Lost Sales test only includes a measure in the utilities' goals if it saves the utilities more money than its associated energy savings costs the utilities in lost sales—that is, the measure must increase utility profits. It is perverse to set goals using a test that counts the very objective of the statute, cutting energy waste, as a cost, thereby eliminating effective measures from further consideration in the goal setting process. The Lost Sales test[3] will generally only allow measures to pass that have a significant impact on reducing peak demand. While this is also an objective of the statute, it is not, and cannot, be the sole criteria by which to

[3] The utilities urge the Commission to apply the Lost Sales test to avoid any theoretical rate impacts, but in raising the specter of a rate hike, the utilities are disingenuous at best. The theoretical rate impacts the utilities refer to are just that—theoretical. At an 11.6% return on equity, FPL is already earning at the very top of its authorized return on equity. The idea that an impact of fewer than 0.002 basis points under the Bill test scenario would affect FPL's profits sufficiently for it to petition for a rate increase is absurd. A 0.00002% impact is barely measureable; the impact would need to be over 100,000 times greater to lower FPL's return more than the 2% it would need before it could seek a rate increase. FPL has a target return on equity of 10.6%, with an authorized range from 9.6% to 11.6%, with the latter the rate at which it is currently earning. Because FPL's claimed impact to its return is *fewer* than 0.002 basis points, it would actually take a *greater* than 100,000-fold negative impact to its profits before dropping below range and thereby becoming eligible to seek a rate increase. Even if FPL could realize this theoretical rate case, a truly imperceptible rate increase is well worth the hundreds of millions of dollars in actual bill savings for Floridians statewide.

judge energy efficiency cost-effectiveness.[4]

Instead, the Commission should rely on the Total Resource Cost test ("Bills test") in order to set cost-effective energy savings goals that comply with the intent of the Energy Efficiency Act. In contrast to the Lost Sales test, which treats energy savings as a negative (despite such savings being the actual point of efficiency programs and why customers adopt them, i.e., to save money on their electricity bills by reducing energy consumption), the Bills test actually considers whether the benefits of a measure, to the system as a whole, outweigh the costs of that measure. Measures that pass the Bills test drive down utility costs—and average customer bills. Robust programs will grant all customers the opportunity to participate in efficiency programs and to decide for themselves whether to reduce their own electricity consumption and corresponding utility bills. All the while, savings from these programs will defer additional fossil fuel powered generation, reduce energy waste, and help to mitigate Florida utilities' misguided and dangerous overdependence on gas, which are the aims and objectives of the Energy Efficiency Act. The measures that most cost-effectively lead to energy savings and thus best support low-income communities and hard-working families pass only the Bills test, not the Lost Sales test. To remedy this, the utilities profess a commitment to continue low-

[4] In the past, the use of the Lost Sales test has allowed some efficiency measures to pass, but this is no longer the case. Florida utilities have so focused their electricity generation around combined cycle gas generation that peak power is no longer much more expensive than baseload power. As a result, energy efficiency measures now uniformly fail the Lost Sales test, as the benefits to the utility of shaving peak power are virtually never outweighed by the cost of lost sales. Florida's growing dependence on a single fuel source, an outcome the Energy Efficiency Act was specifically designed to mitigate, cannot now be the excuse the utilities use to justify a goal of zero. Moreover, it is no coincidence that Florida, which is plagued by one of the lowest adoption rates of energy efficiency measures in the country, also pays some of the nation's highest electricity bills. Rates modestly lower than the national average (driven lower by such large energy sales) are small consolation for Florida families who must use greater amounts of electricity just to keep the lights on and their homes at livable temperatures.

income programs, but refuse to agree to establish any energy savings goal that would ensure the continuation of low-income programs. The Commission must establish specific low-income goals for each utility in order to ensure that the needs of those communities are met.

In addition to the Lost Sales test, the utilities use a highly restrictive two-year payback screen to eliminate the lowest-cost and most impactful measures. The two-year payback discards measures that pay for themselves within two years on the unsupported assumption that all customers will adopt such measures anyway and would thus "free-ride" on any utility incentives for the same. While a Commission rule requests the utilities to address so-called free-ridership, it does not prescribe such a blunt instrument.[5] Nexant witness, Mr. Herndon, readily admits that Nexant has never utilized a two-year payback before (and never has produced goals reliant principally on the Lost Sales test) during the dozens of market potential studies it has conducted for other utilities. Even here, Nexant developed the technical potential from load forecasting that already accounted for people who will install energy efficiency measures without incentives—those that the utilities would call "free-riders." The utilities are simply using the two-year screen to remove the most cost-effective measures and prevent Floridians—particularly working families and low-income communities—from saving significant energy and money and potentially impacting utility profits.

Beyond the treatment of energy savings as a cost through use of the Lost Sales test and the use of the two-year payback screen, the utilities' technical analyses are rife with errors. Jim Grevatt worked to diagnose and correct as many of the utilities' faults as possible. Many errors, however, were simply embedded in the utilities' work, through literally thousands of

[5] The rule also does not require that the Commission's goals actually reflect consideration of free-riders.

assumptions, such as absurd administrative costs: FPL's claimed administrative costs of $29 per lightbulb and JEA's administrative costs of almost $1500 for a 21 SEER air source heat pump from base electric resistance heating exemplify this type of error. Conceptually, these costs do not make sense, and even the utilities make no attempt to logically defend them. Sensible administrative costs are possible, as demonstrated by Tampa Electric Company ("TECO") and Duke Energy Florida ("Duke"). It is no coincidence that they are the two utilities with non-zero energy efficiency goals despite reliance on the two-year screen and Lost Sales test.

Because Mr. Grevatt was unable to overcome and correct each of the numerous errors and conservatisms in the compressed discovery timeframe, he recommended a 1.5% energy savings goal, commensurate with the demonstrated savings of other Southern utilities. While 1.5% of energy savings is an achievable and worthy goal, it is not the result of a Florida-specific analysis. Therefore, SACE and LULAC propose Mr. Grevatt's "partially-corrected TRC Achievable Potential" ("corrected Bills test analysis") as ten-year goals for the utilities as a conservative set of goals.[6] SACE's and LULAC's proposed goals are cost-effective under the Bills test and demonstrably achievable.

In addition, to determine an appropriate goal for low-income communities, Forest Bradley-Wright took the corrected Bills test analysis and scaled the goals to match the low-income population of each utility. Adopting these specific low-income goals will help to ensure that the particular needs of low-income communities throughout the state are addressed. Given the lower saturation rates of energy efficiency measures within low-income households as compared to the residential population at large, Mr. Bradley-Wright's low-income goals reflect a

[6] With the addition for FPL of those measures that FPL's own analysis showed were economic, but yet were assigned zero potential owing to errors in their analysis where all potential was assigned to the most efficient measures, even if the most efficient measures were not economic.

conservative accounting of the energy efficiency savings that are cost-effectively achievable for low income communities, even though the Commission has historically promoted and should continue to promote low income programs regardless of cost-effectiveness.

Finally, zero is not an acceptable goal for the promotion of rooftop solar in Florida given the Energy Efficiency Act's unambiguous mandate to do just that—promote solar. Instead, to meet the statute's obligation to promote solar, SACE and LULAC propose that the utilities adopt a pilot program investing in photovoltaic ("PV") solar installations coupled with battery storage at schools that are designated as storm shelters. With Florida's ever-present vulnerability to hurricanes and the concurrent widespread power outages they cause, coupling solar with battery back-up at schools that serve as storm shelters will aid in storm resiliency and ensure that shelters can continue to provide electricity for vital needs. During normal operations, solar plus battery storage can reduce demand at peak and therefore help reduce overall peak demand.

In sum, zero is not a goal. The Energy Efficiency Act was designed to protect the health and welfare of the citizens of this state, not the profits of the utilities. The only goals proposed in this proceeding that actually protect the welfare of real Floridians, by meaningfully lowering people's bills and actually deferring additional fossil-fueled generation—consistent with the intent of the Energy Efficiency Act—are the goals SACE and LULAC propose here. Now the Commission must decide if the Energy Efficiency Act has any meaning, or whether zero is an actual goal and this whole proceeding is just a paper-pushing multi-million-dollar[7] exercise in futility.

[7] Every single utility subject to EEA—including those proposing zero goals—plans to recover all costs incurred in this proceeding from their ratepayers. Exhibit 109, FPL's Response to Staff's 100th Interrogatory (Redacted); Exhibit 133, Gulf's Response to Staff's 89th Interrogatory (Redacted); Exhibit 177, Duke's Response to Staff's 119th Interrogatory (Redacted); Exhibit 249, TECO's Response to Staff's 99th Interrogatory (Redacted).

STATEMENT OF ISSUES AND POSITIONS

ISSUE 1: Are the Company's proposed goals based on an adequate assessment of the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, pursuant to Section 366.82(3), F.S.?

POSITION: *No. Among other things, the utilities ignore the possibility of early retirement of measures and overinflate the labor costs to install certain measures, increasing the applicable costs.*

ISSUE 2: Do the Company's proposed goals adequately reflect the costs and benefits to customers participating in the measure, pursuant to Section 366.82(3)(a), F.S.?

POSITION: *No. Among other things, by placing the economic potential of many measures at zero even when they are cost-effective, the utilities underestimate the benefits of many measures. By narrowly focusing on the Lost Sales test and inflating certain labor and administrative costs, the utilities do not properly consider the benefits to the ratepayers as a whole and especially low income communities.*

ISSUE 3: Do the Company's proposed goals adequately reflect the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions, pursuant to Section 366.82(3)(b), F.S.?

POSITION: *No. By improperly focusing on the Lost Sales test, the utilities ignore the real costs and benefits to the general body of ratepayers as a whole. The Lost Sales test treats lost sales, i.e., bill savings, as a cost. Total system costs and benefits are reflected in the Bills test, which thus best meets the requirements of the statute. Additionally, measures that assist low income communities are improperly screened out by the Lost Sales test.*

ISSUE 4: Do the Company's proposed goals adequately reflect the need for incentives to promote both customer-owned and utility-owned energy efficiency and demand-side renewable energy systems, pursuant to Section 366.82(3)(c), F.S.?

POSITION: *No. The utilities' analysis to arrive at their proposed goals are deeply flawed and arbitrarily stop at a two-year payback, artificially limiting available market penetration and energy efficiency, including for low income communities.*

ISSUE 5: Do the Company's proposed goals adequately reflect the costs imposed by state and federal regulations on the emission of greenhouse gases, pursuant to Section 366.82(3)(d), F.S.?

POSITION: *No. Given the climate crisis, and a bi-partisan bill currently pending in Congress on carbon fees, some cost for greenhouse gas emissions over the ten-year planning horizon should be assumed.*

ISSUE 6: What cost-effectiveness test or tests should the Commission use to set goals, pursuant to Section 366.82, F.S.?

POSITION: *The Bills test and the Participant test. The Bills test focuses on ratepayers as a whole by considering the total cost of implementing the efficiency measure

compared to its benefits, including avoided generation, transmission, and distribution costs. The Bills test focuses on reducing the average bills of all customers. This is especially important for low income communities, as people struggle to pay monthly energy *bills*, not monthly energy rates.*

ISSUE 7: Do the Company's proposed goals appropriately reflect consideration of free riders?

POSITION: *No. Among other things, the load forecasts used by Nexant in its analysis already included naturally occurring energy efficiency. As such, the possibility of free riders had already been accounted for at the Technical Potential stage of the analysis. Furthermore, the completely arbitrary two-year screen used by the utilities is not backed by any empirical evidence and improperly screens out measures that are especially important to low income communities.*

ISSUE 8: What residential summer and winter megawatt (MW) and annual Gigawatt-hour (GWh) goals should be established for the period 2020-2029?

POSITION: *The Commission should approve the corrected Bills test analysis goals contained within Witness Grevatt's testimony and additionally corrected for Florida Power & Light, and, as a subset of those goals, approve specific goals for low-income communities consistent with the testimony of Witness Bradley-Wright. These goals are presented below. As bills are driven by energy use, SACE and LULAC do not propose specific MW goals for low-income customers, only GWh goals.*

	Incremental Annual Energy Savings (GWh)										Total
Utility	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL^	136	162	162	162	162	162	162	162	162	162	1,594
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										Total
Utility	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL^	59	70	70	70	70	70	70	70	70	70	689
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

Utility	Winter Peak MW										Total
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL^	22	26	26	26	26	26	26	26	26	26	256
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

^All values are from Exhibit JMG-2, except for FPL which includes the addition of the 50% of the economic potential (representing the achievable potential) of the two-speed pool pump and SEER 21 ASHP vs electric resistance heat spread out over the ten-year period (63 GWh per year, 31 summer MW per year, and 11 winter MW per year).

Utility	Residential Low-Income Incremental Annual Energy Savings (GWh) Goals as a Subset of the Residential Goals (included in the total noted above) (from Table 4 of Forest Bradley-Wright Testimony)										10-Year Total
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
FPL	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5	395
Duke	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	57.2	572
TECO	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	117
Gulf	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	133
Orlando	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	67
JEA	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	125

ISSUE 9: What commercial/industrial summer and winter megawatt (MW) and annual Gigawatt hour (GWh) goals should be established for the period 2020-2029?

POSITION: *The Commission should approve the corrected Bills test analysis goals contained within Witness Grevatt's testimony. These goals are presented below and offer a conservative goal of what is economically achievable for each of the utilities.*

Utility	Incremental Annual Energy Savings (GWh)										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										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										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

ISSUE 10: What goals, if any, should be established for increasing the development of demand-side renewable energy systems, pursuant to Section 366.82(2), F.S.?

POSITION: *Goals should be established to create pilot programs at schools that also serve as storm shelters along with solar plus battery storage in order to increase resiliency and offset peak demand.*

ISSUE 11: Should these dockets be closed?

POSITION: *Yes, after the Commission has approved SACE's & LULAC's proposed goals for the utilities.*

ARGUMENT

I. The Lost Sales Test is No Longer an Appropriate Test with Millions of Dollars of Potential Benefits Ignored Due to Hypothetical De Minimis Rate Impacts, Ignoring the Intent of the Energy Efficiency Act.

The Commission should reject the zero goals derived by the Lost Sales test in order to lessen Florida's dependence on natural gas and to fulfill the purposes of the Energy Efficiency Act. The use of the Lost Sales test ignores millions of dollars of benefits that all Floridians could benefit from due to hypothetical de minimis rate impacts. All of the energy efficiency measures that could benefit Florida's hard working families and businesses are eliminated by use of the

Lost Sales test. Even though no other state primarily relies on the Lost Sales test in setting goals, Florida's utilities argue Florida should continue to do so, even though Florida already has some of the highest electricity bills in the nation. The Commission must choose to protect the public interest and help Floridians lower their electricity bills – not ensure that the utilities do not lose revenue from customers saving money on bills to maximize their own profits.

a. The Energy Efficiency Act does not allow the Lost Sales test to be used when it produces goals of zero.

The Rate Impact test—the "Lost Sales test"—counts energy savings as a cost, but energy savings are a primary goal of the Energy Efficiency Act and, accordingly, should be considered a benefit. Lost revenue is simply an accounting of lost sales by a utility. When discussing demand side measures, like energy efficiency, lost sales correspond to bill savings due to energy conservation (which the Commission has referred to as "bill reductions"). *See* Notice of Adoption of Rule Amendment, Docket No. 891324-EU, Order No. 24745 at 1 (Fla. P.S.C. July 2, 1991), http://www.psc.state.fl.us/library/filings/1991/06643-1991/06643-1991.pdf ("PSC Efficiency Order"). In the energy efficiency context, if a utility has lost $1 in sales, it means that a customer is not paying that $1 because she has lowered her energy usage in an amount equal to $1 of energy usage. Perversely, the Lost Sales test counts that $1 in savings as a cost. The Energy Efficiency Act's purpose is to lower energy use (kWh), and specifically directs the Commission to "adopt appropriate goals for increasing the efficiency of energy consumption . . . specifically including goals designed to increase the conservation of expensive resources, such as petroleum fuels, to reduce and control the growth rates of electric consumption." § 366.82(2), Fla. Stat. The Lost Sales test, which focuses only on MW capacity reductions and considers efforts to curb kWh electric consumption a cost, cannot be the test used to determine which energy efficiency measures are deemed cost-effective pursuant to the Energy Efficiency Act

when the end-result is a *zero* goal for the control of the "growth rates of electric consumption," a *zero* goal for "increasing the efficiency of energy consumption," and a *zero* goal for "increasing the development of demand-side renewable energy systems." *Id.*

Crucially, the goals of zero supported by the current Lost Sales test are a far cry from those that the Florida Supreme Court evaluated in *Legal Environmental Assistance Foundation v. Clark*. 668 So. 2d 982 (Fla. 1996). At that time it was noted that the "differences in . . . energy savings between RIM and TRC portfolios are negligible." *Id.* at 987. Moreover, the decision also upheld the Commission's encouragement that the utilities implement "TRC measures when it is found that the savings are large and the rate impacts are small." *Id.* at 988.

In stark contrast, today four utilities rely on the Lost Sales test to propose energy savings goals of zero, while the Bills test provides significantly greater energy savings for every utility. In place of *LEAF*'s "negligible" difference, each utility in this proceeding has submitted a study featuring a wide gulf between its RIM and TRC portfolios. Moreover, as demonstrated in Section VI of this brief, compared to the RIM portfolios submitted in this proceeding, each utility has put forth a TRC portfolio where "the savings are large and the rate impacts are small." *Legal Environmental Assistance Foundation*, 668 So. 2d at 988.

Although the Lost Sales test can be taken into account in other states, no other state primarily uses the Lost Sales test (even in conjunction with the Participants test) to set goals. Herndon, Vol. 2 at 391. Other states weigh the hundreds of millions of dollars in system savings against reduced revenue to the utility and theoretical rate implications, rather than simply saying "No" based on cross-subsidy concerns. Accordingly, a few comparisons are useful to lend context to the absurdity of the goals the utilities are proposing based on the Lost Sales test. Florida is already in the bottom tier among states in energy savings as a percent of retail sales,

ahead of just Alabama, Louisiana, North Dakota, Alaska, and Kansas. Exhibit 346. It is from this abysmal starting line that the utilities, with the exception of Duke and TECO, propose to cut efficiency drastically further (and Duke, to be clear, is still proposing energy savings cuts). The farce of the utilities' proposed savings is evident from a Nexant-conducted comparison of energy savings in Florida and Georgia. For example, the City of Tallahassee, which is not subject to the Energy Efficiency Act, achieved 5,686 MWh of energy savings in just 2017, five times as much FPL proposes to save for the entirety of its territory over the next *decade*. Exhibit 284, tab "EIA861," p. 14. Similarly, the Reedy Creek Improvement District (with essentially one customer, Disney World), also not subject to the Energy Efficiency Act, on its own, achieved 8,526 MWh of energy savings in one year, over eight times greater than what FPL proposes over the next decade (with almost five million customers). Exhibit 284, tab "EIA 861," at p. 14.

b. Florida's over-reliance on gas further renders the Lost Sales test obsolete.

Across the state, the utilities are growing highly dependent on combined cycle natural gas units as their primary and almost sole source of generation. The state's largest utility, FPL, already derives 74.5% of its electricity from burning gas, and by 2024, its gas generation will come exclusively from combined cycle plants,[8] and other utilities like Gulf are not far behind.[9] As a result, the historic spread between peak pricing and baseload has largely disappeared, especially for FPL. Because the Lost Sales test accepts only measures whose benefits to the

[8] Sim, Vol. 2 at 279 (by that year, gas generation from units other than combined cycle rounds to 0.0% in FPL's 2019 Ten Year Site Plan). As such, the efficiency of their generating units "stays fairly constant every hour of the year" and avoids "big price swings between, say, peak hours and off-peak hours." Sim, Vol. 2 at 301. Because FPL burns natural gas on the margin (i.e., the last kWh it serves), projected low natural gas prices drive down the cost-effectiveness of efficiency measures competing with combined cycle gas units. Sim, Vol. 2 at 280, 302.
[9] Exhibit 315. Gulf is replacing gas combustion turbines with combined cycle plants, and its combined cycle generation "jumps up quite a bit" in 2025. Floyd, Vol. 3 at 491-92.

utility are worth more to the utility than the lost energy sales, it selects measures that reduce costly peak demand.[10] This test is thus unfit for a system that increasingly derives baseload and peak electricity from the same generating units. While at least some efficiency measures have historically survived the Lost Sales test, Florida's emerging dependence on combined cycle natural gas units is now driving goals to zero.[11] When a utility has become so dependent on natural gas that no energy conservation measures can pass the Lost Sales test, the test cannot be the cost-effectiveness test to use for the "conservation of electric energy and natural gas usage" required by the Energy Efficiency Act, and has thus outlived any usefulness. § 366.81, Fla. Stat.

c. The volatility of gas prices is a growing threat for Floridian ratepayers and is a further reason that a zero goal based on the Lost Sales test does not comport with the Energy Efficiency Act.

One reason to be especially concerned about extensive reliance on natural gas is the continued volatility in natural gas prices. Every utility in these proceedings has struggled to predict natural gas prices with much accuracy even five years out, producing error rates from 48% to 100%.[12] Nonetheless, the utilities are confident that natural gas prices will remain at their current low price over the ten-year planning period. Yet in the face of historic volatility,

[10] The energy efficiency measures that passed the Lost Sales test were those that avoided peak energy that was expensive to the utility to generate, but did not conserve much energy at other times. *See* Roche, Vol. 5 at 913 (Lost Sales test favors programs with high demand savings).
[11] Now that peak energy is not currently expensive, the Lost Sales test unsurprisingly finds that no energy-saving measures will benefit the utilities whose peak pricing has come down, leading them to zero goals. *See* Koch, Vol. 1 at 101-02 (Lost Sales test eliminated all efficiency measures from economic potential); Floyd, Vol. 3 at 497, 531 (Lost Sales test achievable potential just 0.1% of technical potential; measures often eliminated by Lost Sales test before even getting to two-year screen); and Roche, Vol. 5 at 898 (measures failing Lost Sales test, especially for low-income programs, would provide significant energy savings).
[12] Floyd, Vol. 3 at 481 (50.5 % error for Gulf); Exhibit 311; Koch, Vol. 1 at 99 (53% error for FPL); Exhibit 101; Cross, Vol. 3 at 623 (48% error for Duke); Exhibit 321; Kushner, Vol. 4 at 661 (98% for Orlando); Exhibit 326; Exhibit 344 (97% for JEA); Composite Exhibit 345 (Staff's Second Set of Interrogatories, Interrogatory No. 32, p. 2 of 3) (100% for TECO).

the utilities offer no evidence to suggest that natural gas prices will suddenly find the long-term stability that has consistently eluded them. This assumption has aided the utilities in cratering energy conservation goals by depressing the benefits of avoided generation and fuel costs, and shows yet another baked-in conservatism affecting the goals of every utility to this proceeding.

Setting energy efficiency goals at zero for FPL, Gulf, Orlando, and JEA increases the vulnerability of their customers to volatile gas prices, as no natural gas dependence will be deferred for those utilities. Utilities can and will pass 100% of their fuel costs through to ratepayers with no risk whatsoever to the company—in addition to imposing costly recovery for capital investment in new power plants. It is precisely because of this customer bill volatility that the State should be endeavoring to lower dependence on natural gas before prices rise unpredictably at the expense of hard-working families across Florida. Energy efficiency is a quantifiable resource and dependable in how much energy it will save. By diverting that dependence to gas, the utilities now propose zero goals for conserving energy, due to cheaper peak pricing and counting all energy savings as a cost. Ultimately, this refusal to help decrease energy usage will further exacerbate the costs to ratepayers of unpredicted fuel price shocks—an outcome the Energy Efficiency Act was specifically intended to avoid, but one made all the likelier by the utilities' demonstrated records of wildly inaccurate forecasts.

II. The Two-Year Payback Screen Has No Empirical Basis, Inappropriately Reduces Goals by Cutting the Most Cost Effective Measures, and Double Counts People Who Would Adopt Measures Without a Utility Program

The utilities screen out all measures that pay for themselves within two years, removing the most cost-effective measures with the lowest cost and highest energy savings—the measures that would make the biggest difference to low-income communities and Florida's hard-working families and businesses. The utilities do this despite no research that this is an effective method

to account for people who would have employed efficiency measures even in the absence of a utility-sponsored program, and despite that these people are accounted for elsewhere in the utilities' analysis.

The foundation for the analysis for all of the utilities was the technical potential analysis. *See, e.g.*, Herndon, Vol. 2 at 322. That analysis formed the basis of each successive level of conservation potential for all of the utilities. Although the utilities diverged somewhat following that starting point in exactly how subsequent analyses were performed, and by whom, each conducted an economic potential analysis to determine what measures in the technical potential were economical, and an achievable potential analysis to determine what portions of the economic measures were actually achievable. The utilities all recommended to use the achievable potential under the Lost Sales test to set their goals, except where, as in Gulf's case, the achievable potential was so close to zero that a utility simply zeroed out the resulting goals instead. *See, e.g.*, Floyd, Vol. 3 at 448.

Although the Energy Efficiency Act itself is silent as to any need to account for people that would implement a demand-side measure in the absence of a utility-sponsored program (i.e., free-riders), the implementing regulation does ask the utilities, as part of each goals proceeding, to include in their ten year projections consideration of free riders. Fla. Admin. R. 25-17.0021(3).[13] A so-called free-rider is simply someone who will adopt an energy efficiency

[13] Notably, the rule does not require that the goals the Commission adopts to include such considerations as subsection 3 of 25-17.0021 only applies to the utilities. Fla. Admin. R. 25-17.0021(3) ("each utility shall propose . . . ."). Instead, the rule that applies to the Commission says "[t]he Commission shall establish numerical goals for each affected electric utility . . . to reduce and control the growth rates of electric consumption, and to increase conservation of expensive resources, such as petroleum fuels" with such goals being based on "savings reasonably achievable through demand-side management in each utility's service area over a ten-year period." Fla. Admin. R. 25-17.0021(1). No mention is made of the Commission including consideration of free-riders in the goals it sets or even that the goals must be cost-effective.

measure, regardless of whether a utility incentive is available or not. Floyd, Vol. 3 at 472; Herndon, Vol. 2 at 386.

Here, Nexant accounted for free-ridership at the moment it incorporated the utilities' load forecasts into its technical potential. The utilities' load forecasting formed the basis of the technical potential for each of the utilities. Herndon, Vol. 2 at 321 (step 1 was to take the load forecast from each utility and disaggregate it by end use sector). All of the assumptions that went into those load forecasts are implicitly embedded in the technical potential. The technical potential assumes that energy can only be saved from that baseline, and not beyond it. Each utility in these proceedings supplied a load forecast to Nexant that was used to form that baseline. Every single utility admitted that their load forecasting assumed that people would continue to adopt and implement demand-side measures in the absence of utility-sponsored programs in the future. Exhibit 272 (FPL)("[t]he impacts of additional adoption by customers of energy efficiency measures above the baseline codes and standards is implicitly . . . captured in the forecast"); Exhibit 312 (Gulf); Exhibit 182 (Duke); Exhibit 327 (Orlando); Exhibit 341 (JEA); Composite Exhibit 345 (TECO's Answers to SACE's Fifth Set of Interrogatories). Therefore, the load being removed by these people implementing efficiency measures above baseline codes and standards in the absence of a utility-sponsored program is already accounted for—and already eliminated—in the load forecasts that were provided to Nexant. By virtue of basing the technical potential study on the utilities' load forecasts, Nexant ensured that each subsequent level of potential analysis had already factored free-riders out of the universe of potential energy savings. Consequently, neither the technical potential, nor economic potential, nor subsequent achievable potential, include any energy savings from those who would have implemented a measure even in the absence of a utility-sponsored program.

Regardless, the utilities erroneously insist that free-ridership be addressed using an unsupported and arbitrary two-year payback screen in later stages of the potential study. In the purported name of eliminating the free-riders that were already stripped out by their own baseload forecasting methods, the utilities insist on removing all of the most cost-effective measures—any measure that would pay for itself within two years. The utilities contend that this arbitrary two-year payback horizon marks the precise decision point at which consumers will adopt a measure out of their own rational self-interest. The utilities have no empirical evidence for this assertion, customers do not act accordingly in practice, and low income customers in particular generally cannot make such investments. *See, e.g.*, Koch, Vol. 1 at 110-13. Mr. Floyd, an expert witness on energy efficiency and payback periods, did not even know the payback period for R38 insulation, even though that is one of the more common cost-effective measures seen throughout the analysis. Floyd, Vol. 3 at 479. If the utilities' own experts do not know the payback of measures without looking them up in their own complex technical analyses, how are customers supposed to? The utilities provided no evidence showing that customers actually know that information, or even that they have ready *access* to that information. Koch, Vol. 1 at 111-12 (no surveys done to establish number of free-riders); Whitley, Vol. 1 at 200 (no empirical analysis of two-year payback methodology); Roche, Vol. 5 at 910-11 (no surveys done to determine free-ridership). Even in a fictional world where all utility customers have a ready supply of cash earmarked for energy efficiency improvements on a two-year payback horizon, it is hard to imagine that most Floridians know that the payback period for LED lightbulbs, faucet aerators, two-speed pool pumps, or any of the other measures analyzed by the utilities. Mr. Herndon, the Nexant expert who conducted the market potential study for each utility, readily admitted he had *no* opinion on the effectiveness of the two-year payback screen to limit free-

ridership, Herndon, Vol. 2 at 389, and was aware of no other jurisdictions that use such a screen to eliminate measures as part of a market-potential study. Herndon, Vol. 2 at 388.[14]

By applying the two-year screen, the utilities are arbitrarily removing from consideration the most cost-effective measures that can help hard-working families and businesses. No additional "free-riders" are being taken into account by the two-year screen. The only thing the screen achieves is the deliberate deletion of the most cost-effective measures, allowing the utilities to artificially lower their potential energy savings. The utilities do not get to remove potential energy savings twice in order to account for "free-riders."[15]

III. The Utilities Acknowledge that Removing the Two Year Screen and Setting Goals Based on the Bills Test is the Only Way to Meet the Needs of Low Income Communities Struggling With Electric Bills

This Commission, in the past, has rightly emphasized the need to protect low-income communities. These communities face enormous energy burdens. Bradley-Wright, Vol. 5 at 989-90. Florida has some of the highest electricity bills in the nation due to our extraordinary energy usage. Roche, Vol. 5 at 905-06; Exhibit 334. It is no coincidence that Florida has some of the highest energy usage, and thus, some of the highest electricity bills in the nation when our energy efficiency programs and achievements are so small compared to the rest of the country. Exhibit 346. We have the highest bills, and least savings, due to the focus on rates. Telling a low-income customer who cannot afford their electricity bill because it is so high that they should not worry because they pay a lower rate than most of the nation is not a solution.

[14] However, as is common in other states, additional steps can be taken at the *program design* phase to steer incentives away from potential free-riders. Herndon, Vol. 2 at 388.

[15] To the extent that it has been historic Commission practice to allow the utilities to rely on the two-year screen, such practice is not in any way determinative as it is not a rule. To the extent the Commission does consider it determinative, it would constitute an un-promulgated rule, subject to challenge under the Florida Administrative Procedure Act.

All of the utilities subject to this proceeding profess to care about low-income customers. And, while there is room for improvement with all of the utilities as outlined in Forest Bradley-Wright's testimony, some of the utilities are doing significantly better than the others.

TECO, for example, has historically done and proposes to do much more for low-income customers than the other utilities, such as FPL. FPL has proposed a small expansion of its small low-income program, but still asks for zero energy savings goals. Koch, Vol. 1 at 84. By contrast, TECO has historically helped more low-income customers than FPL proposes in its modest expansion, even in absolute numbers, with TECO last year achieving 9.792 GWh of savings for low income customers, which is far greater than the 3.4 GWh that FPL proposes to achieve in its more "expansive" offering. Roche, Vol. 5 at 900-01. FPL serves 6.4 times the population of TECO and includes many more low income customers. Exhibit 279 (FPL in 2019 projected to serve 4.471 million residential customers); Exhibit 304 (Tampa Electric in 2019 projected to serve 0.695 million residential customers); Bradley-Wright, Vol. 5 at 990 (FPL serves a bit over 6.2 times the low income population served by Tampa Electric (low income population as presented by Forest Bradley-Wright for FPL divided by low income population for TECO)). If FPL were to scale their proposed program to be of similar size to TECO's (which SACE and LULAC believe should be expanded) in proportion to their number of low income customers, their goal would be 60.7 GWh per year, (9.792 GWh achieved by TECO per year multiplied by 6.2), which is almost twice what FPL aims to save over the next *ten* years.

Other utilities are also woefully behind in serving low-income customers. Orlando served 6 customers last year. Bradley-Wright, Vol. 5 at 1010. That was not a percent – that was the number of low income customers served in their low-income program. Although Orlando

pointed out some of the partnerships they had entered into to help low-income customers, they never rebutted this number.[16]

While all of the utilities promised to continue their low-income programs even if zero goals were adopted, there is no way that the Commission can ensure this would happen without enforceable goals. The regulated utilities, when asked about seeking recovery for costs associated with those programs, admitted that they would, of course, seek recovery for low income programs. Floyd, Vol. 3 at 529. However, if there is a goal of zero, and thus nothing for the utilities to achieve, what would be the legality of cost recovery for expenses associated with low income programs that the utilities are under no obligation to achieve? Certainly, if the utilities decided to voluntarily pay for large industrial customers to undertake certain measures that would lead to enormous bill savings (and possible upward pressure on rates) at the cost of millions of dollars, consumer advocates and others would object to the recovery of those funds since the utilities decided to expend them without any obligation. Similarly, if the utilities spend millions on low income programs when there is zero obligation to do so, because they have a goal of zero, it would not be surprising if the industrial users objected to the recovery of those millions of dollars at the cost of those industrial users.

The only way to ensure that the needs of low income communities are met is for the Commission to ensure that those needs are met with the legal tools it has—specific, mandatory

[16] Orlando, throughout this proceeding, has pointed out how they are not a regulated utility. However, the Legislature required that they be subject to this proceeding and its mandates (and mandatory goals). If Orlando believes that the Commission should not, as a matter of policy, be able to dictate these kinds of goals to the city, than its remedy is with the Legislature to change the law, not the Commission which, under the law, has the same obligation to set mandatory goals as it does for the regulated entities.

goals. Anything short of that is a suggestion to the utilities, a suggestion which, even if the utilities followed, could prevent recovery of costs due to the lack of obligation.

SACE and LULAC have proposed specific low-income goals based on the low-income population and what is achievable for each utility. Using the residential achievable potential for each utility that Mr. Grevatt calculated, Mr. Bradley-Wright developed a goal based on the proportion of low income customers in each utility's territory. Bradley-Wright, Vol. 5 at 1009. These goals are conservative because they ultimately derive from the potential Nexant calculated based on efficiency saturation rates it developed for the residential sectors at large, even though low income customers would be expected to have implemented fewer measures due to the upfront costs of doing so. Bradley-Wright, Vol. 5 at 1002.

Although FPL presented an analysis showing that achieving those goals would cost billions of dollars based on winter megawatt reductions, this is absurd.[17] What truly matters to low income customers are their electricity bills, which, in Florida, are driven by energy consumption. The only important part of the proposed goals in Mr. Bradley-Wright's testimony is the kWh component for low-income customers. As was shown on cross-examination, achieving this kWh goals for low income customers would be a bargain at a little over $7 million for FPL, leading to bill savings of about $65 per year per customer while helping 64,000 customers per year. Koch, Vol. 6 at 1169. If SACE's and LULAC's proposed goals were

[17] FPL also tried to take issue with Mr. Bradley-Wright's analysis by stating that the proposed goal should be even higher under his analysis because he did not add enough achievable potential into it for the HVAC system that FPL had inadvertently left out of their economic potential. However, as pointed out on cross-examination, the number added in was 50% of the economic potential for that measure, which was the achievable potential shown by Mr. Grevatt to be achievable. *See* Bradley-Wright, Vol. 5 at 1008.

adopted, FPL's low income customers would have the choice to easily and cheaply lower their electricity bills and energy burdens.

IV. The Technical Potential Study Produced by Nexant Significantly Understates True Savings Potential Due to Extensive Errors and Conservatisms

Errors and conservatisms abound in Nexant's technical potential studies for each utility, yielding results that understate the utilities' true technical potential for demand side energy conservation. Nexant's refusal to allow SACE, LULAC, and even Staff any meaningful access to the TEAPOT model that they sought—even subject to a non-disclosure agreement—prejudicially impaired their ability to evaluate and correct the results of the potential studies.

a. Nexant failed to consider early retirement.

Nexant, on behalf of all of the utilities in this case, failed to consider the possibility of early retirement of measures, as Mr. Herndon fully admits. Herndon, Vol. 6 at 1121. As a result, significant savings are missing from the technical potential analysis for all of the utilities. Grevatt, Vol. 5 at 956. Essentially, the utilities assumed that a measure could not be replaced until the end of its useful life. This assumption ignores savings that would accrue from people replacing functional but now highly inefficient HVAC systems. Although Mr. Herndon defends the process by noting that the studies employed a ten-year horizon, the energy-efficient measures actually considered tended to have service lives well in excess of ten years. Exhibit 347. Therefore, the assumption that it is not technically possible to replace aging appliances and other measures before the end of their useful life is not technically sound and understates the actual technical potential. The stated purpose of the technical potential is to determine the theoretical maximum energy savings possible; where, as here, the technical potential is understated, it necessarily follows that the economic potential and achievable potential are understated as well.

b. Nexant included exaggerated labor costs.

Nexant's technical potential studies are also plagued by needless and expensive labor costs. For example, Nexant assumed that the labor costs to install a water-heater blanket were $140—representing two full hours of skilled labor—even though Mr. Herndon agreed that it was possible for some people to install a residential hot-water blanket on their own. Herndon, Vol. 2 at 352. The impact of that labor cost ballooned the total measure cost to obtain a water heater blanket by *six times* to $167.92 over baseline (no water heater blanket), even though the product itself cost only $27.92. Exhibit 280, at p. 3. These expensive and unnecessary labor costs forced out otherwise cheap and effective measures[18] by greatly increasing their incremental cost over the baseline.

c. Nexant Denied Intervenors Reasonable Access to its Crucial TEAPOT Model.

Nexant has a model called the TEAPOT model, which was used to establish the technical potential for every single utility in this case. Herndon, Vol. 2 at 353. Staff (and SACE) asked for a copy of the TEAPOT model in order to examine it and review its underlying assumptions. Herndon, Vol. 2 at 353-56; Exhibit 281; Exhibit 282. Nexant, even pursuant to a confidentiality agreement, refused to hand it over to staff or SACE for examination. Herndon, vol. 2 at 354-56; Exhibit 281; Exhibit 282. Nexant instead offered a live demonstration of the model, Herndon, Vol. 2 at 354; Exhibit 281; Exhibit 282, which fundamentally fails to provide an opportunity to examine the model in-depth to truly examine how it functions and determine how changing

[18] Other measures that would seem to be able to installed by a customer on their own would be the residential energy star room air conditioner ($263.04 in assumed labor costs), Exhibit 280, at p. 2, energy star freezers ($166.52 in assumed labor costs), Exhibit 280, p. 1, energy star refrigerator ($166.52 in assumed labor costs), Exhibit 280, p. 1, and removal of second refrigerator-freezer ($50 in assumed labor costs), Exhibit 280, p. 1. Most able-bodied people can remove a refrigerator on their own; $50 in assumed costs to do so seems unnecessarily punitive to the energy efficient measure.

certain assumptions changes the outputs from the model. Without such a detailed examination, it is impossible for SACE, LULAC, staff, or even the Commission itself, to truly assess the accuracy and completeness of the technical potential analysis for the utilities. As has been stated before, the technical potential serves as the basis for the economic potential and achievable potential for every single utility.[19]

In contrast, FPL made its economic potential and achievable potential analyses available for examination, enabling SACE and LULAC to meaningfully review these analyses, and, as described below, to identify their shortcomings and embedded conservatisms. TECO similarly conducted its own economic and achievable potential analyses and provided these for review, allowing SACE and LULAC to examine them and to determine that their work presented fewer shortcomings. Ultimately, even denied the ability to conduct an equivalent review of Nexant's analyses, given their strikingly conservative results—especially compared to those of TECO—SACE and LULAC must infer that Nexant's model contains many conservatisms that greatly underestimate the potential for energy savings throughout Florida.

V. The Utilities' Potential Studies Suffer From Grave Defects at the Economic and Achievable Potential Levels That Further Understate The Utilities' True Potential for Energy Savings.

SACE and LULAC, in their recommended goals, worked to correct as many of the errors in the utilities' analyses as they could, and as such, the Commission should adopt these goals.

[19] Nexant further used the TEAPOT model to calculate the economic potential for Gulf, Duke, JEA, and Orlando (even though Gulf and Duke used their own cost-effectiveness screenings), and then to calculate the achievable potential for those same utilities. Herndon, Vol. 2 at 334, 337. As a result of this increased reliance on the TEAPOT model, the lack of transparency regarding the model and its assumptions further impedes independent evaluation of the Gulf, Duke, JEA, and Orlando studies. Nexant's willful obfuscation as to the assumptions it used, and as to any means to test them, leaves SACE, LULAC, and staff—and thus the Commission—without any way to determine the accuracy and completeness of these analyses.

Unfortunately, additional errors and conservatisms, many seemingly intentional (like absurd administrative costs) at the economic potential and achievable potential stage presented too many errors in too short of time for SACE and LULAC to correct.

a. The utilities subjected high-impact measures to outrageous administrative costs.

Every utility, except for TECO and Duke, embedded absurd administrative costs into their analyses. Any defense that these costs did not impact the final goals because no measures were screened out by administrative costs is wholly unconvincing, as every measure permutation failed to pass the Lost Sales test for those utilities, and thus there were no measures left to screen out. FPL developed its own administrative costs, while Nexant developed administrative costs for Gulf, JEA, and Orlando. TECO used a similar method to FPL for developing administrative costs, but did so in a rational way. Duke developed its administrative costs in a similar fashion to Nexant, but used a much more reasonable approach based on its historic programmatic costs. Herndon, Vol. 2 at 363-64. The resulting contrasts are easily seen.

FPL's administrative costs range from quite reasonable to flatly absurd. For instance, assigning a program cost of $29 per participant *for a lightbulb* exceeds all credibility. Koch, Vol. 1 at 95; Exhibit 100, electronic file Attachment No. 1 to Staff's 1st INT No. 9; and Grevatt, Vol. 5 at 962-63. Other examples of such absurd costs include $29 for faucet aerators and $29 for low flow showerheads. Koch, Vol. 1 at 97; Exhibit 100, electronic file Attachment No. 1 to Staff's 1st INT No. 9. FPL claims the costs are based on the typical cost for currently existing FPL programs. Koch, Vol. 1 at 95. By contrast, some of the other FPL assumed administrative costs were quite reasonable: the 21 SEER air source heat pump from base electric resistance heating was only assigned $19 in administrative costs, even though that unit certainly costs more and is far more complicated to install than a lightbulb. Koch, Vol. 1 at 96; Exhibit 100,

electronic file Attachment No. 1 to Staff's 1st INT No. 9. Similarly, FPL assigned $29 of administrative costs to the variable speed pool pump. Koch, Vol. 1 at 95. These assumed administrative costs will be useful for comparison to the assumed Nexant costs.

Nexant developed model program costs based on certain end-use program categories using data amalgamated from several utilities, including Duke North Carolina, Georgia Power, TECO, JEA, FPUC, Orlando, and FPL. Herndon, Vol. 2 at 362; Exhibit 284 at tab "TPS Program Categories," p. 1. Specifically, Nexant derived its administrative costs for each end use category from formulas based on dollars per kWh of savings. Herndon, Vol. 2 at 363. Thus, the more kWh savings a measure provides—that is, the more valuable it is to a customer by reducing energy use and thus providing bill savings—the higher the administrative costs assigned to that measure. Floyd, Vol. 3 at 488. For residential HVAC measures, this led to an administrative cost of $0.198 per kWh in administrative costs alone! Exhibit 284 at tab "TPS Program Categories," p. 1. Nexant's administrative cost multiplier leads to outrageous costs for many of the measures that save the most energy, such as 21 SEER air source heat pumps from base electric resistance heating. Nexant assigned this measure a program cost of $1,478, which is *in addition to* the actual cost of the measure. Herndon, Vol. 2 at 360-61; Exhibit 283 at tab "34b-EE," p. 1.[20] For context, the same 21 SEER air source heat pump from base electric resistance heating was assigned administrative costs of just $19 per unit by FPL. Nexant's unsupported approach aggressively inflates administrative costs for measures that lead to high energy savings,

[20] Similarly, the measure to increase ceiling insulation for single families from R2 to R38 had program costs of $640, while installing identical insulation for the same single family market segment, but where a different baseline insulation (R12) was installed, yielded administrative costs of only $166.95. Herndon, Vol. 2 at 361; Exhibit 283 at tab "34b-EE," p. 1. The only reason the program costs are different for the exact same measure is that the energy savings are higher when the baseline is lower; more energy is saved by increasing insulation from R2 to R38 than from R12 to R38.

making them more prone to elimination when applying cost-effectiveness tests. It should not cost JEA and the other utilities that relied on the administrative costs provided by Nexant over 75 times as much as FPL to administer a 21 SEER air source heat pump rebate program; one wonders how many hours it really takes an employee of JEA or the other Nexant utilities to process a rebate for a given 21 SEER air source heat pump.[21] Indeed, Gulf's own witness admitted that these administrative costs, which are supposed to approximate the administrative costs for the utilities, "would not necessarily be representative of actual program administrative costs." Floyd, Vol. 3 at 490.[22]

[21] At the same time, measures which have energy savings that are smaller per unit, but significant per unit cost, such as efficient lightbulbs, receive more reasonable outcomes under Nexant's scheme (although still not as reasonable as Duke's, as discussed below). For example, Nexant administrative costs for lightbulbs ranged from $0.27 to $0.57, depending on the type of bulb (due to the corresponding amounts of energy savings). Herndon, Vol. 2 at 360; Exhibit 283 at tab "34b-EE," p. 1. This at least somewhat aligns with the range of administrative costs for lightbulbs nationally found by Mr. Grevatt, Grevatt, Vol. 5 at 962-63, and stands in sharp contrast to FPL's assumed administrative costs of $29, which, depending on the lightbulb, can be over 100 times greater. There is no reason that it should cost FPL over 100 times the amount it costs the other utilities of the state to administer a lightbulb program.

[22] Another useful comparison of administrative costs is the difference in those projected by Nexant for Gulf Power Company for this proceeding in contrast to those that Gulf assigned during the 2014 proceeding. In 2014, Gulf assumed a flat cost of $50 per measure. Floyd, Vol 3 at 487; Exhibit 314 at tab "Sheet1." Although this led to ludicrous results for items like lightbulbs, in 2014, the 21 SEER air source heat pump from base electric resistance heating received the same $50 program cost, instead of the $1,478 of administrative costs Nexant assigns it today. Exhibit 314 at tab "Sheet1," p. 2. No explanation has been provided as to why administrative costs for this one measure have increased nearly thirty times over in just five years. To illustrate the absurdity of these costs, the measure for 21 SEER air source heat pump—the same unit, but taken from a different baseline (i.e., not "from base electric resistance heating")—was assumed to have costs of $392.52. *Id.* Again, Gulf attempts no explanation for why the same measure, but with a different baseline, would have such radically different administrative costs, other than they provide different amounts of energy savings. That the same HVAC unit can provide different savings with respect to various baselines simply does not change how much it costs Gulf to administer a rebate program for that unit.

Under the Bills test, many measures were screened-out as no longer being cost-effective because they "cost" too much because of absurd administrative costs. Although Mr. Floyd claims that only two measure permutations were eliminated due to administrative costs, Floyd, Vol. 3 at 488, that was clearly under the Lost Sales test analysis. Under Gulf's Bills test portfolio, many measures failed and were dropped from further consideration because of high administrative costs.[23] To begin to understand the true impact of these administrative costs on the Bills test analysis, consider the solar pool heater measure, which fell from a passing TRC score of 1.19 (that is, almost 20% more benefits than costs), to a failing score of 0.89 due to program costs alone. Exhibit 126, Rog 40 electronic file. The impact is the same for all JEA and Orlando measures as well, which Nexant assigned identical administrative costs per kWh of savings. Thus, these utilities also excluded many measures under the Bills test due to the absurd administrative costs assigned by Nexant.

[23] *See* Exhibit 126, Rog 40 electronic file. In contrast, many measures that pass the Economic Potential under Gulf's TRC—or Bills test—portfolio, actually end up on the failing list at the achievable potential stage. This is not simply because of the two-year payback, but because the measures see their actual TRC scores drop. Between those two phases of analysis, the only costs added were administrative, added under "Step 2" of the analysis. Exhibit 126 (indicated as 20190015-21-EG Staff Hearing Exhibits 01467). Measures that were thus dropped because of administrative costs under the Bills test include, but are not limited to: residential Heat Pump Water Heater ($237.80 in assumed administrative costs versus $50 in 2014), Exhibit 314, tab "Sheet1," at p. 1; Solar Pool Heater ($1,169.51 in assumed administrative costs versus $50 in 2014), Exhibit 314, tab "Sheet1," at p. 2; three permutations of the water heater blanket ($40.24 in assumed administrative costs), Exhibit 314, tab "Sheet1," at p. 3; four permutations of R12-R38 ceiling insulation ($166.95 of administrative costs versus $50 in 2014), Exhibit 314, tab "Sheet1," at p. 3; three permutations of Energy Star Windows ($78.60 of administrative costs versus $50 in 2014), Exhibit 314, tab "Sheet1," at p. 4; four permutations of Home Energy Management System ($138.10 of administrative costs versus $50 in 2014), Exhibit 314, tab "Sheet1," at p. 4; and one permutation of wall insulation ($220.42 of administrative costs versus $50 in 2014), Exhibit 314, tab "Sheet1," at p. 4. Exhibit 126, Rog 40 electronic file. Moreover, this considers only the residential sector; there are significantly more measures and permutations in the commercial/industrial sector.

By contrast, Duke and TECO assumed much more reasonable administrative costs. Although Duke still relied on administrative cost derived from measures' energy savings, their formula, $0.049 per kWh of savings, Cross, Vol. 3 at 620, Exhibit 320, is far more reasonable than those provided by Nexant, which ranged up to $0.198 per kWh of energy savings, Exhibit 284 at tab "TPS Program Categories," p. 1. Although SACE and LULAC maintain this is an inappropriate proxy for determining administrative costs, as how much energy a measure saves does not directly relate to how much it costs a utility to administer a corresponding program, Duke used a more reasonable figure, and, as a result, administrative program costs were significantly lower for Duke than for the utilities that relied on Nexant's program costs. Despite using a per kWh of savings method to derive program costs, Duke assigned costs a full order of magnitude smaller than Nexant's.[24]

TECO only assigned administrative costs to those measures that made it to the achievable potential. Like FPL, TECO avoided a per kWh savings formula, and instead used past experience to assign reasonable program costs. Based on this experience, TECO assigned just $18 for duct repair program costs, and $30 in program costs to both the energy star room air conditioner and variable speed pool pump. Roche, Vol. 5 at 904; Composite Exhibit 345, part 10. Tellingly, ceiling insulation for both R2-R38 and R12-R38 were both assigned $50 in administrative costs, as "[t]here would be no difference in having an attic inspection before the actual work is done" and there is no other cause for differing administrative costs due to the

[24] The same 21 SEER air source heat pump from base electric resistance heating which had almost $1500 in administrative costs for Gulf, Orlando, and JEA, received less than $150 in administrative costs under Duke's analysis. Cross, Vol. 3 at 621; Exhibit 320. Similarly, this method resulted in reasonable administrative costs for lightbulbs, (ranging from $0 to $3 per unit), faucet aerators (ranging from $1 to $3 per unit), and two-speed pool pumps ($51 per unit). Cross, Vol. 3 at 621-22; Exhibit 320.

baseline attic insulation. Roche, Vol. 5 at 904. This approach makes sense, considering how much a program is likely to cost, instead of assigning wildly varying administrative costs based on the inaccurate proxy of energy saved per measure.

Given all of this, it should be no surprise that the utilities with the most reasonable administrative costs were the only utilities in this proceeding to propose goals containing any energy savings whatsoever. Furthermore, it is no coincidence that TECO, by divorcing their administrative costs from ratios of energy savings and actually assigning reasonable costs, arrived at the largest goals in proportion to the size of the utility, by far. Although SACE and LULAC disagree with the choices of TECO and Duke to apply the Lost Sales test and the two-year screen, resulting in highly stunted goals, SACE and LULAC credit those utilities for at least rejecting the use of absurd administrative costs to rig the analysis to produce goals of zero.

b. Inappropriate use of the weighted average cost of capital misstates participants' abilities to access capital and overly discounts the value of future savings.

Another issue driving goals lower is the use of the weighted-average cost of capital as the discount rate for the participant test. The weighted-average cost of capital is the cost of funds used to make an investment, and the rate saved if funds were not borrowed or if available funds were used to retire debt. Exhibit 325. Substituting the weighted cost of capital into the discount rate for the participant test is inappropriate both because the cost to access capital is different for utilities than individual participants, and also because, especially for cheaper measures, most participants will purchase measures outright and thereby avoid any cost of capital. *See, e.g.*, Exhibit 172, DEF Response to Interrogatory 83 ("There are a number of factors that can influence a participant cost of capital resulting a wide diversity of potential values . . . ."). Reliance on the weighted-average cost of capital did not alone cause many Bills test-passing measures to fail the participant test for most utilities, but this was not the case for Duke. Duke's

analysis saw several otherwise cost-effective measures eliminated for failing participant test scores as a direct result of using the weighted average cost of capital for the participant test discount rate. Cross, Vol. 3 at 618-19 ("a different discount rate could have changed the outcome"); Exhibit 319; Exhibit 320. If a measure passes the Bills test and is thus cost-effective to ratepayers as a whole, it should be cost-effective to an individual employing that measure.

No customer actually uses their utility's weighted average cost of capital to access credit to purchase efficiency upgrades. It makes no sense to discount future value at such a high rate (Gulf Power – 7.25%, Floyd, Vol. 3 at 480; Exhibit 310; Duke – 7.1%, Cross, Vol. 3 at 615; Exhibit 317; FPL – 7.73%, Whitley, Vol. 1 at 187; Exhibit 273; Orlando – 6.5%, Kushner, Vol. 4 at 660; Exhibit 325; JEA – 4.5%,[25] Exhibit 343; TECO – 7.08%, Composite Exhibit TECO Response to Staff Interrogatory No. 7), when the guaranteed return on investment many customers would see on that money would be significantly less. Thus, Duke is causing many cost-effective measures to fail the Participants test when those measures still pay back costs relatively quickly and, as a result, artificially lowering cost-effective goals. This may help explain how, despite Duke and TECO making similar assumptions and manipulating the analysis less than the other utilities, Duke's study still produced lower goals than in 2014.

c. The utilities' analyses fail to consider externalities.

The utilities universally refused to quantify environmental externalities, even though the Commission has specifically directed that "[i]f a particular conservation program would reduce certain external environmental costs that can be reasonably quantified, those avoided costs

[25] Although JEA's 4.5% discount value based the on rate of return for long-term tax exempt municipal bonds makes more sense than the other utilities' approach, as that is closer to what a customer could think of as a guaranteed return on investment – even municipal bonds are not failsafe, while investments in energy efficiency are.

should be recorded as a benefit when calculating the benefit-cost ratio for the Total Resource Test." PSC Efficiency Order at 2. This blatant violation of the Commission's order regarding Bills test analysis reveals another conservatism in the utilities' analysis—and by extension, baked into SACE's and LULAC's proposed goals, to the extent that they are based on that analysis. The environmental benefits of avoiding the construction of new fossil fuel generation and of avoiding the need for additional fossil fuel extraction with methods such as fracking are well known and could be easily quantified on a kW or kWh basis. Furthermore, no attempt was given to calculate the benefits of rooftop solar coupled with batter storage from a resiliency perspective. Floyd, Vol. 3 at 499.

d. The utilities arbitrarily limit incentives to a two-year payback horizon.

All of the utilities limit incentives under their achievable potential analyses to buy down the payback period to a full two-year minimum. For every single utility, this artificially limits the achievable potential, as that analysis is supposed to represent the full extent of a measure's implementation achievable under each of the cost-effectiveness tests. Under the Bills test, the total cost of a measure is considered a cost, no matter who pays it. PSC Efficiency Order at 14 (participant costs and utility program costs included as costs under Bills test). Mr. Herndon himself admits that one way to increase adoption would be to increase incentives. Herndon, Vol. 1 at 391. Numerous measures are still cost-effective under the Bills test (that is, they continue to decrease average customer bills), even if incentives are increased beyond this artificial two-year limitation. Accordingly, the achievable potential presented by the utilities does not reflect true achievable potential, but rather a lesser subset realized by incentivizing measures only to the point of a two-year payback.

The proposition of the two-year payback screen is conceptually problematic and empirically unsupported, as indicated in Section II, *supra*. Many people still cannot afford the cost of a measure based on a two-year payback. In order to represent the true achievable potential under the Bills test, the utilities should have modeled adoption under scenarios where the incentives equaled the costs of the measure. For these cost-effective measures, the goal should be to have as wide adoption as possible. For measures that pass the Bills test, if there is universal adoption, everyone wins. Even if there is upward pressure on rates, if everyone implements the cost-effective measures, because of declining energy usage for everyone, everyone's bills will go down. *See, e.g.*, Whitley, Vol. 1 at 189-190; 194 (customers as a whole pay less to FPL under Bills test goals than Lost Sales test goals). As such, it should be the goal under the Bills test to have as wide adoption as possible, and not artificially limit adoption by ensuring that no measure has a payback of less than two years. As each utility's achievable potential analysis is infected with these arbitrary limits, none of them can be relied upon in determining the actual achievable potential. Under the Bills test, if incentives equal the cost of the measure, near universal adoption should be possible and the achievable potential should be very close to the economic potential. If measures have no cost to the customer, economic barriers will no longer be a barrier to implementation. Instead, if any customer chooses not to implement a measure for whatever reason, that would be their *choice*. In contrast, if the Commission adopts the utilities' proposed zero or near-zero goals, few Florida customers will even have the *choice* of participating in utility programs to help them lower their energy bills.

e. FPL failed to reshuffle potential within measure families.

Among the several flaws unique to FPL's analysis, one of the most significant was their failure to reallocate *any* potential to runner-up measures when outcompeting measures were

eliminated at the economic potential level. As Mr. Grevatt explained, at the technical potential stage, all available potential was allocated only to the most efficient individual measures in measures families or "competition groups." Grevatt, Vol. 5 at 958. For instance, among HVAC systems of different SEER ratings, all potential would be assigned to the 21 SEER units, and none to the 15 SEER units. Grevatt, Vol. 5 at 960. For the Nexant utilities, if the most energy-saving measure failed the economic screen, Nexant would reallocate its underlying technical potential to the next most efficient measure, until a measure from that family passed the economic screen (or the model confirmed that no measure from that family could do so). In conducting its own economic screening, FPL eschewed this iterative process, resulting in a number of measures that passed its economic screens, but had been given no technical potential—and therefore, no economic potential. Grevatt, Vol. 5 at 960-61.

This error, which FPL does not even dispute, Koch, Vol. 6 at 1157, wiped out enormous savings from FPL's economic potential analysis. Although SACE and LULAC could not fully correct these defects, as doing so would have required access to Nexant's TEAPOT model, Mr. Grevatt's analysis identifies the magnitude of FPL's under-reported savings for the residential economic potential—a full 25% below what it should have been if technical potential had been correctly reassigned where necessary. Grevatt, Vol. 5 at 961. In response, FPL essentially argues their error was immaterial because only the achievable potential level of analysis is relevant to goal-setting. Koch, Vol. 6 at 1157. Given the importance and reflexive nature of every step of the potential study, this position is unsupported and renders FPL's achievable potential (which already stood out as being only 6% of their understated economic potential) even more absurd.

f. FPL severely limits achievable potential by imposing a de facto three-year incentive screen and adoption curves set to single-digit rates.

The arbitrary three-year incentive screen and adoption curves FPL applied at its achievable potential stage defy credulity and reveal a naked attempt to drive goals to zero. FPL neuters even the more reasonable Bills test scenario by assuming—with scant/zero justification—that the vast majority of economic measures have zero achievable potential, mainly because their payback is less than three years. Koch, Vol. 1 at 108; Exhibit 266; Grevatt, Vol. 5 at 955. Aggravated by FPL's insistence on limiting utility incentives to a two-year horizon, FPL's unsupported contention that buying down a payback by less than one year (i.e., from a three-year to a two-year payback period), has created a de facto three-year payback limit on incentives. In other words, FPL has eliminated any achievable potential for every measure in its study, unless that measure would take more than three years to repay its costs (before incentives). Koch, Vol. 1 at 108; Exhibit 266; Grevatt, Vol. 5 at 955. As a result, compared to the economic potential (which was already absurdly low for the reasons discussed above), FPL had, by far, the lowest achievable potential under the Bills test at only 6% of the economic potential. Grevatt, Vol. 5 at 954 (compare the 6% FPL said it could achieve with the 44% reported by TECO). Even for those measures with a payback of over three years before incentives, and thus a possible chance of having *some* achievable potential under FPL's analysis, several were still discarded for various reasons. Exhibit 266 (e.g., efficient exhaust hood). Measures that survived FPL's haphazard exclusions were assigned pitiful incentive levels, resulting in absurdly low achievable potential for measures like pool pumps, which, had FPL properly calculated economic potential, would have presented significant potential savings. Grevatt, Vol. 5 at 955; Koch Vol. 1 at 106; Exhibit 266. Instead, by artificially deciding that only 4% adoption was possible, without any kind of analytical process to show why adoption was so limited, FPL has produced absurdly low achievable potential.

Given the glaring errors SACE and LULAC found in their brief review of FPL's economic potential analysis and achievable potential analysis, aggravated by the truly absurd administrative costs incorporated alongside them, a more detailed review of their analysis would be expected to find even more errors. Given the size of the errors in the economic potential and the achievable potential, FPL's goals analysis cannot be credited.

VI. SACE's and LULAC's Proposed Goals Based on the Partially Corrected Bills Test Are the Only Defensible Alternatives Offered in This Proceeding, and the Commission Should Adopt These Goals in Order to Protect the Body of Ratepayers as a Whole.

Usage of the Bills test leads to energy savings and benefits for all customer classes of a utility. It is also the cost effectiveness test required by the statute now that the Lost Sales test leads to goals at or close to zero. More robust goals means all customers can lower their bills. Under the alternative presented by the utilities—zero goals—rates will continue to rise based on the construction of new fossil-fueled generation and bills will continue to soar. As customers who have commented on these proceedings have indicated, and as even Mr. Roche admitted on cross-examination, Roche, Vol. 7 at 1395 ("premise of an energy audit [is] to lower their energy use"), customers have energy audits and concerns over bills, *not* rates. Customers pay a monthly bill, and that is what determines how much money is deducted from their checking account, not their rate which is just one of the components of their bill.

The Commission's past orders have recognized the importance of the Bills test and what the Bills test accomplishes. "The Total Resource Cost Test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utility's cost." PSC Efficiency Order at 15. "The costs are the program costs incurred by the utility and any increased supply costs. All equipment costs, installation, operation and maintenance, and administration costs, no matter who pays for them,

are included in the test." *Id.* In other words, it includes all of the actual costs (including utility incentives because they are embedded in the cost of the measure) that are important to consider as part of a cost-effectiveness test. This language closely parallels the language of the statute, which requires the Commission to take into consideration "[t]he costs and benefits to customers participating in the measure" and "[t]he costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions." § 388.82(3), Fla. Stat. Notably, the statute does not single out costs and benefits to the utility itself, nor does it single out the costs and benefits to non-participants.

Usage of the Bills test will help a utility's ratepayers, because unlike the Lost Sales test,[26] it does not count energy savings as a cost, but actually looks at benefits to the system as a whole. This is why measures that pass the Bills test and the Participants test tend to be the same, and why usage of the Bills test will benefit all of the ratepayers of a utility.

a. SACE's and LULAC's proposed goals lower utility revenue requirements, and therefore reduce customer bills.

The Bills test, properly conducted, demonstrates significant potential energy savings for all of the utilities across all customer classes. Properly implemented, these savings could be realized by all customers who wish to participate and lower their electricity bills. Even if there is

[26] Measures that pass the Lost Sales test often are not cost-effective, as the test does not even consider the cost of the measure. For example, see Exhibit 240 (additional electronic file titled IRR No. 20, (BS 47) Passing and Failing Measures tab EP failing column Failing Measure Results – Economic Potential Permutations – RIM PCT), which includes examples of programmable thermostats for the Health Care Industry with a positive Lost Sales test value, but a Bills test value of 0.61, a Participant test value of -1,212, and a negative winter MW value, Demand Defrost for commercial/industrial uses with a Lost Sales test of about 1.40, a Bills test of 0.19, and a negative Participants test value, or air curtains, which have a positive Lost Sales test value of about 1.3 for commercial/industrial uses, but a Bills test value of 0.01 (meaning that considering the cost of the measure the costs are 100 times more than the benefits!), and a Participants test value of negative 10,250.

resulting upward pressure on rates, such pressure is insignificant compared to the opportunity for all willing customers to lower their electricity bills. Even if somehow rates were to increase, average bills would go down. With robust goals established for all of the utilities, all customers who choose to do so can participate and lower their bills, including low income customers.

The utilities do not dispute that goals from the Bills test lowers the utilities' revenue requirements (the amount the utility will charge customers) for the utilities more than the Lost Sales test. *See* Whitley, Vol. 1 at 193-94 (Bills test achievable potential has $104 million lower in cumulative net present value revenue requirements than Lost Sales test achievable potential). All customers benefit from lower revenue requirements for the utilities. If a utility has lower revenue requirements, but the same number of customers (and the same reliability), that lower revenue requirement by definition means that customers will be paying less on average. In this case, the Bills test and Lost Sales test resource plans contain the same reliability and the same number of customers. The resource plan supported by the Bills test, however, will have lower revenue requirements and thus lower average bills. The utilities only argument against this is that, even though bills would be lower, average rates *may* be higher. However, as previously indicated, customers are concerned with aggregate bills, and not their underlying rates. The overriding mission of this proceeding must be to try and lower customer bills through cost-effective energy efficiency.

Energy savings, and thus bill savings, are also much cheaper to achieve for all of the utilities under the Bills than the Lost Sales test, especially with respect to deferring future power

plants that lead to enormous rate increases. This is true for Gulf,[27] TECO,[28] FPL,[29] and Duke.[30] Mr. Roche from TECO even admitted that the Bills test favors inexpensive measures that thus have disproportionate benefits that are "inexpensive . . . [but] you get a boatload of energy

[27] For Gulf's achievable potential analyses, the Lost Sales test net present value total benefits were $89,687,087, while the net present value total costs were $88,799,173. The Bills test net present value total benefits were $291,151,795 while the net present value total costs were $89,166,699 (less than $400,000 more than the costs of the Lost Sales test). Exhibit 126, bates stamped 20190015-21-EG Staff Hearing Exhibits 01487. In other words, an additional $367,526 would save 216 GWh, while shaving 35 MW of summer peak and 27 MW of winter peak. [Gulf Achievable Potential Results are on Exhibit 35, p. 5 of 8 (schedule 5). Difference presented here is simply the Bills test achievable potential minus the Lost Sales test achievable potential.] Especially compared to supply-side options, that is a fantastic bargain, which Gulf's own calculations determine would confer a total net present value additional benefit of $201,464,708 on Gulf customers at the price of $367,526. [$291,151,795 in net present value benefits for achievable potential of Bills Test minus $89,687,087 in net present value benefits for achievable potential of Lost Sales test.]

[28] For TECO, their Lost Sales test achievable potential has a cost of $396,417,580, while their Bills test has a cost of $573,475,985, a difference of $177,058,405. Exhibit 63, Document No. 16; Roche, Vol. 5 at 914-15. The Lost Sales test achievable potential at the generator for TECO was 165 GWh, 79.7 summer MW, and 43.4 winter MW. Exhibit 63, Document No. 15, p. 6 of 7. Under the Bills test, those numbers were 414.6 GWh, 165.9 summer MW, and 81.1 winter MW. Exhibit 63, Document No. 15, p. 7 of 7. That works out to a cost of $2.4 million per GWh of savings under the Lost Sales test, while it only costs $1.4 million per GWh of savings under the Bills test. Roche, Vol. 5 at 915. For that additional $177 million of cost of the Bills test over the Lost Sales test, an additional 86.2 summer MW of savings are realized, 37.7 winter MW of savings are realized, and 249.6 GWh of energy savings are realized.

[29] FPL's own analysis showed that the cumulative present value revenue requirement under the Bills test would be $104 million lower than under the Lost Sales test. Whitley, Vol. 1 at 194. With this $104 million in revenue requirement savings comes an additional 195 GWh of energy savings, 119.2 summer MW of savings, and 60.2 winter MW of savings. Exhibit 4 (Bills test achievable potential savings minus Lost Sales test achievable potential savings).

[30] Duke also had much cheaper Bills test achievable potential energy savings, with Lost Sales test energy savings costing $5.8 million per GWh, while Bills test energy savings cost less than half of that at $2.4 million per GWh. Cross, Vol. 3 at 627-28. The projected costs for the Bills test achievable potential was only $87.7 million more than the Lost Sales test achievable potential. Exhibit 46. For this additional cost, there was an additional 265 GWh of energy savings, 51 summer MW of savings, and 21 winter MW of savings. Exhibit 41 (Bills Test savings) minus Exhibit 40 (Lost Sales test savings).

savings." Roche, Vol. 5 at 914. Ultimately, the idea that usage of the Bills test will lead to higher rates, given its effectively nonexistent impact, is not credible.[31]

b. The Bills test benefits all ratepayers, even if some may not participate in a program.

The utilities maintain that use of the Bills test would allow cross-subsidies. However, this argument is disingenuous as many utility resource decisions are embedded with so-called cross-subsidies. Grevatt, Vol. 5 at 940-942. For example, those who live near power plants have much lower transmission and distribution costs, yet do not get a discount on their rates. The converse is also true for those far away from power plants, impose significant transmission and distribution costs on the system, but are not subject to additional fees for causing other ratepayers to subsidize their electricity service.

In this setting, with robust goals that make utility programs accessible to all customers, the only possible cross-subsidization which would occur would be from those customers who affirmatively choose not to participate, and thus who forgo the benefits that all other participating customers would receive. In the context of the utilities' routine supply side cross-subsidizations, goals that will save customers hundreds of millions of dollars by reducing fuel costs and deferring costly power plants are clearly preferable to denying all customers access to utility-sponsored programs that help customers reduce energy use and save money on bills. The Commission should not punish all customers by denying them the choice to lower their bills, but

[31] For FPL, the impact on basis points for implementation of the Bills test is less than 0.002. Whitley, Vol. 1 at 191; Confidential Exhibit 274. FPL is also at the very top of their allowed ROE of 11.60%. *Compare* Exhibit 275 (FPL earning 11.60% return on common equity) *with In re: Petition for rate increase by Florida Power & Light Company*, Docket No. 160021-EI, Order No. PSC-16-0560-AS-EI (Fla. PSC December 15, 2016) (setting return on equity upper range of 11.60%). Even with perfect ratemaking, the rate impact of the Bills Test versus the Lost Sales test is 1 one thousandth of a cent per kWh. Whitley, Vol. 1 at 194-96 (0.0011 cents per kWh). Given this, usage of the Bills test will not have any impact on rates.

that is exactly what the utilities are asking this Commission to do with the use of the Lost Sales test.

Given all the issues with the utilities' analyses, as noted above, the only defensible goals left in this proceeding are those proposed by SACE and LULAC. SACE and LULAC corrected the economic potential of the utilities to the best of their ability, while still leaving many errors and conservatisms unaddressed. While SACE and LULAC believe that the 1.5% goal presented by Mr. Grevatt, as demonstrated by other utilities, is perfectly achievable, SACE and LULAC nonetheless propose to use the very conservative partially corrected goals that Mr. Grevatt presented based on the utilities' analysis. 50% as an achievable potential of the economic potential is achievable for the utilities, as demonstrated by Mr. Grevatt. Grevatt, Vol. 5 at 971. TECO, despite using the two-year payback limitation, found that 44% was achievable. Grevatt, Vol. 5 at 954. Getting rid of the arbitrary two-year payback limitation would easily make 50% achievable, and actually makes it quite conservative. If measures are given away for free, and there was robust education about their availability and potential to lower bills, it is difficult to believe that fully 50% of people will choose to have higher bills by not participating (but again, that would be their choice). As such, SACE and LULAC have proposed goals based on partially correcting the utilities' analysis based on the Bills test. Given all the issues with the utilities' analyses, these are the only defensible goals in this proceeding.

Not a single utility was actually able to point to the rate impact of SACE's and LULAC's proposed goals in this proceeding, but given the extremely limited impact from their own proposed Bills test achievable potential, it would be expected that any such impacts would be de minimis. Given the potential bill savings at issue, and how much all customers could save by implementation of SACE's and LULAC's proposed goals, the Commission must not forego

these potential bill savings just to ensure that the utilities' electricity sales continue to grow, which is what the utilities wish to do by proposing energy savings goals of zero or near zero.

c. Only SACE's and LULAC's proposed goals actually lead to deferral of expensive power plants, consistent with the intent of the Energy Efficiency Act.

These savings under SACE's and LULAC's proposed goals do not even take into account the added benefits avoiding unneeded fossil fuel generation. In contrast, with zero goals, rates will continue to rise based on the construction of new fossil-fueled generation, as they have in the past for such construction.[32] All of these rate increases have been approved while the Commission has continued to rely on the Lost Sales test for deciding how much energy efficiency to undertake. As a result of the lack of efficiency, everyone's bills continue to go up, increasing the energy burden for everyone, especially low income communities. SACE's and LULAC's proposed goals would actually defer or eliminate the need for new generation for

[32] *See In re: Petition for rate increase by Florida Power & Light Company*, Docket No. 160021-EI, Order No. PSC-16-0560-AS-EI (Fla. PSC December 15, 2016) (approving rate increase of $811 million for FPL (with parts specifically tied to in-service date of the Okeechobee Power Plant) and an ROE upper range of 11.60%); *In re: Petition for rate increase by Gulf Power Company*, Docket No. 160170-EI, Order No. PSC-17-0178-S-EI (Fla. PSC May 16, 2017) (approving overall base rate increase of $61.99 million); *In re: Petition for limited proceeding for approval to include in base rates the revenue requirement for the Citrus combined cycle project, by Duke Energy Florida, LLC*, Docket No. 20180084-EI, Order No. PSC-2018-0367-TRF-EI (Fla. PSC July 25, 2018) (approving $200,488,588 revenue requirement increase tied to Citrus Combined Cycle Project, for base rate increase of $5.84 on a 1,000 kWh bill); *In re: Application for limited proceeding to approve 2017 second revised and restated settlement agreement, including certain rate adjustments, by Duke Energy Florida, LLC*, Docket No. 20170183-EI, Order No. PSC-2017-0451-AS-EU (Fla. PSC Nov. 20, 2017) (approving $67 million increase in base rates in 2019, 2020, and 2021).

FPL,[33] Orlando,[34] and Duke.[35] The benefits of deferring or eliminating the need for additional natural gas fueled generation are obvious, and can only be realized if the Commission adopts SACE's and LULAC's proposed goals.

VII. The Commission Should Adopt SACE's and LULAC's Resiliency-Enhancing Rooftop Solar Goal

In considering demand-side renewable goals, the utilities did not consider the many benefits of solar plus battery storage for making communities within their service territories more resilient. Floyd, Vol. 3 at 499. Resiliency is the ability to provide continuous reliable power during catastrophic events when the electric grid goes down for extended periods of time. Solar plus battery storage allows a facility, like a school that is designated as a shelter, to

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[33] FPL projects a 335 MW (summer) need in 2026, reaching 1,226 MW by 2029. Exhibit 12. SACE's and LULAC's proposed goals more than meet this need. The benefits to customers of avoiding such a large cost, easily exceeding a billion dollars, and its correspondingly significant large rate impact, are significant. *See In re: Petition for rate increase by Florida Power & Light Company*, Docket No. 160021-EI, Order No. PSC-16-0560-AS-EI (Fla. PSC December 15, 2016) (approving $811 million FPL rate increase, with parts specifically tied to in-service date of the Okeechobee Power Plant). The rate impacts of building such a large power plant (1,886 MW as proposed by FPL), are large and often quickly result in a rate case. *See id.* (FPL rate case following determination of need for supply-side fossil fuel generation). In contrast to the guaranteed higher rates and higher bills for *all* FPL customers if its zero goal is approved and a new gas plant is constructed to meet need that could have been avoided through energy efficiency, SACE's and LULAC's proposed goals are unlikely to result in rate impacts (for the reasons discussed below), and will lower average bills for all of FPL's customers.

[34] Orlando projects its first need in 2031:13 MW, growing to 386 MW in 2032. Exhibit 211, Bates Stamped 20190015-21-EG Staff Hearing Exhibits 02910. Under SACE's and LULAC's proposed goals would defer that need until at least 2032. Further efficiency improvements could completely obviate that need, which is mainly based on an expiring power purchase agreement. Exhibit 211, Bates Stamped 20190015-21-EG Staff Hearing Exhibits 02910.

[35] The first plant Duke Energy has identified a need for are five units of combustion turbines for a total winter capacity of 233.3 MW with an in-service date of June, 2027. Exhibit 42, p. 1 of 5. Under Duke's proposed goals, 163 MW of winter capacity will be avoided under the Lost Sales test through 2027. Exhibit 40, adding total winter MW through 2027. Under SACE's and LULAC's proposed goals based on the Bills test, 361 MW of winter capacity will be avoided, completely obviating the need for the combustion turbines presented by Duke Energy and saving Duke's customers over $128 million. Exhibit 42 (generating unit cost of $549.40 per kW multiplied by 233,300 kW of capacity).

generate its own power, independent of the grid, allowing it to provide power for critical needs, such as medical equipment, cooling, lighting, and charging cell phones.

Florida's vulnerability to catastrophic weather events, like hurricanes, is well established. Major hurricanes routinely impact the state, most recently hurricanes Irma and Michael. These storms can devastate communities and cause power outages that last from days to many weeks. While more affluent residents may be able to escape a storm's fury, many, especially low-income families, avail themselves of nearby shelters. The utilities have substantial low-income communities within their service territories. For FPL, the number of low-income residents is over 3 million, for Duke Energy Florida, over 1 million residents (population at or below 200% of the federal poverty level). Bradley-Wright, Vol. 5 at 990.

Therefore, SACE & LULAC propose a demand-side renewable goal, implemented through a five year pilot program, that would meet the demand-side renewable goal requirements of the Energy Efficiency Act, assist low-income customers and make Florida communities more resilient. The utilities should work with school districts within their service territory, with a focus on low-income communities, to identify schools that can serve as shelters and invest in appropriately sized PV systems that are coupled with appropriately sized battery storage that can meet the needs for those seeking shelter[36] for at least 24 hours.

The investment should be based on the relative size of low-income communities within each utilities service territory. Each utility should be required to invest in one solar plus battery storage system on a public school for every 10,000 low-income residents. For instance, for Duke Energy Florida, this would amount to 166 solar plus battery installations (1,158,262 low-income residents/10,000) constructed over a five-year period.

[36] Including power for lights, medical equipment, and air conditioning in shelter areas.

This goal is eminently reasonable and would lead to additional co-benefits. Solar PV plus battery storage represents a clean and reliable generation source that is not subject to supply disruption. It can provide savings throughout the year by offsetting power that might otherwise be used from the grid and sending excess power back to the grid; thereby, helping schools lower electric bills, so they invest more of their resources to directly benefit students. These systems can become the focus of community events, with students and teachers educating the public on the clean renewable system powering their school and making their communities more resilient.

This goal builds on the already existing SunSmart E-Shelters program so there is a template to inform the utilities in developing their programs. It meets the intent and requirement of the Energy Efficiency Act, encourages significant demand-side renewable development focused on low-income communities, and has the effect of making those communities and the state of Florida a more resilient state. As such, the Commission should approve this proposal, or a reasonable facsimile of this proposed goal.

VIII. Zero is Not a Goal for Energy Efficiency or Demand-Side Renewable Energy, and Approving Zero Goals is At Odds with the Energy Efficiency Act

Zero is not a goal, for either energy savings or demand-side renewable energy (photovoltaic solar). The Energy Efficiency Act requires that the Commission "*shall* adopt appropriate goals for *increasing* the efficiency of energy consumption and *increasing* the development of demand-side renewable energy systems . . . ." § 366.82(2), Fla. Stat. (emphasis added). When a statute is clear and unambiguous, it is not necessary to look behind the statutes plain language for legislative intent or resort to rules of statutory construction to ascertain intent. *See Lee County Elec. Coop., Inc. v. Jacobs*, 820 So. 2d 297, 303 (Fla. 2002). No further statutory construction is necessary to establish that there is a clear requirement for the Commission to adopt goals to increase the efficiency of energy consumption and increase the

development of solar energy. A goal of zero is *not* an increase. The definition of "zero" denotes the absence of all magnitude or quantity,[37] or the "number" between the set of all negative numbers and the set of all positive numbers.[38] An increase of zero therefore lacks any magnitude or quantity and cannot *increase* anything. Similarly, a number that is not a positive number cannot *increase* a value. Furthermore, the plain meaning of a "goal" is an "end towards which effort is directed."[39] Effort cannot be directed towards nothing, zero. Hence, as currently proposed, the utilities proposed goals contravene the plain meaning of the statute. Therefore, the Commission is statutorily required to set a numeric goal above zero for both energy savings and demand-side renewables like rooftop solar.

In the past, the Commission has realized its statutory obligation related to setting conservation goals and has never set a goal of a zero increase for any of the big four investor-owned utilities. When a regulated utility has proposed zero goals, such as FPL attempted in the 1994 conservation goal setting proceeding, for the period between 2001 to 2003, the Commission clearly stated that "[o]ur rules require each utility to propose numeric goals …." Order No. PSC-94-1313-FOF-EG at 32. The Commission found that FPL's decision not to propose DSM goals for 2001-2003 was contradictory to Commission rules. ***Id.*** at 33. The

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[37] Zero is a relatively new "number" that was introduced via the Hindu/Arabic numeral system, *see* Rowlett, Russ, ***Roman and "Arabic" Numerals***, University of North Carolina at Chapel Hill (July 4, 2004), ***available at*** http://www.ibiblio.org/units/roman.html, which number was notably questioned by the Greeks and the Romans. *See* Shivprasad, ***Zero: A philosophical history of an Indian Idea***, Critical Twenties (Aug. 20, 2010), ***available at*** http://www.criticaltwenties.in/philosophyreligionculture/zero-a-philosophical-history-of-an-indian-idea-%E2%80%93-i ("The Greeks clung firmly to the dictum *Ex nihilo nihil fit*: out of nothing comes nothing."). The basis for the latter skepticism about the validity of the number was the paradox that "nothing" could simultaneously be "something." ***Id.*** In the context of these proceedings, the Greek and Roman view is plainly more consistent with the governing statute.

[38] Definition of "zero," at http://www.merriam-webster.com/dictionary/zero

[39] Definition of "goal," at https://www.merriam-webster.com/dictionary/goal

Commission order reaffirms Commission Rule 25-17.0021, F.A.C. that states "[t]he Commission shall establish numerical goals for each affected electric utility …." The Commission subsequently set goals for FPL when the company proposed zero goals. *Id.* at 34. When people tell the city of Orlando that they have a right to zero, they do not mean zero solar, zero energy efficiency, and zero progress towards Orlando's goal of 100% clean energy. Actions speak louder than words, and in this case, Orlando has decided to take zero action towards clean energy or slowing the use of fossil fuels.[40]

SACE and LULAC have proposed conservative energy savings goals for all of the utilities based on making a few corrections to the utilities' analysis and relying on the Bills test rather than the Lost Sales test. These goals should be adopted as a conservative step forward to help hard working families and small businesses around the state lower their electricity bills with cost-effective energy savings measures. All Floridians can win by being given the choice of participating in programs that will help them lower their electricity bills. The utilities call their goals of zero the results of a "no losers test," but it is only a "no losers test" if the comparison is to "winners." In the utilities' view, if there are zero winners—that is, zero people lowering their electricity bills—then there are also zero losers. However, as rates continue to increase and our summers continue to get hotter and our electricity bills keep increasing—under zero goals, everyone loses. Code and standards are no excuse for zero goals because just having a better code and standard does not automatically make people's existing homes and appliances any more efficient, and such codes and standards have not prevented TECO from proposing an increase in their goals. Floyd, Vol. 3 at 493-96.

[40] Orlando argues that goals of zero are appropriate based on Mr. Deason's interpretation of the law. Orlando Utilities Commission's Post-Hearing Statement and Brief at 14-15. Mr. Deason is not a legal expert and SACE and LULAC object to his interpretations being given any weight.

CONCLUSION

Zero is not a goal. It is time for the Commission to implement modest energy efficiency goals to allow hard working families and businesses across the state to have the opportunity to reduce their outrageously high electricity bills. It is time to no longer have some of the highest electricity bills in the nation while having some of the lowest energy efficiency (and thus lowest opportunities to lower those bills). It is time to ensure that the utilities actually help their low and moderate income populations by having mandatory goals for those communities so that the needs of those communities are addressed. It is time to do away with arbitrary two-year paybacks that have no empirical basis. It is time to reduce the need to build more power plants reliant on fossil fuels that only increases financial exposure for customers and exacerbates the climate crisis. It is time for the Commission to say that zero is not a goal, and to adopt the conservative goals proposed by SACE and LULAC.

Respectfully submitted this 20th day of September, 2019.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy and correct copy of the foregoing was served on this 20th day of September, 2019, via electronic mail on:

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