State of Florida

Public Service Commission

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-M-E-M-O-R-A-N-D-U-M-

DATE: September 22, 2014

TO: Office of Commission Clerk (Stauffer)

FROM: Division of Engineering (Graves, Mtenga, Woodbery)
Division of Accounting and Finance (Cicchetti, Lester, Mouring)
Division of Economics (Higgins, McNulty, Ortega, Wu)
Office of the General Counsel (Lawson)
Office of Industry Development and Market Analysis (B. Crawford)

RE: Docket No. 140110-EI – Petition for determination of need for Citrus County Combined Cycle Power Plant, by Duke Energy Florida, Inc.

Docket No. 140111-EI – Petition for determination of cost effective generation alternative to meet need prior to 2018, by Duke Energy Florida, Inc.

AGENDA: 10/02/14 – Regular Agenda – Post Hearing Decision – Participation is Limited to Commissioners and Staff

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Brisé

CRITICAL DATES: October, 2, 2014 – For Docket No. 140110-EI the Commission must render a decision within 135 days of filing per Section 403.519(4), Florida Statutes.

SPECIAL INSTRUCTIONS: Staff recommends discussing Issues in the following order: Issue A, Issues 1 and 9, Issues 2 and 10, Issues 3 and 11, Issues 4 and 12, Issues 6 and 14, Issues 5 and 13, Issues 7 and 15, and Issues 8 and 16

Case Background

On May 27, 2014, Duke Energy Florida, Inc. (DEF or Company) filed a Petition and supporting testimony to determine the need for a Citrus County Combined Cycle Power Plant (Docket No. 140110-EI) and another Petition for determination of cost-effective generation alternatives to meet need prior to 2018 (Docket No. 140111-EI), pursuant to Sections 366.04 and 403.519, Florida Statutes (F.S.), and Rules 25-22.080, 25-22.081, 25-22.082 and 28-106.201, Florida Administrative Code (F.A.C.).

The Citrus County Combined Cycle Power Plant (Citrus County Plant) will be a natural gas-fired, combined cycle power plant with an expected summer and winter rating of 1,640 MW and 1,820 MW respectively. The Citrus County Plant will be built on a site adjacent to DEF's Crystal River Energy Center in Citrus County, Florida, with a completion date of December 2018.

DEF's second petition consisted of two different projects, the Hines Chillers Power Uprate Project (Hines Project) and the Suwannee Simple Cycle Project (Suwannee Project). The Hines Project involves the installation of a chiller system that will cool the gas turbine inlet air to all four of the existing power blocks at DEF's Hines Energy Center located in Bartow, Florida. The Hines Project has an expected in-service date of summer 2017 and will contribute an additional 220 MW of summer capacity only. The Suwannee Project consists of two F class combustion turbine generators that will be installed by June 2016 at DEF's existing Suwannee power plant site in Suwannee County, Florida. The Suwannee Project is expected to add 320 MW of summer capacity and 375 MW in the winter.

On May 29, 2014, the Commission issued a Notice of Commencement of Proceedings pursuant to Rule 25-22.080(3), F.A.C. and an Order Establishing Procedure was issued for both of the petitions. On May 30, 2014, Calpine Construction Finance Company (Calpine) filed a petition to intervene and the Office of Public Counsel (OPC) filed a notice to intervene for both of the dockets. On June 3, 2014, White Springs Agricultural Chemicals, Inc. (PCS Phosphate) and Florida Industrial Power Users Group (FIPUG) filed a petition to intervene for both dockets. On June 11, 2014, NRG Florida LP (NRG) filed a petition to intervene for both dockets. On July 15, 2014, EFS Shady Hills LLC (Shady Hills) filed a petition to intervene in Docket No. 140110-EI. On August 13, 2014, Southern Alliance for Clean Energy (SACE) filed a petition to intervene in Docket No. 140110-EI. Intervention for these parties was granted pursuant to several orders.[1] A prehearing conference was held on August 13, 2014. A formal hearing was held during August 26, 2014 through August 27, 2014. During the hearing DEF made a motion to withdraw a portion of its petition in Docket No. 140111-EI. Specifically, DEF wanted to withdraw the Suwannee Project from the petition citing a potential acquisition of Calpine's

[1] Order No. PSC-14-0301-PCO-EI, issued June 11, 2014, (OPC)
Order No. PSC-14-0306-PCO-EI, issued June 12, 2014, (Calpine)
Order No. PSC-14-0304-PCO-EI, issued June 12, 2014, (PCS Phosphate)
Order No. PSC-14-0305-PCO-EI, issued June 12, 2014, (FIPUG)
Order No. PSC-14-0340-PCO-EI, issued July 3, 2014, (NRG)
Order No. PSC-14-0397-PCO-EI, issued August 1, 2014, (Shady Hills)
Order No. PSC-14-0435-PCO-EI, issued August 20, 2014 (SACE)

Osprey Facility in lieu of constructing the proposed Suwannee Project. The Commission granted the motion to withdraw the Suwannee Project from the petition. Therefore, Issues A and 9-15 have been revised from what was contained in the pre-hearing order to reflect withdrawal of the Suwannee Project from consideration.

Pursuant to Commission Order No. PSC-13-0598-FOF-EI, the Commission approved a Revised and Restated Stipulation and Settlement Agreement (RRSSA) between DEF, OPC, FIPUG, Florida Retail Federation, and PCS Phosphate. If the proposed projects are placed in-service on the projected dates, the terms of the RRSSA permit DEF to recover the costs of the projects through a separate base rate adjustment.

Discussion of Issues

Issue 1: Is the proposed Citrus County Plant needed, taking into account the need for electric system reliability and integrity?

Recommendation: Yes. There is no record evidence to indicate that the recession of 2008-2009 has fundamentally altered DEF's expected forecast result for 2018 demand in a manner that casts doubt of the reasonableness of the forecast. Staff recommends the Commission find the results of DEF's load forecast presented in this docket as reasonable for the purposes of determining the need for DEF's proposed Citrus County Plant in 2018. Based on the evidence in the record, if DEF did not construct the proposed Citrus County Plant in 2018, the projected reserve margin could drop as low as 12.3 percent in 2018. (Graves, Higgins, McNulty)

Position of the Parties

DEF: Yes. DEF needs additional generation in 2018 to meet its 20 percent minimum Reserve Margin commitment. By summer 2018, the Citrus County Combined Cycle Power Plant is needed to meet peak demand of 9,439 MW and, by summer 2019, the Plant is needed to meet peak demand of 9,813 MW, a 1.4 percent annual growth rate, which results from increasing customer growth and improving economic conditions. Generation retirements contribute to DEF's need. The Plant increases DEF's summer peak Reserve Margin to 20.4 percent in 2018 and 23.6 percent in 2019. Without the Plant, the summer Reserve Margin is 11.7 percent in 2018. The Plant allows DEF to satisfy its minimum 20 percent Reserve Margin commitment by and beyond 2018.

OPC: Given the methodology underlying the demand forecast that Duke has produced in Dockets 140110 & 140111 and absent sufficient time or evidence in the shortened need proceeding schedule to develop a competing forecast, the OPC has not filed testimony challenging Duke's forecast. Duke nevertheless has the burden of demonstrating the reasonableness of its forecast and the Commission should consider testimony offered by other witnesses as well as evidence adduced at the hearing in making a determination whether the Duke forecast meets its burden to demonstrate the need for the Citrus County combined cycle plant.

At this time, the issue of electric system reliability and integrity in the context of competing resource options proposed by other intervenors in this docket is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: The in-service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: No. Duke failed to meet the burden of demonstrating the reasonableness of its load forecasts, and has not demonstrated that capacity additions proposed in the Citrus County

project are needed by 2018, particularly considering the changed circumstances created by Duke's announced intention to acquire the Osprey combined cycle unit.

Calpine: No position.

NRG: No. Duke has not demonstrated need for additional 2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding Duke's revised generation plan. For the sake of argument, an agreement with Calpine could defer the Citrus County project.

Shady Hills: No. Duke has not demonstrated it has a need for 1,640 MW in 2018 to maintain electric system reliability and integrity.

SACE: Duke's resource planning process is flawed in regards to reserve margin and load forecast, but those flaws are likely not sufficient to eliminate the need for a power plant of some undetermined size in the 2018 timeframe, as such SACE takes no position on the need for the proposed Citrus County plant.

Staff Analysis:

PARTIES' ARGUMENTS

DEF contends the record evidence demonstrates that it needs additional generating capacity by the summer of 2018. DEF claims that absent the addition of the Citrus County Plant in 2018, DEF's summer Reserve Margin falls to 11.7 percent in 2018 and to just 6.9 percent in 2019. DEF asserts that the primary driver, for DEF's need for additional generation capacity commencing in 2018, is DEF's recent and planned generation facility retirements. DEF further asserts that the second driver for DEF's need for additional generation is summer load growth on DEF's system. (DEF BR 4-6)

DEF contends that this evidence is unchallenged by any contrary evidence. DEF adds that no witness or party introduced any evidence that contradicts any reason for any of DEF's generation facility retirement decisions. DEF further adds that no witness or party introduced in evidence an alternative load forecast or introduced any evidence of any error in DEF's load forecasting methods and procedures or DEF's load forecast assumptions. (DEF BR 6-7)

With respect to the potential Calpine deal, DEF argues that the potential acquisition has no impact on the need for the Citrus County Plant. DEF asserts that it cannot obtain the full output of the Calpine Osprey Facility until it constructs necessary transmission infrastructure to directly connect the Calpine Osprey Facility to DEF's system. DEF further contends that it would not build this transmission infrastructure until DEF actually owned the Calpine Osprey Facility. As a result, DEF argues that the earliest it could obtain the full output of the Calpine Osprey Facility would be the beginning of 2020. (DEF BR 7-10)

With respect to load forecast, DEF contends that comparing recent, actual peak demand and projected peak demand, as suggested by the intervenors, is improper and unreasonable. DEF

argues that a reasonable load forecasting methodology accounts for projections of future conditions, not past conditions. (DEF BR 12-13)

Lastly DEF refutes arguments that it should continue operation of Crystal River Units 1 and 2 beyond 2018. DEF opines that continuing to operate Crystal River Units 1 and 2 beyond 2018 results in a cumulative present value revenue requirements (CPVRR) increase to customers of approximately $90 million. DEF additionally argues that existing environmental regulations, including the site averaging to comply with the Mercury Air Toxics Standards Rule (MATS) and the one-hour sulfur dioxide National Ambient Air Quality Standard, increase the technical complexity and potentially the cost of continuing to operate Crystal River Units 1 and 2 beyond 2018. (DEF BR 14-16)

OPC expresses concerns with the load forecast that DEF submitted. OPC additionally asserts that DEF does little more than present a vague allusion to an unnamed wholesale customer contract that is partly responsible for that increase. OPC contends that if one layers onto the uncertainty in the DEF forecast, the potential softness in the wholesale demand represented largely by sales to Seminole Electric Cooperative (Seminole), a real doubt persists with regard to the need for the combined cycle unit in 2018. OPC further opines that DEF controls all the information about its contracted for and expected actual sales to Seminole and offered very little in the way of tangible justification for the projected Seminole demand. OPC also suggests that the trend in the recent years indicates significant fluctuation in demand for sales to Seminole. OPC also expresses concerns and arguments similar to that summarized in NRG's arguments below. (OPC BR 5-6)

OPC asks that the Commission hold DEF to its burden of proof and determine whether the issues with the forecast changing abruptly, the questions about wholesale sales assumptions and the lack of a complete analysis of the cost-effectiveness of the Citrus County Unit with the Osprey Facility becoming available, independently, and collectively, erode DEF's showing to the point that it has not met its burden. (OPC BR 8)

FIPUG argues that DEF's recent decision to invest ratepayer money to make environmental upgrades to Crystal River units 1 and 2, which the state agency charged with protecting the environment has permitted to operate through 2020, and this Commission's finding that ratepayers will save more than $300 million with net savings beginning in 2017, the Commission should defer approving the Citrus County Facility so as to allow these savings to be realized as projected. FIPUG additionally provided argument that is contained within the summary of NRG's arguments below. (FIPUG BR 4-5)

PCS Phosphate argues that DEF forecasts a significant increase in the summer peak from its 2013 actual levels. PCS Phosphate further contends that the substantial increase in summer peak load, that DEF relies upon to justify the Citrus investment, can only be attributed to a sudden, substantial and sustained increase in customer accounts with lower load factor usage patterns. PCS Phosphate opines that there is, however, nothing to support that assertion. (PCS BR 7-8)

PCS Phosphate further asserts that an adjusted peak demand reveals that DEF's expected generation reserve margins would average 34.6 percent for the period 2014-2018 if the three

projects originally proposed by DEF were to be constructed as proposed. PCS Phosphate expounds that the additional combined cycle generating capacity from the Osprey Facility would only increase the Company's reserve margin. (PCS BR 10)

NRG argues that DEF has not met its burden of proving that it needs any additional generation in 2019 to meet its reserve margin. NRG asserts that DEF's projected load growth is far more load growth than DEF has experienced in any two consecutive years since 2005. NRG further contends that DEF has not demonstrated that its forecast is reasonable or that this high level of load growth is likely to materialize. NRG opines that the record reflects that DEF has consistently overestimated its actual need. NRG further attests that DEF's 2013 Ten-Year Site Plan overestimated its actual 2013 need by 881 MW. NRG expresses trepidation that DEF modeled sensitivities to changes in gas price and carbon costs but failed to model the effect of an inaccurate load forecast. (NRG BR 12)

NRG also argues that even assuming that DEF needed its full forecasted capacity of 1,640 MW the Osprey Facility will meet nearly 600 MW of that need when fully integrated into DEF's fleet. NRG also contends that DEF's proposed acquisition of the Osprey Facility casts doubt on DEF's decision to retire Crystal River Units 1 and 2 in 2018 in favor of building the Citrus County project on its current schedule. NRG expounds that DEF's acquisition of the Osprey Facility provides DEF with flexibility to defer the Citrus facility, which, based on the testimony of witness Hibbard, could mean $59 million in cumulative present value requirement benefits for ratepayers, even while accounting for the increased operations and maintenance (O&M) expenses necessary to operate Crystal River Units 1 and 2 with new pollution controls in place. NRG opines that continued operation of the Crystal River 1 and 2 units is both feasible and practical. (NRG BR 13-14)

NRG concludes that, in light of DEF's changed circumstances, the only way the Commission can prudently assure that DEF has explored and identified the alternative that is best for its customers, is to require DEF to revise and resubmit its needs assessment and supporting models based on its new slate of generation assets, including a new Integrated Resource Plan that is updated with current data and planning information, as well as load-forecast sensitivity analyses. (NRG BR 14-15)

SACE expresses concerns over the demand projections utilized in DEF's resource planning supporting construction of the 2018 plant. SACE asserts that the Company is coming out of five years of flat or declining demand and now projecting annual demand growth of 1.4 percent. SACE further contends that Florida's power companies have displayed a tendency to overestimate demand over the last five years. (SACE BR 6-7)

Shady Hills' takes the position that DEF has not demonstrated that it has a need for 1,640 MW in 2018 to maintain electric system reliability and integrity, however it did not provide any arguments to support its position. Calpine did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

As proposed, the Citrus County Plant will be built in two, 820 MW stages, with the first stage in commercial operation in May 2018 and the second stage in commercial operation in December 2018. (TR 113) DEF witness Borsch provided testimony and exhibits concerning DEF's projected reliability need for the proposed Citrus County Plant. As described in the testimony of witness Borsch, DEF employs two reliability criteria in its resource planning process: (1) a loss of load probability criterion; and (2) a reserve margin criterion. Witness Borsch stated that DEF's resource plans have been reviewed by the Commission each year since the early 1990s in the annual Ten-Year Site Plan review process. (TR 405)

DEF witness Borsch asserted that the Company's need for the proposed Citrus County Plant in the summer of 2018 is driven by the aforementioned reserve margin criterion. (TR 407) DEF's minimum reserve margin threshold is 20 percent and the Company calculates its reserve margin based on the relationship between peak load and total capacity available to serve that load. (TR 421)

In addition to DEF's claimed need to satisfy its reserve margin criterion, witness Borsch testified that the Citrus County Plant would provide reliability and stability to the Florida electric grid as determined by the FRCC. (TR 476) Staff's analysis of the Company's load forecast, total capacity, and reserve margin is discussed below.

Load Forecast

The Company's load forecast presented in this proceeding by DEF witness Borsch is the same forecast that appears in DEF's 2014 Ten-Year Site Plan. (TR 407; EXH 49) DEF forecasts its future load requirements by utilizing statistical modeling techniques. In order to model and forecast load, DEF makes certain assumptions relating to factors that influence energy consumption and demand. DEF's assumptions for forecasting load can generally be described as economic, demographic and weather related. The demographic and weather related assumptions are what the Company refers to as "General Assumptions." (EXH 49) General assumptions include accounting for normal weather, population & average household size, production conditions/environment concerning phosphate mining, wholesale contracted load, demand side management, and the amount of cogeneration expected by its customers. Economic related assumptions such as inflation, employment, and income are also utilized to model and forecast load requirements. (EXH 49)

The Company then utilizes its forecast assumptions to produce projections of customer, energy, and peak demand requirements, through the application of both econometric and end-use modeling methodologies. (EXH 49) Staff notes the econometric modeling approach attempts to explain (and thus predict) the Utility's energy and demand requirements as a function of relevant (demographic, economic, and weather) variables. The end-use, or statistically adjusted end-use approach, attempts to determine and refine projections of future demand by modeling new and upcoming industry regulations and the characteristics of new electricity-driven devices.

According to DEF's 2014 Ten-Year Site Plan, once customer, energy, and peak demand models are formulated, an overall evaluation process commences. After evaluation, preliminary

customer, energy and demand forecasts are produced. These preliminary forecasts are then evaluated by the Company's Senior Management. Following review by Senior Management, DEF releases its official customer, energy, and demand forecast. These final forecasts then provide the basis for the Company's demand and system requirements. Staff notes that this docket primarily addresses DEF's 2018 summer peak demand requirement and associated reserve margin. From this point, generation, transmission, and distribution planning commences. (EXH 49)

The Company, in its brief, contends the need for additional generation capacity on its system in 2018. (TR 408) DEF witness Borsch stated "[b]y the summer of 2018, when the Citrus County Combined Cycle Plant is expected to come on-line, the summer peak demand its projected to grow to 9,439 MW and by the next summer, when the Citrus County Combined Cycle Power Plant is expected to be fully operational, the summer peak demand is projected to reach 9,813 MW." (TR 408) DEF's forecast presented in this docket represents an annual growth rate of approximately 1.4 over the next ten year projected period. (TR 408) The Company contends that without new capacity in 2018, its reserve margin will be 11.7 percent, which is below the Company's 20 percent[1] commitment. (TR 406; TR 407; TR 408)

DEF witness Borsch further testified that the Company's system energy requirement, or net energy for load, is also projected to increase over the same time period due to increasing customer growth and Florida's general improving economic conditions. (TR 408 – 409; EXH 49) Net energy for load is expected to grow from 39,801 GWh in 2014, to 41,995 GWh in 2018, or by 2,194 GWh over the period. While net energy for load is expected to grow to 43,013 GWh by 2019, or by 3,212 GWh from 2014 – 2019. (EXH 49)

Witness Hibbard, on behalf of Calpine, presented testimony concerning DEF's projected need. While not taking issue with any specific conclusion of DEF's load forecast, Mr. Hibbard raises the general issue of forecast variability for the Commission's consideration surrounding any forecasting of load demand. The witness states:

> . . . based on my experience over the decades as a utility regulator and consultant, I recognize that the type of resource and forecast assumptions that go into the Company's determination of resource needs are just that – assumptions – and are almost certain to deviate from what actually transpires in the coming years.

(TR 348)

NRG witness Pollock filed identical testimony in this Docket, No. 140110-EI, and in 140111-EI. (TR 860) Mr. Pollock stated that his testimony addresses Issues 9, 10, 13, 14, and 15, which are the subject of Docket No. 140111-EI. (TR 861) However, staff notes that witness Pollock's Exhibit 85, which details the impact of limiting DEF's net firm summer peak demand to reflect only achieving 50 percent of its projected growth spanning the timeframe of 2014 – 2023, which encompasses the Company's 2018 need. (EXH 85). Mr. Pollock's testimony

[1] See Order No. PSC-99-2507-S-EU, issued December 22, 1999, in Docket No. 981890-EU, In re: Generic investigation into aggregate electric utility reserve margins planned for Peninsular Florida.

characterizes this 50 percent load growth adjustment as an illustration of potential forecasting error. (TR 878)

Witness Pollock further offers that if DEF's firm summer peak demand forecast is overestimated by 50 percent, the Company's generation system would be significantly over-built in the years 2016 and 2017. (TR 878) Conversely, Mr. Pollock was also asked in testimony if the possibility exists that the Company under-forecasted it's summer peak demand requirements. To which the witness responded "Yes."

NRG states in its brief that DEF failed to model sensitivities (high/low case scenarios) concerning its load forecast. (NRG BR 12) Further to this point, NRG witness Pollock stated during hearing that "[. . .] it's been my experience that in planning cases and need cases like this, the utility typically presents more than one scenario for load forecast. What we've seen in this case is just a single scenario." (TR 898)

In addressing arguments raised by NRG, DEF witness Borsch begins his rebuttal testimony being asked of his understanding of NRG Pollock's testimony as it related to Docket No. 140110-EI:

> It is difficult to discern the exact reason why NRG filed direct testimony in this Docket [140110-EI] and what NRG expects the Company and the Commission to do with its direct testimony in this docket because the NRG witness recommendation, to the extent they exist at all, address the Company's need prior to 2018, which is the subject of Docket No. 140111-EI, not this [140110-EI] Docket.

(TR 481)

However, in addressing arguments raised by NRG, DEF witness Borsch testified in rebuttal that:

> Mr. Pollock's claimed potential "error" based on his selective reading of DEF's load forecast is not an "error" at all. Even apart from this assertion by Mr. Pollock, however, there is no reasonable basis that I can see for Mr. Pollock to assume a 50 percent reduction in DEF's load growth and he provides none in his direct testimony. He appears to simply have arbitrarily selected 50 percent as his projected reduction in DEF's growth load forecast to make a point.

(TR 497 – 498)

OPC contends in its brief that DEF's "[. . .] load forecast is fraught with uncertainty and demonstrates an optimistic level of growth that may not be warranted in the demand recently exhibited by either retail or wholesale native load that DEF is required to serve." (OPC BR 5) Further in its brief, OPC states, "[i]f one layers on to this fragility in the DEF forecast, the potential softness in the wholesale demand represented largely by sales to [Seminole] a real doubt persists with regard to the need for the combined cycle unit in 2018." (OPC BR 6)

Upon cross examination by OPC, DEF witness Borsch explained how wholesale contracts factor into DEF's load forecast. (TR 665) OPC questioned witness Borsch on how the Company's wholesale contracts are generally structured and performed, as well as accounted for within the Company's load forecast. (TR 669) DEF witness Borsch indicated that all projected wholesale capacity contract amounts, are in fact, actual contracted amounts between the Company and its wholesale customers. (TR 667 – 668; TR 671) OPC then asked witness Borsch a series of questions relating to whether the Company revisits contracts with its wholesale customers, specifically mentioning Seminole. (TR 668 – 671) Witness Borsch testified that ". . . if there are updates from year to year based on new contracts or renegotiation of existing contracts, then the results of those contracts are folded into the Company's next year's Ten-Year Site Plan." (TR 671)

PCS Phosphate presented DEF witness Borsch with an Exhibit titled: "Historic percentage of Summer Net Firm Demand to Average System Demand and adjusted Summer Net Firm Demand Forecast." (EXH 140) The conclusion reached in Exhibit 140 is that average summer net firm demand as a percentage of average system demand is higher in the forecast years of 2014 – 2018, than it was for the actual years of 2009 – 2013. Or said alternatively, DEF is projecting a higher summer peak demand relative to historic average demand for this and the next four years, than the past five-year actual period. When asked by PCS Phosphate as to why the percentage of summer net firm demand to average system demand increased from 172 percent to 194 percent from 2013 to 2014, DEF witness Borsch responded that he hadn't time to review Exhibit 140, thus did not know the answer. (TR 733 – 734)

PCS Phosphate furthers its analysis by multiplying the historic (2009 – 2013) average summer net firm demand as a percentage of average system demand, by the forecasted average system demand (2014 – 2023), which results in a 10-year adjusted summer firm peak demand.

At issue concerning DEF's load forecast in this docket is the potential for forecast error and associated magnitude. Staff notes that no other party to this Docket other than DEF filed a load forecast. Staff agrees with witness Hibbard that forecast assumptions are "just that – assumptions," and in all likelihood, these assumptions will deviate from actual experience. (TR 348) Staff notes the primary assumptions of DEF's load forecast are economic, demographic, and weather related. (EXH 49) Staff believes these are proper inputs and thus necessary assumptions for modeling and forecasting the future demand and energy needs of the Company's customers. Concerning intervener testimony filed in this docket, NRG witness Pollock suggests the possibility of error in DEF's forecast without clearly defining a basis for either its magnitude or direction. Calpine witness Hibbard stated when asked in testimony if he has concluded that DEF's load forecasted energy growth or the timing of forecasted growth is in error, which the witness responded "[n]o, I have not." (TR 347 – 348) Staff agrees with this assessment.

While the potential exists for forecast error as presented by NRG witness Pollock, staff understands the deviation in projected summer peak demand to be arbitrary. (TR 878; TR 879) However, to assess the reasonableness of assumptions by NRG, staff compared DEF's forecasts to the adjusted forecasts set forth by witness Pollock, see Table 1 below:

Table 1:DEF Net Summer Firm Demand Forecast Compared with Hearing Exhibits 85 and 140

Year	DEF[2]	NRG[3]	Percent Difference, NRG to DEF	PCS[4]	Percent Difference, PCS to DEF
2014	8,812	8,411	(4.55%)	8,068	(8.44%)
2015	9,042	8,525	(5.72%)	8,207	(9.23%)
2016	9,149	8,579	(6.23%)	8,331	(8.94%)
2017	9,307	8,658	(6.97%)	8,387	(9.89%)
2018	9,440	8,725	(7.57%)	8,513	(9.82%)
2019	9,813	8,911	(9.19%)	8,719	(11.15%)
2020	9,935	8,973	(9.68%)	8,919	(10.23%)
2021	9,952	8,980	(9.77%)	9,004	(9.53%)
2022	10,067	9,039	(10.21%)	9,095	(9.66%)
2023	10,173	9,092	(10.63%)	9,215	(9.42%)
2014 - 2023 Average Variation			(8.05%)		(9.63%)

To the extent witness Pollock raises general issues surrounding forecast error potential, as in, projections will usually differ from actuality, staff agrees. The level of forecast error for the relevant year of 2018, which is the planned in service date for the Citrus County Plant, is 50 percent. NRG provided no basis for selecting a 50 percent reduction (EXH 85) to DEF's Net Summer Firm Demand Forecast. In as much as NRG did not file an alternative firm summer peak demand forecast, staff interprets this Exhibit to be illustrative in nature, highlighting what NRG proffers as a possible forecast error.

Table 1 displays NRG's exhibit relative to DEF's net summer firm demand forecast, which yields a forecast deviation of 7.57 percent from DEF's total projected amount for 2018. Staff compared this illustrative forecast error to DEF's 2009 forecast error of 2013 demand, which was 10.9 percent. (EXH 95) Staff believes this is relevant because they both represent a five year range, thus the forecast error percent in both these instances are comparable. The 2009 Ten-Year Site Plan variance of 2013 demand can largely be attributed to a weak economic recovery stemming from the unforeseen effects of the Great Recession and associated housing market decline. There is no record evidence to indicate that the recession of 2008-2009 has fundamentally altered DEF's expected forecast result for 2018 demand in a manner that casts doubt of the reasonableness of the forecast.

[2] Hearing Exhibit Number 49.
[3] Hearing Exhibit Number 85.
[4] Hearing Exhibit Number 140.

With regard to arguments raised by OPC concerning wholesale contract, staff is unaware of any other proper treatment for wholesale demand than to include capacity amounts that are actually contracted for the purposes of the Company's load forecast. As DEF witness Borsch indicated when discussing the Company's summer peak demand forecast, located in Schedule 3.1 of its 2014 Ten-Year Site Plan, "[. . .] what we show is what is the contracted capacity that we are expected to provide, expected to be able to provide on peak under the contracts that we have executed with various wholesale entities." (TR 668, EXH 49) Further on this point, OPC asks of DEF Borsch, "is it your testimony that you are not aware of any change in the projected sales of power to Seminole for the years 2015 through 2020?" To which Mr. Borsch responds, "[i]t's my testimony that as of the time these values were given to me that they represent the contracted amounts that we have. I am not aware of updates to those contracts which would have occurred since the provision of this load forecast, and so I'm not aware of any other particular changes, no." (TR 685)

Concerning arguments raised by PCS Phosphate, staff is unaware of how historic average summer net firm demand as a percentage of average system demand assists with forecasting future demand needs. Staff inquired as to DEF's summer peak demand forecast accuracies over the past four year period of 2010 to 2013. (EXH 95) It appears to staff that the forecast errors are declining because the impacts of the unforeseen Great Recession are receding. While the anomaly between the average summer net firm demand as a percentage of average system demand being higher in the forecast years of 2014–2018, than in the actual years 2009–2013, staff notes that DEF's forecast is based upon normalized weather conditions, while historic demand and energy forecasts represent the actual impact of severe or mild weather conditions on its customers. (TR 737–738; EXH 49) The results of PCS Phosphate adjustments to DEF's summer firm peak demand is an (approximate) average 9.6 percent MW reduction from 2014 to 2023.

Staff asked the Company to provide a sensitivity analysis of its summer and winter peak demand forecasts, to which DEF responded, "DEF does not have a High Case and Low case forecast for Summer Peak Demand. The Company uses a robust load forecasting methodology which examines forecasts of economic growth and historic weather and customer usage." (EXH 95) Staff believes performing and analyzing sensitivities around the "base case" forecast presented in this docket may have been an informative and helpful analytical tool.

Staff, through discovery, has obtained the Company's assumptions of population, employment, income, prices, weather, and domestic production (amongst others) used to forecast DEF's customers, energy, and demand. (EXH 93) Likewise, staff has reviewed DEF's load forecast methodologies. Staff believes these assumptions, data inputs and methods are reasonable for predicting future demand and were reasonably estimated. While staff is cognizant of forecast error potential generally associated with estimating future system load requirements, DEF's choice of model variables, methodology, and results with respect to its load forecast appear reasonable. Furthermore, it appears to staff that the forecast errors are declining because the impacts of the unforeseen Great Recession are receding. Additionally, there is no record evidence to indicate the dire economic circumstances of 2008-2009 are currently present that would impact DEF's 2018 forecasted demand. Staff recommends the Commission find the

results of DEF's load forecast presented in this docket as reasonable for the purposes of determining the need for DEF's proposed Citrus County Plant in 2018.

Total Capacity

The Commission's decision on a need determination petition must be based on the facts as they exist at the time of the filing with the underlying assumptions tested for reasonableness. It is prudent for a utility to continue to evaluate whether it is in the best interests of its ratepayers for a utility to participate in a proposed power plant before, during, and after construction of a generating unit. If conditions, such as load growth or capacity retirements, change from what was presented at the need determination proceeding, then a prudent utility would be expected to respond appropriately.

Witness Borsch asserted that peak load growth contributes to the need for the proposed Citrus County Plant, however, the need is primarily driven by generation retirements. (TR 400) DEF's total capacity includes firm purchased power and installed generating capacity. Prior to the projected 2018 in-service date of the proposed Citrus County Plant, DEF's projected capacity from purchased power agreements (PPA) remains relatively unchanged. (EXH 94) DEF is planning to retire several of it existing generating units prior to commercial operation of the proposed Citrus County Plant, including Crystal River Units 1 and 2 (740 MW) in 2018 and Suwanee Steam Units 1-3 (129 MW). (EXH 94)

For the purposes of evaluating the need for the Citrus County Plant, DEF assumed that it would satisfy its reliability needs prior to 2017 with the addition of its Suwannee Project (316 MW) and the addition of its proposed Hines Project (220 MW). (TR 413) At the start of the hearing DEF announced a potential PPA/acquisition of Calpine's Osprey Facility (515 MW) in lieu of constructing the proposed Suwannee Project. Based on testimony at the hearing the terms of the agreement would be a two-year PPA followed by an acquisition of the unit in year three. (TR 687) In light of the described PPA/acquisition, witness Borsch testified that the Company would not retire Suwannee Steam Units 1-3 until sufficient transmission is in place to support the retirement of those units. (TR 748)

During the hearing the intervening parties discussed several generation scenarios that could affect DEF's projected need in 2018. The majority of the discussion centered on delaying the retirement of Crystal River Units 1 and 2 beyond 2018 and the potential impact associated with a PPA/acquisition of the Osprey Facility.

OPC presented a hypothetical reserve margin calculation that added 515 MW from Calpine's Osprey Facility in 2016, delayed the retirement of Crystal River Units 1 and 2 beyond 2018, and added the Citrus County Plant in 2019. (EXH 138) FIPUG additionally raised questions concerning DEF's decision to retire Crystal River Units 1 and 2 in 2018 rather than 2020 which is the term allowable by the existing DEP permit.

Witness Borsch acknowledged that under OPC's hypothetical scenario, DEF would maintain a reserve margin above 20 percent beyond 2018. (TR 705) However, DEF witness Borsch testified that transmission constraints currently limit DEF from receiving more than 249 MW from the Osprey Facility. (TR 688) Assuming DEF acquires the Osprey Facility at the end

of 2016 witness Borsch explained that the transmission projects necessary to access the full-capacity of the plant would not be complete until 2020 at the earliest. (TR 692)

With respect to continued operation of Crystal River Units 1 and 2, witness Borsch testified that DEF has reliability concerns about the long-term site-averaging approach at the Crystal River Energy Center. (TR 809) Witness Borsch opined that continued reliance in 2019 on the dependent operational reliability between Crystal River Units 1 and 2 and Crystal River Units 4 and 5 when DEF has a readily available, cost-effective means of remedying that operational reliability risk with the addition of the Citrus County Plant is not justified. (TR 509-510) These reliability concerns were articulated in Commission Order No. PSC-14-0173-PAA-EI. In that Order, the Commission approved certain environmental projects predicated on the following compliance alternative:

> Establish a MATS compliance plan for CR 1 and 2 and configure the units to operate in compliance through mid-2018, and establish a resource plan to provide for replacement of combined cycle generation in that timeframe. This alternative includes a competitive solicitation for combined cycle energy and capacity starting in 2018, identification of additional resources needed in 2016 and beyond, and a transmission plan that supports the required resources. [Emphasis Added]

In that same Order the Commission stated the following with regard to the plan described above:

> After DEF established a MATS compliance plan for CR 1 and 2 to operate through mid-2018, the Company performed an economic evaluation comparing the alternatives identified above. When compared to retiring the units in 2016, DEF estimates that the second alternative will result in a net present value savings of approximately $307 million, with cumulative savings beginning in 2017. Thus, we find that DEF's proposal represents significant savings based on avoided transmission projects and avoided purchased power agreements that would otherwise be needed, for reliability purposes, in the 2016 through 2018 timeframe. [Emphasis Added]

The Florida Department of Environmental Protection also recognized that continued operation of Crystal River Units 1 and 2 deferred or resolved significant grid reliability issues identified by the Florida Reliability Coordinating Council in a 2013 study. (EXH 62) That study determined that the addition of a combined cycle facility by summer 2018 in the vicinity of the existing Crystal River Energy Center would resolve the reliability issues that are created by the potential shutdown of Crystal River Units 1 and 2 and announced retirement of Crystal River Unit 3

In addition to these reliability concerns, witness Borsch asserted that extending the life of Crystal River Units 1 and 2 would not be cost-effective. (TR 508) Staff's review of the cost-effectiveness of the Citrus County Plant is discussed in Issue 5.

Staff has reviewed the record and believes that there is sufficient information to calculate DEF's reserve margin through 2018 and beyond. As addressed there are two major points of contention with respect to DEF's projected total capacity: (1) How much capacity from the

Osprey Facility should be included prior to 2018; and (2) Should DEF delay the retirement of Crystal River Units 1 and 2. Based on the testimony of witness Borsch staff believes that DEF has demonstrated that assuming a maximum of 249 MW from the Osprey Facility prior to 2020 is an appropriate assumption. With respect to delaying the retirement of Crystal River Units 1 and 2 staff also believes that assuming the retirement of Crystal River Units 1 and 2, for reliability and economic purposes, in 2018 has been previously established and is appropriate based on information at this time.

Based on the evidence in the record, staff has recalculated DEF's originally filed reserve margin based on the assumptions discussed above and including the continued operation Suwannee Steam Units 1-3. For reference Table 2 summarizes DEF's original reserve margin calculation and staff's recalculated reserve margin. As previously stated, DEF's filing assumed the addition of the Suwannee Project and the retirement of Suwannee Steam Units 1-3 in 2016. Staff's calculated reserve margin assumes the addition of the Osprey Facility in 2016 and no retirement of Suwannee Steam Units 1-3.

Table 2: Summer Reserve Margin Calculations[5]

	DEF as Filed		**DEF w/o Suwannee Project**	
	Reserve Margin	**MW Shortage**	**Reserve Margin**	**MW Shortage**
2016	20.4%	-	21.0%	-
2017	20.7%	-	21.3%	-
2018	11.7%	785	12.3%	723
2019	6.9%	1,284	7.6%	1,222
2020	4.5%	1,535	5.2%	1,473

Based on staff's review of the record, staff recommends that the Commission find DEF's load forecast presented in this docket to be reasonable for the purposes of determining the need for DEF's proposed Citrus County Plant in 2018. Using DEF's load forecast and assuming the appropriate changes to DEF's installed capacity, the Company's reserve margin would drop to 12.3 percent in 2018, thus demonstrating a reliability need at that time.

CONCLUSION

There is no record evidence to indicate the dire economic circumstances of 2008-2009 are currently present that would impact DEF's 2018 forecasted demand. Staff recommends the Commission find DEF's load forecast presented in this docket to be reasonable for the purposes of determining the need for DEF's proposed Citrus County Plant in 2018. Based on the evidence in the record, if DEF did not construct the proposed Citrus County Plant in 2018, the projected reserve margin could drop as low as 12.3 percent in 2018.

[5] Hearing Exhibit No. 50 and Staff Calculation

Issue 2: Is the proposed Citrus County Plant needed, taking into account the need for adequate electricity at a reasonable cost?

Recommendation: Yes. Staff recommends that DEF's assumptions and forecasts in its analysis of the proposed Citrus County Plant are reasonable for evaluation purposes. (Graves, Cicchetti, McNulty, Ortega, Wu)

Position of the Parties

DEF: Yes. The Citrus County Combined Cycle Power Plant is a highly efficient, state-of-the art, natural-gas fired plant with relatively low production costs creating significant fuel savings benefits. Shared site infrastructure and existing transmission infrastructure add substantial benefits. The Plant cost is $1,514 million (nominal). The Plant can be built at a reasonable cost for DEF's customers. No third party bidder proposal came close to matching the Plant benefits. All bidder proposals fell short of DEF's need and, when combined with generic plants to meet that need, the closest bidder scenario was over $470 million less cost effective. Based on Duke's internal, rigorous IRP process, and the 2018 RFP competitive market process, the Plant provides customers adequate electricity at a reasonable cost.

OPC: Given the methodology underlying the demand forecast that Duke has produced in Dockets 140110 & 140111 and absent sufficient time or evidence in the shortened need proceeding schedule to develop a competing forecast, the OPC has not filed testimony challenging Duke's forecast. Duke nevertheless has the burden of demonstrating the reasonableness of its forecast and the Commission should consider testimony offered by other witnesses as well as evidence adduced at the hearing in making a determination whether the Duke forecast meets its burden to demonstrate the need for the Citrus County combined cycle plant.

At this time, the issue of adequate electricity as a reasonable cost in the context of competing resource options proposed by other intervenors in this docket is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists

FIPUG: The in-service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: No. Duke has not demonstrated that capacity additions of the size proposed in the Citrus County project are needed by 2018. Premature construction of those facilities will produce consumer rate impacts that are not just and reasonable.

Calpine: No position.

NRG: No. Duke has not demonstrated need for additional 2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding

Duke's revised generation plan. For the sake of argument, an agreement with Calpine could defer the Citrus County project.

Shady Hills: No. Duke did not fully evaluate alternatives that would defer the need for the Citrus CC by continued operation of its existing generating units through 2020, in conjunction with RFP bidder proposals.

SACE: No position, see SACE's position on Issue 1.

Staff Analysis:

PARTIES' ARGUMENTS

DEF asserts that the total cost of the Plant, including the allowance for funds used during construction and transmission interconnection costs, is $1,514 million. DEF continues that over 80 percent of this cost is based on fixed or firm price bids. (DEF BR 17)

DEF states that the location of the Citrus County Plant allows DEF to avoid the costs to build separate site and transmission infrastructure for the Citrus County Plant because of its location adjacent to the Crystal River Energy Center. DEF further asserts that no intervenor party and no intervenor witness challenged DEF's evidence that the Citrus County Plant will provide DEF's customers adequate electricity at a reasonable cost. (DEF BR 17-18)

FIPUG, PCS Phosphate, Shady Hills, and NRG took positions opposed to DEF's; however, they did not provide arguments directly related to the information discussed in this issue. OPC, similarly, did not file arguments directly related to the information discussed in this Issue. Calpine and SACE did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF's Citrus County Plant is a proposed 1,640 MW power plant located adjacent to the Company's Crystal River Energy Center. (TR 110) As proposed the Citrus County Plant will include four combustion turbines, four heat recovery steam generators, and two steam generators. (TR 111)

DEF witness Landseidel testified that the Citrus County Plant will be located on a site next to the Company's Crystal River Energy Center that takes advantage of existing infrastructure including transmission facilities. (TR 112) He elaborated that one power block will be connected to the Crystal River Energy Center 500kV transmission system, effectively replacing the generation from the retired Crystal River Unit 3 nuclear unit, and the other power block will be connected to the Crystal River Energy Center 230kV transmission system, effectively replacing Crystal River Units 1 and 2 those plants are retired. (TR 112) Witness Landseidel testified that DEF's ability to use existing infrastructure facilities at the Crystal River Energy Center for the Citrus County Plant avoids the cost of building separate, similar facilities for the project thus providing cost-savings. (TR 112)

DEF utilized the Strategist resource optimization program to perform the Company's economic evaluation of the proposed Citrus County Plant. (TR 415-416) DEF witness Borsch testified that the Strategist model is a utility accepted industry production cost model. (TR 415) Inputs to the Strategist model include the costs and operational characteristics of generating units. (TR 459) Witness Borsch additionally attested that fuel and emission pricing are typically two of the most sensitive inputs to the production cost model. (TR 563) Staff's analyses of DEF's assumptions are discussed separately below.

Financial Assumptions

DEF used a capital structure consisting of 50 percent equity at cost rate of 10.50 percent and 50 percent debt at a cost rate of 3.75 percent. (EXH 48) DEF applied an after-tax discount rate of 6.46 percent based on the effective income tax rate of 35.26 percent. (EXH 48) There was no evidence presented in the record disputing the reasonableness of these financial assumptions. Staff recommends that the financial assumptions used for this evaluation are reasonable.

In evaluating the proposed purchased power agreements (PPA), DEF included the cost of imputed debt by determining the additional equity cost related to the purchased power proposals. (TR 466-467) Standard and Poor's is the only rating agency that makes an adjustment to offset the expenditures of debt-like commitments associated with the fixed, long-term payments of PPAs. (TR 468; TR 872) The cost associated with imputed debt was not determinative to the most cost-effective option to the Company. (TR 467)

Generation Cost Estimates and Projected Performance Specifications

DEF estimated that the Citrus County Plant will have an in-service cost of approximately $1.5 billion. (EXH 5) DEF witness Landseidel presented testimony and exhibits regarding cost estimates and performance projections of the proposed Citrus County Plant. DEF's cost estimates and operational characteristics are based on advanced class gas turbines in a 4 by 2 configuration. (TR 113) DEF relied on a power plant engineering and construction firm, an engineering procurement and construction contractor with advanced gas turbine plant experience in Florida, and the Company's experience with combined cycle projects to develop the cost estimates for the Citrus County Plant. (EXH 93) Witness Landseidel testified that DEF has successfully executed several combined cycle gas turbine projects. (TR 119) Staff's review of DEF's past cost projections, for combined cycle projects, when compared to actual costs indicate that the projects are often at or below the projected cost. (EXH 93)

With respect to the operational characteristic of the Citrus County Plant, staff compared DEF's estimates and projection to the generic cost and performance projections made by a power plant engineering and construction firm as well as internal DEF resources. (EXH 48) Staff also compared heat rate to the heat rate projected by Florida Power & Light in its recently approved Port Everglades Energy Center. Based on these comparisons, staff believes DEF operational characteristics are reasonable for evaluation purposes. There was no evidence presented in the record disputing the reasonableness of these assumptions.

Fuel Costs

DEF's fuel price forecasts were presented by DEF witness Delehanty. Charts of DEF's base, high, and low fuel price forecasts and other industry natural gas price forecasts were provided as exhibits to witness Delehanty's direct testimony. (EXHs 21, 22) DEF's fuel price forecasts were provided in response to staff discovery. (EXH 93) DEF's fuel price forecasts of natural gas, coal, and distillate oil represent a combination of short-term fuel price forecasts and long-term fuel price forecasts. The Company's short term forecast is based on available futures market prices, spot market prices, and short-term contract prices. (TR 207) The Company's long term forecast is a forward-looking evaluation of the marginal cost of supply at the expected level of demand, prepared with the assistance of DEF's current industry consultant, Energy Ventures Analysis, Inc. (TR 208)

DEF worked collaboratively with Energy Ventures Analysis, Inc. to ensure that the assumptions and data inputs in its long term commodity price forecasts were consistent with DEF's internal planning assumptions and data inputs. (TR 209-210) DEF's low and high natural gas price forecasts scenarios were developed by comparing the DEF Energy base natural gas price forecast to recent, recognized industry natural gas price forecasts and applying statistically relevant standard deviations to the data. The low natural gas price forecast is 18 percent lower and the high natural gas price forecast is 14 percent higher than DEF's base natural gas price forecast. (TR 213-214) No party took a position opposing DEF's fuel price forecasts. Staff has reviewed the record evidence in this case pertaining to DEF's base, high, and low fuel price forecasts and believes they are reasonable projections of fuel prices for the relevant forecast horizon (2014-2041).

Environmental Costs

DEF has consistently included a cost of carbon dioxide (carbon) in its base case for planning purposes since 2006. (EXH 48) DEF believes that it is prudent to model a price on carbon as a way of capturing the risk of potential future legislation and pending Environmental Protection Agency regulation of carbon, as well as the impact of a national carbon policy. (TR 195) In order to test the reasonableness of its carbon cost forecast, DEF reviewed carbon dioxide cost estimates from the Energy Information Agency and cost estimates from the failed Waxman-Markey bill. (EXH 95) DEF asserted that the carbon price it currently uses has been set at a level the Company believes to be a reasonable trajectory to represent the risk of federal climate change legislation or regulation given the current uncertainty surrounding such policy. (TR 195) Staff notes that neither the appropriateness for DEF to include the projected carbon cost in its base case of the resource planning nor the actual carbon price used by DEF was challenged by any of the parties in this docket. Staff notes that the proposed Citrus County Plant would lower DEF's carbon emissions profile, which will help Florida in complying with future regulations or future compliance plans. (EXH 95) DEF also performed a zero-price carbon case sensitivity analysis as an alternative to its base case. (TR 470) The results of such analyses show that the Citrus County Plant is still the most cost-effective resource for DEF's customers. (TR 471)

Rate Impact

DEF projected a residential base rate increase of approximately $6.55 on a 1,000 kWh bill when the Citrus County Plant is placed in service. (EXH 95) Pursuant to Commission Order No. PSC-13-0598-FOF-EI, the Commission approved a Revised and Restated Stipulation and Settlement Agreement between DEF, OPC, FIPUG, Florida Retail Federation, and PCS Phosphate. Paragraph 16.b. of the RRSSA states the following:

> [I]f DEF petitions the Commission for a need determination for additional generation, not to exceed 1,800 MW, to be placed in service in 2018, and the Commission grants that determination of need, and DEF constructs and places in service that additional generation in 2018, DEF's base rates shall be increased by the annualized base revenue requirement for the first 12 months of operation.

Therefore, if in-service date of the Citrus County Plant is delayed beyond 2018, for any reason, the base rate increase, per the settlement, would not be applicable.

CONCLUSION

Staff recommends that DEF's assumptions and forecasts in its analysis of the proposed Citrus County Plant are reasonable for evaluation purposes.

Issue 3: Is the proposed Citrus County Plant needed, taking into account the need for fuel diversity and supply reliability?

Recommendation: Yes. Staff recommends that DEF's selection of the proposed Sabal Trail pipeline to serve the Citrus County Plant can reduce fuel cost volatility and provide fuel supply reliability. Furthermore, the supply reliability benefits associated with the Sabal Trail agreement and the Company's existing fleet of dual fuel combined cycle power plants supports the Company's decision to operate the proposed Citrus County Plant on a single fuel source. (Graves)

Position of the Parties

DEF: Yes. The Citrus County Combined Cycle Power Plant will be fueled by natural gas. Gas is an abundant, competitively-priced generation fuel because of increases in production from conventional and unconventional sources. Natural gas also is a cleaner burning fuel resulting in lower capital and operating costs to comply with environmental regulations. Sabal Trail will supply the Plant and provide access to abundant conventional and unconventional gas supplies, ensuring fuel supply diversity by providing readily available fuel at a cost-effective price. Additional interconnects between Sabal Trail and FGT will allow DEF to deliver gas to the Plant in the event of Sabal Trail interruptions, achieving fuel supply diversity by ensuring a reliable fuel supply. DEF reasonably achieved fuel diversity benefits.

OPC: Given the methodology underlying the demand forecast that Duke has produced in Dockets 140110 & 140111 and absent sufficient time or evidence in the shortened need proceeding schedule to develop a competing forecast, the OPC has not filed testimony challenging Duke's forecast. Duke nevertheless has the burden of demonstrating the reasonableness of its forecast and the Commission should consider testimony offered by other witnesses as well as evidence adduced at the hearing in making a determination whether the Duke forecast meets its burden to demonstrate the need for the Citrus County combined cycle plant.

At this time, the issue of adequate electricity as a reasonable cost in the context of competing resource options proposed by other intervenors in this docket is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: The in-service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: No position provided.

Calpine: No position.

NRG: No. Duke has not demonstrated need for additional 2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding

Duke's revised generation plan. For the sake of argument, an agreement with Calpine could defer the Citrus County project.

Shady Hills: No. An RFP choice of a smaller unit, together with deferral of Crystal River Unit 1 and 2 retirements, would better enhance fuel diversity and allow reliability needs to be met while providing additional opportunities to procure non-natural gas resources.

SACE: No position, see SACE's position on Issue 1.

Staff Analysis:

PARTIES' ARGUMENTS

DEF states that natural gas is a readily available fuel source for the Citrus County Plant at a cost-effective price to customers. DEF argues that the abundant supply of natural gas resources ensures that fuel is readily available at a cost-effective price to the Citrus County Plant providing natural gas supply diversity. DEF also asserts that DEF's access to abundant natural gas supplies for the Citrus County Plant through gas transportation pipeline interconnections further provides DEF and its customers with fuel supply diversity by ensuring a reliable fuel supply to the Citrus County Plant. DEF further opines that natural gas is an attractive fuel source because, compared to oil and coal, it is a cleaner burning fuel and, therefore, it does not have the same level of environmental costs and related impacts associated with plants using alternative fuels. (DEF BR 19-21)

FIPUG, NRG, and Shady Hills took positions opposed to DEF's; however, they did not provide arguments directly related to the information discussed in this issue. OPC, similarly, did not file arguments directly related to the information discussed in this issue. PCS Phosphate, Calpine, and SACE did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF's proposed Citrus County Plant will be fueled by natural gas. (TR 110) Based on current assumptions the Company's energy generation from natural gas is projected to increase from 56.6 percent in 2013 to 66.2 percent in 2019, the first full year of service for the Citrus County Plant. (EXH 49) As discussed in Issue 1, the proposed Citrus County Plant is replacing recently or soon to be retired coal-fired and nuclear generation at the Company's Crystal River Site. DEF witness Borsch testified that new coal-fired generation is not feasible at this time given environmental constraints. (TR 427) Additionally, in response to staff discovery, DEF indicated that additional coal generation would generally take six to seven years to construct while new nuclear generation would require at least ten years which is beyond DEF's projected need in 2018. (EXH 93) Staff would also note that only one respondent to DEF's RFP was not natural gas-fired technology. Therefore, staff believes that natural gas generation is the only reasonable generation option to meet the Company's needs at this time.

To support the Citrus County Plant's natural gas needs DEF has contracted for firm gas transportation on the Sabal Trail pipeline beginning on October 1, 2017. (Patton TR 168) DEF

witness Patton testified that Sabal Trail was the best gas transportation solution for the Citrus County Plant because it provides new gas infrastructure that enhances reliability and diversifies DEF's gas transportation portfolio. (TR 170) DEF's capacity from long term firm transportation agreements that support DEF's existing gas plants is nearly equally divided between Gulfstream and FGT. (TR 170) The estimated percentages of DEF's firm transportation service are Gulfstream (36 percent), Florida Gas Transmission (34 percent) and Sabal Trail (30 percent). (TR 171)

Witness Patton additionally testified that DEF's contract with Sabal Trail will allow direct access to onshore unconventional natural gas resources. (TR 170) DEF witness Borsch attested that the abundant supply of unconventional natural gas resources achieve one of the primary objectives of fuel diversity, specifically ensuring that fuel is readily available at a cost-effective price. Witness Borsch further indicated that conventional gas resources are also expected to increase in production over the next 25 years. (TR 425) Witness Borsch opined that that access to conventional and unconventional natural gas resources ensures a reliable fuel supply in the event of gas supply interruptions. (TR 427)

Staff concurs with witnesses Borsch's statement that natural-gas fired combined cycle generation is the most economic large-scale generation technology at this time. Furthermore, staff agrees that the diversification of DEF's fuel supply provides the benefits, reduced fuel cost volatility and fuel supply reliability, associated with fuel diversity.

In prior need determination proceedings the Commission has recognized dual-fuel capability as an enhancement to fuel-supply reliability. The Citrus County Plant is not designed to burn fuel oil and therefore the plant will not have dual fuel capability. (TR 116) DEF witness Landseidel testified that dual fuel capability adds additional engineering, design, and construction cost to the plant. (TR 116) He explained that the installing dual fuel capability would incur $25.7 million in capital costs as well as additional costs in operating and testing the plant and recycling the oil. (TR 148-149)

DEF commissioned an independent engineering risk analysis for single fuel operation based on natural gas at the Citrus County Plant. (TR 116) Based on this report, and DEF's own analysis of fuel supply reliability, DEF decided that reliance on natural gas as a single fuel source at the Citrus County Plant provided adequate reliability compared to the cost and risk associated with adding dual fuel capabilities at the Citrus County Plant. (TR 116)

Staff recommends that the testimony of DEF witness Lanseidel adequately supports DEF's decision to operate the proposed Citrus County Plant on a single fuel source. As discussed at the hearing, assuming completion of the Citrus County Plant, between 60 and 65 percent of DEF's combined cycle generation would still have dual fuel capability. This percentage is favorable when compared to the state percentage of 48 percent. (TR 148)

While Shady Hills took the position that an RFP choice of a smaller unit, together with deferral of Crystal River Units 1 and 2 retirements, would better enhance fuel diversity it did not provide an argument in its brief to support this position. Furthermore, Shady Hills did not offer a witness in this proceeding.

CONCLUSION

Staff recommends that DEF's selection of the proposed Sabal Trail pipeline to serve the Citrus County Plant can reduce fuel cost volatility and provide fuel supply reliability. Furthermore, the supply reliability benefits associated with the Sabal Trail agreement and the Company's existing fleet of dual fuel combined cycle power plants supports the Company's decision to operate the proposed Citrus County Plant on a single fuel source.

Issue 4: Are there any renewable energy sources and technologies or conservation measures taken by or reasonably available to Duke Energy Florida that might mitigate the need for the proposed Citrus County Plant?

Recommendation: No. Staff recommends that DEF's Integrated Resource Planning (IRP) process used to determine its resource needs fully takes into account all projected Demand-Side Management (DSM) benefits based on its existing Commission approved programs. DEF's ongoing Request for Renewables (RFR) and open-ended 2018 request for proposals did not identify any renewable resources that could possibly mitigate DEF's capacity needs in 2018. (Woodbery)

Position of the Parties:

DEF: No. Renewable resources are not commercially available on a utility-scale for generation capacity at a cost-effective price. DEF has not received a utility-scale, commercially viable solar or wind proposal that has achieved commercial operation. Large scale, commercially viable and economic generation capacity renewable projects cannot be reasonably expected at this time.

No demand-side resources are reasonably available to replace or mitigate DEF's need for additional generation capacity in 2018. DEF included demand-side resources in its current DSM Plan in determining the Base Generation Plan. The Citrus County Combined Cycle Power Plant is needed even if DEF meets its current and proposed DSM program goals. Conservation measures do not replace or offset the need for the Plant.

OPC: At this time, the OPC has no basis to dispute that Duke has appropriately incorporated into its analysis all renewable energy sources and technologies or conservation measures taken by or reasonably available to the company as required by the Commission in its needs analysis in Dockets 140110 & 140111. Nevertheless, Duke has the burden to demonstrate that it has properly considered renewables and conservation in its analysis.

FIPUG: The in-service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: At this time, it appears that Duke has appropriately incorporated into its analysis all renewable energy sources and technologies reasonably available to the company, but Duke's forecasted growth in peak demand while usage per customer generally flattens or declines suggests that Duke's efforts to manage peak load growth are insufficient.

Calpine: No.

NRG: The Commission should defer ruling in this proceeding until after its decision on Duke's conservation goals Docket No. 130002-EI.

Shady Hills: No position.

SACE: Yes. The Company has not met its burden that it has utilized all reasonably available conservation measures, and solar power, to mitigate the need for the proposed power plant.

Staff Analysis:

PARTIES' ARGUMENTS

DEF claims that it has provided sufficient evidence that demonstrates there are no renewable energy sources or conservation measures reasonably available to mitigate the need for the Citrus County Plant in 2018. DEF points out that none of the intervenor witnesses testified to this issue and that SACE was the only party that disputed DEF's evidence on this issue. DEF states that despite having an ongoing RFR and the open-ended 2018 RFP; it still did not receive any renewable resources or technologies that would mitigate the need for new generation in 2018. (DEF BR 22) DEF also argues that it included all of its current DSM programs in its analysis and determined that even if it meets all of its program goals (existing or proposed) it will still need the Citrus County Plant in 2018. (DEF BR 23)

NRG argues that the Commission should defer its ruling in this proceeding because DEF has proposed new conservation goals that are currently waiting for approval. (NRG BR 15) SACE argues that DEF has not shown enough proof that it has considered all the possible conservation measures that could mitigate the size of the Citrus County Plant. (SACE BR 1) SACE also asserts that DEF appears to believe that renewable energy must eliminate the need of the plant in its entirety and therefore did not consider if the size of the plant could be reduced using a mix of additional DSM programs and solar power resources. (SACE BR 2)

FIPUG's position was that DEF could defer the in-service date of the plant but did not provide any arguments related to this issue to support its position. OPC, PCS Phosphate, Calpine, and Shady Hills and did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF determined its future demand and energy needs for 2018 based on an IRP process. DEF's load forecast developed during the IRP process incorporated all demand and energy reductions expected from DEF's current DSM programs. (EXH 48)

For analysis purposes, DEF assumed that its current DSM programs would continue; however, DEF has proposed new DSM goals that are waiting for Commission approval in Docket No. 130200-EI. (TR 768, 769) DEF witness Borsch asserted that the proposed goals will slightly accelerate the need for new generation for the study period, because the goals are lower than the existing goals. (TR 418,419) By 2018, the cumulative difference between the existing and proposed goals is only 91 MW. Therefore, DEF was conservative in this proceeding by assuming greater DSM savings than the company is currently seeking approval for.

DEF has maintained an open RFR that was first issued on July 19, 2007. (EXH 93) Despite having the on going RFR, DEF claims that there is not any renewable resources commercially available on a utility-scale for generation capacity at a cost-effective price. (TR 428) DEF also kept its 2018 RFP open to proposals for other types of resources besides gas-fired generation, but only gas-fired proposals were received with the exception of a small existing non-solar renewable generation facility. DEF's load forecast included all of its current

firm renewable contracts that all extend beyond 2018 and contribute over 450 MW of power a year. (EXB 48) For planning purposes, DEF does not include any of its non-firm renewable contracts such as its solar resources in its forecast; because they cannot be counted on to meet the reliability needs of the Company. (EXH 93)

CONCLUSION

DEF's IRP process used to determine its resource needs fully takes into account all projected DSM benefits based on its existing Commission approved programs. DEF's ongoing RFR and open-ended 2018 RFP did not identify any renewable resources that could possibly mitigate DEF's capacity needs in 2018.

Issue 5: Is the proposed Citrus County Plant the most cost-effective alternative available to meet the needs of Duke Energy Florida and its customers?

Recommendation: Yes. Staff recommends that DEF's analysis of multiple scenarios, including delaying the in-service date of the project, indicate a high likelihood that the proposed project will result in savings for DEF's customers. Based on DEF's analysis the proposed project will result in a savings of $477 to $1,218 million when compared to alternatives received through the Company's RFP. (Graves)

Position of the Parties

DEF: Yes. DEF screened supply-side alternatives in its IRP process before identifying the Citrus County Combined Cycle Power Plant. The Plant is a highly efficient, state-of-the art, natural-gas fired plant with relatively lower production costs, creating significant fuel savings benefits. Shared site infrastructure and existing transmission infrastructure add substantial benefits to this Plant. Through the 2018 RFP, DEF determined that the Plant was more cost-effective than any proposal. No bidder proposal came close to matching its benefits. The closest proposal scenario was over $470 million less cost effective and all proposals combined was over $1.2 billion less cost effective. Based on DEF's IRP process, and the 2018 RFP process, the Plant is the most cost effective generation resource for DEF's customers.

OPC: At this time, the issue of whether the proposed Citrus County combined cycle plant is the most cost-effective alternative available to meet the needs of Duke Energy Florida and its customers is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: The in-service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: Duke has not demonstrated that constructing the proposed Citrus County combined cycle plant for an in-service date of December 2018 is the most cost-effective alternative available to meet the needs of Duke Energy Florida and its customers.

Calpine: No position.

NRG: No. Duke has not demonstrated need for additional 2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding Duke's revised generation plan. For the sake of argument, an agreement with Calpine could defer the Citrus County project.

Shady Hills: No. DEF has not demonstrated the cost-effectiveness of the Citrus CC relative to contracting for the power of a smaller unit, only, without deeming the full capacity of the Citrus CC to nonetheless be added.

SACE: No. The Company has not met its burden that it has utilized all reasonably available conservation measures, and solar power, to mitigate the need for the proposed power plant.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that the evidence in the record conclusively demonstrates that the Citrus County Plant is the most cost-effective alternative to meet DEF's customer needs commencing in 2018. DEF asserts that no party or witness identified any error in the Company's IRP process or challenges the selection of the Citrus County Plant as the next planned generating unit as a result of that IRP process. (DEF BR 24)

DEF claims that the high efficiency of the Citrus County Plant coupled with the favorable site location adjacent to the Crystal River Energy Center where site infrastructure can be shared and existing transmission infrastructure capacity exists adds substantial benefits to this plant for DEF's customers. DEF additionally opines that the closest bidder proposal resource plan scenario was over $470 million less cost-effective for DEF's customers. (DEF BR 25)

FIPUG argues that DEF's recent decision to invest ratepayer money to make environmental upgrades to Crystal River Units 1 and 2, which the state agency charged with protecting the environment has permitted to operate through 2020, and this Commission's finding that ratepayers will save more than $300 million with net savings beginning in 2017, the Commission should defer approving the Citrus County Facility so as to allow these savings to be realized as projected. (FIPUG BR 4)

NRG argues that DEF's acquisition of the Osprey Facility provides DEF with flexibility to defer the Citrus facility, which, based on the testimony of witness Hibbard, could mean $59 million in cumulative present value requirement benefits for ratepayers, even while accounting for the increased O&M expenses necessary to operate Crystal River Units 1 and 2 with new pollution controls in place. NRG opines that continued operation of the Crystal River Units 1 and 2 units is both feasible and practical. (NRG BR 13-14)

PCS Phosphate, Shady Hills, and SACE took positions opposed to DEF's; however, they did not provide arguments directly related to the information discussed in this issue. OPC, similarly, did not file arguments directly related to the information discussed in this issue. Calpine did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

In its initial filing DEF presented the results of its economic evaluation of the Citrus County Plant compared to other generation alternatives that resulted from the Company's RFP. No party disputed DEF's economic analysis, rather several of the intervening parties challenged the need for the Citrus County Plant in 2018, based on load projections (discussed in Issue 1), and the economics of delaying the in-service date of the plant by continuing operation of Crystal River Units 1 and 2 beyond 2018. In response, DEF witness Borsch presented testimony

supporting the economics of delaying the in-service date of the Citrus County Plant by one year. As such, staff's review and analysis as it relates to the cost-effectiveness of the Citrus County Plant will address the Company's evaluation of competing bids as well as the Company's evaluation of delaying the in-service date of the proposed Citrus County Plant.

DEF's RFP Evaluation

As discussed in Issue 1, DEF has a projected reliability need for additional generation beginning in 2018. DEF identified the proposed Citrus County Plant as its next planned generating unit to meet its projected reliability need in 2018. (TR 400) In accordance with the Commission Bid Rule, DEF issued an RFP on October 8, 2013, soliciting proposals for other generation capacity resources that might prove superior as a supply-side alternative to the Company's proposed Citrus County Plant. (TR 429) DEF witness Borsch provided testimony and exhibits regarding the Company's RFP and its economic evaluation of the proposed Citrus County Plant and potential alternatives.

DEF received six proposals in addition to the Company's proposed Citrus County Plant. Witness Borsch testified that none of the proposals individually met DEF's request for 820 MW in service by May 1, 2018. (TR 430) Witness Borsch further attested that the total generation capacity (1,328 MW) offered by all bidders in response to the 2018 RFP was less than that of DEF's proposed Citrus County Plant (1,640 MW). (TR 430) As a result, DEF considered a range of resource plan scenarios that included all bidder proposals and generic combustion turbines to scenarios with less than all or single bidder proposals and either generic combustion turbines or combined cycle units. (TR 431) In all these bidder proposal resource plan scenarios some combination of utility-owned generation was needed both to meet DEF's projected reliability need in 2018 and to "backfill" the bidder proposed generation when it went off-line before the end of the expected service life of the Citrus County Plant. (TR 454)

DEF evaluated multiple resource plan scenarios in addition to two resource plans that included the proposed Citrus County Plant. DEF's resource plans were based on the assumptions discussed in Issue 3. DEF's initial economic evaluation demonstrated that the resource plan with the Citrus County Plant was the most cost-effective option when considering the Company's reference case assumptions. (TR 466)

Following the Initial Detailed Evaluation the Company also performed a Final Detailed Evaluation to compare the bidder proposal resource scenarios to DEF's self-build alternative, the Citrus County Plant. (TR 466) The Final Detailed Evaluation involved a more detailed economic analysis, which included transmission costs and the cost of imputed debt as well as other costs and charges. (TR 466-467) DEF's final economic evaluation increased the cost-effectiveness of the proposed Citrus County Plant. (TR 466 and 468) The resource plan with the proposed Citrus County Plant was demonstrated to be the most cost-effective plan in DEF's initial economic evaluation; therefore, the Company's additional costs were not a determinative factor in the cost-effectiveness analysis. (TR 468) DEF further performed sensitivity analyses, in which it assumed either a high gas price forecast case or a zero carbon cost (CO2) price case. (TR 470) Table 3 below, summarizes the results of DEF's economic analysis when comparing alternative resource plans with the Citrus County Plant. Under the base case, the savings

associated with the Citrus County Plant, compared to other alternatives range from $477 to $1,218 million CPVRR. No sensitivity changed the relative result of DEF's analysis.

Table 3: Summary of Economic Analysis ($ millions, CPVRR)[6]

Resource Plan	Reference Case	High Gas Case	No CO2 Case
Citrus County	-	-	-
Citrus County + Bid B	29	-13	59
Bid A +2 CTs + 1 CC	477	464	269
Bid C1 + 2 CTs + 1 CC	548	535	399
Bids A and C1 + 1 CC	705	699	655
Bid G + 2 CTs + 1 CC	718	693	464
Bids A and G + 1 CC	748	731	600
Bids B, C1, and G + 1 CC	847	811	784
Bids A, B, C1 and G + 2 CTs	1,218	1,171	1,037

As discussed in Issue 3, staff believes DEF's economic analysis of the Citrus County Plant and other resource plans relied on reasonable and fair estimates and forecasts. Staff recommends that DEF's analysis demonstrates that the Citrus County Plant is cost-effective under a range of potential scenarios. Staff would also reiterate that no Party contested the economic analysis as presented by the Company.

DEF's Evaluation of Delaying the Citrus County Plant

As discussed in Issue 1, multiple parties discussed delaying the in-service date of the proposed Citrus County Plant by continuing operation of Crystal River Units 1 and 2 beyond 2018. DEF witness Borsch testified that such a delay would not be cost-effective. (TR 508) Review of DEF's economic analysis indicates that a one-year delay in the Citrus County Plant would result in a net revenue requirement increase of $78 million over the life of the plant. (EXH 96) Witness Borsch stated that this cost increase is driven primarily by the fuel efficiency of the Citrus County Plant compared to the balance of the fleet, including the extended operation of Crystal River Units 1 and 2 by another year. (TR 508) Table 4 below, summarizes the additional cost associated with a one-year delay of the Citrus County Plant.

Table 4: Costs of Delaying Citrus County Plant ($ millions, CPVRR)[7]

Capital	-65
O&M	-15
Fuel	113
Environmental	28
Other	17
Total	**78**

[6] Hearing Exhibit No. 60
[7] Hearing Exhibit No. 79

Witness Borsch additionally expressed concern that continued operation of Crystal River Units 1 and 2, in to 2019, could result in additional environmental compliance costs. (TR 508) Calpine witness Hibbard provided testimony stating that a one year delay of the Citrus County Plant could result in a savings of $59 million. (TR 364) This appears consistent with DEF's estimated $65 million savings in capitol costs shown above. At the hearing, witness Hibbard clarified that these calculated savings were a calculation of the time value of money, associated with delaying the Citrus County Plant, not a cost and benefit analysis. (TR 371)

Based on the preponderance of evidence staff does not believe that delaying the in-service date of the Citrus County Plant would be cost-effective. While witness Hibbard represented potential benefits that could be realized if the plant is delayed, his evaluation did not consider operational costs. Furthermore, as discussed in Issue 1, staff believes that the continued operation of Crystal River Units 1 and 2 could cause significant reliability issues.

The Commission's decision on a need determination petition must be based on the facts as they exist at the time of the filing with the underlying assumptions tested for reasonableness. It is prudent for a utility to continue to evaluate whether it is in the best interests of its ratepayers for a utility to participate in a proposed power plant before, during, and after construction of a generating unit. If conditions, such as load growth or capacity retirements, change from what was presented at the need determination proceeding, then a prudent utility would be expected to respond appropriately.

CONCLUSION

Staff recommends that DEF's analysis of multiple scenarios, including delaying the in-service date of the project, indicate a high likelihood that the proposed project will result in savings for DEF's customers. Based on DEF's analysis the proposed project will result in a savings of $477 to $1,218 million when compared to alternatives received through the Company's RFP.

Issue 6: Did Duke Energy Florida reasonably evaluate all alternative scenarios for cost effectively meeting the needs of its customers over the relevant planning horizon?

Recommendation: Yes. Staff recommends that DEF's RFP process, including oversight by an independent monitor, was sufficient to ensure a reasonable evaluation of alternative scenarios. (Graves)

Position of the Parties

DEF: Yes. DEF's RFP solicited proposals to DEF's Citrus County Combined Cycle Power Plant. DEF used the RFP evaluation process and criteria. An independent monitor ensured the process was fair and impartial and the RFP documents were fair and consistent with the Bid Rule. An independent evaluator ensured DEF's evaluation was fair and impartial and that DEF's most cost-effective proposal selection was reasonable. No bidder proposal met and all proposals combined did not meet DEF's need. DEF quantitatively and qualitatively evaluated proposals in combination with generic plants for a more cost effective scenario and demonstrated the Plant is the most cost-effective generation at $477 million less expensive than the least-cost scenario. High gas and zero carbon cost sensitivities confirmed this conclusion.

OPC: At this time, the issue of whether Duke Energy Florida reasonably evaluated all alternative scenarios for cost effectively meeting the needs of its customers over the relevant planning horizon is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: The in-service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: No. Duke has not evaluated all cost-effective resource alternatives for meeting customer needs, taking into account Duke's intention announced on August 26, 2014 to acquire the Osprey facility.

Calpine: No position.

NRG: No. There is no record evidence that Duke's hasty, eleventh-hour decision to abandon its Integrated Optimal generation plan, acquire Calpine's Osprey facility, and withdraw the Suwannee project from consideration is based on a reasonable evaluation of all alternative scenarios to meet its customers' needs.

Shady Hills: No. DEF did not evaluate scenarios that considered continued operation of Crystal River Units 1 and 2 through 2020. DEF also failed to evaluate deferral of part or all of the Citrus CC in conjunction with RFP bidder proposals.

SACE: No. The Company has not met its burden that it has utilized all reasonably available conservation measures, and solar power, to mitigate the need for the proposed power plant.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that it conclusively demonstrated that it reasonably evaluated all alternative scenarios for cost-effectively meeting DEF's customer needs commencing in 2018. DEF asserts that no intervenor party or witness questioned the fairness or impartiality of the 2018 RFP or DEF's evaluation of the 2018 RFP that led to the selection of the Citrus County Plant as the most cost-effective generation alternative to meet DEF's need. (DEF BR 26)

DEF additionally states that it developed the 2018 RFP and fairly and impartially implemented it consistent with the Commission Bid Rule to solicit proposals for other generation capacity resources that might prove superior as a supply-side alternative for customers, based on price and non-price attributes, to the Company's Citrus County Plant. DEF further attests that it retained an independent evaluator (Mr. Taylor) to ensure the 2018 RFP solicitation documents were clear, fair, and consistent with the Commission Bid Rule. DEF asserts that Mr. Taylor confirmed that the 2018 RFP was reasonable and an appropriate document for the solicitation of proposals consistent with the Commission Bid Rule. DEF further states that Mr. Taylor independently concluded that DEF's Citrus County Plant is at least $282 million CPVRR less expensive than the next best bidder proposal portfolio. (DEF BR 27-28)

DEF explains that it received bid proposals in addition to the Company's self-build proposal for the Citrus County Plant. DEF further expounds that none of these proposals individually or collectively met the Company's reliability need for summer generation capacity commencing in 2018. DEF asserts that it evaluated all bidder proposals to see if there was any combination of them that, individually or collectively with other, undeveloped generic Company power plants, provided customers a more cost-effective supply-side generation alternative to the Citrus County Plant. DEF further claims that these combinations, or resource combination scenarios, were quantitatively and qualitatively evaluated against the Citrus County Plant. DEF concludes that the evaluation demonstrated that the Citrus County Plant is the most cost-effective supply-side generation capacity to meet the Company's reliability need in 2018. (DEF BR 28-29)

FIPUG, PCS Phosphate, NRG, Shady Hills, and SACE took positions opposed to DEF's; however, they did not provide arguments directly related to the information discussed in this issue. OPC, similarly, did not file arguments directly related to the information discussed in this issue. Calpine did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

Prior to DEF's issuance of its 2018 RFP it held a pre-issuance meeting to discuss the requirements of the 2018 RFP. As a result of the meeting, DEF eliminated a minimum generation capacity limit at the request of a potential bidder. (TR 433)

In response to its RFP, DEF received six bid proposals. (TR 438) As testified by DEF witness Borsch, none of the proposals met the Company's reliability need for 820 MW no later than May 1, 2018. Witness Borsch testified that DEF could have rejected the proposals for

failure to comply with the 2018 RFP without further evaluation. (TR 454) Witness Borsch additionally testified that there were non-conformance issues or risks associated with the 2018 RFP threshold requirements or technical criteria associated with each of these six 2018 RFP proposals. (TR 431) However, DEF continued its evaluation of these six proposals to see if there was any combination of them that, individually or collectively with other, undeveloped generic Company power plants, provided customers a more cost-effective supply-side generation alternative to the Citrus County Plant. (TR 431) As discussed in Issue 5, DEF performed a Detailed Evaluation of the proposals that included transmission costs and the cost of imputed debt as well as other costs and charges. (TR 467)

DEF also retained an independent monitor/evaluator (Mr. Taylor) to ensure that the 2018 RFP solicitation documents were clear, fair, and consistent with the Commission Bid Rule. (TR 435) Witness Taylor concluded that the RFP was sufficiently detailed to provide necessary information to proposers. (TR 283) No party filed testimony arguing that DEF did not reasonably evaluate all alternative scenarios.

CONCLUSION

Staff recommends that DEF's RFP process, including oversight by an independent monitor, was sufficient to ensure a reasonable evaluation of alternative scenarios.

Issue 7: Based on the resolution of the foregoing issues, should the Commission grant the requested determination of need for the proposed Citrus County Plant?

Recommendation: Yes. Staff recommends that the Commission grant the requested determination of need as the proposed Citrus County Plant represents the optimal resource option to meet the Company's projected need in 2018. (Graves)

Position of the Parties

DEF: Yes. DEF needs the Citrus County Combined Cycle Power Plant to maintain reliability and to provide customers adequate electricity at a reasonable cost. The Plant enables DEF to meet its Reserve Margin commitment by improving the quantity and preserving the quality of its total reserves. The Plant adds natural gas fuel supply diversity, and technology, age, and functionality diversity to DEF's fleet. DEF exhausted reasonably available, cost effective conservation measures and selected the Plant as its most cost-effective alternative in a competitive process. The Plant will be a state-of-the-art, fuel efficient, environmentally preferable installation. DEF will successfully obtain all necessary permits to build and operate the Plant and urges the Commission to approve DEF's plan to build the Plant.

OPC: Duke has not met its burden of demonstrating that a need exists for the Citrus County Combined Cycle plant in 2018.

FIPUG: The determination of need should not be granted as requested as the in service date of the plant may be deferred based on the evidence presented.

PCS Phosphate: No. Duke has not met its burden of proving that constructing the proposed Citrus County combined cycle plant for an in-service date of December 2018 is the most cost-effective alternative available to meet the needs of Duke Energy Florida and its customers.

Calpine: No position.

NRG: No. As discussed in response to Issues 1, 2, 3 and 5, Duke has not demonstrated need for additional 2019 capacity given the pending Osprey acquisition, and the parties must be given an opportunity to submit evidence regarding its revised generation plan.

Shady Hills: No. DEF has not reasonably demonstrated either its need for the Citrus CC, nor its cost-effectiveness.

SACE: No. In the alternative, should the Commission approve the need for the proposed power plant, it should provide appropriate direction to· DEF to improve its resource planning process.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that it needs the Citrus County Plant to maintain its electric system reliability and integrity and to provide its customers with adequate electricity at a reasonable cost. DEF also contends that by building the Citrus County Plant, the Company will be able to meet its

commitment to maintain a 20 percent Reserve Margin. DEF opines that the Citrus County Plant also adds diversity to DEF's fleet of generating assets, in terms of natural gas fuel supply diversity, technology, age, and functionality of the Citrus County Plant. DEF asserts that having used all cost-effective conservation measures reasonably available to the Company in the timeframe of the need, it selected the Citrus County Plant as its most cost-effective alternative for meeting its reliability needs. (DEF BR 30-31) DEF requests the Commission to approve DEF's plan to build the Citrus County Plant and grant DEF's Petition for Determination of Need for the Citrus County Plant. (DEF BR 31)

OPC, FIPUG, PCS Phosphate, NRG, and SACE took positions opposed to DEF's. Their arguments are summarized in Issues 1-6. Shady Hills took a position opposed to DEF's; however, it did not provide arguments directly related to the information discussed in any issue in this docket. Calpine did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

Staff's analysis in Issues 1-6 supports the need for the Citrus County Plant in 2018. The following summarizes staff's review of the proposed plant:

1. DEF's load forecast in this proceeding is reasonable.

2. No cost-effective DSM or renewable resources have been identified that could mitigate the need for the Citrus County Plant.

3. The Citrus County Plant is expected to provide adequate electricity at a reasonable cost to DEF's customers.

4. The Citrus County Plant will increase DEF's fuel diversity and supply reliability by relying on a new fuel transportation provider.

5. DEF performed a reasonable evaluation of alternatives to the Citrus County Plant.

6. Analyses indicate that the Citrus County Plant is the most cost-effective alternative compared to respondents to the Company's RFP and when compared to continuing operation of Crystal River Units 1 and 2.

Based on the summary above, staff recommends that the Commission grant the requested determination of need as the proposed Citrus County Plant represents the optimal resource option to meet the Company's projected need in 2018.

Issue 8: Should this docket be closed?

Recommendation: Yes. The docket should be closed after the time for filing an appeal has run. (Lawson)

Position of the Parties

DEF: Yes, following a final order by the Commission granting the requested determination of need for the proposed Citrus County Combined Cycle Power Plant and pending the filing of reconsideration or for appellate review, if any, yes this docket should be closed.

OPC: No position.

FIPUG: Yes.

PCS Phosphate: No position provided.

Calpine: No position.

NRG: Yes.

Shady Hills: Yes.

SACE: No, prior to closing the docket, the Commission should order the Company to conduct and present a reserve margin study to determine the optimum reserve margin from a customer cost-effectiveness perspective.

Staff Analysis: The docket should be closed after the time for filing an appeal has run.

Docket No. 140111-EI

Issue A: Does the Commission have jurisdiction in this docket to grant Duke's request for a determination that the proposed Suwannee Simple Cycle Project and Hines Chillers Power Uprate Project are the most cost-effective generation alternatives to meet Duke's needs prior to 2018?

Recommendation: Yes, under Chapter 366, F.S., the Commission has jurisdiction to grant or deny DEF's petition for a determination of need that the proposed Hines Chillers Power Uprate Project is a cost-effective generation alternative to meet DEF's needs prior to 2018. (Lawson)

Position of the Parties

DEF: Yes. The Commission can determine its jurisdiction at any time and the Commission has the jurisdiction to grant DEF's Petition. This jurisdiction is consistent with the Commission's jurisdiction under the Florida Electric Power Plant Siting Act. Additionally, the Commission determined that it had jurisdiction to grant DEF's Petition in the Revised and Restated Stipulation and Settlement Agreement pursuant to Chapter 366, including among others, Section 366.04 and 366.05, Florida Statutes, in Commission Order No. PSC-13-0598-FOF-EI approving that Settlement Agreement. That Settlement Agreement provides for a potential Generation Base Rate Adjustment ("GBRA") for DEF generation resources prior to 2018 based on the Commission's determination of the need for and cost effectiveness of the generation resources.

OPC: The OPC stands by the 2013 Revised and Restated Stipulation and Settlement Agreement (RRSSA) to which it is a signatory. The provisions of the RRSSA were entered into in good faith and are lawful and are the product of a global settlement including give and take by all parties, especially as it concerns the availability of, and manner of, base rate relief. The Commission has broad authority to accept and implement settlements that it finds to be in the public interest. The provisions providing for the hearings being conducted in Dockets 140111 and 140110 emanate from the RRSSA which the Commission expressly found to be in the public interest in its entirety. For this reason, the OPC is unaware of any reason why the Commission lacks jurisdiction to entertain and consider the petitions filed by Duke in these dockets.

FIPUG: No position.

PCS: No Position

Calpine: Yes. The Commission has the authority and jurisdiction to approve retail rates for Duke Energy Florida based on reasonable and prudent costs. The 2013 Revised and Restated Stipulation and Settlement Agreement (RRSSA) allows Duke to petition the Commission for a base rate adjustment associated with adding generating capacity, subject to the limitations stated in the RRSSA. The Commission has jurisdiction to consider and act on Duke's petition in this case pursuant to its general jurisdiction over retail rates and also pursuant to its order approving the RRSSA.

NRG: No. The Commission's jurisdiction to pre-determine need and pre-approve prudence of a proposed generating plant is limited to electrical power plants subject to the Florida Electrical Power Plant Siting Act, Sections 403.501 – 403.518, Florida Statutes.

Staff Analysis:

PARTIES' ARGUMENTS

The only party opposing the Commission's exercise of jurisdiction in this matter is NRG. All other parties took no position or state that it is within the Commission's jurisdiction to act on DEF's petition. None of the parties presented any evidence or testimony in support of their arguments during the hearing.

NRG asserts in its post hearing brief that "Section 403.519, Florida Statutes, is the only source of Legislative authority for the Commission to pre-determine whether a need exists for a proposed power plant and to pre-approve a proposed plant as the most cost-effective alternative to meet that need, and specifically applies only to an electrical power plant subject to the Florida Electrical Power Plant Siting Act. §403.519(1), Fla. Stat. (NRG BR 18) NRG argues that the Florida Electric Power Plant Siting Act[8] (PPSA) narrowly defines what kind of power plants are subject to the act and then grants the Commission the jurisdiction to "pre-determine need" for those plants subject to the act. According to NRG, the Hines Chillers Power Uprate Project (Hines project) is not a power plant as defined under the PPSA, and therefore, is not eligible for pre-approval. (NRG BR 18-19) Since the PPSA is inapplicable to the Hines project and since no other statute authorizes the Commission to pre-judge the prudency of the proposed project, the legal maxim "expressio unius est exclusion alterius"[9] applies, and that means the Commission cannot act on DEF's petition at this time. (NRG BR 19) NRG further argues that the 2013 Revised and Restated Stipulation and Settlement Agreement (RRSSA) does not require or allow DEF to initiate this proceeding and merely permits DEF to pursue a prudence review for the Hines project. (NRG BR 20)

Conversely, DEF argues that the Commission already determined its jurisdiction in this matter when it approved the RRSSA pursuant to Chapter 366, F.S. According to DEF, The RRSSA contemplates a Generation Base Rate Adjustment prior to 2018 to address a projected shortfall in generation capacity resulting from the retirement of the Crystal River 3 nuclear power plant and the Crystal River 1 and 2 coal fired power plants along with the cancellation of the Levy nuclear power plant project. As part of the process of obtaining the Generation Base Rate Adjustment, the RRSSA allows the Utility to bring a need determination before the Commission. DEF further argues that its petition is not in conflict with the Commission's jurisdiction under the PPSA. Although the PPSA does "carve out" certain kinds of generation resources for need determination proceedings as part of a centralized permitting process, that "carve out" does not conflict with, or diminish, the Commission's existing jurisdiction over projects such as the one proposed in this docket. (DEF BR 10-11) Furthermore, the Commission is empowered to determine whether or not a proposed matter is within the scope of its

[8] Section 403.501, F.S. - 403.519, F.S.
[9] "expressio unius est exclusion alterius" or, "the expression of one thing is the exclusion of another"

jurisdiction.[10] Subject matter jurisdiction arises by virtue of law,[11] if jurisdiction exists, which it does in this matter, then the Commission has jurisdiction regardless of whether the petition or the RRSSA includes a citation to the proper jurisdictional authority. (DEF BR 12-13) In this instance, DEF asserts that under Chapter 366, F.S., the subject matter in this docket is well within the scope of the Commission's jurisdiction and thus the Commission may render a decision in this matter.

All other parties who offered a position on this issue generally asserted that the Commission would have jurisdiction over the matters proposed in this docket under Chapter 366, F.S., and/or flowing from the jurisdiction that governed the approval of the RRSSA.

STAFF ANALYSIS

NRG posed the question of whether or not the Hines project should be heard in this docket. NRG suggests that the PPSA has a specific definition of a power plant, and since the proposed project in this docket does not meet that definition, it is not subject to the PPSA. NRG concludes it is improper for the Commission to act on DEF's petition in this docket because DEF has incorrectly petitioned for this matter to be considered under the PPSA. Thus, the real question is, if the Hines project is not subject to the PPSA, can the Commission act on DEF's petition in this docket?

To answer this question staff first turns to the matter of the RRSSA. The RRSA was approved by this Commission pursuant to Order No. PSC-13-0598-FOF-EI, issued November 12, 2013, in Docket No. 130208-EI, In re: Petition for limited proceeding to approve Revised and Restated Stipulation and Settlement Agreement, including Certain Rate Adjustments. That Order states that the Commission has jurisdiction over the RRSSA pursuant to Chapter 366, F.S., including Sections 366.04, 366.041, 366.05, 366.06, 366.07, 366.076, 366.8255, 366.93, and 120.57(2) and (4), F.S., and Rules 28-106.301 and 28-106.302, F.A.C.

Section 16 of the RRSSA contemplates DEF's need for increased generating capacity and provides DEF an opportunity to obtain a Generation Base Rate Adjustment to satisfy this need provided any project proposed by DEF under the terms of the RRSSA meets certain minimum standards involving total generating capacity and comes into service prior to 2018. As part of the process for receiving this Generation Base Rate Adjustment, DEF must obtain a need determination so the Commission can determine that there is, in fact, a need for the proposed project and that the proposed project is a prudent solution. Additionally the RRSSA explicitly states that obtaining the Generation Base Rate Adjustment is "subject to the Intervenor Parties' right to challenge the need for or prudence of any costs associated with the construction, purchase, or acquisition of any such units or uprates." Thus an additional function of the need determination is to satisfy this requirement and allow any interested party the opportunity to review or contest the need for the proposed project regardless of whether that party executed the PPSA.

[10] Florida Public Service Commission v. Bryson, 569 So. 2d 1253, 1255 (Fla. 1990)
[11] Order No. PSC-02-1191-FOF-TP, issued September 3, 2002, in Docket No. 020611-TP, In re: Complaint of BellSouth Telecommunications, Inc. regarding Supra Telecommunications and Information Systems, Inc.'s inappropriate use of Local Exchange Navigation Service (LENS)

Based on the language of the RRSSA and the Order approving the RRSSA, staff believes it was the intent of the RRSSA to enable DEF to evaluate various generation alternatives and select the most cost-effective option for addressing a perceived need for replacement generation. The RRSSA identified several broad options to address this need including new power plant construction, the uprate or expansion of existing generation resources, or the acquisition of such resources from a third party. Furthermore, the RRSSA contemplated a scenario where DEF would bring its proposed options before the Commission prior to receiving the Generation Base Rate Adjustment. Such a review allows the Commission and any interested party the same opportunity to evaluate DEF's evidence that the proposed project is a prudent solution that fills an actual need for additional generating capacity.

Since the RRSSA allows DEF to file a petition for a determination of need, staff believes that DEF was correct in citing to the RRSSA as a basis for its petition. In doing so, the basis for jurisdiction in Docket No. 140111-EI would include, but not be limited to, the statutes cited as the basis of jurisdiction in the Order that approves the RRSSA.

Turning to Chapter 366, F.S., there are several sections that address the question of the Commission's jurisdiction with regard to its authority over electric utilities in Florida. In particular, Section 366.04, F.S., titled "Jurisdiction of Commission" states "(i)n addition to its existing functions, the commission shall have jurisdiction to regulate and supervise each public utility with respect to its rates and service." This statute further states that the Commission "in the exercise of its jurisdiction" shall have the authority to prescribe a rate structure for all electric utilities and ensure reliability within an electric grid. As part of its authority over matters affecting the reliability of the electric grid, the statute grants the Commission jurisdiction over the planning, development and maintenance of the electric grid in Florida for operational purposes and to avoid the "uneconomic duplication of generation, transmission and distribution facilities."

Furthermore, there are numerous other sections of Chapter 366, F.S., that provide the Commission authority over this matter. Section 366.05, F.S., states that "in the exercise of such jurisdiction, the commission shall have power to prescribe fair and reasonable rates and charges, classifications, standards of quality and measurements." Section 366.041, F.S., provides that in fixing rates the Commission may consider "among other things, to the efficiency, sufficiency, and adequacy of the facilities provided and the services rendered." Section 366.055, F.S., states that the Commission has the authority to ensure grid reliability and integrity is maintained. Sections 366.06, F.S., and 366.07, F.S., describe the procedure and authority for fixing and adjusting the rates charged by electric utilities.

Staff believes this extensive statutory language is unambiguous. The plain language of Chapter 366, F.S., establishes the Commission's jurisdiction over any matter which affects the rates and services of electric utilities in Florida, or for preventing the uneconomic duplication of generation, transmission or distribution resources. The Commission's jurisdiction also extends to matters that would affect the reliability of the electric grid. When staff applies the facts presented in this docket to the statutory authority granted to this Commission under Chapter 366, F.S., staff finds the Hines project would clearly have an effect on the reliability of the service provided by

DEF, as well as the on the reliability of the electric grid. As stated in the RRSSA, if the Hines project is put into service, it would be entered into the rate base and would, therefore, affect the rates of DEF. The proposed Hines project would also merit scrutiny to determine that there is a need for the project in order to establish that it would not constitute the uneconomic duplication of generation resources. In short, staff believes that the Hines project is squarely within the boundaries of regulating electric utilities for which this Commission has been expressly granted jurisdiction by the Florida Legislature pursuant to Chapter 366, F.S.

Staff also believes that the Commission's authority enables it to hear any matter within its jurisdiction upon its own motion or upon the request of an interested third party, particularly with regard to any matter that involves fixing or adjusting rates as stated in Section 366.06(2), F.S., and Section 366.07, F.S. Staff believes that, had the Utility filed its petition for a determination of need without citation to the RRSSA or if we assume for the sake of argument that DEF incorrectly cited Section 403.519, F.S., as the sole basis for Commission jurisdiction, it is still within the Commission's discretion and authority to address DEF's petition under the broad jurisdiction granted under Chapter 366, F.S.

CONCLUSION

Therefore, under Chapter 366, F.S., the Commission has jurisdiction to grant or deny DEF's petition for a determination of need that the proposed Hines Chillers Power Uprate Project is a cost-effective generation alternative to meet DEF's needs prior to 2018.

Issue 9: Is the Hines Chillers Power Uprate Project needed, taking into account the need for electric system reliability and integrity?

Recommendation: Yes. If DEF did not construct the proposed Hines Project in 2017, the projected reserve margin could fall below 19 percent. Although, the need is relatively small, the record demonstrates that the addition of the Hines Project is cost-effective even when the capacity of the project was not required to meet the reserve margin. (Graves, Higgins)

Position of the Parties

DEF: Yes, the proposed Hines Uprate Project is needed for electric system reliability and integrity. The project is necessary to help to meet the Company's summer Reserve Margin requirement to deliver reliable electric service to the Company's customers. DEF projects growth in firm summer peak demand in the summers of 2016 and in 2017. DEF's existing and planned generation capacity retirements and reductions also contribute to the Company's need for generation capacity and specifically summer peaking capacity. The Hines Uprate Project allows DEF to help satisfy its commitment to maintain a minimum 20 percent Reserve Margin and is needed for the Company to maintain electric system reliability and integrity to serve DEF's customers.

OPC: Given the methodology underlying the demand forecast that Duke has produced in Dockets 140110 & 140111 and absent sufficient time or evidence in the shortened need proceeding schedule to develop a competing forecast, the OPC has not filed testimony challenging Duke's forecast. Duke nevertheless has the burden of demonstrating the reasonableness of its forecast and the Commission should consider testimony offered by other witnesses as well as evidence adduced at the hearing in making a determination whether the Duke forecast meets its burden to demonstrate the need for the Citrus County combined cycle plant.

At this time, the issue of electric system reliability and integrity in the context of competing resource options proposed by other intervenors in this docket is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: No position provided.

Calpine: The Hines Chillers Power Uprate Project appears to be a cost-effective addition to Duke's power supply resources even with the addition of the Osprey Energy Center as contemplated by the agreement in principle reached by Duke and Calpine. Accordingly, and since the Hines Chillers Project will provide additional capacity during the summer months, the Hines Chillers Project will help meet Duke's need for electric system reliability and integrity.

NRG: No. Duke has not demonstrated need for additional pre-2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding Duke's revised generation plan. For the sake of argument, an agreement with Calpine or NRG would provide more than enough capacity to serve Duke's load growth into 2019.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that the undisputed evidence demonstrates that the Hines Project assists DEF in meeting its commitment to maintain a minimum 20 percent reserve margin to maintain electric system reliability and integrity. The Company asserts that its need for the Hines Project is driven by generation facility retirements and power reductions, and projected increases in summer firm demand and energy growth in 2016 and 2017. DEF lastly states that no intervenor presented any evidence disputing DEF's evidence that DEF has a reliability need for additional generation capacity on DEF's system prior to 2018. (DEF BR 13-14)

NRG argues that DEF has not met its burden of proof that it needs any additional generation in 2018 to meet its reserve margin. NRG asserts that DEF's projected load growth is far more load growth than DEF has experienced in any two consecutive years since 2005. NRG further contends that DEF has not demonstrated that its forecast is reasonable or that this high level of load growth is likely to materialize. NRG opines that the record reflects DEF has consistently overestimated its actual need. NRG further attests that DEF's 2013 Ten-Year Site Plan overestimated its actual 2013 need by 881 MW. NRG expresses trepidation that DEF modeled sensitivities to changes in gas price and carbon costs, but failed to model the effect of an inaccurate load forecast. (NRG BR 12-13)

NRG also argues that even assuming that DEF needed its full forecasted capacity, DEF's withdrawal of the Suwannee peaker project and its newly-announced decision to keep the existing 129 MW Suwannee steam plants in service while purchasing power from and pursing acquisition of Calpine's 599 MW Osprey Facility would provide DEF with 316 MW more than the net 412 MW of generation it would have gained by building the Hines Project and Suwannee Project. NRG concludes that the Commission should require DEF to resubmit its needs assessment as well as load-forecast sensitivity analyses. (NRG BR 12-13)

FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced. (FIPUG BR 3)

OPC and Calpine did not file arguments directly related to the information discussed in this issue. PCS Phosphate did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

As proposed, the Hines Project will contribute 220 MW of summer capacity. DEF witness Borsch testified that the current plan is for the four blocks of chillers to come on in alignment with upcoming outages at DEF's Hines Energy Center with all four blocks being in service by the summer of 2017. (TR 134) DEF's planning criterion that determined its need for new generation prior to 2018 is the same as that discussed in Issue 1.

Based on current projections witness Borsch contends that the Company needs additional generation in the summer of 2016 and 2017 to meet its 20 percent minimum reserve margin requirement. (TR 532) Witness Borsch testified that DEF's projected needs prior to 2018 are a result of load growth, planned unit retirements, and unit de-rates. (TR 524) DEF's load forecast and forecasting assumptions are the same as those discussed in Issue 1.

Prior to 2017, DEF plans to retire combustion turbines at the Company's Avon Park, Turner, and Rio Pinar sites. These combustion turbines were installed in the late 1960's and early 1970's and have been identified for retirement in the Company's resource planning process since the late 2000's. Collectively these units provide 133 MW of summer generation capacity to DEF's system. Witness Borsch testified that these units are becomingly more costly to operate and maintain. (TR 524)

DEF indicated that the CTs, noted above, burn mainly distillate oil and have heat rates ranging from 15,300 to 18,800 btu/kwh and are sometimes up to ten times more expensive to dispatch versus natural gas-fired generation. (EXH 104) DEF stated that, due to the advanced age of these units, the Company has been forced to revert to secondary sources (salvage part suppliers, parts remanufacturers, E-Bay, etc.) to keep the units available in case they are needed to support the grid. (EXH 104) Staff believes that the retirement of these units is a reasonable decision at this time.

For evaluation purposes, DEF also assumed the retirement of its Suwannee 1-3 steam units (129 MW) and the construction of the Suwannee Project (316 MW). (EXH 94) As discussed in Issue 1, DEF announced a potential PPA/acquisition of Calpine's Osprey Facility in lieu of constructing the proposed Suwannee Project in 2016, and the continued operation of Suwannee Units 1-3. As further discussed in Issue 1, staff believes that the Osprey Facility would only be capable of providing 249 MW, of its rated 515 MW output, to DEF prior to 2020.

Based on the evidence in the record, staff has recalculated DEF's originally filed reserve margin to ensure that the Company still has a reliability need in 2017. Table 5 below, shows that DEF's reserve margin in 2017 would fall to 19 percent absent any new generation. This represents a 94 MW need. Although, the need is relatively small, DEF witness Borsch testified that the addition of the Hines Project is cost-effective even when the capacity of the project was not needed to meet the Company's reserve margin criteria. (TR 554-555) This point is discussed in greater detail in Issue 13. Staff would note that no party to this case disputed the need for the Hines Project.

Table 5: Staff Calculated Reserve Margin w/o Hines Project[12]

	Peak Demand (MW)	Installed Capacity (MW)	Reserve Margin
2014	8,812	11,024	25.1%
2015	9,042	10,991	21.6%
2016	9,149	11,074	21.0%
2017	9,307	11,074	19.0%

Based on a 20 percent reserve margin criterion, staff believes that the evidence in the record demonstrates a need for the Hines Project beginning in 2017. Based on staff calculations, if DEF did not construct the proposed Hines Project in 2017, the projected reserve margin could fall below the Company's 20 percent criterion.

CONCLUSION

If DEF did not construct the proposed Hines Project in 2017, the projected reserve margin could fall below 19 percent. Although, the need is relatively small, the record demonstrates that the addition of the Hines Project is cost-effective even when the capacity of the project was not required to meet the reserve margin.

[12] Staff Calculation Based on Hearing Exhibit No. 65

Issue 10: Is the Hines Chillers Power Uprate Project needed, taking into account the need for adequate electricity at a reasonable cost?

Recommendation: Yes. Staff recommends that DEF's assumptions and forecasts in its analysis of the proposed Hines Project are reasonable for evaluation purposes. (Mtenga, Cicchetti, McNulty, Ortega, Wu)

Position of the Parties

DEF: Yes, the proposed Hines Uprate Project is needed and will provide adequate electricity at a reasonable cost. The Hines Uprate Project meets the Company's need for reliable capacity by the summer of 2017 through an increase in the summer capacity of the existing natural-gas fired, combined cycle power plants located at the HEC. DEF will achieve an increase of approximately 220MW in its HEC summer capacity by utilizing an existing site and power block, saving customers the increased costs and time of building new generation at another existing site or a Greenfield site to achieve the same reliable summer capacity.

OPC: Given the methodology underlying the demand forecast that Duke has produced in Dockets 140110 & 140111 and absent sufficient time or evidence in the shortened need proceeding schedule to develop a competing forecast, the OPC has not filed testimony challenging Duke's forecast. Duke nevertheless has the burden of demonstrating the reasonableness of its forecast and the Commission should consider testimony offered by other witnesses as well as evidence adduced at the hearing in making a determination whether the Duke forecast meets its burden to demonstrate the need for the Citrus County combined cycle plant.

At this time, the issue of adequate electricity as a reasonable cost in the context of competing resource options proposed by other intervenors in this docket is still under evaluation by the OPC given that Duke discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: No position provided.

Calpine: The Hines Chillers Power Uprate Project appears to be a cost-effective addition to Duke's power supply resources even with the addition of the Osprey Energy Center as contemplated by the agreement in principle reached by Duke and Calpine. Accordingly, and since the Hines Chillers Project will provide additional capacity during the summer months, the Hines Chillers Project will help meet Duke's need for adequate electricity at a reasonable cost.

NRG: No. Duke has not demonstrated need for additional pre-2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence

regarding Duke's revised generation plan. For the sake of argument, an agreement with Calpine or NRG would provide more than enough capacity to serve Duke's load growth into 2019.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that the undisputed evidence demonstrates that the Hines Project will provide DEF's customers needed summer peaking capacity at a reasonable cost. DEF asserts that the estimated project cost is $160 million and when complete will increase the summer capacity by approximately 220 MW. DEF further explains that there will be a minimal increase in the fixed and variable O&M costs at the Hines Energy Center. DEF concludes that the Hines Project, therefore, provides DEF's customers adequate electricity at a reasonable cost. (DEF BR 15-16)

NRG contends that the Hines Project is unreasonably expensive on a per-kW basis. NRG suggests that the nominal cost of the Hines Project is misleadingly low because it will only contribute power to meet DEF's summer peak. NRG argues that the Hines Project per-kW price increases dramatically when adjusted to reflect its limited availability. NRG submits that assuming that the project will contribute 220 MW to DEF's system 50 percent of the time, the per-kW price increases dramatically to $1,450. (NRG BR 14-15)

FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that, it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced. (FIPUG BR 3)

OPC and Calpine did not file arguments directly related to the information discussed in this issue. PCS Phosphate did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF's Hines Project is a proposed 220 MW uprate to the Company's existing Hines 1-4 combined cycle power plants. (TR 131) DEF witness Landseidel presented testimony and exhibits regarding cost estimates and performance projections of the Hines Project. DEF's financial assumptions, fuel cost projections, and environmental cost projections used to evaluate the Hines Project are the same as those discussed in Issue 2.

The Hines Project involves the installation of a chiller system on all four existing natural-gas fired, combined-cycle power blocks (Hines Units 1-4), located at DEF's Hines Energy Center. Hines Units 1-4 have a total installed capacity of approximately 1,900 MW. When complete, the Hines Project will increase the summer capacity of those units by approximately 220 MW. Witness Landseidel testified that existing generation, site infrastructure, and transmission infrastructure will support the power Uprate project and that there is no transmission costs associated with the Hines Project. (TR 131)

The Hines Project consists of installation of chiller modules for the existing Hines Energy Center power block units, a large chilled water storage tank, an auxiliary power system, pumps and chilled water supply and return piping, and gas turbine air inlet chiller coils. The installation of the chiller system on the existing Hines Energy Center power block units is designed to cool the gas turbine inlet air thus increasing the capacity of each power block while maintaining fuel efficiency. The result of this project is an increase of approximately 220 MW of summer capacity. (TR 131)

Generation Cost Estimates and Projected Performance Specifications

DEF estimates the total project cost of the Hines Project to be $160 million. (TR 133) DEF indicated that Kiewit Power Engineers, the engineer of record for two of the Hines power blocks, assisted in putting together the preliminary estimate for the Hines Project. DEF additionally asserted that an inlet chiller package supplier with experience in retrofit inlet chilling projects provided indicative pricing that further supported the capital cost estimate. (EXH 101) According to DEF this advice, together with the Company's project and estimating experience, provided the basis for the cost estimate. Based on a response to staff discovery the projected cost of the Hines Project is comparable to a similar project installed at Duke Energy Carolinas Dan River Combined Cycle project. (EXH 101) Witness Landseidel testified that the Hines Project will increase summer capacity with a minimal increase in the fixed and variable O&M costs at the Hines Energy Center. (TR 134)

Rate Impact

DEF projected a residential base rate increase of approximately $0.61 on a 1,000 kWh bill when the Hines Project is placed in service. (TR 840) Pursuant to Commission Order No. PSC-13-0598-FOF-EI, the Commission approved a Revised and Restated Stipulation and Settlement Agreement between DEF, OPC, FIPUG, Florida Retail Federation, and PCS Phosphate. Paragraph 16.a. of the RRSSA states the following:

> DEF shall have the ability to recover the full, prudently incurred revenue requirement of any: (1) combustion turbine unit(s) constructed and associated transmission required to integrate and deliver power from such unit(s) into the DEF system; (2) any power uprates to existing DEF unit(s); and/or (3) any existing combustion turbine and/or combined cycle unit(s) acquired or purchased along with any transmission costs required to integrate and deliver power from such unit(s) into the DEF system, not to exceed a total megawatt ("MW") capacity of 1150 MWs collectively for items (1), (2) and/or (3) above (unless a higher MW amount is otherwise agreed to by the Parties), which may be placed in-service and/or acquired/purchased prior to year-end 2017, through a base rate increase at the time each unit is placed in service and/or acquired/purchased. In addition, DEF will evaluate and compare whether it is more cost effective to satisfy this MW capacity need prior to 2017 through its Integrated Resource Planning ("IRP") methodology and will provide this comparison at the time it submits these costs in (1), (2) or (3) of this paragraph for prudence review.

Therefore, if in-service date of the Hines Project is delayed beyond 2018, for any reason, the base rate increase, per the settlement, would not be applicable.

CONCLUSION

Staff recommends that DEF's assumptions and forecasts in its analysis of the proposed Hines Project are reasonable for evaluation purposes.

Issue 11: Is the Hines Chillers Power Uprate Project needed, taking into account the need for fuel diversity and supply reliability?

Recommendation: Yes. Staff recommends that the Hines Project will increase the overall efficiency of DEF's generation fleet. Staff recommends that the increased efficiency will reduce fuel costs and will provide benefits with respect to mitigating the impacts of fuel cost volatility. (Graves)

Position of the Parties

DEF: Yes, the proposed Hines Uprate Project is needed taking into account the need for fuel diversity and supply reliability. The Hines Uprate Project is a natural gas-fired generation project. Natural-gas fired generation is the most economic and qualitatively attractive generation technology for DEF and the State of Florida at this time and for the foreseeable future. There are abundant conventional and unconventional natural gas resources available in the United States and North America. These natural gas resources ensure a long term natural gas supply at economically beneficial prices for electric power generation at the Hines Uprate Project. The Hines Uprate Project will use the existing fuel pipeline infrastructure and firm gas transportation and supply arrangements for the HEC.

OPC: Given the methodology underlying the demand forecast that Duke has produced in Dockets 140110 & 140111 and absent sufficient time or evidence in the shortened need proceeding schedule to develop a competing forecast, the OPC has not filed testimony challenging Duke's forecast. Duke nevertheless has the burden of demonstrating the reasonableness of its forecast and the Commission should consider testimony offered by other witnesses as well as evidence adduced at the hearing in making a determination whether the Duke forecast meets its burden to demonstrate the need for the Citrus County combined cycle plant.

At this time, the issue of adequate electricity as a reasonable cost in the context of competing resource options proposed by other intervenors in this docket is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: No position provided.

Calpine: The Hines Chillers Power Uprate Project appears to be a cost-effective addition to Duke's power supply resources even with the addition of the Osprey Energy Center as contemplated by the agreement in principle reached by Duke and Calpine. Additionally, the Hines Chillers will operate at a heat rate close to that of the existing Hines combined cycle units. Accordingly, and since the Hines Chillers Project will provide additional capacity during the

summer months, the Hines Chillers Project will help meet Duke's need for fuel diversity and supply reliability.

NRG: No. Duke has not demonstrated need for additional pre-2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding Duke's revised generation plan. For the sake of argument, an agreement with Calpine or NRG would provide more than enough capacity to serve Duke's load growth into 2019.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that the undisputed evidence demonstrates that the Hines Project is needed taking into account the need for fuel diversity and supply reliability. DEF contends that natural-gas fired generation is the most economic and qualitatively attractive generation technology for DEF and the State of Florida at this time and for the foreseeable future. DEF further asserts that there are abundant conventional and unconventional natural gas supply resources available in the United States and North America. DEF expounds that these natural gas supply resources ensure a long term natural gas supply at economically beneficial prices for electric power generation at the Hines Energy Center for the Hines Project. (DEF BR 16-17)

FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that, it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced. (FIPUG BR 3)

OPC and Calpine did not file arguments directly related to the information discussed in this issue. PCS Phosphate did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

As discussed in Issue 3, staff believes that natural gas generation is the only reasonable generation option to meet the Company's needs at this time. DEF's Hines Project will increase the summer output of four of the Company's most efficient units, thus increasing the efficiency of the Company's overall system. DEF indicates that the efficiency of the proposed Hines Project will result in reduced fuel and emissions costs that would have resulted from energy generated from less efficient generation resources such as combustion turbines. The reduced fuel cost provides a level of protection with respect to fuel volatility which is a benefit of fuel diversity. Therefore, staff recommends that increasing the capacity of efficient combined cycle generation is a means for providing fuel diversity. Staff's discussion and recommendation regarding the supply reliability of natural gas is contained in Issue 3.

CONCLUSION

Staff recommends that the Hines Project will increase the overall efficiency of DEF's generation fleet. Staff recommends that the increased efficiency will reduce fuel costs and will provide benefits with respect to mitigating the impacts to fuel cost volatility.

Issue 12: Are there any renewable energy sources and technologies or conservation measures taken by or reasonably available to Duke Energy Florida, Inc. that might mitigate the need for the Hines Chillers Power Uprate Project?

Recommendation: No. Staff recommends that DEF's IRP process used to determine its resource needs, fully takes into account all projected DSM benefits based on its existing Commission approved programs. DEF's ongoing RFR did not identify any renewable resources that could possibly mitigate DEF's capacity prior to 2018. (Woodbery)

Position of the Parties:

DEF: No. DEF analyzed viable non-generating, demand-side alternatives before determining that the Hines Uprate Project was the most cost effective resource option to meet part of DEF's needs. Energy conservation and direct load control programs are always a part of the Company's IRP process and the Company's current, approved DSM programs were considered in connection with the Company's near term generation capacity need commencing in 2016. The Company's DSM programs, however, cannot replace or defer the Company's need for additional generation on its system to meet the Company's capacity needs commencing in 2016. There are no renewable energy sources and technologies or conservation measures taken by or reasonably available to DEF to mitigate the Company's need for the Hines Uprate Project.

OPC: At this time, the OPC has no basis to dispute that Duke has appropriately incorporated into its analysis all renewable energy sources and technologies or conservation measures taken by or reasonably available to the company as required by the Commission in its needs analysis in Dockets 140110 & 140111. Nevertheless, Duke has the burden to demonstrate that it has properly considered renewables and conservation in its analysis.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: At this time, it appears that Duke has appropriately incorporated into its analysis all renewable energy sources and technologies reasonably available to the company, but Duke's forecasted growth in peak demand while usage per customer generally flattens or declines suggests that Duke's efforts to manage peak load growth are insufficient.

Calpine: No.

NRG: The Commission should defer ruling in this proceeding until after its decision on Duke's conservation goals Docket No. 130002-EI.

Staff Analysis:

PARTIES' ARGUMENTS

DEF claims that it has provided undisputed evidence that demonstrates that there are no renewable energy sources or conservation measures that would mitigate the need for the Hines Project. DEF argues that it analyzed non-generating, demand side alternatives and still determined that the Hines Project was more cost-effective. DEF also states that despite having

an ongoing RFR, it did not receive any renewable resources or technologies that would mitigate the need for additional generation capacity in 2016. DEF also argues that it considered energy conservation, direct load control programs and its current DSM programs but there was still a need for additional generation capacity in 2016. (DEF BR 17)

NRG argues that the Commission should defer its ruling in this proceeding because DEF has proposed new conservation goals that are currently waiting for approval. (NRG BR 15-16) FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that, it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced. (FIPUG BR 3)

OPC and Calpine did not file arguments directly related to the information discussed in this issue. PCS Phosphate did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF determined its future demand and energy needs starting in 2017 based on the same process described in Issue 4. Similar to the discussion in Issue 4, if DEF were to assume its conservation goals currently proposed in Docket No. 130200-EI, the need for new generation in 2017 would be slightly accelerated. Based on a comparison of DEF's proposed goals and the DSM assumptions used in this docket, by 2017, the cumulative difference between the existing and proposed goals would be 72 MW. Regarding mitigation through renewable generation, staff's analysis is the same as that discussed in Issue 4.

CONCLUSION

DEF's IRP process used to determine its resource needs, fully takes into account all projected DSM benefits based on its existing Commission approved programs. DEF's ongoing RFR, did not identify any renewable resources that could possibly mitigate DEF's capacity needs in 2017.

Issue 13: Is the Hines Chillers Power Uprate Project in 2017 the most cost-effective alternatives available to meet the needs of Duke Energy Florida, Inc. and its customers?

Recommendation: Yes. Staff recommends that the proposed Hines Project is the most cost-effective option for DEF to satisfy part of its need prior to 2018. Staff recommends that DEF's analysis of multiple scenarios indicate a high likelihood that the proposed project will result in savings for DEF's customers. Based on DEF's analysis, the Hines Project could provide a savings of $90 to $140 million. (Mtenga)

Position of the Parties

DEF: Yes, the proposed Hines Chillers Power Uprate Project is the most cost-effective alternative available to meet DEF customer needs prior to 2018. The Company conducted a careful screening of various other supply side alternatives in its IRP process. DEF evaluated new generation, existing plant uprate projects, and existing generation life extension projects to meet this need. The Hines Uprate Project is the most cost-effective generation option in every generation alternative scenario. This project adds summer generation capacity with additional combined cycle power generation so DEF obtains additional summer peaking generation at combined cycle generation efficiency and cost. No NRG or Calpine witness contests the cost-effectiveness of the Hines Uprate Project to meet DEF's generation capacity need.

OPC: At this time, the issue of whether the proposed Suwannee Simple Cycle Project in 2016 and Hines Chillers Power Uprate Project in 2017 are the most cost-effective alternative(s) available to meet the needs of Duke Energy Florida and its customers is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: No position provided.

Calpine: The Hines Chillers Power Uprate Project appears to be a cost-effective addition to Duke's power supply resources even with the addition of the Osprey Energy Center as contemplated by the agreement in principle reached by Duke and Calpine. Accordingly, and since the Hines Chillers Project will provide additional capacity during the summer months, the Hines Chillers Project appears to be a cost-effective addition to Duke's generating fleet.

NRG: No. Duke has not demonstrated need for additional pre-2019 capacity, and given the pending Osprey acquisition, the parties must be given an opportunity to submit evidence regarding Duke's revised generation plan. For the sake of argument, an agreement with Calpine or NRG would provide more than enough capacity to serve Duke's load growth into 2019.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that the uncontroverted evidence demonstrates that the Hines Project is the most cost-effective alternative available to meet a portion of the need of DEF and its customers prior to 2018. DEF asserts that it evaluated new generation, existing plant uprate projects, and existing generation life extension projects to meet this need. DEF explains that this evaluation included the fixed project capital costs, fixed and variable O&M costs, fuel and consumable costs, transmission costs, and the technical feasibility of these generation options. (DEF BR 19)

DEF contends that it systematically followed a structured, orderly evaluation process that evaluated nine proposals, including the Company's self-build generation projects, on price and non-price attributes, including all generation, environmental, and transmission cost impacts, in the analysis. DEF concludes that this detailed evaluation analysis demonstrated that the Hines Project was cost-effective in every generation alternative resource combination to meet DEF's need prior to 2018. (DEF BR 20)

NRG argues that because the load forecast is an integral assumption of DEF's cost-effectiveness analysis, its failure to model high and low case forecasts means that there is no basis to conclude that any generation portfolio presented in this case is the most cost-effective alternative for ratepayers.

FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that, it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced.

OPC and Calpine did not file arguments directly related to the information discussed in this issue. PCS Phosphate did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF's original filing requested approval of the Hines Project and the Suwanee Project. At the August 26, 2014, hearing DEF withdrew its request for approval of the Suwanee Project and decided to pursue approval of the Hines Project, to be constructed to meet a portion of DEF's need prior to 2018. Witness Borsch testified that DEF received nine proposals for PPAs or generation facility acquisitions from seven participants. (TR 547-548)

The company performed an initial detailed economic optimization analysis comparing the proposals against the company's self-build option which included the Suwannee Project and three Hines chillers. (TR 549) DEF later determined it was feasible to add inlet chillers to all four Hines power blocks. (TR 562) Witness Borsch explained that the optimization analyses assessed the impact of each proposal on total system costs including the relative impacts on system costs for fuel and variable O&M of the other units on DEF's system and any impact on DEF's purchased power costs. (TR 550)

During the course of testing alternatives, DEF modeled several of the proposals with and without the Hines Project. In each case, addition of the Hines Project was more favorable from a CPVRR perspective, even when the capacity of the Hines Project was not required to meet DEF's reserve margin criterion. As a result, all of the resource plans include inlet chilling at the Hines Energy Center. The Hines Project meets the Company's need for reliable peaking capacity through an increase in the efficiency of the existing natural gas-fired, combined cycle plants. (TR 554-555) The project produces the savings associated with achieved reliable summer peaking capacity of combined cycle generation efficacy without having to build additional peaking capacity at another site on DEF's system. (TR 126) The analysis of the Hines Project in the acquisition cases show that the project provides savings of $90 to $140 million. (TR 133-134)

The fuel efficiency and relatively low cost of the Hines Project make it a highly cost-effective generation option to meet DEF's customer reliability needs. No NRG or Calpine witness contests the cost-effectiveness of the Hines Project to meet the Company's generation capacity need commencing in the summer of 2017. DEF will be saving customers the increased cost and time building new generation at another existing site or greenfield site to achieve the same reliable summer capacity. (TR 133) There will be a minimal increase in the fixed and variable O&M costs at DEF's Hines Energy Center and much lower fixed and variable O&M costs for the same amount of capacity for a new power plant at an existing or greenfield site. (TR 133)

CONCLUSION

Staff recommends that the proposed Hines Project is the most cost-effective option for DEF to satisfy part of its need prior to 2018. Staff recommends that DEF's analysis of multiple scenarios indicate a high likelihood that the proposed project will result in savings for DEF's customers. Based on DEF's analysis, the Hines Project could provide a savings of $90 to $140 million.

Issue 14: Did Duke Energy Florida, Inc. reasonably evaluate all alternative scenarios for cost effectively meeting the needs of its customers over the relevant planning horizon?

Recommendation: Yes. Staff recommends that DEF used reasonable assumptions in its evaluation that determined that the Hines Project will result in savings to customers. (Mtenga, Graves)

Position of the Parties

DEF: Yes. DEF examined several alternative generation expansion plans to determine the most cost-effective based on cost, fuel sources and availability, technological maturity, and overall resource feasibility. The Hines Uprate Project was chosen by the Company as part of its plan to meet the Company's reliability needs for summer capacity. DEF also evaluated nine proposals for PPAs or facility acquisitions. DEF evaluated all of these proposals by systematically following a structured process that evaluated all proposals on price and non-price attributes. DEF also continued to evaluate additional offers from NRG and Calpine. DEF concluded that there was no more cost effective generation resource to achieve an additional 220 MW of summer capacity than the Hines Uprate Project.

OPC: At this time, the issue of whether Duke Energy Florida reasonably evaluated all alternative scenarios for cost effectively meeting the needs of its customers over the relevant planning horizon is still under evaluation by the OPC given that discovery has not been concluded in this docket. At this time the OPC does not yet have a complete basis to determine whether Duke has met its burden of proof on this issue. The Public Counsel believes that the Commission should find that the lowest cost, prudent, reliable solution should be selected in the event that the Commission determines that Duke has met its burden to demonstrate that a need exists.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: No position provided.

Calpine: Yes. Duke's RFP process for the Citrus County Combined Cycle Project complied with the requirements of Rule 25-22.082, F.A.C., and even after the RFP process and the associated solicitations for Duke's capacity needs in the 2016-2018 time frame were complete, Duke continued negotiating with Calpine and other potential suppliers in its reasonable efforts to secure the best and most cost-effective resources to meet its needs in the 2016-2020 time frame.

NRG: No. There is no record evidence that Duke's hasty, eleventh-hour decision to abandon its Integrated Optimal generation plan, acquire Calpine's Osprey facility, and withdraw the Suwannee project from consideration is based on a reasonable evaluation of all alternative scenarios to meet its customers' needs.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that it reasonably evaluated all alternative scenarios to the Hines Project for cost-effectively meeting a portion of DEF's need prior to 2018. DEF explains that its evaluation included the fixed project capital costs, fixed and variable O&M costs, fuel and consumable costs, transmission costs, and the technical feasibility of these generation options. DEF asserts that it followed a structured, orderly evaluation process that evaluated all proposals, including the Company's self-build generation projects, on all price and non-price attributes, in evaluating nine proposals for PPAs or generation facility acquisitions. (DEF BR 21-22)

NRG argues that the plan DEF is now pursuing will result in a net increase of over 500 MW more than it originally sought. NRG further asserts that in the absence of further evidentiary proceedings in which this issue may be fully evaluated and evidence presented by DEF to the Commission demonstrating that it has met its burden in this regard, the Commission should conclude that DEF failed to reasonably evaluate all alternative scenarios. (NRG BR 16)

FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that, it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced. (FIPUG BR 3)

OPC and Calpine did not file arguments directly related to the information discussed in this issue. PCS Phosphate did not dispute DEF on this issue and as a result did not file any arguments against DEF in their briefs.

STAFF ANALYSIS

DEF witness Borsch provided testimony and exhibits discussing DEF's economic evaluation of scenarios to meet its projected needs prior to 2018. Witness Borsch testified that DEF issued a solicitation for proposals for PPAs for which bids were initially received in October 2012. (TR 546) Following DEF's initial solicitation the Company implemented a plan to continue the operation of Crystal River Units 1 and 2 to 2018. Witness Borsch testified that this plan substantially reduced the Company's needs prior to 2018. Potential suppliers submitted renewed bids for PPAs and generation facility acquisition offers to meet DEF's near-term generation capacity needs in September and October 2013. (TR 546-547) Evidence in the record further demonstrates that DEF continued negotiating with Calpine as well as NRG.

Witness Borsch testified that DEF received nine proposals for PPAs or generation facility acquisitions from seven participants. (TR 548) The Company performed an initial detailed economic optimization analysis comparing the proposals against the Company's self-build option which included the Suwannee Project and three Hines chillers. (TR 549) DEF later determined that it would be feasible to add inlet chillers to all four Hines power blocks. (TR 562) Witness Borsch asserted that the optimization analyses were performed for a period of 30 years using Strategist which was previously discussed in Issue 2. (TR 551) Witness Borsch explained that the optimization analyses assessed the impact of each proposal on total system costs

including the relative impacts on system costs for fuel and variable O&M of the other units on DEF's system and any impact on DEF's purchased power costs. (TR 550)

During the course of testing alternatives, DEF modeled several of the proposals with and without the Hines Project. In each case, addition of the Hines Project made the project more favorable from a CPVRR perspective, even when the capacity of the Hines Project was not required to meet DEF's reserve margin criterion. As a result, all of the resource plans include the Hines Project. (TR 554-555)

CONCLUSION

Staff recommends that DEF used reasonable assumptions in its evaluation that determined that the Hines Project will result in savings to customers.

Issue 15: Based on the resolution of the foregoing issues, should the Commission grant the requested determination that the proposed Hines Project is the most cost-effective generation alternative to meet Duke's needs prior to 2018?

Recommendation: Yes. Staff recommends that the Commission grant DEF's petition as the proposed Hines Project represents the optimal resource option to meet the Company's projected need prior to 2018. (Mtenga, Graves)

Position of the Parties

DEF: Yes, the Commission should grant the requested determination that the proposed Hines Uprate Project is the most cost-effective generation alternative to meet a portion of DEF's need prior to 2018. DEF needs the Hines Uprate Project prior to 2018 to help maintain its 20 percent Reserve Margin commitment and to serve its customers' future electrical power needs in a reliable and cost-effective manner. The Hines Uprate Project is the most cost-effective generation option in every generation alternative scenario. This Project adds summer generation capacity with additional combined cycle power generation. As a result, the Company obtains additional summer peaking generation at combined cycle generation efficiency and cost.

OPC: The Commission should hold Duke to the final cost standard for the Hines Chillers Uprate Project as that standard is reflected in Rule 25-22.082(15), F.A.C.

FIPUG: Duke must meet its burden of proof on this point.

PCS Phosphate: No position provided.

Calpine: Yes, in part. The Suwannee Peakers Project has been withdrawn from consideration in this docket. Based on the evidence, the Commission should grant Duke's petition for determination that the Hines Chillers Power Uprate Project is a cost-effective addition to Duke's generating resources to meet the needs of its customers prior to 2018.

NRG: No. As discussed in response to Issues 9, 10, 11, and 13, Duke has not demonstrated need for additional pre-2019 capacity, and the parties must be given an opportunity to submit evidence regarding its revised generation plan. For the sake of argument, an agreement with Calpine or NRG would provide more than enough capacity to serve Duke's load growth into 2019.

Staff Analysis:

PARTIES' ARGUMENTS

DEF argues that the undisputed record evidence demonstrates that the Hines Project will meet a portion of DEF's need prior to 2018 in a cost-effective manner. DEF contends that the fuel efficiency and relatively low cost of the Hines Project make it a highly cost-effective generation option to meet DEF's customer reliability needs. DEF additionally asserts that the addition of the Hines Project to every generation capacity resource proposal made every proposal more economically favorable for DEF's customers. DEF concludes that the Commission should

grant DEF's Petition and approve the Hines Project as the most cost-effective generation alternative to meet a portion of DEF's customer needs prior to 2018. (DEF BR 23-24)

OPC submits that the Commission should hold DEF to the same standard that will apply to the Citrus County Plant which is the subject of a petition for need determination in Docket No. 140110-EI under the provision of Paragraph 16, the 2013 Settlement Agreement and Rule 25-22.082(15), F.A.C. OPC asks the Commission to accept DEF's representation and indicate that the agency expects DEF to, first, not exceed the construction estimate of $160 million and, second, if they do experience a cost overrun, that the Commission will expect the company not to seek recovery unless they can meet the same standard as in subsection 15 of the Bid Rule to which Mr. Borsch essentially committed in the hearing. (OPC BR 3-4)

FIPUG states that DEF must meet its burden of proof to demonstrate that the Hines Project is needed. FPIUG further states that, it reserves all of its rights related to the tentative agreement between DEF and Calpine that was announced just after the consolidated hearing commenced. (FIPUG BR 3)

NRG took a position opposed to DEF's. Its arguments are summarized in Issues A and 9-14. Calpine took a position similar to DEF. Its arguments are summarized in Issue A. PCS Phosphate took no position on this issue; however, PCS Phosphate did indicate that it supports DEF's proposal to move forward with the Hines Project.

STAFF ANALYSIS

Staff's analysis in Issues 9-14 supports construction of the Hines Project. The following summarize staff's review of the proposed plant:

1. DEF's load forecast in this proceeding is reasonable.

2. No cost-effective DSM or renewable resources have been identified that could mitigate the need for the Hines Project.

3. The Hines Project is expected to provide adequate electricity at a reasonable cost to DEF's customers.

4. The Hines Project will increase the efficiency of DEF's system.

5. DEF performed a reasonable evaluation of alternatives to the Hines Project.

6. Analyses indicate that the Hines Project is the most cost-effective alternative compared to respondents to the Company's RFP.

Based on the summary above, staff recommends that the Commission grant DEF's as the proposed Hines Project represents the optimal resource option to meet the Company's projected need prior to 2018.

Issue 16: Should this docket be closed?

Recommendation: Yes. The docket should be closed after the time for filing an appeal has run. (Lawson)

Position of the Parties

DEF: Following a final order by the Commission granting the requested determination that the proposed Hines Chillers Power Uprate Project is the most cost effective generation alternative to meet DEF's need prior to 2018, and pending the filing of reconsideration or for appellate review, if any, yes, this docket should be closed.

OPC: No position.

FIPUG: Yes.

PCS Phosphate: No position provided.

Calpine: Yes.

NRG: No. Intervenors should conduct discovery and present evidence regarding Duke's newly revised generation plans; suppliers should be allowed to present a "best and final offer" to meet customers' needs; and Duke should revise and resubmit its needs assessment and supporting models in a new petition for approval in a separate proceeding.

Staff Analysis: The docket should be closed after the time for filing an appeal has run.