

State of Florida



# Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

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

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**DATE:** December 23, 2015

**TO:** Office of Commission Clerk (Stauffer)

**FROM:** Division of Engineering (Graves, Mtenga, Wooten) *REG MMM*  
Division of Accounting and Finance (Archer, Buys, Cicchetti) *DB DS*  
Division of Economics (McNulty, Stratis, Wu) *MS WGM*  
Office of the General Counsel (Corbari, Ames) *HC Key*

**RE:** Docket No. 150196-EI – Petition for determination of need for Okeechobee Clean Energy Center Unit 1, by Florida Power & Light Company.

**AGENDA:** 01/05/2016 –Regular Agenda – Post Hearing Decision – Participation is Limited to Commissioners and Staff.

**COMMISSIONERS ASSIGNED:** All Commissioners

**PREHEARING OFFICER:** Brisé

**CRITICAL DATES:** 01/19/16 – Final Order

**SPECIAL INSTRUCTIONS:** None

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## Case Background

On September 3, 2015, Florida Power & Light (FPL or Company) filed a Petition and supporting testimony to determine need for the construction of a combined cycle generating unit in Okeechobee County. Construction would also include associated facilities, including transmission lines and substation facilities. The petition is 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.). According to FPL's Petition, the proposed Okeechobee Clean Energy Unit 1 (OCEC Unit 1) will be a natural gas, combined cycle power plant, with an

expected summer peak rating of about 1,622<sup>1</sup> megawatts (MW). OCEC Unit 1 will be built at a greenfield site in northeast Okeechobee County owned by FPL. FPL asserts the OCEC Unit 1 will enable FPL to meet a projected need for additional generation resources that begins in 2019, continues into 2020, and increases each year thereafter.

On September 11, 2015, the Commission issued a Notice of Commencement of Proceedings pursuant to Rule 25-22.080(3), F.A.C. An Order Establishing Procedure, including a list of tentative issues, was issued on September 16, 2015.<sup>2</sup> Florida Industrial Power Users Group (FIPUG), the Office of Public Counsel (OPC), the Southern Alliance for Clean Energy (SACE), and the Environmental Confederation of Southwest Florida (ECOSWF) were granted intervention in this proceeding.<sup>3</sup>

On November 17, 2015, a prehearing conference was held. At the prehearing conference, SACE, ECOSWF and FPL, proposed additional issues for inclusion in this proceeding, which were denied by the Prehearing Officer.<sup>4</sup> On November 30, ECOSWF filed a Motion for Reconsideration and Clarification of Order No. PSC-15-0540-PCO-EI which denied additional issues proposed by SACE and FPL. On December 1, 2015, FPL filed a response to ECOSWF's Motion for Reconsideration and Clarification.

A formal hearing was held December 1- 2, 2015. At the start of the hearing, ECOSWF and FPL were given an opportunity to present oral arguments on the Motion for Reconsideration and Clarification. After consideration of the arguments, the Commission denied ECOSWF's Motion for Reconsideration and Clarification, finding no mistake of fact or law in Order No. PSC-15-0540-PCO-EI.

The Commission has jurisdiction over the subject matter of this proceeding pursuant to Sections 366.042 and 403.519, F.S.

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<sup>1</sup> Filings subsequent to FPL's petition indicate that the total capacity of the proposed OCEC Unit 1 has been increased to 1,633 MW.

<sup>2</sup> Order No. PSC-15-0394-PCO-EI, issued September 16, 2015.

<sup>3</sup> Orders Granting Intervention: Order No. PSC-15-0408-PCO-EI, issued September 25, 2015, (OPC); Order No. PSC-15-0411-PCO-EI, issued September 28, 2015, (FIPUG); Order No. PSC-15-0424-PCO-EI, issued October 8, 2015, (SACE); Order No. PSC-15-0494-PCO-EI, issued October 22, 2015, (ECOSWF).

<sup>4</sup> Order No. PSC-15-0540-PCO-EI, issued November 20, 2015 (Order denying additional issues proposed by SACE and FPL); and Order No. PSC-15-0547-PHO-E, issued November 24, 2015, (Prehearing Order denying issues proposed by ECOSWF).

## Discussion of Issues

**Issue 1:** Is there a need for the proposed Okeechobee Clean Energy Center Unit 1, taking into account the need for electric system reliability and integrity, as this criterion is used in Section 403.519(3), F.S.?

**Recommendation:** Yes. Based on a reasonable load forecast and a 20 percent reserve margin criterion, FPL has demonstrated a need for new generation starting in 2019. (Graves, Wu, McNulty, Stratis)

### Position of the Parties

**FPL:** Yes. There is a need for the Okeechobee Unit, taking into account the need for electric system reliability and integrity. FPL employs three reliability criteria to maintain its system reliability and integrity: a 0.1 Loss of Load Probability (“LOLP”), a 20% Reserve Margin (“RM”), and a 10% Generation Only Reserve Margin (“GRM”). After accounting for all reasonably achievable; cost-effective conservation and renewable resources available, FPL has a need for generation capacity beginning in 2019 under two of its three reliability criteria (RM and GRM). The Okeechobee Unit is the most cost-effective option available to meet all of FPL’s reliability criteria.

**OPC:** No. Using the 15% minimum reserve margin in Rule 25-6.035, Florida Administrative Code, OCEC Unit 1, is not needed for the proposed in-service date of June 1, 2019. In addition, FPL’s proposed 10% GRM criterion is unnecessary for the Commission’s determination of reliability and integrity. Further, FPL’s proposed 10% GRM should not be adopted or approved by the Commission in making this need determination.

**SACE:** No. FPL relies on two unsubstantiated reliability criterion in order to create an appearance of need for the proposed OCEC Unit 1: (1) a 20% reserve margin criterion that is not only inapplicable to this proceeding as a matter of law, but moreover is outdated and unsubstantiated; and (2) an FPL-contrived 10% generation-only reserve margin criterion that is unnecessary, skewed towards generation, and further is not a generally accepted utility planning criterion. Therefore, the proposed OCEC Unit 1 would result in a system with excess capacity that exceeds the need for electrical system reliability and integrity.

**ECOSWF:** No. FPL’s system will meet appropriate reliability and integrity standards without the proposed unit. The loss of load probability criterion projections, prove that the proposed unit is not needed to maintain system reliability. FPL has a history of over-stating its load projections five-years out, but even if true, FPL will maintain a more than 15% reserve margin in 2019, which the evidence shows will maintain sufficient reliability. Additionally, the Commission should reject FPL’s request to add the generation-only reserve criterion, as it is not necessary and does not assist in determining whether FPL has additional reliability needs.

**FIPUG:** No.

**Staff Analysis:**

**Parties' Arguments**

**FPL**

FPL employs three reliability criteria: (1) 0.1 day per year maximum LOLP; (2) 20 percent reserve margin; and (3) 10 percent generation-only reserve margin. (FPL BR 5) FPL argues that each of these criteria addresses different aspects of system reliability. FPL additionally contends that the use of any one of the three criteria by itself would not guarantee reliable service for FPL's customers. (FPL BR 7)

FPL claims that its reliability assessments, based on updated load forecasts, show a resource need beginning in 2019 of 904 MW under its 10 percent generation only reserve margin criterion and 826 MW under its 20 percent reserve margin criterion. FPL asserts that the Commission should have confidence in its updated load forecast given that its variance over the past three years has been -0.1 percent. (FPL BR 8)

FPL asserts that the 20 percent reserve margin criterion, approved by the Commission in 1999<sup>5</sup>, has been employed by FPL in numerous proceedings since initial adoption. (FPL BR 5-6) FPL adds that the Commission has previously held that it will not revisit the 20 percent reserve margin criterion in a determination of need proceeding but will only consider an alternative reserve margin criterion in a generic proceeding because such a consideration affects peninsular Florida's other IOUs.<sup>6</sup> (FPL BR 11-12) FPL additionally adds that it has reviewed its use of the 20 percent reserve margin and continues to believe it should be applied in its reliability analyses to ensure system reliability. (FPL BR 12)

FPL asserts that in 2011, it began considering a generation only reserve margin metric, and in its 2014 and 2015 Ten-Year Site Plans (TYSPs), FPL employed the generation only reserve margin as a third reliability criterion. (FPL BR 7) FPL adds that its 10 percent generation only reserve margin is designed to complement, not replace, its other criteria. FPL further adds that the generation only reserve margin criterion provides guidance regarding what mix of DSM and generation resources should be added to maintain system reliability. (FPL BR 14) FPL continues that a generation only reserve margin reliability criterion is desirable because it can lower system LOLP projections and thereby increase system reliability. (FPL BR 15) FPL expresses that its minimum generation only reserve margin value of 10 percent is based on a recommendation from its system operations department. (FPL BR 16)

FPL contends that it understands what is required to maintain reliable service based on its experience with significant weather and other unforeseen events over the years. (FPL BR 17-18) FPL concludes that in order to maintain adequate reliability to serve its customers through such events, it must maintain its three reliability criteria. (FPL BR 18-19)

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<sup>5</sup> The 1999 Stipulation referred to herein was a stipulation approved by the Commission by Order No. PSC-99-2507-S-EU, issued December 22, 1999, in Docket No. 981890-EU, *In Re: Generic investigation into the aggregate electric utility reserve margins planned for Peninsular Florida*.

<sup>6</sup> Order No. PSC-01-0029-FOF-EI issued January 5, 2001, in Docket No. 001064-EI, *In re: Petition for determination of need for Hines Unit 2 Power Plant by Florida Power Corporation*.

### **OPC**

OPC asserts that LOLP and reserve margin are commonly used as accepted resource planning criteria or reliability criteria throughout the utility industry. OPC adds that the 10 percent generation only reserve margin criterion is not a commonly accepted resource planning criterion. OPC states that it does not take issue with the use of an LOLP analysis to determine whether a particular generation unit is needed. (OPC BR 5-6)

OPC submits that the 20 percent reserve margin used by FPL is excessively high, and should be re-visited by the Commission in a generic proceeding. OPC further submits that the Commission should require FPL to utilize a minimum 15percent reserve margin set forth in Rule 25-6.035, F.A.C. (OPC BR 7-8) OPC claims that planning to the minimum 15percent reserve margin would avoid overbuilding of generation and the resulting increase in rates to ratepayers. (OPC BR 10)

OPC contends that the 10 percent generation only reserve margin criterion is unnecessary because FPL has not demonstrated that the LOLP and reserve margin criteria are insufficient. OPC adds that the 10 percent generation only reserve margin criterion is duplicative of the 25 percent spinning load requirement established by Commission Rule, and will likely contribute to uneconomic and unnecessary overbuilding of generation. (OPC BR 13)

OPC concludes that FPL has failed to demonstrate that the OCEC Unit 1 plant is needed for reliability and integrity in June 2019. OPC elaborates that without OCEC Unit 1 being placed in service in 2019 FPL will meet its LOLP criterion and a 15 percent reserve margin. (OPC BR 14)

### **SACE**

SACE argues that FPL's 20 percent reserve margin and 10 percent generation only reserve margin criteria are unsubstantiated and should be rejected by the Commission. (SACE BR 4) SACE contends that the Commission cannot properly rely on a 20 percent reserve margin because the stipulation,<sup>7</sup> which the 20 percent reserve margin was based on, is inapplicable to need determinations. (SACE BR 5) SACE further asserts that the 1999 stipulation's 20 percent reserve margin is significantly outdated. (SACE BR 6) SACE continues that the 1999 stipulation was based on conditions that no longer reflect reality, including the improved reliability of FPL power plants. (SACE BR 6-7)

With respect to FPL's 10 percent generation only reserve margin, SACE argues that the Company has presented no evidence that the criterion is necessary. SACE additionally asserts that FPL's own analyses demonstrate that this criterion is not necessary from an LOLP perspective. (SACE BR 9) SACE adds that the generation only reserve margin is not a generally accepted reliability criterion and that the Commission should reject FPL's 10 percent generation only reserve margin, because it is not needed. (SACE BR 11-12)

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<sup>7</sup> The Stipulation referred to by SACE is a Stipulation approved by the Commission by Order No. PSC-99-2507-S-EU, issued December 22, 1999, in Docket No. 981890-EU, *In Re: Generic investigation into the aggregate electric utility reserve margins planned for Peninsular Florida*.

SACE recommends that the Commission should review FPL's petition using a 15 percent reserve margin and no generation only reserve margin. Therefore, SACE recommends that the Commission should deny FPL's petition and require the Company to hire a third-party consultant to conduct a comprehensive reserve margin study. (SACE BR 3-4)

### **ECOSWF**

ECOSWF asserts that by relying on the total reserve margin, rather than the LOLP criterion, as a driver of deciding to build more power plants, generation growth has outpaced the growth of demand. (ECOSWF BR 8) ECOSWF suggests that the Commission should rely on FPL's 2014 LOLP Projections in this proceeding. (ECOSWF BR 11) Based on FPL's 2014 LOLP projections ECOSWF asserts that it is not until 2022 that the LOLP criterion is violated, assuming no new generation sources being brought on-line. (ECOSWF BR 12) ECOSWF also argues that a good basis of comparison for the desired reliability of the generation system is the reliability of the distribution and transmission system. ECOSWF asserts that FPL characterizes its assessment of its distribution and transmission system as strong. (ECOSWF BR 7)

ECOSWF asserts that since the Commission last examined the 20 percent reserve margin, the electricity industry has made improvements in load management, load control, and demand response, along with improvements in distributed generation and storage. (ECOSWF BR 20) ECOSWF further suggests that because of the reliability FPL has achieved for its system, there is no need for FPL to maintain a 20 percent total reserve margin. (ECOSWF BR 20)

ECOSWF also contests FPL's load forecast. ECOSWF asserts that that since 2005, FPL has, on average, over-projected summer peak load five years out by 1,725 MW. (ECOSWF BR 12) ECOSWF contends that the over-forecasts demonstrate that the Commission should not rely on these load forecasts. (ECOSWF BR 13)

ECOSWF recommends that even with a 15 percent reserve margin, FPL could lose 1,980 MW of capacity, and still sell at least 458 MW of power to another utility while maintaining all firm load for its customers during its highest peak ever is proof that it does not need a new power plant in 2019. (ECOSWF BR 15)

### **FIPUG**

FIPUG took a position opposed to FPL's; however, FIPUG did not provide arguments directly related to the information discussed in this issue.

### **Analysis**

FPL witnesses Sim and Feldman provided testimony and exhibits concerning FPL's projected reliability need, including its load forecast, for the proposed OCEC Unit 1. As described in the testimony of witness Sim, FPL utilizes three reliability criteria to project the timing and magnitude of its future resource needs. The three reliability criteria are: (1) a 20 percent reserve margin (2) a 10 percent generation only reserve margin; and (3) an LOLP criterion. (TR 53) Witness Sim testified that if one or more of these criteria is projected to not be met in a given future year, then additional resources are needed in that year. (TR 54)

FPL's 10 percent generation only reserve margin criterion and 20 percent reserve margin criterion provide an indication of the adequacy of capacity resources compared to load during

peak periods. (EXH 2, p. 104) Both of these criteria are discussed in greater detail later in this analysis. The LOLP criterion looks at the daily peak demands, while taking into consideration events such as the unavailability of individual resources due to maintenance or outages. (EXH 2, p. 104)

Witness Sim testified that FPL's projections, after accounting for demand-side management (DSM), show that neither the 20 percent reserve margin, nor the 10 percent generation only reserve margin, criterion will be met in 2019 based on total capacity and projected summer peak load. Consequently, FPL has a need for generation capacity in 2019 based on FPL's reserve margin criteria. (TR 49 and TR 54) Based on FPL's projected LOLP, the Company does not have a need until 2022. (TR 86-87, EXH 64, Attachment 1, Tab 1)

Staff's analysis of FPL's projected reliability need is organized as follows:

- a review of FPL's load forecast;
- a review of the 20 percent reserve margin; and
- a review of the 10 percent generation only reserve margin reliability criteria.

### **Load Forecast**

FPL's load forecasts in this proceeding are the same forecasts FPL presented in its 2015 TYSP. (TR 54 and 230; EXH 2) These forecasts are generated using econometric models,<sup>8</sup> including customer models, summer and winter peak demand per customer models, and a net energy for load (NEL) per customer model. FPL witness Feldman maintains that the Commission has consistently relied on these models for various forecasting purposes, and the modeling results have been reviewed and accepted by the Commission in past proceedings.<sup>9</sup> (TR 235, 236 and 253)

Customer growth is a primary driver of the growth of peak demand and net energy for load. (TR 234) To forecast its customer base, FPL's customer model includes statewide population growth as the most influential variable. (EXH 5) FPL used July 2014 population estimates and projections from the Bureau of Business and Economic Research of the University of Florida (BEBR) and the Office of Economic and Demographic Research (EDR). (TR 233-234) Staff inquired as to the rationale for FPL relying upon projections of statewide population growth, rather than projections of growth in the 35 counties in FPL's service area, which could more accurately reflect growth in FPL's customer base. In response to staff's inquiry, witness Feldman stated that FPL had not considered the use of historical county population data in favor of statewide population data, citing: a high historical customer forecast accuracy using statewide population data; statewide EDR population forecasts are more current than county forecasts; and, in some of the counties in its service territory, FPL serves only a small portion of the population. (TR 274) FPL further justified its use of statewide population forecasts by citing good statistical results in its customer model. (TR 235, 274, 279, and 280)

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<sup>8</sup> An econometric model is a numerical representation, obtained through statistical estimation techniques, of the degree of relationship between a dependent variable (e.g. summer peak per customer) and the independent, or explanatory, variables (e.g. heating degree days and energy price). A change in any of the independent variables will result in a corresponding change in the dependent variable.

<sup>9</sup> Docket No. 130198-EI, *In Re: Petition for prudence determination regarding new pipeline system*, and Docket No. 110309-EI, *In Re: Petition to determine need for modernization of Port Everglades Plant*.

Concerning the accuracy of its customer model, witness Feldman stated that FPL's one-year out customer forecast error rates are generally within "a couple of tenths of a percent." (TR 276) Witness Feldman agreed, however, that FPL had a large variance in its 2008 TYSP forecast of 2012 total customers of 6.65 percent, due to the unusual set of conditions posed by the recession of 2007- 2009. (TR 277) Witness Feldman indicated that FPL's most recent customer forecast error rates were below the four-year error rate of its 2011 TYSP's forecast of 2014, which was 0.72 percent. (TR 278) Since the recession, witness Feldman reported that modeling adjustments and improvements have led to smaller forecast errors. (TR 284).

Staff initially had reservations regarding FPL's forecasts due to potential forecast errors attributable to disparities between statewide and service area population growth rates. If those two growth rates diverge, systematic forecast errors may result. In the instant case, however, witness Feldman reported that the population growth rate at the county level is similar to the population growth rate at the state level over a ten year horizon, about 1.3 percent. (TR 279-280). FPL's customer forecasts indicate that FPL expects continued growth in its customer base with an annual average increase in total customers of 1.3 percent from 2014-2024. (TR 234; EXH 7) Upon further review, staff believes FPL's customer forecast is reasonable for purposes of this proceeding. None of the intervening parties presented substantial evidence to challenge FPL's customer forecast.

FPL's long-term summer peak demand forecasts include a base case forecast and a risk-adjusted forecast. The base case forecast presents the most likely forecast in that there is an equal probability of over-forecasting as under-forecasting. The risk-adjusted forecast is designed to reflect the higher values of peak demand that could occur in the future given past differences between actual and forecasted values of demand. FPL's risk-adjusted forecast thus reflects a reduction in the risk of under-forecasting future load growth. The capacity need addressed in this proceeding is based on the base case forecasts and not on the risk-adjusted forecasts. (TR 244, 471, and 473)

FPL presented both a summer peak demand base case forecast, which is 25,045 MW by 2019, (TR 242; EXH 11) and a winter peak demand forecast, which is 21,792 MW by 2019. (TR 248; EXH 13) Staff's analysis focused on FPL's summer peak demand forecast since it is the key driver for the need in this proceeding. The preliminary forecast of summer peak demand is derived by using the output from summer peak per customer model multiplied by the forecasted number of customers discussed above. Staff reviewed the model specification, inputs, assumptions, and statistical analysis. Staff believes the summer peak demand model is reasonable.

The output of the summer peak per customer model is multiplied by the number of customers to derive a preliminary estimate of the forecasted summer peak. FPL then made adjustments to the forecasted summer peak to reflect the impacts from various incremental and new loads resulting from wholesale contracts, plug-in vehicles, Economic Development and Existing Facility Economic Riders, and distributed solar generation. These adjustments, except the one related to distributed solar generation, have been incorporated into FPL's forecasts presented in its prior



petitions before the Commission. (TR 242) Staff reviewed the out-of-model adjustments and believes that the adjustments are appropriate for use in this proceeding.

ECOSWF questioned FPL’s summer peak demand, claiming that FPL has a history of over-projecting load five-years into the future (i.e. “five years out”). (ECOSWF BR 13, TR 264). ECOSWF argues that FPL consistently over-forecasts its summer peak demand five-years into the future, citing the over-forecast of summer peak demand for the years following the recession. (ECOSWF BR 12-13) The direct testimony of ECOSWF witness Rabago did not address this issue.

Staff reviewed FPL’s historic forecasting accuracy of past summer peak demand forecasts. The review methodology involves comparing actual summer peak for a given year to summer peak forecasts made one, two, three, four, and five years prior. This methodology has been previously used by the Commission to review the Florida utilities’ historic forecasting accuracy of past retail energy sales forecasts presented in the recent years’ TYSPs.<sup>10</sup> These differences, expressed as an average percentage error rate, were used to determine FPL’s historic forecast accuracy. An average (AVG) error with a negative value indicates an under-forecast, while a positive value represents an over-forecast. An absolute (ABS) average error provides an indication of the total magnitude of error, regardless of the tendency to under or over forecast. The results are presented in Table 1-1, below.

**Table 1-1: Accuracy of FPL's Summer Peak Demand and Forecasts**

Actuals Year	Forecast Produced Year	Forecast Error Rate (%)					Years 1-5	Years 1-5
		Years Prior to the Forecast Produced Year					AVG	ABS AVG
		5	4	3	2	1	Error	Error
2005	2001-2005 TYSPs	-9.44%	-2.91%	-0.83%	-2.22%	-3.33%	-3.74%	3.74%
2006	2002-2006 TYSPs	-2.99%	-7.93%	-1.58%	0.49%	-0.46%	-2.49%	2.69%
2007	2003-2007 TYSPs	-0.51%	-2.29%	-7.51%	-1.22%	-0.53%	-2.20%	2.41%
2008	2004-2008 TYSPs	-5.51%	-0.51%	-2.29%	-7.51%	-1.22%	-1.20%	3.41%
2009	2005-2009 TYSPs	2.33%	5.59%	-0.89%	-3.03%	-8.47%	-0.89%	4.06%
2010	2006-2010 TYSPs	8.69%	6.02%	9.14%	2.58%	0.44%	5.37%	5.37%
2011	2007-2011 TYSPs	12.16%	7.28%	4.63%	7.51%	1.33%	6.58%	6.58%
2012	2008-2012 TYSPs	13.68%	10.63%	5.51%	1.93%	5.80%	7.51%	7.51%
2013	2009-2013 TYSPs	3.02%	2.25%	-1.17%	-5.24%	-5.81%	-1.39%	3.50%
2014**	2010-2014 TYSPs	2.71%	3.39%	3.16%	0.78%	-1.52%	1.70%	2.31%
2015***	2011-2015 TYSPs	-	-	-	-	-	-	-
2016	2012-2016 TYSPs	-	-	-	-	-	-	-
2017	2013-2017 TYSPs	-	-	-	-	-	-	-
2018	2014-2018 TYSPs	-	-	-	-	-	-	-
2019****	2015-2019 TYSPs	-	-	-	-	-	-	-
AVG Error		3.52%	2.15%	0.82%	-0.59%	-1.27%		
ABS AVG Error		6.10%	4.88%	3.67%	3.25%	2.89%		
Under-forecasting cases		3	4	6	5	6	6	
Over-forecasting cases		7	6	4	5	4	4	

**Note:**  
 \* Source data: EXH 36, page 201, EXH 37, page 45; EXH 38, page 45; EXH 39, page 44; EXH 40, page 45; EXH 41, page 48; EXH 42, page 46, EXH 43, page 50; EXH 44, page 55; EXH 45, page 54; EXH 46, page 59; EXH 47, page 52; EXH 48, page 53; EXH 49, page 48; and EXH 50, page 48.  
 \*\* 2014 5-Year Prior Error Rate is based on 2010 TYSP Forecast of 2014 Summer Peak Demand.  
 \*\*\* Actual data is not available starting from this year.  
 \*\*\*\* 2019 5-Year Prior Error Rate will be based on 2015 TYSP Forecast of 2019 Summer Peak Demand.

<sup>10</sup> This methodology has been previously used by the Commission to review Florida utilities’ historic forecast accuracy of retail energy sales forecasts presented in reporting utilities 2013-2015 TYSPs.

As shown in Table 1-1 above, beginning with planning year 2009, FPL's forecasting error was significantly reduced, and the variance between the projected and actual summer peak demand start to show both over and under forecasting. Staff notes that three out of ten of the "five years out" forecasts, for the period of 2005 through 2014, were under-forecasts (shown at the bottom of Table 1-1), which demonstrate that FPL's "five years out" forecasts are not consistently over-forecasts, as asserted by ECOSWF. The cumulative number of over- and under- forecasts for one to five years out, at the bottom of Table 1-1, also indicate that FPL's overall summer peak demand forecasts show almost an equal chance of an over-forecast or an under-forecast, which staff believes further demonstrates that no systematic over-forecasting or under-forecasting is taking place. Therefore, based on staff's review of FPL's summer peak demand model, inputs, assumptions, statistical analysis, and the out-of-model adjustments, staff believes that FPL's summer peak demand forecast is appropriate for use in the instant proceeding.

To develop the econometric model to forecast net energy for load, FPL considered the principal influencing factors including the customer base, weather, the economy, and codes and standards. (TR 250) Accordingly, FPL's net energy per customer model has been developed incorporating these variables. The output of the model is multiplied by the number of customers to derive a preliminary net energy for load forecast. FPL then made adjustments to the preliminary estimate similar to those made to its summer peak demand model. The final forecast shows that FPL is projecting a 1.2 percent annual growth rate in net energy for load, resulting in a cumulative increase of 13,563 GWh by 2024. (TR 252; EXH 14) Staff believes that the variables used by FPL in developing the model and the adjustments made to the forecast are appropriate. None of the intervening parties presented substantial evidence challenging FPL's net energy for load forecast.

In summary, staff analyzed FPL's load forecasting models and believes the models to be appropriate for forecasting purposes in the instant proceeding. Staff also reviewed the forecast assumptions of anticipated economic and demographic conditions, as well as the adjustments FPL made to its estimates produced by the forecasting models. Staff believes the assumptions and adjustments used by FPL are appropriate. In addition, staff notes that there is nothing in the record to indicate that any of the intervenors in this proceeding proffered any forecasting model or forecasts of FPL's customers, summer peak demand, and net energy for load. No intervenor challenged FPL's methodology, input data, assumptions, or out-of-model adjustments used to project load. Based on the record as well as staff's analysis and review, staff recommends that FPL's load forecasts are appropriate for consideration in this proceeding.

### ***Twenty Percent Reserve Margin***

As previously discussed FPL's projected need is based on its 20 percent reserve margin criterion and 10 percent generation only reserve margin criterion. Staff addresses FPL's two reserve margin criteria below. Based on a 20 percent reserve margin and FPL's previously discussed load forecast FPL has demonstrated a need for new generation in order to maintain electric system reliability and integrity. Table 1-2, below, summarizes FPL's projected need, assuming no new capacity additions through 2020.

**Table 1-2: Summer Reserve Margin Calculations**

	<b>Reserve Margin</b>	<b>MW Shortage</b>
<b>2016</b>	21.2%	(259)
<b>2017</b>	20.4%	(91)
<b>2018</b>	20.0%	(1)
<b>2019</b>	16.4%	<b>826</b>
<b>2020</b>	15.0%	<b>1,144</b>

Source: EXH 3, updated on 11/18/2015

FPL's 20 percent reserve margin criterion is based on the relationship between firm peak load and total capacity available to serve that load. (TR 54) FPL's reserve margin criterion accounts for projected DSM capability (energy efficiency and load management) which reduces the company's projected peak load. (EXH 3) As discussed in Issue 3 herein, staff believes FPL has accounted for all reasonably available DSM measures in its projection of resource needs.

Both SACE witness Wilson and ECOSWF witness Rabago expressed trepidation with regard to the cost associated with dependence on a 20 percent reserve margin. Witness Wilson testified that if FPL's 20 percent reserve margin is excessive then FPL's proposed OCEC Unit 1 does not come at a reasonable cost. (TR 403-404) In a similar vein, witness Rabago testified that adherence to the 20 percent reserve margin has resulted in costly overbuilding. (TR 454) In response to a staff interrogatory, FPL provided an economic evaluation assuming the in-service date of OCEC Unit 1, and all subsequent capacity additions were delayed by one-year. (TR 580-581) The scenario requested by staff, which caused FPL's projected reserve margin to fall below 20 percent in a number of years, demonstrated a potential savings of approximately \$235 million. (TR 581-582) FPL's response additionally noted that its response did not account for short-term capacity purchases and the projected decrease in the cumulative present value revenue requirement (CPVRR) is likely overstated. (EXH 63) While staff recognizes the potential savings associated with reducing FPL's 20 percent reserve margin criterion as discussed in detail below, staff is concerned that a reduced reserve margin would impact system reliability.

FPL witness Sim testified that the starting point for FPL's use of a 20 percent reserve margin was a stipulation approved by the Commission in 1999. (TR 125) To this point, SACE witness Wilson argued that circumstances, such as generation outage rates, have changed since 1999 and continued reliance upon a 20 percent reserve margin will lead to overbuilding. (TR 409 and 427) Witness Wilson recommended that the Commission evaluate FPL's petition using the FRCC 15 percent reserve margin until such time as FPL, or the FRCC, provides analysis for the Commission to consider. (TR 409-410) ECOSWF witness Rabago also testified that circumstances have changed since the 1999 stipulation and added that low LOLP assessments suggest a need to reexamine the 20 percent reserve margin. (TR 451)

OPC similarly suggests that FPL should adhere to a 15 percent reserve margin criterion as outlined in Rule 25-6.035, F.A.C., which requires peninsular Florida utilities to maintain a minimum 15 percent planned reserve margin in order to maintain an equitable sharing of energy reserves. The language of Rule 25-6.035(1), F.A.C., clearly provides that the Rule is not

intended to set a prudent level of reserves for long-term planning or reliability purposes. Rule 25-6.035, F.A.C., states in part:

The planned and operating reserve margin standards established herein are intended to maintain an equitable sharing of energy reserves, not to set a prudent level of reserves for long-term planning or reliability purposes.

Witness Sim testified that FPL did not include justification, in its initial filing, for continued use of a 20 percent reserve margin because the company does not believe such a justification is required in a need determination filing. (TR 512) Witness Sim cited to Commission Order No., PSC-03-0175-FOF-EI, to support his testimony. In that Order, the Commission stated that “[t]he proper forum to address what minimum reserves are necessary should be in a generic docket, as was previously done, and not in a particular utility’s power plant need determination docket.” (TR 504; EXH 66, p. 4)

Staff agrees that a need determination proceeding is not the appropriate forum to address what a utility’s minimum reserves should be. The 20 percent reserve margin was established in a docket that involved multiple utilities as well as the FRCC, in which the planned reserve margins of peninsular Florida were considered. Furthermore staff has concerns that reducing the reserve margin for a single utility may have unintended adverse consequences on the reliability of the individual utility as well as peninsular Florida. Staff believes that a high load event that occurred on January 11, 2010, highlights this concern. During that event, FPL sold more than 500 MW of emergency power to Duke Energy Florida, which also utilizes a 20 percent reserve margin. (TR 553; EXH 67, p. 1)

As part of his rebuttal testimony, FPL witness Sim testified that, on January 11, 2010, load was higher than expected, and a higher-than-normal amount of FPL generation was either out-of-service or operating at less than full capacity. (TR 494) Witness Sim further explained that “other utility systems in Florida were also experiencing difficulties, and FPL provided support by implementing a significant portion of its load management capability to assist at least one other utility.” (TR 494) In contrast, SACE Witness Wilson opined that FPL would have had sufficient resources under a 15 percent reserve margin to meet its load during the discussed high load event. (TR 438-439)

Witness Sim provided an analysis considering the potential impacts a 15 percent reserve margin planning criterion would have had on system reliability during the January 11, 2010 high load event. (EXH 69, p. 2) In order to reflect a 15 percent reserve margin planning criterion witness Sim reduced FPL’s total capacity by approximately 1,200 MW. (EXH 69, p. 2) Staff believes that this reduction reasonably reflects a resource plan based on 15 percent reserve margin criterion. Based on FPL’s analysis and assumptions, which considered more than 1,700 MW of load management that was available during the event, FPL would have been 68 MW short of meeting firm load while providing assistance to another utility. (TR 584)

Based on staff’s review of the January 11, 2010 high load event, if FPL had been planning to a 15 percent reserve margin criterion, FPL would have had sufficient capacity to serve its customers during the high load event assuming that it did not sell emergency power to Duke Energy Florida. During the hearing in this matter, witness Sim testified that, if FPL recalled its

emergency power, Duke Energy Florida customers would have faced blackouts. (TR 584) Staff believes that this amplifies the point that minimum reserves should not be addressed in the vacuum of an individual utility's need determination proceeding, but rather in a generic proceeding that allows input from other peninsular Florida utilities and the FRCC. To clarify, staff is not suggesting that FPL should ensure the reliability of other utilities. Rather, staff recommends that the 20 percent reserve margin criterion utilized by FPL was established giving consideration to peninsular Florida and, thus, should not be changed absent similar consideration.

Staff concludes that the 20 percent reserve margin remains appropriate for identifying the timing of resource needs. As part of his rebuttal testimony, FPL witness Sim also provided an exhibit identifying 13 need determination proceedings, since the 1999 Stipulation, which were evaluated by the Commission based on a 20 percent reserve margin. (EXH 66, pp. 1-14) Therefore, staff's recommendation to determine reliability based on reliance on a 20 percent reserve margin, is consistent with prior Commission decisions.

#### ***Ten Percent Generation Only Reserve Margin***

Similar to its 20 percent reserve margin, FPL's 10 percent generation only reserve margin is based on the relationship between peak load and total capacity available to serve that load. Unlike its 20 percent reserve margin, FPL's 10 percent generation only reserve margin does not account for projected DSM capability. (EXH 2, p. 105) FPL first implemented the 10 percent generation only reserve margin in its resource planning in 2014. (TR 92-93) Witness Sim testified that two occurrences caused FPL to take another look at its reliability planning criteria. One of those occurrences was the Commission's 2009 DSM goals order and the other occurrence was the January 11, 2010, high load event discussed above. (TR 145-146)

With respect to the Commission's 2009 DSM goals order, witness Sim testified that the order demonstrated a potential for FPL to be more heavily dependent upon DSM. Witness Sim further testified that the 2009 goals were never implemented and the goals set in 2014 were quite a bit lower than 2009, and in large part has reduced the generation only reserve margin impact in this case. (TR 147, 154)

Regarding the January 11, 2010, high load event, FPL evaluated the event assuming a 10 percent generation only reserve margin and a 5 percent generation only reserve margin. (EXH 70, p. 2) For this analysis FPL contemplated scenarios with and without Turkey Point Unit 4, which tripped hours after the high load event. (EXH 70, p. 17; TR 515) Assuming a 5 percent generation only reserve margin without Turkey Point Unit 4, FPL would have had to shed firm load after implementing available load management. However, assuming FPL's actual generation only reserve margin on that day (8.4 percent), FPL would not have had to shed firm load even without Turkey Point Unit 4. (EXH 70, p. 17) Therefore, a 10 percent generation only reserve margin would not have been necessary in order to allow FPL to reliably serve its customers during that event.

Although, SACE witness Wilson and ECOSWF witness Rabago provided testimony refuting FPL's need for a 10 percent generation only reserve margin criterion, FPL's own analyses demonstrate that a generation only reserve margin is not the primary driver for its projected need in 2019. FPL Witness Sim testified that the 10 percent generation only reserve margin is not a

significant factor in this case. (TR 499) Staff believes that there is value in evaluating reliability from different perspectives, such as a generation only reserve margin, as it can provide useful information regarding the assurance that FPL's 20 percent reserve margin will be achieved. However, because both generation and DSM are considered resources, staff recommends that a reserve margin criterion that includes both of these resources is a more fitting criterion for overall reliability analyses.

**Conclusion**

Based on a reasonable load reasonable load forecast and a 20 percent reserve margin criterion FPL demonstrates a need for additional generation beginning in 2019.

**Issue 2:** Are there any renewable energy sources and technologies or conservation measures taken by or reasonably available to Florida Power & Light, which might mitigate the need for the proposed Okeechobee Clean Energy Center Unit 1?

**Recommendation:** No. FPL's forecast of resource needs takes into account all projected DSM from cost-effective programs approved by the Commission. No additional cost-effective DSM has been identified in this proceeding which could mitigate the need for new generation. Similarly, all existing firm generating capacity from renewable resources and qualifying facilities through 2024 is already reflected in FPL's forecast of resource needs. (Wooten)

### **Positions of Parties**

**FPL:** No. In determining its customers' resource needs, FPL accounted for all FPL and Commission-identified cost-effective and reasonably achievable renewable energy and conservation measures reasonably available to FPL that might mitigate the need for the Okeechobee Unit. After accounting for over 200 MW of additional solar PV scheduled to be on FPL's system by 2016 and the level of FPL DSM the Commission has previously determined is reasonably achievable and cost-effective, FPL still has a resource need of over 900 MW in 2019 that grows in subsequent years. The Okeechobee Unit is the best alternative available to meet that need.

**OPC:** Yes. There may be renewable energy sources and technologies or conservation measures that could have been taken by or reasonably available to Florida Power & Light, which might mitigate the need for the proposed Okeechobee Clean Energy Center Unit 1. However, FPL's DSM and PV solar evaluations were insufficient to determine whether there were ways to increase DSM and PV solar to meet a portion of any need. The introduction of a 10% GRM criterion creates an unlawful bias against finding ways to increase DSM and PV solar to meet a portion of any need.

**SACE:** Yes. FPL has failed to utilize renewable energy sources and technologies, in particular solar PV resources, as well as conservation measures, namely energy efficiency, reasonably available to it which might mitigate the need for the proposed OCEC Unit 1. Specifically, FPL did nothing more than pay lip service to solar PV as an alternative to the proposed OCEC Unit 1, and has failed to capitalize on countless opportunities to pursue much higher levels of energy efficiency.

**ECOSWF:** Yes, renewable energy and conservation measures could obviate whatever alleged need would be met by the proposed unit. FPL should be expanding its demand response program in order to maintain reliability during freak weather events. By reducing payments, FPL has artificially reduced the number of customers who volunteer to participate in demand response programs. Rather than investing well over a billion dollars of ratepayer money in a new power plant, FPL should be increasing payments to participants in its demand response programs. Such participation will obviate any capacity need in FPL's system for the foreseeable future.

**FIPUG:** Yes.

**Staff Analysis:**

**Parties' Arguments**

**FPL**

FPL argues that it has relied upon the Commission's determination in the 2014 DSM Goals proceeding for making its decisions. FPL contends that none of the intervenors have shown additional cost-effective DSM reasonably available to FPL and that lowering FPL's reserve margin as advocated by the intervenors would make the approved 2014 DSM amounts less cost-effective. FPL further states, that nothing in the record supports any additional DSM measures that it did not already account for in the need determination request. (FPL BR 20) FPL maintains that there are no additional cost-effective renewable generation resources available that would mitigate the need for the OCEC Unit 1 in 2019. FPL additionally asserts that no intervenor provided any other cost-effective renewable generation to meet its 2019 need. (FPL BR 21)

**OPC**

OPC agrees with ECOSWF and SACE that FPL did not conduct significant analysis to evaluate if renewable energy sources were reasonably available to FPL to meet need. (OPC BR 14)

**SACE**

SACE argues that FPL did not adequately explore reasonably available renewable energy sources and determined from the outset that it wanted to construct the OCEC Unit 1. (SACE BR 12) SACE contends that, since FPL had pre-filed testimony citing gas fired units as "most likely" candidates to meet the 2019 need and eliminated solar photovoltaic (PV) in the first stage of the need analysis, renewable energy sources never received real consideration. (SACE BR 13) Finally, SACE contends that FPL did not complete the analysis in a way that satisfactorily met the burden of proof needed. (SACE BR 14)

**ECOSWF**

ECOSWF maintains that FPL has not incentivized cost-effective load management programs with their customers that would eliminate the need for the OCEC Unit 1. ECOSWF states that air conditioner load management could be useful during summer peak since FPL is using summer load projections to justify their reserve margin for this need determination. ECOSWF also argues that FPL provides incomplete information relating to additional analyses that could be performed for PV that would meet need. (ECOSWF BR 21)

**FIPUG**

FIPUG disputes that FPL met the burden of proof to show that its proposed OCEC Unit 1 is needed and should be denied or deferred. (FIPUG BR 3)

**Analysis**

FPL considered multiple options when considering what types of generating facilities and technologies would be viable for 2019 self-build options. (TR 58) With regard to renewable energy sources, FPL considered and evaluated solar energy as a potential source for meeting all or a portion of its 2019 resource need. (TR 64) According to Witness Sim, the evaluation of FPL's forecast of resource needs takes into account all projected DSM from cost-effective programs approved by the Commission. (TR 49)



ECOSWF asserts that FPL did not properly incentivize cost-effective load management programs that would eliminate the need for the new OCEC Unit 1, but did not provide an analysis to support its claim. FPL Witness Sim argued that by solely following the 20 percent total reserve margin criterion, an additional 823 MW of cost-effective DSM would be needed in less than four years. (TR 55) This would equate to 206 MW per year of additional cost-effective DSM. Witness Sim testified that FPL would have to enroll more than 70 percent of its total residential customers in the load management program in order to obtain this level of savings. (TR 55-57) In Order Number PSC-14-0696-FOF-EG,<sup>11</sup> the Commission found that the total amount of achievable, cost-effective DSM for FPL over a 10 year period was about 53 MW per year on average.

Staff notes that raising incentives for DSM lowers cost-effectiveness for non participants. FPL's most recent DSM plan approved by this Commission in Order No., PSC-15-0331-PAA-EG, included cost-effective load management, and was not appealed by any intervenor in that proceeding. No additional cost-effective DSM has been identified in this proceeding that could mitigate FPL's need for new generation. Furthermore, no evidence has been presented to suggest that FPL is not meeting the DSM goals set by this Commission.

Similarly, all existing firm generating capacity from renewable resources and qualifying facilities through 2024 is already reflected in FPL's 2015 TYSP. (EXH 50) FPL focused on several concerns PV presented for the amount of capacity needed in 2019, namely timely and reasonably affordable acquisition of land, PV costs, and the ability to deliver firm capacity. (TR 64) Specifically, FPL would need to acquire approximately 21,000 acres of land, with only a relatively small percentage of that being currently owned by FPL, to accommodate a solar PV generating solution. (TR 187) Despite the aforementioned concern, staff notes that this is the first time FPL included existing and planned solar as a firm resource in a need determination filing. (TR 212)

### **Conclusion**

FPL's forecast of resource needs takes into account all projected DSM from cost-effective programs approved by the Commission. No additional cost-effective DSM has been identified in this proceeding that could mitigate the need for new generation. Similarly, all existing firm generating capacity from renewable resources and qualifying facilities through 2024 is already reflected in FPL's forecast of resource needs.

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<sup>11</sup> Order No. PSC-15-0331-PAA-EG, issued December 16, 2014, in Docket No. 130199-EI, *In re: Commission review of numeric conservation goals (Florida Power & Light Company)*.

**Issue 3:** Is there a need for the proposed Okeechobee Clean Energy Center Unit 1, taking into account the need for adequate electricity at a reasonable cost, as this criterion is used in Section 403.519(3), F.S.?

**Recommendation:** Yes. Staff recommends that FPL's assumptions and forecasts in its analysis of proposed OCEC Unit 1 are reasonable for evaluation purposes. (Mtenga, Archer, McNulty)

**Position of the Parties:**

**FPL:** Yes. The projected cost of the 1,633 MW Okeechobee Unit is \$1,231,700,000 or \$754/kW. The Okeechobee Unit has outstanding projected operational parameters: an EAF of 95.5%; a POF 3.5% and a FOF of 1.0%. It is projected to have an exceptionally low heat rate of 6,249 BTU/kWh at 75°F. This low projected heat rate will make the Okeechobee Unit the most fuel-efficient CC unit on FPL's already highly efficient system. Having this highly efficient generating unit, available to serve customers over 95% of the time will generate significant fuel savings for FPL's customers.

**OPC:** No. using a margin reserve greater than 15% with a 10% GRM criterion will lead to uneconomic and unnecessary overbuilding of generation and result in unreasonable rate increases for FPL's ratepayers.

**SACE:** No. FPL's 20% reserve margin criterion is excessive, and its 10% generation only reserve margin criterion is unnecessary. Therefore, the proposed OCEC Unit 1 would result in the uneconomic overbuilding of generation capacity at an unreasonable cost for FPL ratepayers under the guise of reliability.

**ECOSWF:** No. As stated in Issue 1, and as shown by the evidence, there is no need for the proposed unit in order to maintain adequate reliability. FPL's own calculations show that under current conditions, only one rolling blackout would be expected to occur from lack of generating resources in the next 3,000 years. Adding this unit will simply add an unnecessary cost to FPL customers, adding over \$17 to each residential customer's bills each year. FPL already provides a more than adequate amount of electricity. Adding this unit will simply make the cost of providing electricity less reasonable.

**FIPUG:** No.

**Staff Analysis:**

**Parties Arguments:**

**FPL**

FPL asserts that the total cost of the plant, including funds used during construction and transmission costs is \$1.232 billion. (FPL BR 22) FPL's analyses shows that OCEC Unit 1 is projected to save FPL's customers between \$72 million to \$153 million CPVRR. (FPL BR 3) FPL attests that the low projected heat rate of 6,249 Btu/kWh will make OCEC Unit 1 the most fuel efficient in FPL's system. (FPL BR 22)

**OPC**

OPC argues that the 20 percent reserve margin is excessive. OPC adds that FPL did not consider the risks and impact of overbuilding and that FPL's proposal fails to properly address the requirement for adequate and affordable service. (OPC BR 17)

**SACE**

SACE argues that FPL's 20 percent reserve margin is excessive and FPL already provides adequate electricity and therefore any cost associated with building OCEC Unit 1 should be considered unreasonable. (SACE BR 14)

**ECOSWF**

ECOSWF like SACE argues that FPL's 20 percent reserve margin is excessive. ECOSWF requests that the Commission closely examine FPL's reliability on natural gas asserting FPL has moved to vertically integrate its entire natural gas structure and should be viewed with skepticism. (ECOSWF BR 19)

**FIPUG**

FIPUG took a position in opposition to FPL, but did not provide arguments directly related to the information discussed in this issue.

**Analysis**

FPL's OCEC Unit 1 is a proposed 1,633 MW power plant located in Okeechobee County. As proposed the Okeechobee Plant will include three combustion turbines, three heat recovery steam generators, and one single-reheat steam turbine. (TR 292)

The proposed OCEC Unit 1 would be located on 2,842 acres of land that FPL acquired in 2011 in northeast Okeechobee County. Once operational, OCEC Unit 1 would comprise approximately 250 acres of the site. (TR 299) The OCEC Unit 1 will be interconnected to the FPL transmission grid through an existing transmission line. (TR 305) FPL attests that the transmission lines will not adversely impact the reliability of the FRCC transmission system. (TR 305)

FPL has experience building combined-cycle units on time and under budget. (EXH 17) Cost estimates of the new unit are based off of previous project experience with adjustments for project scheduling, specific site conditions and anticipated market conditions during period of project execution. (EXH 61) FPL's analysis projects OCEC Unit 1 will save customers between \$72 million to \$153 CPVRR as compared to other available self-build alternatives. Staff's analysis of FPL's assumptions used to evaluate OCEC Unit 1 is discussed below.

**Financial Assumptions**

FPL used a capital structure consisting of 59.62 percent equity at a cost rate of 10.50 percent and 40.38 percent debt at a cost rate of 5.14 percent. (EXH 61) FPL applied an after-tax discount rate of 7.54 percent based on the effective income tax rate of 38.58 percent. (EXH 61) None of the intervening parties presented substantial evidence to dispute the reasonableness of these financial assumptions. Staff, therefore, concludes that the financial assumptions used by FPL for its evaluation are reasonable.

### **Generation Cost Estimates and Projected Performance**

The installed cost of OCEC Unit 1 is projected to be approximately \$1.232 billion. (TR 19) FPL's witness Kingston presented testimony and exhibits regarding cost estimates and performance projections of the proposed OCEC plant. OCEC Unit 1 is projected to have a heat rate of 6,249 Btu/kWh at full capacity and is expected to have an availability factor of 95.5 percent. (EXH 22) The cost estimates, heat rate, and equivalent availability parameters for OCEC Unit 1 are comparable with similar projects approved by the Commission.

### **Fuel Costs**

FPL relies upon leading industry fuel forecasting experts for its fuel price forecasts used in its evaluation of OCEC Unit 1. (TR 356) The fuel price forecasts FPL used in the evaluation were its November 3, 2014, and October 7, 2013, long-term fuel price forecasts. (TR 352) FPL witness Stubblefield stated that FPL's fuel price forecasts reflect the projected commodity and transportation costs for fuel oil, natural gas, and coal. (TR 351)

FPL's methodology for developing its natural gas and fuel oil forecasts are structured according to the time period of the forecast. For years 1 and 2 of the natural gas price forecast, the methodology is based on the Henry Hub forward curve. Years 3 and 4 of the forecast are based on a 50/50 blend of the forward curve and the most current projections from the PIRA Energy Group. Years 5 through 20 of the forecast are based on the annual projections of the PIRA Energy Group. Years 21 through 35 are based on the real rate of escalation from the U.S. Energy Information Administration (EIA). FPL's fuel oil forecast is based on the same methodology, except years 1 and 2 of the forecast are based on the New York Harbor 0.7 percent sulfur heavy oil and ultra low diesel fuel oil. Natural gas and fuel oil transportation forecasts are added to these commodity forecasts to arrive at delivered fuel forecasts. Coal prices are based on cost information provided by JD Energy, Inc. for both commodity and transportation. FPL witness Stubblefield testified that this basic fuel forecasting methodology has not changed since at least 2008. (TR 364) None of the intervening parties presented substantial evidence challenging FPL's fuel price forecasts or methodologies.

Staff compared FPL's natural gas price forecast (commodity only) to the EIA's 2015 Reference Case obtained from the EIA's Annual Energy Outlook 2015 for the period 2015 through 2024. (EXH 61) While each natural gas forecast (i.e. FPL's, EIA's) was developed independently, staff believes the forecasts were reasonably comparable for all years based on both unit and percent differences for the years 2015 through 2024.

Witness Stubblefield testified that Sabal Trail, Florida Southeastern Connection (FSC) and the OCEC Unit 1 gas lateral pipeline transportation costs have been included in the evaluation of the OCEC Unit 1 project. (TR 354-355) Witness Stubblefield explained that the pipelines' capacity costs are included in the gas transportation demand charge collected via the fuel clause. (TR 377-378)

In response to staff discovery requests seeking to test the robustness of FPL's purported cost savings of the proposed generating unit compared to other generating alternatives, FPL provided its July 27, 2015, update to its natural gas fuel price forecast for the years of the planned in-

service period of OCEC Unit 1. (EXH 59) A comparison of the current FPL natural gas price forecast to FPL's November 3, 2014, natural gas price forecast reveals that FPL's more current forecast is relatively lower in 2019; nearly the same from 2020 to 2035, then trends higher at a constant rate from 2036 to 2049. The timing of these comparative changes in the forecast can be understood by considering the methodology FPL uses to construct its natural gas price forecasts, including the impact of the EIA escalation factor for years 21-35, or 2036 to 2049. (EXH 27; EXH 59)

Staff has reviewed FPL's fuel price forecasts and the methodologies FPL used to prepare the forecasts. Based on staff's review of the methodology and sources used to prepare FPL's fuel price forecasts, staff believes FPL's fuel price forecasts are reasonable for purposes of evaluating FPL's OCEC Unit 1. None of the intervening parties presented substantial evidence to dispute FPL's fuel price forecasts.

### ***Environmental Costs***

FPL relied on ICF's International National Emission Price forecasts for the projected environmental compliance cost for SO<sub>2</sub>, NO<sub>x</sub> and CO<sub>2</sub> in its analyses of its self-build options. In FPL's first stage of analyses, CO<sub>2</sub> costs were projected to start in 2023, for the second stage costs started in 2020. The change in start dates reflect the projected start year in the draft rules for the EPA's Clean Power Plan. (EXH 61)

Changes in SO<sub>2</sub> and NO<sub>x</sub> values from the first to second stage were due to the United States Supreme Court's 2014 ruling to stay the EPA's Cross-State Air Pollution Rule which resulted in changes for compliance costs projections for both SO<sub>2</sub> and NO<sub>x</sub>. (EXH 61)

FPL's use of ICF's international National Emission Price forecasts is consistent with past analyses that have performed by the Company and reviewed by the Commission. Staff believes that the changes made by the Company, from its first stage of analyses to its second stage of analyses, are reasonably based on current events. Staff recommends that FPL's emission price forecast is reasonable for evaluation purposes. Additionally, no party challenged FPL's environmental cost assumptions in this proceeding.

### **Conclusion**

Based on the summation of staff's analyses discussed above, staff concludes that the assumptions and forecasts used by FPL in its analysis of the proposed OCEC Unit 1 are reasonable for evaluation purposes in this proceeding. Furthermore, staff believes that FPL has demonstrated that the proposed OCEC Unit 1 would provide adequate electricity at a reasonable cost.

**Issue 4:** Is there a need for the proposed Okeechobee Clean Energy Center Unit 1, taking into account the need for fuel diversity, as this criterion is used in Section 403.519(3), F.S.?

**Recommendation:** No. While the OCEC Unit 1 will not improve FPL's overall fuel diversity, the efficiency of OCEC Unit 1 allows FPL to reduce the total amount of natural gas needed to serve the need of its customers. In addition, overall fuel supply reliability will be enhanced because the OCEC Unit 1 will use light oil as a backup fuel. (Mtenga)

### **Position of the Parties**

**FPL:** Yes. While the Okeechobee Unit will not improve FPL's fuel diversity, it will not significantly increase FPL's reliance on natural gas, given other capacity additions and retirements, plus the high level of fuel efficiency of this new unit. In terms of utilizing other energy sources for its generation portfolio, FPL is actively pursuing additional solar and nuclear energy. This project will improve fuel supply reliability with its use of the new Sabal Trail/Florida Southeast Connection natural gas pipeline.

**OPC:** No, the OCEC Unit 1 is a natural gas unit which will needlessly increase FPL's reliance on natural gas.

**SACE:** No. FPL has, for a number of years, cited "maintaining/enhancing fuel diversity in the FPL system" as an ongoing concern in the Company's resource planning. However, construction and operation of the OCEC Unit 1 will only exacerbate FPL's and its customers' already precarious overreliance on natural gas.

**ECOSWF:** No. The proposed unit will increase FPL's over-reliance on natural gas when FPL should be investing in clean energy to diversify its fuel portfolio. Instead, FPL is proposing to continue its natural gas vertical integration. While investing in the production of natural gas, FPL's parent company has also invested in pipelines to transport that gas. Natural gas prices are inherently uncertain, and by increasing FPL's reliance on natural gas to nearly 70% of its fuel-mix, the construction of this plant leaves FPL's customers more vulnerable to future price-swings in natural gas prices.

**FIPUG:** No

### **Staff Analysis:**

### **Parties Arguments**

#### **FPL**

FPL states that while the Okeechobee unit will not improve FPL's fuel diversity but it will not significantly increase FPL's reliance on natural gas, given other capacity additions and retirements. (FPL BR 24) FPL contends that a large part of its fuel diversity efforts consist of improving system efficiency. FPL elaborates that the OCEC Unit 1 will be one of the most fuel-efficient combined-cycle units built and will improve FPL's overall system fuel efficiency. (FPL BR 24) FPL further expresses that OCEC's ability to burn light oil as a backup fuel further

enhances FPL's reliability in the event of disruption in the supply or delivery of natural gas. (FPL BR 25)

**OPC**

OPC argues that the OCEC Unit 1 will not be fuel diverse and that such a dependence on natural gas will be at a significant risk for FPL's customers. (OPC BR 18)

**SACE**

SACE states that FPL is seeking Commission approval on another power plant that will increase reliance on natural gas after expressing concern in FPL's 2014 TYSP about maintaining and enhancing fuel diversity. (SACE BR 15)

**ECOSWF**

ECOSWF echoes SACE in arguing that OCEC Unit 1 will exacerbate FPL's reliance on natural gas. (ECOSWF BR 18)

**FIPUG**

FIPUG took a position in opposition to FPL, but did not provide arguments directly related to the information discussed in this issue.

**Analysis**

FPL's proposed OCEC Unit 1 will be fueled by natural gas, and to enhance fuel supply reliability, it will use light oil as a backup fuel. (TR 352) FPL has contracted firm gas transportation on the Sabal Trail pipeline beginning by 2018. (TR 352) With the Sabal Trail pipeline in place FPL will have sufficient natural gas transportation rights to meet the requirements of OCEC Unit 1 (TR 352). Light fuel oil will be stored in sufficient quantities to allow OCEC Unit 1 to operate at full capacity for seventy-two (72) hours of continuous operation and can be resupplied with truck deliveries. (TR 352).

While it is true that the addition of the OCEC Unit 1 will increase FPL's dependence on natural gas, adding OCEC Unit 1 will improve FPL's overall heat rate. (TR 295) The efficiency of OCEC Unit 1 allows FPL to reduce the total amount of natural gas needed to serve the needs of its customers. (TR 296) For example, when comparing actual gas usage, and generation in 2014, to projected usage and generation in 2020, (the first full year of operation for the OCEC Unit 1), FPL projects that its gas usage, in millions of cubic feet will increase approximately 14.6 percent. However, generation from natural gas, in gigawatt-hours is projected to increase 16.8 percent. (EXH 60, pp. 90 and 91)

**Conclusion**

While the OCEC Unit 1 will not improve FPL's overall fuel diversity, the efficiency of OCEC Unit 1 allows FPL to reduce the total amount of natural gas needed to serve the need of its customers. In addition, overall fuel supply reliability will be enhanced because the OCEC Unit 1 will use light oil as a backup fuel.

**Issue 5:** Will the proposed Okeechobee Clean Energy Center Unit 1 provide the most cost-effective alternative, as this criterion is used in Section 403.519(3), Florida Statutes?

**Recommendation:** Yes. The analyses in the record demonstrate that the OCEC Unit 1 is projected to save customers approximately \$72 million on a net present value basis when compared to the next best alternative. Therefore, the OCEC Unit 1 is the most cost-effective option to meet FPL's projected needs starting in 2019. (Graves)

### **Position of the Parties**

**FPL:** Yes. The Okeechobee Unit is the most cost-effective alternative to meet FPL's customers' reliability needs. FPL's analyses accounted for all cost-effective, reasonably achievable DSM and renewable energy. The Okeechobee Unit is projected to save FPL's customers \$72 million CPVRR in electricity costs (current base case fuel forecast) over the next best self-build alternative analyzed. It is more cost-effective than any solar PV alternative analyzed. A market assessment was done under the Commission's Bid Rule, and no market alternatives were available to FPL. There is no option that is projected to result in lower electric rates for FPL's customers.

**OPC:** No. Since there is no need to build generation to meet a need in 2019, the most cost effect alternative is not to self-build any new generation.

**SACE:** No. FPL has had countless opportunities to pursue much higher levels of energy efficiency at a much lower cost than building new power plants, like the proposed OCEC Unit 1, but has failed to take advantage of these opportunities. FPL also continues to underutilize renewable energy sources and technologies, in particular solar PV resources, which are more cost-effective than the proposed OCEC Unit 1.

**ECOSWF:** No. First, no alternative is needed because FPL's system will stay reliable without the addition of the proposed plant. Second, to the extent there is any need, energy efficiency, clean energy, demand response and load management are more cost-effective alternatives. FPL's proposed plant should be subject to the same cost-effectiveness tests that the Commission imposes on energy efficiency measures and demand response programs – the RIM test. Under the RIM test, this plant is far from being cost-effective.

**FIPUG:** No.

### **Staff Analysis:**

### **Parties' Arguments**

#### **FPL**

FPL asserts that it examined feasible self-build generation options, including combined-cycle units, combustion-turbine units, and solar PV facilities in order to meet its projected 2019 resource need. FPL adds that it removed coal-fired technologies and new nuclear capacity from consideration due to environmental and timing concerns. (FPL BR 25-26)



FPL explains that its first stage of analysis identified combined-cycle technology as the most cost-effective option over combustion-turbine, PV, and hybrid PV/combined-cycle or combustion-turbine generation options. FPL additionally asserts that PV alternatives were determined to have considerable uncertainties regarding cost and reliability. (FPL BR 26) FPL's second stage of analysis determined that the OCEC Unit 1 was the best, most economic self-build option. FPL also expresses that no viable market alternatives were presented in response to the RFP. (FPL BR 26-27)

FPL asserts that updated analyses demonstrate that the OCEC Unit 1 with the enhanced 1,633 MW design remains the most cost-effective alternative to meet its projected resource need in 2019. FPL elaborates that the OCEC Unit 1, with the updated assumptions, will save \$72 million CPVRR over the next best self-build alternative. (FPL BR 27-28)

### **OPC**

OPC argues that a one year delay of the proposed OCEC Unit 1, as well as future capacity additions, would result in significant CPVRR savings. OPC further adds that the total CPVRR for a delay of one year is at a minimum \$237 million. (OPC BR 19)

### **SACE**

SACE contends that if FPL properly conducted its analyses the results would have demonstrated that the utilization of solar PV and/or more energy efficiency, whether alone or in conjunction with a smaller version of the proposed OCEC Unit 1, would be a more cost-effective alternative. (SACE BR 15)

### **ECOSWF**

ECOSWF's post-hearing brief largely discussed the cost-effectiveness of the proposed plant in the context of DSM programs. Staff's review of achievable DSM is discussed in Issue 3 above.

### **FIPUG**

FIPUG argues that deferral of the proposed plant should be considered as being more advantageous to consumers. FIPUG additionally asserts, that the process for providing consumers with the most cost-effective option to meet FPL's alleged needs, was harmed by having only one party offer a competing bid to OCEC Unit 1. (FIPUG BR 2-3)

### **Analysis**

FPL witness Sim's direct testimony provided an overview of FPL's process to determine its best self-build option to meet its projected need in 2019. FPL's evaluation of self-build options was a multi-stage process, which resulted in the OCEC Unit 1, a 1,622 MW combined-cycle power plant located in Okeechobee County, being identified as the most economic self-build option to meet FPL's future resource need. FPL initially considered gas-fired combined-cycles, simple cycle combustion-turbines, and PV facilities as generation options. As discussed in Issue 2 above, FPL did not consider additional solar PV capacity as a replacement for the OCEC Unit 1 due to land requirements and cost constraints. Therefore, FPL continued its economic analyses giving additional consideration to combined-cycle and combustion-turbine options.

FPL's first stage analyses were performed during 2014, and used then current forecasts (such as load and fuel cost forecasts). The first stage of FPL's analyses identified the best site and

generation type (combined-cycle or combustion-turbine). FPL evaluated sites located in Okeechobee, Putnam, and Hendry counties. The results of FPL's first stage of analyses identified the Okeechobee County site as the most economic site for new generation. The first stage of analyses additionally indicated that resource plans with combined-cycle units, placed in-service in 2019, were more cost-effective than resource plans with combustion-turbine units placed in-service that same year. FPL's original filing showed the OCEC Unit 1 as the most cost-effective option followed by six different combined-cycle combinations. The additional costs of the alternatives ranged from \$33 million to \$322 million net present value. (EXH 5) At the hearing in this proceeding, witness Sim described how FPL evaluated other alternatives and stated the following:

Exhibit SRS-4 then presents the results of the first stage of FPL's analyses of these generating options. From these results, two conclusions were drawn. First, the best resource plan with a CC unit at the Okeechobee site was projected to be \$65 million CPVRR more economic than the best resource plan with a CC unit sited at Putnam. Therefore, the Putnam site was then removed from further consideration. Second, the best resource plan containing only simple cycle CT units was projected to be \$124 million CPVRR more expensive than the best CC resource plan. At that point, simple cycle CT-only generation options were removed from further consideration."

(TR 62)

Therefore, FPL's on-going analyses focused on refining the specific characteristics of its combined-cycle options.

FPL's second stage analyses, performed in the second half of 2014 and in early 2015, incorporated updated assumptions and forecasts. FPL also received refreshed cost and performance values from the three vendors that were candidates to supply the combustion-turbine component of its combined-cycle power plant options. The results of FPL's second stage analyses identified a combined-cycle based on GE technology as the most economic option. Additional refinements, including changes in the capacity and heat rate resulted in a 1,622 MW combined-cycle, with peak firing and wet compression, being identified as the most economic self-build option to meet FPL's future resource need. (TR 66-67)

On March, 16, 2015, FPL issued a Request for Proposals (RFP) to solicit non-FPL generation options that could be evaluated as an alternative to OCEC Unit 1. Witness Sim testified that a total of 46 parties registered for the RFP. As described by witness Sim, one registrant objected to aspects of the RFP in a filing to the Commission. (TR 69) In Order No., PSC-15-0171-PCO-EI,<sup>12</sup> the Commission determined that no changes to the RFP were needed.

Of the 46 bid registrants, FPL received one submittal in response to the RFP. Witness Sim explained that the submittal was a power purchase agreement based on an existing combined-

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<sup>12</sup> Order No. PSC-15-0171-PCO-EI, issued May 5, 2015, in Docket No. 150100-EI, *In re: DeSoto County Generating Company, LLC's objections to Florida Power & Light Company's 2015 request for proposals.*

cycle unit located in Alabama. Witness Sim also testified that the submittal failed to meet numerous minimum requirements, including that it did not agree to guarantee the availability and reliability values contained in the submittal. (TR 69-71) As such, FPL could not analyze purchased power options compared to the OCEC Unit 1 in this proceeding. (TR 71)

In response to a staff interrogatory provided on November 10, 2015, FPL provided updated analyses of OCEC Unit 1 and other self-build options. FPL's updated analyses incorporated updated load and fuel cost forecasts and its most current planning assumptions, such as a delayed in-service date for Turkey Point Units 6 and 7. The updated analyses additionally reflect an enhanced version of OCEC Unit 1 (1,633 MW versus 1,622 MW) as well as enhanced combustion-turbine designs for combustion-turbine resource plans. Based on FPL's updated analyses, a resource plan that includes the OCEC Unit 1 in 2019 continues to remain the lowest cost option on a CPVRR basis. However, the addition of six combustion-turbine units are now the next best alternative, projected to cost an additional \$72 million CPVRR when compared to the proposed OCEC Unit 1 addition. (EXH 62; TR 208-209).

In FPL's original need filing, the option of six combustion-turbine units was projected to cost an additional \$259 million CPVRR when compared to the OCEC Unit 1 addition. (TR 207-208) The updated analyses project the overall customer savings of the proposed OCEC Unit 1 increasing from \$33 million to approximately \$72 million on a CPVRR basis. However, the updated analyses also has a different capital risk profile from a customer's perspective due to the lower capital costs associated with combustion-turbine units, \$672 million for the combustion-turbines versus \$1.2 billion for the OCEC Unit 1. (EXH 63) In contrast with FPL's original filing, where the next best alternative was another combined-cycle unit, the updated analyses suggest that the lower fuel costs associated with the OCEC Unit 1 may take several years to offset the initial capital cost difference when compared to combustion-turbine units. Such results are not surprising when comparing technologies with different capital to fuel cost ratios. None of the intervening parties presented substantial evidence to challenge FPL's initial or updated economic assumptions or CPVRR results.

The intervenors argue for the Commission to deny FPL's need determination based on changing FPL's planning reserve margin criterion from 20 percent to 15 percent. The intervenors claim that the reduced need for additional capacity will maintain reliability and improve the cost-effectiveness to customers. (TR 404, 409, 453, and 460) As discussed in Issue 1, the 20 percent reserve margin was established in a docket that involved multiple utilities as well as the FRCC and gave consideration to planned reserve margins in peninsular Florida. Staff has concerns that reducing the reserve margin for a single utility may have unintended adverse consequences on the reliability of the individual utility as well as peninsular Florida.

If the Commission were to deny FPL's requested need, witness Sim testified that FPL would likely build combustion-turbine units. (TR 79) FPL acknowledged that both combustion-turbine models being considered are "capable of operating in simple cycle mode as a stand-alone combustion-turbine or as part of a combined cycle." (EXH 63) Therefore, it appears FPL could first construct combustion-turbine units and later convert them to combined-cycle units to improve fuel efficiency. Such a phased-in approach allows capacity to be added in smaller increments and preserves the option of converting to a more fuel efficient generating unit at a

later date. The reliability of the system would remain virtually identical and the initial capital cost to customers should be reduced compared to adding the proposed OCEC Unit 1 in 2019. As discussed above, this phased-in approach was not presented at the hearing.

Staff has reviewed the input assumptions as discussed in Issue 2 and believes them to be reasonable. Likewise, the CPVRR analyses were performed in a consistent manner and no party presented substantial evidence disputing either the input assumptions or the CPVRR analyses.

### **Conclusion**

The analyses in the record demonstrate that the OCEC Unit 1 is projected to save customers approximately \$72 million on a net present value basis when compared to the next best alternative. Therefore, the OCEC Unit 1 is the most cost-effective option to meet FPL's projected needs starting in 2019.

**Issue 6:** Based on the resolution of the foregoing issues, should the Commission grant Florida Power & Light's petition to determine the need for the proposed Okeechobee Clean Energy Center Unit 1?

**Recommendation:** Yes. Pursuant to Rule 25-22.082(15), F.A.C., if the public utility selects a self-build option, costs in addition to those identified in the need determination proceeding shall not be recoverable unless the utility can demonstrate that such costs were prudently incurred and due to extraordinary circumstances. FPL should file an annual report regarding the status of the OCEC Unit 1, including any enhancements made to the unit, to the Commission's Director of the Division of Accounting and Finance. (Graves, Mtenga, Wooten, Archer, Wu, McNulty, Stratis)

### **Position of the Parties**

**FPL:** Yes. The Okeechobee Unit is the best, most cost-effective alternative to maintain reliable electric service for FPL's customers beginning in 2019. This unit was determined to be the most cost-effective option through extensive analyses and a market assessment pursuant to the Commission's Bid Rule, while taking into account all reasonably available, cost-effective renewable energy and DSM. Therefore, the Commission should grant an affirmative determination of need for the Okeechobee Unit with an in-service date of June 1, 2019, based on a finding that this project is the best, most cost-effective choice to meet the needs of FPL's customers in 2019.

**OPC:** No. Using the 15 percent minimum reserve margin in Rule 25-6.035, Florida Administrative Code, OCEC Unit 1, is not needed for the proposed in-service date of June 1, 2019.

**SACE:** No. The Commission should deny FPL's Petition, and require FPL to hire a third-party consultant to conduct a comprehensive reserve margin study for the company. If the results of that study support the need for additional generation, FPL can submit a new Petition, while in the one-year interim saving its ratepayers hundreds of millions of dollars and not sacrificing reliability.

**ECOSWF:** No. The Commission should deny the petition based on the evidence adduced at the hearing and the findings that should be made under Issues 1-5. The plant is not needed, it increases FPL's reliance on natural gas, and the plant is not cost-effective.

**FIPUG:** No.

### **Staff Analysis:**

### **Parties' Arguments**

#### **FPL**

FPL opines that OCEC Unit 1 is the most cost-effective alternative with which to maintain reliable electric service for its customers beginning in 2019, taking into account the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, the need for fuel diversity and supply reliability, cost-effectiveness, and the availability of renewable

or conservation alternatives. For these reasons FPL contends that the Commission should grant an affirmative determination of need for OCEC Unit 1. (FPL BR 28-29)

**OPC**

OPC contends that the Commission should not grant FPL's petition for determination of need for OCEC Unit 1 for its reasons discussed in Issues 1 through 5. OPC further asserts that OCEC Unit 1 is not needed for the proposed in-service date of June 1, 2019. (OPC BR 19-20)

**SACE**

SACE assert that the Commission should review FPL's Petition using a 15 percent reserve margin which would result in the Commission denying FPL's Petition, as FPL would have no need for new generation in 2019 and no need for any significant new capacity in 2020. SACE additionally provides that the Commission should require FPL, in the context of a generic proceeding or otherwise, to hire a third-party consultant to conduct a comprehensive reserve margin study for FPL. (SACE BR 16)

**ECOSWF**

ECOSWF recommends that OCEC Unit 1 is not needed, and FPL's system will continue to be reliable without it and the Commission should deny FPL's petition for determination of need. (ECOSWF BR 22)

**FIPUG**

FIPUG argues that FPL did not meet its burden of proof to show that OCEC Unit 1 is needed in the summer of 2019 and its need determination should be denied. (FIPUG BR 2)

**Analysis**

Pursuant to Section 403.519, F.S., the commission is the sole forum for the determination of need for major new power plants. In making its determination, the Commission must take into account the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, the need for fuel diversity and supply reliability, and whether the proposed plant is the most cost-effective alternative available. The Commission must also expressly consider whether renewable generation or conservation measures taken by or reasonably available to the utility might mitigate the need for the proposed plant. 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.

Staff's analyses in Issues 1 through 5 support the need for OCEC Unit 1 in 2019. The following summarizes staff's review of the proposed plant:

1. FPL's load forecast and use of a 20 percent reserve margin in this proceeding is reasonable.
2. No cost-effective DSM or renewable resources have been identified that could mitigate the need for OCEC Unit 1.
3. OCEC Unit 1 is expected to provide adequate electricity at a reasonable cost to FPL's customers.

4. Although OCEC Unit 1 will not enhance fuel diversity, FPL has taken steps to ensure supply reliability.
5. Analyses indicate that OCEC Unit 1 is the most cost-effective alternative compared to other self-build alternatives.

Based on the summary above, staff recommends that the Commission grant FPL's requested determination of need.

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 change from what was presented at the need determination proceeding, then a prudent utility would be expected to respond appropriately. In addition, the Commission has an ongoing authority and obligation to ensure fair, just, and reasonable rates for Florida's utilities and ratepayers. Pursuant to Rule 25-22.082(15), F.A.C., if the public utility selects a self-build option, costs in addition to those identified in the need determination proceeding shall not be recoverable unless the utility can demonstrate that such costs were prudently incurred and due to extraordinary circumstances. FPL should file an annual report regarding the status of the OCEC Unit 1, including any enhancements made to the unit, to the Commission's Director of the Division of Accounting and Finance.

**Issue 7:** Should this docket be closed?

**Recommendation:** Yes. Upon issuance of an order on FPL's petition to determine the need for the proposed OCEC Unit 1, this docket shall be closed after the time for filing an appeal has run. (Corbari, Ames)

**Position of the Parties**

**FPL:** Yes. Upon issuance of an order granting FPL's petition to determine the need for OCEC Unit 1, this docket should be closed. FPL will honor its commitments to report annually on construction costs and to make an informational filing for any cost-effective Power Train Components design improvements. Accordingly, FPL has no objections to the Commission including in the final need determination order those commitments.

**OPC:** Yes.

**SACE:** Yes.

**ECOSWF:** Yes.

**FIPUG:** Yes.

**Staff Analysis:** Upon issuance of an order on FPL's petition to determine the need for the proposed OCEC Unit 1 this docket shall be closed after the time for filing an appeal has run.