

State of Florida



# Public Service Commission

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**DATE:** March 15, 2012

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

**FROM:** Division of Regulatory Analysis (Graves, Ballinger)  
Division of Economic Regulation (Buys, Stallcup, Watts, Wu)  
Office of the General Counsel (Murphy)

**RE:** Docket No. 110309-EI –Petition to determine need for modernization of Port Everglades Plant, by Florida Power & Light Company.

**AGENDA:** 03/27/12 – Regular Agenda – Post Hearing Decision; Participation limited to Commission and Staff

**COMMISSIONERS ASSIGNED:** All Commissioners

**PREHEARING OFFICER:** Balbis

**CRITICAL DATES:** 135 day deadline per statute – April 4, 2012

**SPECIAL INSTRUCTIONS:** None

**FILE NAME AND LOCATION:** S:\PSC\RAD\WP\110309.RCM.DOC

### Case Background

On November 21, 2011, Florida Power & Light Company (FPL or Company) filed a Petition to Determine Need for Modernization of Port Everglades Plant (PEEC) 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.).<sup>1</sup> PEEC involves the construction of a Combined Cycle power plant with a summer capacity rating of about 1,277 Megawatts (MW) and a commercial operation date of June 2016. PEEC will replace four dual-fuel fired steam

<sup>1</sup> Pursuant to Section 403.519, F.S., a hearing must be held within 90 days, and an order granting or denying issued within 135 days, of a petition for a determination.

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generating units that entered service in the 1960s at FPL's Port Everglades plant in Broward County, Florida. The modernized plant's primary fuel will be natural gas, and it will have the capability to burn a light fuel oil as a back-up fuel. On November 28, 2011, the Florida Public Service Commission (Commission) issued its Notice of Commencement of Proceedings for Determination of Need. On December 9, 2011, the Commission issued Order No. PSC-11-0565-PCO-EI, establishing procedure in this docket. On January 13, 2012, the prehearing and hearing were noticed in the Florida Administrative Weekly. On January 17, 2012, FPL and the Commission Staff (Staff) filed prehearing statements. A prehearing was held on January 31, 2012. On February 13, 2012, the Commission issued Prehearing Order No. PSC-12-0063-PHO-EI. On February 14, 2012, five days prior to the hearing and after the prehearing conference and the issuance of the Prehearing Order, the Florida Industrial Power Users Group (FIPUG) filed its Petition to Intervene. On February 15, 2012, FPL filed its Response in Opposition to FIPUG's Petition to Intervene. On February 16, 2012, FIPUG filed a Motion for Leave to file a Response to FPL's Motion in Opposition, FPL filed its Opposition to FIPUG's Motion for Leave to file a Response, and the Commission issued Order No. PSC-12-0070-PCO-EI, granting FIPUG's Petition to Intervene and Denying FPL's Response in Opposition.<sup>2</sup> On February 20, 2012, FIPUG filed a Notice of Positions on Issues to be Decided. A hearing was held on February 20, 2012.

As reflected in the Prehearing Order, prior to the hearing, Staff was recommending that the case be stipulated, all but one FPL witness had been excused from the proceeding, and testimony and exhibits, including all of FPL's responses to Staff's discovery, were to be inserted into the record.<sup>3</sup> The one unexcused witness was FPL witness Silva who was available to answer questions on all issues. At hearing, the Commission clarified what "taking the case as you find it" meant with respect to the FIPUG intervention. FIPUG argued for latitude. (TR pp. 9-10) FPL argued that, based on the status of the case, FIPUG's participation should be limited to making an opening statement. (TR 8) "In an abundance of caution," the Chairman ruled that, "we will allow for an opening statement, we will allow for cross-examination of the one witness, and participation as any other party would participate at this juncture today." (TR 11-12)

Briefs were due on March 2, 2012. On March 1, 2012, FIPUG filed its Unopposed Motion for Extension of Time to file its brief which was granted that day by Order No. PSC-12-0090-PCO-EI. On March 5, 2012, FIPUG and FPL each filed a post-hearing brief.

In its post-hearing brief, FIPUG added an issue<sup>4</sup> that was not included in the Prehearing Order. While the issue itself is not properly before the Commission,<sup>5</sup> FIPUG incorporated the argument associated with the Issue by reference in its position on other issues. As such, the arguments will be considered in that context. Similarly, the substance of FIPUG's Proposed Conclusions of Law, numbered 1 through 3, will be addressed in the Staff analysis under the appropriate issues. FIPUG's Proposed Conclusions of Law, numbered 4 through 6, suggest procedural errors which Staff believes are not appropriately addressed at this stage of the

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<sup>2</sup> The Order Granting Intervention provided that, "[P]ursuant to Rule 25-22.039, Florida Administrative Code, FIPUG takes the case as it finds it as set forth in Order No. PSC-12-0063-PHO-EI, issued on February 13, 2012."

<sup>3</sup> Order No. PSC-12-0063-PHO-EI, at Section VI, pp. 3-4.

<sup>4</sup> FIPUG's Issue 6.

<sup>5</sup> See Order No. PSC-11-0565-PCO-EI at Section VII. C., p. 6. Waiver of Issues.

proceeding. Staff believes that arguments based on procedural decisions made during a hearing are more appropriately raised on reconsideration or appeal rather than before an order is issued.

Pursuant to Section 403.519(3), F.S., the Commission is the sole forum for the determination of need for an electrical power plant. In making its determination, the Commission shall take into consideration 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, whether the proposed plant is the most cost-effective alternative available, and whether renewable energy sources and technologies, as well as conservation measures, are utilized to the extent reasonably available. Based on the plain meaning of the statute, a utility need not prevail on every consideration in order for the Commission to determine that there is a need for a proposed electrical power plant.

This recommendation will reference exhibits and testimony that are contested by FIPUG. However, Staff believes that witness Silva's direct, summary, and extensive cross examination testimony, even when standing alone, provides an adequate basis for the Commission to determine the need for PEEC. As such, Staff's recommendation has not changed from the proposed stipulated language that was incorporated in the Prehearing Order.

### **Discussion of Issues**

**Issue 1:** Is there a need for the proposed modernization of Florida Power & Light's Port Everglades plant, 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. There is a need for Port Everglades Next Generation Energy Center, taking into account the need for electric system reliability and integrity. Based on the 20 percent reserve margin criterion adopted by FPL pursuant to a stipulation with the Commission, FPL projected in its filing that additional capacity to meet firm peak demand will be needed by the summer of 2016. If FPL did not construct PEEC until 2019, the Company's projected reserve margin would drop to 18.2 percent in 2017 and 2018 and would be primarily made up of Demand Side Management (DSM) resources.

After accounting for all projected DSM from cost-effective programs approved by the Commission, FPL's projections at the time of the filing indicate that by 2016, the Company will have a capacity need of 284 MW in order to adhere to FPL's minimum reserve margin criterion of 20 percent. The timing of FPL's projected need was largely driven by the expiration of existing purchased power agreements totaling 1,306 MW of summer capacity and the decision to place certain units into inactive reserve mode. PEEC would provide 1,277 MW of capacity to help satisfy the Company's capacity needs through 2020.

PEEC will also enhance reliability in terms of fuel supply because its coastal location facilitates the receipt of light oil backup fuel via both truck delivery and waterborne transportation. The two delivery alternatives will allow for flexible re-supply of light fuel oil to PEEC in emergency situations. Such deliveries would augment the 72 hour on-site fuel supply. Additionally, PEEC is favorable from a transmission reliability perspective because it reduces the load-to-generation imbalance in the Miami-Dade and Broward County area and also provides voltage support. (Graves, Ballinger)

### **Position of the Parties**

**FPL:** Yes. Adding PEEC in 2016 is the most cost-effective power source for customers. Delaying PEEC's in-service date results in increased costs for construction labor and equipment and carries the potential for substantial environmental cost increases. PEEC also enhances system reliability in terms of transmission load-to-generation balance and fuel supply.

**FIPUG:** No. At best, FPL has identified only 284 MW of need in 2016. There are more cost-effective and efficient ways to meet this need and FPL failed to pursue such alternatives.

### **Staff Analysis:**

### **PARTIES' ARGUMENTS**

FIPUG asserts that the reliability need for PEEC is driven by the reduction of purchased power agreements and the increase in wholesale sales. (FIPUG BR 4) FIPUG contends that FPL failed to establish and carry its burden of proof that it needs an additional 1,277 MW project to

maintain system reliability and integrity. (FIPUG BR 2-3) FIPUG further challenges the need for a 1,277 MW project to meet a 284 MW need. (FIPUG BR 2) FIPUG also asserts that FPL did not explore whether it could avoid the need to build PEEC by simply operating for a brief period of time below a 20 percent reserve margin. (FIPUG BR 3)

FPL argues that PEEC's location within the Company's most concentrated service area, Miami-Dade and Broward County, enhances reliability from a transmission perspective. (FPL BR 15) FPL contends that the addition of small capacity additions ignores both Commission precedent and fundamental principles of resource planning. Specifically, FPL asserts that the Commission rejected a similar objection in the *Hines 2 Need Determination*<sup>6</sup> noting that Progress Energy Florida (formally known as Florida Power Corporation) was forecasted to continue growing beyond the in-service date, and the Hines 2 Unit would be available to fulfill the growing need. (FPL BR 16) FPL states that it too has a steadily growing need that will reach 1,468 MW in 2021. (FPL BR 16)

### ANALYSIS

FPL evaluates the adequacy of its resources (capacity) to meet the needs of its customers considering the peak demand and a 20 percent reserve margin criterion. (TR 35-36) The 20 percent minimum reserve margin criterion is based on the reliability planning standard FPL currently believes is necessary to ensure reliable service, which FPL committed to maintain and the Commission approved by Order No. PSC-99-2507-S-EU. (TR 39) FIPUG expressed concern that FPL did not explore a departure from its 20 percent criterion. (FIPUG BR 3) FIPUG did not provide a witness challenging FPL's 20 percent reserve margin criterion. Moreover, the Chairman determined that the reserve margin is "not one of the issues that's taken up in the Prehearing Order," and is therefore beyond the scope of this proceeding. (TR 233) Nonetheless, Commission Staff did ask FPL to perform multiple economic analyses considering lower levels of reliability. The results of these analyses are discussed in Issue 5.

FPL's projected summer peak demand is based on assumptions developed by industry experts, is consistent with historical experience, and relies on the forecasting methods previously reviewed and accepted by the Commission. (EXH 35 Bates 43) Through discovery, Staff determined that FPL's load forecasts are reasonable for the purposes of this docket. FPL's load forecast was additionally adjusted to include wholesale loads. (TR 87-89) FIPUG's only contention with respect to FPL's load forecast was the Company's decision to sell 200 MW of power to Seminole Electric beginning in 2014. (FIPUG BR 4) Increased load from wholesale agreements can accelerate the timing of new capacity. Similar to its concerns regarding FPL's use of a 20 percent reserve margin reliability criterion, FIPUG did not present a witness challenging FPL's wholesale power agreements. Furthermore, at the hearing, the Commission determined that the appropriateness of FPL's wholesale agreements was outside the scope of this proceeding. (TR 239-241) Per Staff discovery, FPL provided economic analyses which considered delaying the in-service date of PEEC. Such analyses mimic the effects of removing wholesale load because the in-service date of the proposed unit is delayed. The results of the aforementioned analyses are discussed in Issue 5.

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<sup>6</sup> DN 001064-EI, In re: Petition for determination of need for Hines Unit 2 Power Plant by Florida Power Corporation.

FPL's projected summer capacity includes its currently active generation fleet as well as future generation additions already approved by the Commission. (TR 149 and 155) FPL's projected summer capacity also considers the cost-effective removal of older generating units from active service which reduces FPL's summer capacity in 2016. (TR 155) Additionally, the expiration of existing purchased power agreements could result in a loss of 1,306 MW of summer capacity by 2016. (TR 150) FPL determined that renewing its agreements with Southern Company (totaling 931 MW), which expire at the end of 2015, would no longer be economic for its customers. (EXH 37 Bates 162) FPL's initial filing indicated that 375 MW of purchased coal generation from JEA will no longer be available due to Internal Revenue Service regulations in 2016. (TR 150) FPL has since expressed that the purchase may extend beyond 2016. (EXH 40 Bates 234) As discussed in Issues 5 and 6, Staff is recommending that FPL continue to report the status of the PEEC to the Commission annually. Should the economics of purchased power change, to be more cost-effective, the Company should act accordingly.

Based on current projections of load growth and available firm capacity, FPL's summer reserve margin will fall below 20 percent starting in 2016. (TR 182) Table 1, below, summarizes FPL's projected capacity needs through 2021. The addition of PEEC in 2016 would provide 1,277 MW of capacity to help satisfy the Company's capacity needs through 2020. (EXH 28 p. 2) FIPUG contends that the size of the proposed power plants is in excess of the projected need. (FIPUG BR 2-3) Staff would note that FPL analyzed the addition of smaller units in 2016. The addition of smaller units in 2016 would serve to delay the in-service date of PEEC; however this approach would not be economic. (TR 185) The results of this economic analysis are discussed in Issue 5.

Table 1: FPL's Reserve Margin Analysis

	Total Summer Capacity	Firm Peak Demand	Reserve Margin	MW Need
2012	24,679	19,637	25.7%	(1,115)
2013	25,294	19,822	27.6%	(1,507)
2014	26,597	20,971	26.8%	(1,432)
2015	27,553	21,382	28.9%	(1,894)
2016	25,851	21,779	18.7%	284
2017	25,851	21,862	18.2%	384
2018	25,851	21,875	18.2%	400
2019	25,851	22,111	16.9%	683
2020	25,851	22,437	15.2%	1,074
2021	25,851	22,766	13.6%	1,468

Source: EXH 28 p. 1

In evaluating the results of the reserve margin criterion analysis, FPL has expressed concern that its reserves over time will become increasingly dependent upon DSM resources as opposed to generation resources. (TR 183) Without new capacity in 2016, FPL's total reserves would be 4,072 MW of which only 1,536 MW would come from generation resources. Therefore, DSM would provide most of the system reserves. (EXH 28 p. 1) FPL has indicated that it is conducting reliability studies to determine if the 20 percent reserve margin criterion

should be supplemented with a minimum reserve margin contribution from generation-only resources. (TR 39) FIPUG did not address potential concerns about greater reliance on DSM.

FPL has additionally expressed a concern regarding its growing reliance on transmission for importing power into Miami-Dade and Broward Counties. (TR 131) Miami-Dade and Broward Counties are the most populated counties in FPL's territory with the highest concentration of customer load. (TR 131) The two counties together represented more than 40 percent of FPL's total load in 2011 or approximately 9,500 MW. (EXH 35 Bates 105) The installed capacity in the area, in 2011, was approximately 5,000 MW. (EXH 35 Bates 105) Therefore, FPL is largely reliant on power imported into the area which must overcome line losses and is more susceptible to interruptions from natural elements, such as lightning and storms. (EXH 35 Bates 104) As such, placing generation near FPL's load center in Miami-Dade and Broward Counties is desirable. If the addition of new generation into Miami-Dade and Broward Counties were delayed beyond 2020, FPL would be forced to incur over \$600 million in transmission upgrades to continue reliable service into southeastern Florida. (TR 54) FIPUG did not contest the benefits of locating generation near load centers.

Section 403.519(3), F.S., requires the Commission to consider the need for fuel diversity and supply reliability. PEEC will be capable of burning light fuel oil in the event of a natural gas supply disruption and has on-site storage to allow 72 hours of continuous operation. (TR 103) Additionally, the Port Everglades Site, because of its coastal location, allows the receipt of light oil backup fuel via waterborne transportation. (TR 103) The two delivery alternatives will allow for flexible re-supply of light fuel oil to PEEC in emergency situations. (TR 106) FIPUG did not contest the benefits of PEEC's dual fuel capability.

### CONCLUSION

There is a need for Port Everglades Next Generation Energy Center, taking into account the need for electric system reliability and integrity. Based on the 20 percent reserve margin criterion adopted by FPL pursuant to a stipulation with the Commission, FPL projected in its filing that additional capacity to meet firm peak demand will be needed by the summer of 2016. If FPL did not construct PEEC until 2019, the Company's projected reserve margin would drop to 18.2 percent in 2017 and 2018 and would be primarily made up of Demand Side Management resources.

After accounting for all projected DSM from cost-effective programs approved by the Commission, FPL's projections at the time of the filing indicate that by 2016, the Company will have a capacity need of 284 MW in order to adhere to FPL's minimum reserve margin criterion of 20 percent. The timing of FPL's projected need was largely driven by the expiration of existing purchased power agreements totaling 1,306 MW of summer capacity and the decision to place certain units into inactive reserve mode. PEEC would provide 1,277 MW of capacity to help satisfy the Company's capacity needs through 2020.

PEEC will also enhance reliability in terms of fuel supply because its coastal location facilitates the receipt of light oil backup fuel via both truck delivery and waterborne transportation. The two delivery alternatives will allow for flexible re-supply of light fuel oil to PEEC in emergency situations. Such deliveries would augment the 72 hour on-site fuel supply.

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Additionally, PEEC is favorable from a transmission reliability perspective because it reduces the load-to-generation imbalance in the Miami-Dade and Broward County area and also provides voltage support.

**Issue 2:** Are there any renewable energy sources and technologies or conservation measures taken by or reasonably available to Florida Power & Light Company which might mitigate the need for the proposed modernization of Florida Power & Light's Port Everglades plant?

**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 anticipated cost-effective firm generating capacity, that will be available from renewable resources and qualifying facilities through 2016, is already reflected in FPL's resource plan. In addition to existing contracts, FPL anticipates that it will secure approximately 110 MW of additional firm purchased power from renewable resources for a total of 740 MW by 2016. FPL is currently in negotiations for firm purchased power from renewable resources potentially totaling up to 180 MW, however, it is unlikely that these negotiations would result in firm capacity any earlier than 2019. (Graves, Ballinger)

**Position of the Parties**

**FPL:** No. FPL's forecast accounts for all projected DSM from Commission-approved cost effective programs. Additional cost-effective DSM cannot be counted on to contribute to system reliability. All anticipated cost-effective firm capacity that will be available from renewable resources and qualifying facilities through 2016 is already reflected in FPL's resource plan.

**FIPUG:** Yes. FPL failed to explore the availability of alternative projects. Alternate projects are available to meet FPL's need (if any).

**Staff Analysis:**

**PARTIES' ARGUMENTS**

FIPUG contends that FPL did not adequately explore the availability of renewable energy resources that could be used to address its need. (FIPUG BR 5) Notably, FIPUG asserts that witness Silva's first-hand knowledge about the availability of four resources was limited. (FIPUG BR 8) Finally, FIPUG contends that FPL has failed to carry its burden of proof on this point. (FIPUG BR 8)

FPL argues that its forecast accounts for all projected DSM from cost-effective programs approved by the Commission. FPL elaborates that it has identified no additional cost-effective DSM that might mitigate the benefits of PEEC. (FPL BR 17) Additionally, FPL contends that its resource plans already reflect all anticipated cost-effective firm generating capacity that will be available from renewable resources and qualifying facilities (QFs) through 2016. (FPL BR 17-18) FPL denies FIPUG's suggestion that it failed to pursue opportunities for renewable energy contracts with QFs in Miami-Dade and Broward Counties. (FPL BR 18-19)

### ANALYSIS

FPL's current DSM projections consider all programs currently approved by the Commission. (TR 147) Many of the approved DSM programs were based on projections through 2014 only. For purposes of FPL's analyses, the Company assumed that it will continue to achieve its projected incremental level of DSM-based peak demand savings for the years 2015-2025. (TR 147) By 2016 incremental DSM and load management are projected to reduce FPL's peak demand by more than 2,500 MW. (EXH 28 p. 1) FIPUG provided no evidence disputing FPL's DSM projections.

Similarly, all anticipated cost-effective firm generating capacity, that will be available from renewable resources and qualifying facilities through 2016, is already reflected in FPL's resource plan. In addition to existing contracts, FPL anticipates that it will secure approximately 110 MW of additional firm purchased power from renewable resources for a total of 740 MW by 2016. (TR 150) FPL witness Silva testified that the Company has not received any offers through its standard offer contract that would defer the need for PEEC. (TR 256-257) FPL is currently in negotiations for additional firm purchased power from renewable resources potentially totaling up to 180 MW. (TR 38) However, it is unlikely that these negotiations would result in firm capacity any earlier than 2019. (TR 38)

At the hearing FIPUG's attorney discussed multiple QFs located near FPL's load center. With respect to the renewable energy facilities that FIPUG referenced at the hearing, FPL presented the following testimony:

- Florida Crystals's Okeelanta facility is currently under contract with FPL, but only to sell as-available energy. Florida Crystals does not want to commit firm capacity to FPL. (TR 221)
- The two Broward County waste-to-energy facilities previously sold firm capacity to FPL, but they rejected FPL's attempts to renew their contracts because they preferred to "play the market" by selling their power to the highest bidder each day. (TR 187-88)
- The Montenay waste-to-energy facility in Miami-Dade County has consistently chosen to sell its power independently rather than selling to FPL. (TR 188)

Aside from the four facilities discussed above, FIPUG did not present a witness or provide any information that persuaded Staff to believe that additional firm generation from renewable facilities will be available by 2016. Additionally, as the Commission previously found in Order No. PSC-11-0360-PAA-EI, it is unlikely a respondent to an RFP could provide similar benefits to those provided by PEEC. This finding was unopposed by FIPUG or any other entity.

### 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 which could mitigate the need for new generation. Similarly, all

anticipated cost-effective firm generating capacity, that will be available from renewable resources and qualifying facilities through 2016, is already reflected in FPL's resource plan. In addition to existing contracts, FPL anticipates that it will secure approximately 110 MW of additional firm purchased power from renewable resources for a total of 740 MW by 2016. FPL is currently in negotiations for firm purchased power from renewable resources potentially totaling up to 180 MW, however, it is unlikely that these negotiations would result in firm capacity any earlier than 2019.

**Issue 3:** Is there a need for the proposed modernization of Florida Power & Light's Port Everglades plant, 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. There is a need for PEEC, taking into account the need for adequate electricity at a reasonable cost. The estimated total installed cost for PEEC is \$1,185 million, in 2016 dollars. PEEC will take advantage of an existing site, existing infrastructure and existing connectivity to FPL's transmission system, thereby eliminating the costs for those components. Furthermore, FPL's analyses show that the resource plan that includes PEEC in 2016 is projected to save customers \$425 million to \$838 million CPVRR as compared to the other available self-build alternatives, and at least \$900 million CPVRR compared to third party-build alternatives. Accordingly, PEEC is projected to provide needed electricity at a reasonable cost.

FPL is considering a number of advanced combustion turbine designs which could impact the overall cost of the PEEC project. For this proceeding, FPL used projected costs and operating characteristics of the "J" combustion turbine technology, with which FPL has no direct experience. Therefore, Staff recommends that FPL report annually to the Commission the budgeted and actual costs compared to the estimated total in-service costs of the proposed PEEC project relied upon in this proceeding. If FPL decides to utilize a different combustion turbine design from the one presented in this proceeding, then FPL should include in its annual report the comparative cost advantage of the alternative design chosen. Such a selection would only be made if the projected costs to FPL's customers would be lower as a result of the alternate design. (Graves, Ballinger, Buys, Stallcup, Watts, Wu)

**Position of the Parties**

**FPL:** Yes. PEEC's estimated installed cost is \$1,185 million. PEEC will take advantage of an existing site, existing infrastructure and existing transmission system connectivity.

**FIPUG:** No. FIPUG adopts its arguments and proposed findings of fact set forth in Issues 1 and 6.

**Staff Analysis:**

**PARTIES' ARGUMENTS**

FIPUG's arguments in Issue 1 and its new unapproved Issue 6, (not included in this docket) as they pertain to this issue, mainly dispute the need to construct PEEC and the proper comparisons to the PEEC resource plan. Staff addresses these concerns in Issues 1 and 5.

FPL contends that PEEC's location at an existing generation site is a significant cost advantage. (FPL BR 19) FPL has extensive experience building combined cycle power plants (CC) on time and on budget. (FPL BR 20) FPL requests that, as part of the Commission's Order granting an affirmative determination of need for the PEEC Project in 2016, the Commission provide that its determination is not predicated on the use of a particular combustion turbine (CT) design, thus ensuring that FPL has the flexibility through its analysis and negotiations to select the CT design that best meets customers' needs in terms of reliability and cost-

effectiveness. (FPL BR 20-21) If FPL decides to use a CT design other than the “J” technology, then FPL will include in its annual report the comparative cost advantage of the alternative design chosen. (FPL BR 21) FPL will make such selection only if the projected costs to FPL’s customers would be lower as a result of the alternate design. (FPL BR 21)

### ANALYSIS

For this proceeding, FPL used projected costs and operating characteristics of the “J” CT technology. (TR 31-32) Although FPL has no direct experience with the operation of “J” CT technology, it has been supplied preliminary operating specifications for the technology. (EXH 35 Bates 70) In order to quantify projected fuel/efficiency and other variable costs, FPL used the PMAREA production costing model. (TR 162) The PMAREA model, which simulates the operation of FPL’s system on an hourly basis, has been used by FPL in fuel cost recovery proceedings as well as in numerous need proceedings brought before the Commission. (EXH 35 Bates 17) FPL’s analysis projects PEEC will save customers \$425 million to \$838 million cumulative present value revenue requirements (CPVRR) as compared to the other available self-build alternatives, and at least \$900 million CPVRR compared to third party-build alternatives. (TR 49 and 53) Staff’s analysis of FPL’s assumptions used to evaluate PEEC are discussed below.

FPL is considering a number of advanced combustion turbine designs which could impact the overall cost of the PEEC project. For this proceeding, FPL used projected costs and operating characteristics of the “J” combustion turbine technology, with which FPL has no direct experience. (TR 72 and EXH 35 Bates 70) Therefore, Staff recommends that FPL report annually to the Commission the budgeted and actual costs compared to the estimated total in-service costs of the proposed PEEC project relied upon in this proceeding. If FPL decides to utilize a different combustion turbine design from the one presented in this proceeding, then FPL should include in its annual report the comparative cost advantage of the alternative design chosen. Such a selection would only be made if the projected costs to FPL’s customers would be lower as a result of the alternate design.

#### *Financial Assumptions*

FPL’s analyses utilized an incremental overall cost of capital of 7.29 percent on an after-tax basis. (EXH 35 Bates 108) This return is based on a capital structure of 59 percent equity at a cost rate of 10 percent and 41 percent debt at a cost rate of 5.5 percent. (EXH 35 Bates 108) The incremental cost of capital is appropriate to use when evaluating new investment. FPL’s other financial assumptions include an annual inflation rate of 3.0 percent for capital expenditures and 2.5 percent for Operation and Maintenance (O&M) expenses. (EXH 35 Bates 108) Staff believes that the financial assumptions used by FPL are reasonable and are consistent with the financial assumptions included in recent Commission-approved need determination filings. No evidence in the record disputes the reasonableness of FPL’s financial assumptions.

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

The installed cost of PEEC is projected to be approximately \$1,185 million. (EXH 35 Bates 61) FPL’s cost estimate includes benefits associated with utilizing the existing site and

infrastructure. (EXH 11) PEEC is projected to have a heat rate of 6,330 Btu/kWh at full capacity and is expected to have an availability factor of 95.4 percent. (EXH 35 Bates 61) The cost estimates, heat rate, and equivalent availability parameters for PEEC are comparable with similar projects approved by the Commission. Table 2, below, summarizes the PEEC project. FIPUG did not dispute the capital and operating assumptions associated with PEEC.

Table 2: Summary of PEEC

Installed Cost (\$ Million)	1,185
Fixed O&M (\$/kw-yr) 2016\$	7.99
Variable O&M (\$/MWh) 2016\$	0.10
Heat Rate (BTU/kwh)	6,330
Equivalent Availability (%)	95.4
Capacity Factor (%)	95

Source: EXH 35 Bates 61

#### *Fuel Costs*

FPL represents that its forecasts are based on recognized, independent sources of forecast information. (EXH 36 Bates 149) Staff notes that, for natural gas, FPL used an escalation rate of 1.706 percent for the conversion forecast based on the average annual escalation beyond the year 2025 based on Energy Information Administration's (EIA) Annual Energy Outlook April 26, 2011, price forecast. (EXH 36 Bates 148) FPL states that the "fuel price forecasts reflect the projected supply, demand and price for fuel oil, natural gas, and coal, as well as the transportation of these fuels to the existing and proposed sites." (TR 104-105)

The fuel forecasts, as described below, were originally prepared using the August 1, 2011, fuel price forecast. (TR 250) The oil price forecasts through 2013 are based on the forward curve for New York Harbor 1 percent sulfur heavy oil, U.S. Gulf Coast 1 percent sulfur heavy oil, and light fuel oil commodity prices. The natural gas price forecast through 2013 is based on the forward curve for the Henry Hub natural gas commodity prices. For 2014 and 2015, FPL combined the forward curve and projections from PIRA Energy Group, giving each equal weight. For the period 2016 through 2025, FPL used the annual projections from PIRA Energy Group. For the period beyond 2025, FPL used the rate of escalation from the EIA. Transportation costs are added to the commodity prices to obtain delivered prices. (TR 103-104) FPL stated that the foregoing fuel forecast methodology was consistent with the approach used in previous filings, including the 2011 Ten-Year Site Plan. (TR 104) Staff believes FPL's fuel price forecasts are reasonable for purposes of this proceeding. FIPUG did not dispute FPL's fuel forecast.

#### *Environmental Costs*

FPL has developed three emission price forecast scenarios (ENV I, ENV II, and ENV III) based on forecasts developed by ICF International. (EXH 35 Bates 12) These three emission price forecasts were used in FPL's feasibility analyses in Docket No. 110009-EI. (EXH 35 Bates 12) For the purposes of this proceeding FPL relied on its ENV II forecast. The ENV II scenario represents the mid-range forecast. (EXH 35 Bates 12) The compliance costs used were ICF

International's forecasted 2011 4th quarter forecast for greenhouse gas legislation and the EPA's Cross State Air Pollution Rule. (TR 124)

In its brief, FIPUG questions the use of carbon costs. (FIPUG BR 10) FIPUG's contention is based on witness Silva's acknowledgement that costs for carbon emissions are not currently imposed. (TR 249-250) Staff would note that FPL's ENV II forecast does not reflect costs for carbon emissions until 2018. (EXH 34) FIPUG did not offer a witness to support an alternate emissions price forecast. However, in response to Staff discovery, FPL evaluated the economics of PEEC assuming no costs for carbon emissions. The results of this economic analysis are discussed in Issue 5. Staff believes FPL's ENV II forecast is based on widely accepted emission price forecasts and is reasonable for use in this proceeding.

### CONCLUSION

There is a need for PEEC, taking into account the need for adequate electricity at a reasonable cost. The estimated total installed cost for PEEC is \$1,185 million, in 2016 dollars. PEEC will take advantage of an existing site, existing infrastructure and existing connectivity to FPL's transmission system, thereby eliminating the costs for those components. Furthermore, FPL's analyses show that the resource plan that includes PEEC in 2016 is projected to save customers \$425 million to \$838 million CPVRR as compared to the other available self-build alternatives, and at least \$900 million CPVRR compared to third party-build alternatives. Accordingly, PEEC is projected to provide needed electricity at a reasonable cost.

FPL is considering a number of advanced combustion turbine designs which could impact the overall cost of the PEEC project. For this proceeding, FPL used projected costs and operating characteristics of the "J" combustion turbine technology, with which FPL has no direct experience. Therefore, Staff recommends that FPL report annually to the Commission the budgeted and actual costs compared to the estimated total in-service costs of the proposed PEEC project relied upon in this proceeding. If FPL decides to utilize a different combustion turbine design from the one presented in this proceeding, then FPL should include in its annual report the comparative cost advantage of the alternative design chosen. Such a selection would only be made if the projected costs to FPL's customers would be lower as a result of the alternate design.

**Issue 4:** Is there a need for the proposed modernization of Florida Power & Light's Port Everglades plant, taking into account the need for fuel diversity, as this criterion is used in Section 403.519(3), F.S.?

**Recommendation:** Yes. There is a need for PEEC, taking into account the need for fuel diversity. PEEC will be fueled by natural gas, and to enhance fuel supply reliability, it will use light oil as a backup fuel. Compared to returning to service the existing units at Port Everglades, adding PEEC will improve the plant's heat rate by 35 percent and will improve FPL's overall system heat rate by 1.3 percent. The improved heat rate is projected to reduce FPL's use of natural gas by about 90 million MMBtu and fuel oil by about 10.4 million barrels over a 30-year period. The PEEC project is also projected to reduce emissions of SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> from FPL's system by approximately 40 thousand, 33 thousand, and 22 million tons, respectively, over the life of the project. Regardless of the modernization of PEEC, FPL projects that it will need additional natural gas supply and transportation to meet its overall system requirements by 2017. FPL is currently preparing a request for proposals to meet its future gas transportation needs. (Graves, Ballinger)

#### **Position of the Parties**

**FPL:** Yes. PEEC will be fueled primarily by natural gas and can burn light oil as a backup fuel. PEEC is projected to improve the plant's heat rate by 35 percent, thus reducing FPL's use of natural gas usage by about 90 million MMBtu and fuel oil by about 10.4 million barrels.

**FIPUG:** No. The proposed Project does not provide fuel diversity. To the contrary, it increases FPL's reliance on natural gas.

#### **Staff Analysis:**

### **PARTIES' ARGUMENTS**

FIPUG challenges that FPL did not adequately consider fuel diversity by ignoring the possibility of contracting with renewable facilities. (FIPUG BR 9) FIPUG further contends that approval of FPL's request furthers the Company's reliance on natural gas. (FIPUG BR 9)

FPL contends that a large part of its fuel diversity efforts consist of improving system efficiency. FPL elaborates that PEEC will improve the plant's heat rate, which indicates higher efficiency in the conversion of fuel to electrical energy and results in less fuel being burned to produce a given amount of electricity thus reducing the Company's dependence on natural gas. (FPL BR 21-22)

FPL also asserts that PEEC will have the capability to burn light oil as a backup fuel. (FPL BR 22) FPL further expresses that PEEC'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 15 and 22) Additionally, FPL argues that because PEEC's location is adjacent to a deep-water port that has significant oil storage, therefore the light oil can be re-stocked rapidly allowing PEEC to continue running on light oil for much longer than would be the case at land-locked CC facilities where the light oil must be re-stocked by truck deliveries. (FPL BR 22)

### ANALYSIS

PEEC will be fueled by natural gas, and to enhance fuel supply reliability, it will use light oil as a backup fuel. (TR 26-27) The construction of PEEC will not substantially change FPL's percentage generation fuel mix. (EXH 35 Bates 93-96) However, the addition of new coal or nuclear generation by 2016 is not feasible and, as discussed in Issue 2, no cost-effective renewable generation has been identified that could defer the need for PEEC. (EXH 35 Bates 106-107, TR 256-257) Furthermore, witness Silva testified that running oil generation ahead of gas generation, could reduce natural gas use from 60 percent to 48 percent, however, such a choice is not economical. (TR 201-202) Staff believes that only considering percent generation fuel mix is a misleading view of fuel diversity. The Commission has, in the past, recognized the reduction of fuel consumption as a step towards fuel diversity.<sup>7</sup> Staff believes reducing the amount of any one fuel within a utility's portfolio provides the benefit of lessening that utility's exposure to potential price fluctuations associated with that fuel.

When compared to returning the existing units at Port Everglades to service, adding PEEC will improve the plant's heat rate by 35 percent and will improve FPL's overall system heat rate by 1.3 percent. (TR 26) By increasing the efficiency of its Port Everglades unit and its overall system, FPL reduces the amount of natural gas and fuel oil needed to serve the same needs of its customers. (TR 183-184) FPL's economic analysis projects more than \$1 billion in fuel savings when PEEC is compared to returning the existing Port Everglades units to service illustrating the benefits discussed above. (EXH 35 Bates 50-51) Table 3, below, summarizes the projected fuel reductions associated with PEEC when compared to returning the existing Port Everglades units to service. (EXH 33)

Table 3: PEEC Fuel Reductions Compared to Returning Units to Service

Natural Gas (MMBtu)	Oil (Bbl)
90,000,000	10,484,000

Source: EXH 33

Another benefit of reduced fuel consumption is reduced emissions. PEEC is projected to reduce greenhouse gas emissions by more than 22 million tons over the life of the project. (EXH 32) Reducing emissions can be beneficial to FPL's customers because of the risk that the costs to comply with various environmental regulations in the future could be higher than projected. (TR 165-166) FPL's economic analysis projects more than \$400 million in environmental savings when PEEC is compared to returning the existing Port Everglades units to service. (EXH 35 Bates 78-79) Table 4, below, summarizes the projected emissions reductions associated with PEEC when compared to returning the existing Port Everglades units to service.

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<sup>7</sup> See Order No. PSC-08-0591-FOF-EI, issued September 12, 2008, in DN 080203-EI, In re: In re: Petition to determine need for West County Energy Center Unit 3 electrical power plant, by Florida Power & Light Company, DN 080245-EI, In re: In re: Petition for determination of need for conversion of Riviera Plant in Palm Beach County, by Florida Power & Light Company, and DN 080246-EI, In re: In re: Petition for determination of need for conversion of Cape Canaveral Plant in Brevard County, by Florida Power & Light Company.

Table 4: PEEC Emission Reductions Compared to Returning Units to Service

SO <sub>2</sub> (Tons)	NO <sub>x</sub> (Tons)	CO <sub>2</sub> (Tons)
40,661	32,635	22,232,000

Source: EXH 32

FPL's utilization of the Port Everglades Site allows the use of existing natural gas infrastructure thus requiring only additional compression infrastructure to supply the site. (TR 102) Staff's analysis of fuel supply reliability is contained in Issue 1. Regardless of the modernization of PEEC, FPL projects that it will need additional natural gas supply and transportation to meet its overall system requirements by 2017. (TR 255 and EXH 35 Bates 86) FPL is currently preparing a request for proposals to meet its future gas transportation needs. (TR 256)

### CONCLUSION

There is a need for PEEC, taking into account the need for fuel diversity. PEEC will be fueled by natural gas, and to enhance fuel supply reliability, it will use light oil as a backup fuel. Compared to returning to service the existing units at Port Everglades, adding PEEC will improve the plant's heat rate by 35 percent and will improve FPL's overall system heat rate by 1.3 percent. The improved heat rate is projected to reduce FPL's use of natural gas by about 90 million MMBtu and fuel oil by about 10.4 million barrels over a 30-year period. The PEEC project is also projected to reduce emissions of SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> from FPL's system by approximately 40 thousand, 33 thousand, and 22 million tons, respectively, over the life of the project. Regardless of the modernization of PEEC, FPL projects that it will need additional natural gas supply and transportation to meet its overall system requirements by 2017. FPL is currently preparing a request for proposals to meet its future gas transportation needs.

**Issue 5:** Will the proposed modernization of Florida Power & Light's Port Everglades plant provide the most cost-effective source of power, as this criterion is used in Section 403.519(3), F.S.?

**Recommendation:** Yes. PEEC is the most cost-effective alternative available, as this criterion is used in Section 403.519, F.S. FPL's economic analyses demonstrate that adding PEEC in 2016 is projected to result in customer savings of: (i) \$469 million CPVRR when compared to returning to service the existing Port Everglades units, (ii) \$838 million CPVRR when compared to adding a combined cycle unit at a greenfield site, and (iii) \$425 million CPVRR when compared to adding a combustion turbine unit at a greenfield site in 2016 and deferring PEEC to 2019. In addition, when compared to third party-build alternatives, customer savings are projected to amount to at least \$900 million and may exceed \$1.1 billion.

If FPL did not construct PEEC until 2019, the Company's projected reserve margin would drop to 18.2 percent in 2017 and 2018 and would be primarily made up of DSM resources. Such a scenario was also projected to produce near-term savings as well as overall long-term savings. However, since this scenario does not consider equal levels of system reliability, this scenario may not provide a meaningful economic comparison. FPL's analyses indicate that a short-term purchased power agreement for the years 2016 through 2019, which is projected to maintain the Company's 20 percent reserve margin criterion, could result in near-term savings, but would have net costs over the analysis period ending in 2047. These analyses reflect only a standard assumed escalation rate of 3 percent and do not take into account factors specific to the current PEEC project that could substantially increase PEEC's costs if it is deferred. (Graves, Ballinger)

#### **Position of the Parties**

**FPL:** Yes. Compared to returning to service the existing Port Everglades units, adding a CC unit or adding a CT unit that defers PEEC to 2019, adding PEEC in 2016 will save customers \$469, \$838 million, and \$425 million, respectively. PEEC saves at least \$900 million compared to third party-build alternatives.

**FIPUG:** No. FPL has not shown that this Project is the most cost-effective. This is particularly the case as FPL has failed to explore other alternatives and because it proposes to meet a 284 MW need with a 1277 MW project.

#### **Staff Analysis:**

### **PARTIES' ARGUMENTS**

FIPUG contends that FPL failed to carry its burden of proof to establish that its proposed Project is the "most cost-effective source of power." FIPUG questions the use of carbon costs when evaluating PEEC. (FIPUG BR 10) Furthermore, FIPUG argues that a resource plan considering a reserve margin of slightly less than 20 percent could save ratepayers approximately \$29 million. (FIPUG BR 10) FIPUG concludes that the Commission should deny FPL's need determination because it is not the most cost-effective source of power available. (FIPUG BR 10)

FPL argues that its economic analysis, at the time of this filing, shows that the PEEC Resource Plan will provide savings to FPL's customers when compared to alternative plans based on similar reliability criteria. (FPL BR 23) FPL further contends that PEEC would result in significant customer savings compared to a third party's offer to build a new advanced CC generating unit outside Miami-Dade and Broward Counties. (FPL BR 23) Lastly, FPL argues that bringing PEEC into service in 2016 saves customers millions of dollars CPVRR compared to delaying construction. (FPL BR 23-26)

### ANALYSIS

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 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.

FPL evaluated multiple resource plans to meet its projected need as discussed in Issue 1. The resource plan which caused the current docket involves the construction of PEEC in 2016. FPL additionally evaluated: (i) a resource plan which involves returning to service the existing Port Everglades units (Return to Service), (ii) a resource plan which assumes construction of a combined cycle unit at a greenfield site in 2016 (GFCC), and (iii) a resource plan which consists of the construction of two new combustion turbines at a greenfield site in 2016 and deferring PEEC to 2019 (GFCT). (TR 159-160) Each resource plan evaluated in FPL's petition satisfies its 20 percent reserve margin criterion over the analysis horizon. (TR 159)

The useful life of a new combined cycle power plant is assumed to be 30 years, therefore, FPL evaluated each resource plan over a 30-year period. (TR 162) FPL's analyses, provided in its petition, additionally relied on the assumptions discussed in Issue 3. FIPUG asserts that the use of carbon costs is not appropriate for this proceeding. (FIPUG BR 10) To reiterate, FIPUG did not present testimony to further its argument. Staff, through discovery, requested that FPL evaluate sensitivities to the aforementioned resource plans considering varying natural gas prices, as well as, analyses which assume no costs associated with future carbon regulation. The sensitivities requested test the robustness of the proposed project. As discussed in Issue 3, Staff believes the assumptions used in FPL's base case are appropriate.

FPL's analyses show that the resource plan that includes PEEC in 2016 is projected to save customers \$425 million to \$838 million CPVRR when considering the assumptions filed by FPL (Base). (EXH 2) Under the least favorable evaluation, which considers no-carbon costs as argued by FIPUG, the PEEC resource plan remains the most cost-effective alternative that maintains a 20 percent reserve margin. (EXH 35 Bates 49-53) The results of FPL's analyses, as well as, the additional analyses requested by Staff are summarized in Table 5, below.

Table 5: Results of Economic Analyses Relative to PEEC  
 (millions, CPVRR, 2011\$)

Resource Plan	Sensitivity (Positive values indicate net costs when compared to PEEC)			
	Base	High NG	Low NG	No Carbon
Return to Service	469	533	440	102
GFCC	838	841	834	816
GFCT	425	456	410	276

Source: EXH 2, EXH 35 Bates 49-53, EXH 37 Bates 196-199

Witness Silva testified that it is highly unlikely that a third party could build a new generating unit at a site in Miami-Dade or Broward Counties by 2016. (TR 47) However, FPL estimated the potential cost of such a project. When compared to PEEC, which will require no cost for new land, no cost for water access, no cost for a new gas pipeline to deliver fuel, and no cost for new transmission lines to connect, any third party proposal is projected to amount in costs of at least \$900 million and may exceed \$1.1 billion. (TR 24-25 and 47-48)

As previously discussed in Issue 1, FIPUG expressed concern that FPL did not explore a departure from its 20 percent criterion. Although FIPUG did not serve any discovery in this docket, Commission Staff requested that FPL consider multiple resource plans which did not adhere to a 20 percent reserve margin. Specifically, Staff requested that FPL consider a resource plan which assumes construction of PEEC in 2019. If FPL did not construct PEEC until 2019, the Company's projected reserve margin would drop to 18.2 percent in 2017 and 2018. (EXH 28 p. 1) Staff additionally requested that FPL perform an analysis assuming the security of a purchased power agreement (2016-2019) thus deferring the construction of PEEC to 2019 and maintaining the Company's 20 percent reserve margin in the near term. The results of these analyses are summarized in Table 6, below.

Table 6: Results of Economic Analyses Relative to PEEC  
 (millions, CPVRR, 2011\$)

Resource Plan	Sensitivity (Positive values indicate net costs when compared to PEEC)			
	Base	High NG	Low NG	No Carbon
Delay w/PPA	30	60	16	-119
Delay	-18	12	-32	-167

Source: EXH 35 pp. 111-123, EXH 37 pp. 190-192 and pp. 196-199

FIPUG asserts that a resource plan considering a reserve margin of slightly less than 20 percent could save ratepayers approximately \$29 million. Based on the Staff interrogatory referenced by FIPUG in its brief, Staff was unable to find the genesis of FIPUG's claim.

Although these resource plans demonstrate potential savings when compared to the PEEC resource plan, they do not consider equal levels of system reliability and may not provide a meaningful economic comparison. (EXH 40 Bates 237-238) Without new capacity in 2016, FPL's total reserves would be 4,072 MW of which only 1,536 MW would come from generation resources. Therefore, DSM would provide most of the system reserves. (EXH 28 p. 1) This could lead to excessive use of load control and potential defections from the program. (TR 183)

Staff would also note that only the "Delay" resource plan shows savings when compared to PEEC under the base case and an increase to the price of natural gas could eliminate those savings. Furthermore, FPL additionally expressed concern that delaying PEEC could lead to relatively significant cost escalations. (TR 257-259) FPL's analyses which consider construction of PEEC beyond 2016 assume a standard escalation rate of 3 percent. National economic recovery could cause greater competition for labor, materials, and equipment, thus raising the cost of the unit more than the assumed 3 percent increase. (TR 258) Additionally, potential environmental regulation combined with low gas prices could result in utilities shutting down coal generation and adding new gas generation. (TR 258) It is reasonable to believe that an increase in demand for equipment for combined-cycle units throughout the country could raise the cost of projects like PEEC.

### CONCLUSION

PEEC is the most cost-effective alternative available, as this criterion is used in Section 403.519, F.S. FPL's economic analyses demonstrate that adding PEEC in 2016 is projected to result in customer savings of: (i) \$469 million CPVRR when compared to returning to service the existing Port Everglades units, (ii) \$838 million CPVRR when compared to adding a combined cycle unit at a greenfield site, and (iii) \$425 million CPVRR when compared to adding a combustion turbine unit at a greenfield site in 2016 and deferring PEEC to 2019. In addition, when compared to third party-build alternatives, customer savings are projected to amount to at least \$900 million and may exceed \$1.1 billion.

If FPL did not construct PEEC until 2019, the Company's projected reserve margin would drop to 18.2 percent in 2017 and 2018 and would be primarily made up of DSM resources. Such a scenario was also projected to produce near-term savings as well as overall long-term savings. However, since this scenario does not consider equal levels of system reliability, this scenario may not provide a meaningful economic comparison. FPL's analyses indicate that a short-term purchased power agreement for the years 2016 through 2019, which is projected to maintain the Company's 20 percent reserve margin criterion, could result in near-term savings, but would have net costs over the analysis period ending in 2047. These analyses reflect only a standard assumed escalation rate of 3 percent and do not take into account factors specific to the current PEEC project that could substantially increase PEEC's costs if it is deferred.

**Issue 6:** Based on the resolution of the foregoing issues, should the Commission grant Florida Power & Light Company's petition to determine the need for the proposed modernization of Florida Power & Light's Port Everglades plant?

**Recommendation:** Yes. The addition of PEEC in 2016 will optimize the use of an existing site and is consistent with the Commission's belief that before a utility constructs a new generating unit at a greenfield site, it must consider the feasibility of modernization of existing units. (Graves, Ballinger)

**Position of the Parties**

**FPL:** Yes. As set forth in issues 1 through 5, bringing PEEC into service in 2016 is the most cost effective source of power for customers, and delaying PEEC results in cost penalties. PEEC enhances system reliability, reduces dependency on natural gas and further improves FPL's already low air emissions profile.

**FIPUG:** No. For the reasons and proposed findings of fact set forth above, the Commission should deny FPL's petition to determine the need for the Project.

**Staff Analysis:**

**PARTIES' ARGUMENTS**

FIPUG argues that the Commission should deny FPL's petition to determine the need for PEEC for the reasons and proposed findings of fact set forth in its arguments regarding the preceding issues.

FPL asserts that PEEC is the best option available for FPL's customers 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. FPL elaborates that PEEC will optimize the use of an existing site and is thus consistent with the Commission's belief that before a utility constructs a new generating unit at a greenfield site, it must consider the feasibility of modernization of existing units.

**ANALYSIS**

Staff's analysis in Issues 1-5 supports construction of PEEC in 2016. Moreover, Staff believes that, in the absence of significant contravening evidence, the testimony of witness Silva, when taken alone, supports the determination of need for PEEC in 2016:

- PEEC will increase FPL's system generation to maintain system reliability and, because PEEC can receive backup fuel delivered via waterborne transport, it will contribute to system reliability in the event of a disruption in gas delivery. (TR 26-27)
- No cost-effective DSM, not already reflected in FPL's resource plan, has been identified to defer the need for PEEC. Similarly, there are no known additional cost-effective

renewable resources that could provide any significant amount of firm generating capacity prior to 2019. (TR 31)

- Because PEEC is needed to meet FPL's reliability criteria previously approved by the Commission, and it is the most cost-effective alternative available it is expected to provide adequate electricity at a reasonable cost to FPL's customers. (TR 27)
- PEEC will enable FPL to reduce fossil fuel use thus contributing to fuel diversity. (TR 42)
- Analyses indicate that PEEC is the most cost-effective alternative compared to returning to service older units now in inactive reserve, adding a new combined cycle unit at a greenfield site, or delaying PEEC by adding CTs. (TR 52)

Additionally, the record reflects that PEEC will provide numerous benefits, including:

- The addition of baseload generation near FPL's load center. (TR 29)
- The optimization of an existing site. (TR 30)
- The improvement of the efficiency of FPL's generation fleet. (TR 41-42)

### **CONCLUSION**

The addition of PEEC in 2016 will optimize the use of an existing site and is consistent with the Commission's belief that before a utility constructs a new generating unit at a greenfield site, it must consider the feasibility of modernization of existing units.

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

**Recommendation:** Yes. Upon issuance of an order granting FPL's petition to determine the need for PEEC, this docket shall be closed. 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. 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. FPL should continue to report the status of the PEEC to the Commission in the annual report required under Issue 3. (Murphy)

**Position of the Parties**

**FPL:** Yes. Upon issuance of an order granting FPL's petition to determine the need for PEEC, the Commission should close this docket. FPL has no objection to the Commission's including in the final need order the commitments that are set forth in Issues 3 and 7 of the Proposed Stipulation.

**FIPUG:** Yes.

**Staff Analysis:** Upon issuance of an order granting FPL's petition to determine the need for PEEC, this docket shall be closed. 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. 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. FPL should continue to report the status of the PEEC to the Commission in the annual report required under Issue 3.