

State of Florida



# Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD  
TALLAHASSEE, FLORIDA 32399-0850

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

**DATE:** April 6, 2018

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

**FROM:** Division of Engineering (Wooten, Ellis)  
Division of Accounting and Finance (Vogel)  
Division of Economics (McNulty, Stratis)  
Office of the General Counsel (Murphy, Dziechciarz)

*Handwritten notes and signatures:*  
TB PoE  
ALM BT  
RD cm  
Other illegible initials and signatures.

**RE:** Docket No. 20170274-EQ – Petition for approval to terminate qualifying facility power purchase agreement with Florida Power Development, LLC, by Duke Energy Florida, LLC.

**AGENDA:** 04/20/18 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

**COMMISSIONERS ASSIGNED:** All Commissioners

**PREHEARING OFFICER:** Administrative

**CRITICAL DATES:** Termination Agreement has a requirement that the transaction be closed by June 1, 2018

**SPECIAL INSTRUCTIONS:** None

## Case Background

On December 29, 2017, Duke Energy Florida, LLC (DEF or Company) filed a petition requesting approval of a termination agreement (Termination Agreement) between DEF and Florida Power Development, LLC (FPD) to terminate a power purchase agreement (PPA) that is no longer cost-effective to DEF customers. The FPD facility is an approximately 60 megawatt (MW) biomass-fired qualifying facility, located in Brooksville, Florida, which came online in May 2014. DEF has been purchasing energy and capacity from the FPD facility since May 2014

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pursuant to the PPA approved by the Florida Public Service Commission (Commission) in 2009.<sup>1</sup> The Office of Public Counsel intervened on January 3, 2018.

The Commission has jurisdiction over this matter pursuant to Sections 366.051, 366.81, and 366.91, Florida Statutes (F.S.).

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<sup>1</sup>Order No. PSC-09-0852-PAA-EQ, issued December 30, 2009, in Docket No. 090372-EQ, *In re: Petition for approval of negotiated purchase power contract with FB Energy, LLC, December 30, 2009*. Original PPA was between DEF and Florida Biomass Energy, LLC, but is now between DEF and Florida Power Development, LLC.

## Discussion of Issues

**Issue 1:** Should DEF's petition for approval to terminate its power purchase agreement with Florida Power Development, LLC and requested regulatory treatment be approved?

**Recommendation:** Yes. Staff has reviewed the Termination Agreement and recommends that terminating the existing PPA is estimated to save customers between \$38 million and \$59 million in net present value (NPV). Staff recommends the establishment of a regulatory asset to be amortized over the remaining contract term through May 2034. (Wooten, Stratis, Vogel)

**Staff Analysis:** At the time of the PPA approval, the PPA was cost-effective and did not exceed DEF's then current avoided costs.<sup>2</sup> Since that time, DEF's avoided costs have decreased, and now payments under the PPA exceed DEF's current avoided costs. As discussed later, the PPA is at a fixed contractual energy rate, therefore any changes in fuel prices are borne by customers. Staff evaluated the forecasting, costs assumptions, and effect on reliability of the proposed Termination Agreement in order to verify suitability of the proposed Termination Agreement. As discussed below, there are projected benefits of the Termination Agreement that would produce savings for DEF's customers, with benefits accruing immediately.

### DEF's Proposal

Under the proposed Termination Agreement, DEF would pay a total of \$105 million to FPD in exchange for FPD's agreement to terminate its qualifying facility status, permanently shut down the FPD facility and terminate any interconnection agreements for the FPD facility by December 31, 2018. DEF requests and requires as a term, the Commission's approval of the consummation of the Termination Agreement which would establish a regulatory asset for the FPD termination payment. The FPD termination payment would be recovered through the Fuel and Purchase Power Cost Recovery Clause (Fuel Clause) by amortizing the FPD regulatory asset at a rate of approximately \$7 million per year through May 2034, the original expiration date of the PPA.

The avoided PPA payment reflects the systems savings to customers by terminating the existing PPA and avoiding the energy and capacity payments. Unlike a traditional PPA, DEF's PPA with FPD was a combined contractual energy rate (\$/MWh) for both energy and capacity. These are calculated by multiplying the energy provided by FPD in megawatt-hours (MWh) times the contractual energy rate (\$/MWh). The energy and capacity payments would occur over the rest of the term of the existing PPA, for the period of May 2018 through May 2034. By terminating the PPA, customers would benefit through lower projected fuel prices. Terminating the PPA without acquiring the facility allows DEF to avoid additional risks associated with the cleanup and dismantlement of the FPD facility.

DEF calculated its Cumulative Present Value Revenue Requirement (CPVRR), including its base case and sensitivities, for DEF's proposed contract using base, high, and low fuel price forecasts as well as, "Base Case CO<sub>2</sub>" and "No CO<sub>2</sub>" carbon emission price forecasts for the period of May 2018 through May 2034. DEF performed its base case analyses and sensitivities under two generation assumptions: (1) 421 gigawatt-hours (GWhs) (Upper Band) and (2) 378 GWhs

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<sup>2</sup>Order No. PSC-09-0852-PAA-EQ, issued December 30, 2009, in Docket No. 090372-EQ, *In re: Petition for approval of negotiated purchase power contract with FB Energy, LLC, December 30, 2009.*

(Lower Band). In this way, 12 base case and sensitivities to the base case were derived. Staff also reviewed the Company's fuel price and CO<sub>2</sub> emissions price forecasts.

### ***Fuel Price Forecast***

DEF's base case fuel price forecast used in the CPVRR analysis was prepared in the Fall of 2016 and was previously provided by DEF for purposes of the Commission's consideration of the 2017 DEF Ten-Year Site Plan (TYSP), DEF's 2017 Standard Offer Contract (Docket No. 20170072-EQ), and DEF's QF Coal Proxy Substitution (Docket No. 20170248-EI). DEF's natural gas fuel price forecasts include both its short term fuel forecast, based on NYMEX futures price contracts, and its long term forecast, based on a collaborative approach between the Company and its industry consultant, Energy Ventures Analysis. The same short term and long term approach is used by the Company to forecast coal and oil prices.

DEF's fuel price forecast sensitivities are based on its recent past fuel forecasts which encompass differing assumptions about elements that affect the price of natural gas, and to a lesser extent coal. DEF relied upon its natural gas price forecast used to prepare its 2016 TYSP for its high fuel price forecast sensitivity. DEF relied upon its Spring 2017 fuel price forecast for its low fuel price case. The high and low fuel price forecasts vary from the base case forecast by approximately 20 percent.

As discussed above, DEF's base case natural gas fuel price forecast, prepared in the Fall of 2016, is higher than its most recent fuel price forecast prepared in the Spring of 2017. Therefore, staff believes DEF's use of its slightly older fuel price forecast (Fall 2016) as its base case forecast can be viewed as a conservative assumption for purposes of DEF's CPVRR analysis. Staff further notes that, while natural gas prices have been trending downward for several years, DEF's upward trending base case natural gas fuel price forecast appears to be contained within the range of similar vintage forecasts from industry recognized third parties. Staff has reviewed DEF's fuel price forecasts and believes they are reasonable.

### ***Emission Reductions and CO<sub>2</sub> Price Forecasts***

A portion of the expected net benefits of the Termination Agreement takes the form of savings attributable to reduced CO<sub>2</sub> emissions. DEF expects that the proposed retirement of the FPD facility will result in a reduction of 2.3 to 2.6 million tons of CO<sub>2</sub> emissions over the 16-year period.<sup>3</sup> DEF's estimates of the cost savings from the Termination Agreement are based on reductions of CO<sub>2</sub> emissions that would have been required by the EPA's 2015 Clean Power Plan.<sup>4</sup> DEF notes that the status of the EPA's Clean Power Plan and related litigation remain 'on hold,' with any change in regulation unlikely under the current administration.<sup>5</sup>

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<sup>3</sup>Witness Borsch testimony, p. 5, response to Staff's 1<sup>st</sup> Data Request, No. 3, Attachments 3-4.

<sup>4</sup>DEF's response to Staff's 1<sup>st</sup> Data Request, No. 14.

<sup>5</sup>DEF's response to Staff's 1<sup>st</sup> Data Request, No. 17.

DEF's analysis of cost savings under various fuel price and carbon cost scenarios considered 'base-case' (low-cost) scenarios, featuring cost-savings generated by reductions in carbon emissions from 2025 to the end of the term in 2034, as well as 'No CO<sub>2</sub>' (zero-cost) scenarios which extend from 2018 through 2034.<sup>6</sup> DEF considers 'No CO<sub>2</sub>' scenarios, which would produce no CO<sub>2</sub> cost savings for DEF customers, to be conservative.<sup>7</sup>

DEF's CO<sub>2</sub> price forecast for its base case scenario was prepared in 2016 for its 2017 TYSP.<sup>8</sup> The Company's base case analysis assumes an emission price equal to the per-ton cost of reduction, and DEF used that estimate of cost as a proxy for emission price.<sup>9</sup> DEF forecasts nominal savings from avoided CO<sub>2</sub> reductions to go from \$14.50 per ton in 2025 to \$14.10 per ton in 2034.

In its responses to staff's data request, DEF noted that no national CO<sub>2</sub> emissions market currently exists, and that DEF has never incurred direct costs related to CO<sub>2</sub> emissions.<sup>10</sup> DEF does not foresee significant federal or state legislation on CO<sub>2</sub> emissions under the current administration.<sup>11</sup> Given the current uncertainty of potential legislative changes, staff believes DEF's approach to providing base and an alternative view of CO<sub>2</sub> pricing is reasonable.

### ***Cost/Benefit Analysis***

The avoided PPA payment reflects the systems savings to customers by terminating the existing PPA and avoiding the energy and capacity payments. These are calculated by multiplying the energy provided by FPD in megawatt-hours (MWh) times the contractual energy rate (\$/MWh). The payments to FPD would occur over the rest of the term of the existing PPA (May 2018 through May 2034). By terminating the PPA, customers would benefit through lower projected fuel prices. Terminating the PPA without acquiring the facility allows DEF to avoid additional risks associated with the cleanup and dismantlement of the FPD facility. As previously discussed, DEF evaluated two scenarios of a Lower Band of 378 GWh of annual output and Upper Band of 421 GWh of annual output. Each scenario assumes a base case fuel scenario and a carbon emission cost which begins in 2025. Additionally DEF performed low and high fuel sensitivities, along with a no carbon cost sensitivity for each, for a total of 12 CPVRR analyses. The results of the 12 sensitivities can be seen below in Table 1-1.

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<sup>6</sup>Witness Borsch testimony, p. 7, DEF's response to Staff's 1<sup>st</sup> Data Request, No.3, Attachments 3-4.

<sup>7</sup>Witness Borsch testimony, p. 7, p. 9.

<sup>8</sup>DEF's response to Staff's 1<sup>st</sup> Data Request, No 2, DEF's 2017 TYSP, pp. 2-33.

<sup>9</sup>DEF's response to Staff's 1<sup>st</sup> Data Request, No. 14.

<sup>10</sup>DEF's response to Staff's 1<sup>st</sup> Data Request, Nos. 16 and 17.

<sup>11</sup>DEF's response to Staff's 1<sup>st</sup> Data Request, No. 17.

**Table 1-1  
 CPVRR Net Cost / (Savings) of FPD Termination Agreement  
 \$ Millions (2018)**

		Low Fuel	Base Case Fuel	High Fuel
<b>Upper Band (421 GWh)</b>	Base Case	(91)	(59)	(20)
	No CO <sub>2</sub>	(85)	(47)	(9)
<b>Lower Band (378 GWh)</b>	Base Case	(67)	(38)	(3)
	No CO <sub>2</sub>	(61)	(28)	7

When evaluating Table 1-1, 11 of the 12 sensitivities produce savings with the termination of the PPA, excluding the No CO<sub>2</sub>/High Fuel sensitivity. The presence of CO<sub>2</sub> pricing made a minor difference in the amount of projected savings that would be expected with the Termination Agreement. This minor difference applied to both the Upper Band and Lower Band for all considered fuel sensitivities. To further evaluate the Termination Agreement, staff inquired about a GWh amount that would provide a breakeven amount for customers. In response to a staff data request, DEF determined that the breakeven GWh amount for both a fuel base case with CO<sub>2</sub> and without CO<sub>2</sub>, the Annualized GWhs delivered would be approximately 300 GWhs. When comparing this amount to the historical performance of the FPD provided in the petition, this would be an unlikely amount as the GWh delivered has historically increased and according to DEF is likely to continue increasing. The continued increase in annualized GWh delivered by FPD was estimated to be as high as 540 GWh, which would cause customers to incur more costs if the PPA continued. Taking these facts into consideration, staff recommends that, on an economic basis, the Termination Agreement is beneficial for customers.

**Non-Economic Evaluation**

DEF does not currently have a need for the firm capacity and energy associated with the PPA generated from the FPD facility. The loss of the 54 MW of peak firm capacity provided by FPD will affect DEF’s reliability reserve margin, but does not cause it to fall below DEF’s planning metrics. The impact of the loss of the PPA is approximately 0.7 percent of the Summer Reserve Margin in 2018. This would result in a 2018 Summer Reserve Margin of 22.7 percent, which would keep DEF above the 20 percent reserve margin approved by the Commission.<sup>12</sup> Upon further review of the DEF’s 2017 TYSP, staff determined that this contract termination should not accelerate the need for any future units. Furthermore, of the 511 MW Firm Renewable and Cogeneration Contracts that DEF has the FPD only comprises 11.7 percent of the total amount of renewable generation.<sup>13</sup>

<sup>12</sup>DEF’s 2017 Ten-Year Site Plan, pp. 3-6.

<sup>13</sup>DEF’s 2017 Ten-Year Site Plan, pp. 3-5.

### **Recovery of Regulatory Asset**

Consistent with the Stipulation and Settlement Agreement issued in August 2012,<sup>14</sup> DEF utilized the May 2017 Earnings Surveillance Report (ESR) capital structure and cost rates, as filed in DEF's Actual/Estimated filing in Docket No. 20170001-EI on July 27, 2017. The May 2017 ESR reported an overall rate of return of 6.71 percent.

As mentioned previously, the existing PPA was approved by the Commission and the recovery of the asset occurred through the Fuel Clause. DEF proposes to recover the regulatory asset to be established for the termination payment through the Fuel Clause as well, over the remaining PPA period which ends in May 2034. DEF requested a recovery of approximately \$7 million per year. DEF also proposes to amortize the regulatory asset over the remaining PPA period and to earn a return, at DEF's Retail Weighted Average Cost of Capital on the unrecovered FPD regulatory asset balance through the Fuel Clause. Staff recommends that the establishment of this regulatory asset, the recovery of this regulatory asset through the Fuel Clause, and the return terms are appropriate.

### **Conclusion**

Staff has reviewed the Termination Agreement and recommends that terminating the existing PPA is estimated to save customers between \$38 million and \$59 million in NPV. Staff recommends the establishment of a regulatory asset to be amortized over the remaining contract term through May 2034.

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<sup>14</sup>Order No. PSC-12-0425-PAA-EU, issued August 16, 2012, in Docket Nos. 120001-EI, *In re: Fuel and purchased power cost recovery clause with generating performance incentive factor*; 120002-EG, *In re: Energy conservation cost recovery clause*; and, 120007-EI, *In re: Environmental cost recovery clause*.

**Issue 2:** Should this docket be closed?

**Recommendation:** Yes. This docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's decision files a protest within 21 days of the issuance of the proposed agency action. (Murphy, Dziechciarz)

**Staff Analysis:** This docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's decision files a protest within 21 days of the issuance of the proposed agency action.