

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Determination) DOCKET NO. 140110-EI
of Need for Citrus County Combined)
Cycle Power Plant) Submitted for Filing
_____) July 15, 2014

**CALPINE CONSTRUCTION FINANCE COMPANY, L.P.'S
NOTICE OF FILING**

Calpine Construction Finance Company, L.P. ("Calpine")
hereby gives notice of filing the Direct Testimony of Todd
Thornton in support of Calpine's positions regarding Duke
Energy Florida, Inc.'s Petition for Determination of Need for
the Citrus County Combined Cycle Power Plant.

Respectfully submitted this 15th day of July, 2014.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was furnished to the following, by electronic delivery, on this 15th day of July, 2014.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In re: Petition for Determination
Of Need for Citrus County
Combined Cycle Power Plant, by
Duke Energy Florida, Inc.**

**DOCKET NO. 140110-EI
Submitted for filing:
July 14, 2014**

REDACTED

DIRECT TESTIMONY

OF

TODD THORNTON

ON BEHALF OF

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**IN RE: PETITION FOR DETERMINATION OF NEED FOR THE
CITRUS COUNTY COMBINED CYCLE POWER PLANT,
BY DUKE ENERGY FLORIDA, INC.
FPSC DOCKET NO. 140110-EI**

DIRECT TESTIMONY OF TODD THORNTON

1 **I. Introduction**

2 **Q: Please state your name, business address, and occupation.**

3 A: My name is Todd Thornton. My business address is 717 Texas Avenue, Houston,
4 Texas 77002. I am Senior Vice President, Origination and Development for Calpine
5 Corporation (“Calpine”).

6

7 **Q: On whose behalf are you testifying in this proceeding?**

8 A: I am testifying on behalf of Calpine Construction Finance Company, L.P., a
9 subsidiary of Calpine Corporation (collectively “Calpine”), in support of its
10 intervention in Duke Energy Florida’s (“Duke”) Petition for Determination of Need
11 for Citrus County Combined Cycle Power Plant (“Petition”). Calpine owns and
12 operates the Osprey Energy Center, which is located in Auburndale, Florida.

13

14 **Q: Please summarize your education and experience.**

15 A: I earned a Bachelor of Science degree in Finance from Northern Illinois University
16 and hold the Chartered Financial Analyst designation. I joined Calpine in October
17 2000 and have held positions of increasing responsibility within the organization,
18 including being named Vice President of Finance in 2007 and Treasurer in 2009. I

1 was named Vice President of Commercial Development in 2013 before recently
2 being promoted to Senior Vice President, with the responsibility for Calpine's
3 origination activities and the development of electric generation resources
4 throughout the U.S. and Canada.

5
6 **II. Purpose of Testimony**

7 **Q: What is the purpose of your testimony?**

8 A: The purpose of my testimony is to describe Calpine and the Osprey Energy Center
9 ("Osprey"), discuss Calpine's participation in Duke's Request for Proposal for Long-
10 term Power Supply Resources with an In-Service Date of 2018 ("Long-Term RFP")
11 and Calpine's recent offer to Duke, which includes a 5-year power purchase
12 agreement ("PPA") for Osprey, with a purchase option. The Osprey offer is
13 described in more detail in Section V of my testimony. In addition, I will briefly
14 discuss the many advantages of Osprey as part of a portfolio of resources that may
15 include Duke's proposed 1,640 MW Citrus County combined cycle power plant (the
16 "Citrus County Project") and a transmission concern raised by Duke. As I stated in
17 my testimony in Docket No. 140111-EI, addressing Duke's proposed Suwannee and
18 Hines Projects, relying on Mr. Hibbard's testimony, I conclude that Osprey has many
19 advantages compared to Duke's self-build options, including:

- 20 • Osprey has a *lower* levelized *cost* of electricity than Duke's Suwannee project,
21 \$85.30 compared to \$168.70 and
22 • Osprey shows a *benefit* to Duke's customers of \$133 million *more* than Duke's
23 option (based on a cumulative present value revenue requirement).

1 I also briefly address Duke’s concerns about transmission and market power.

2

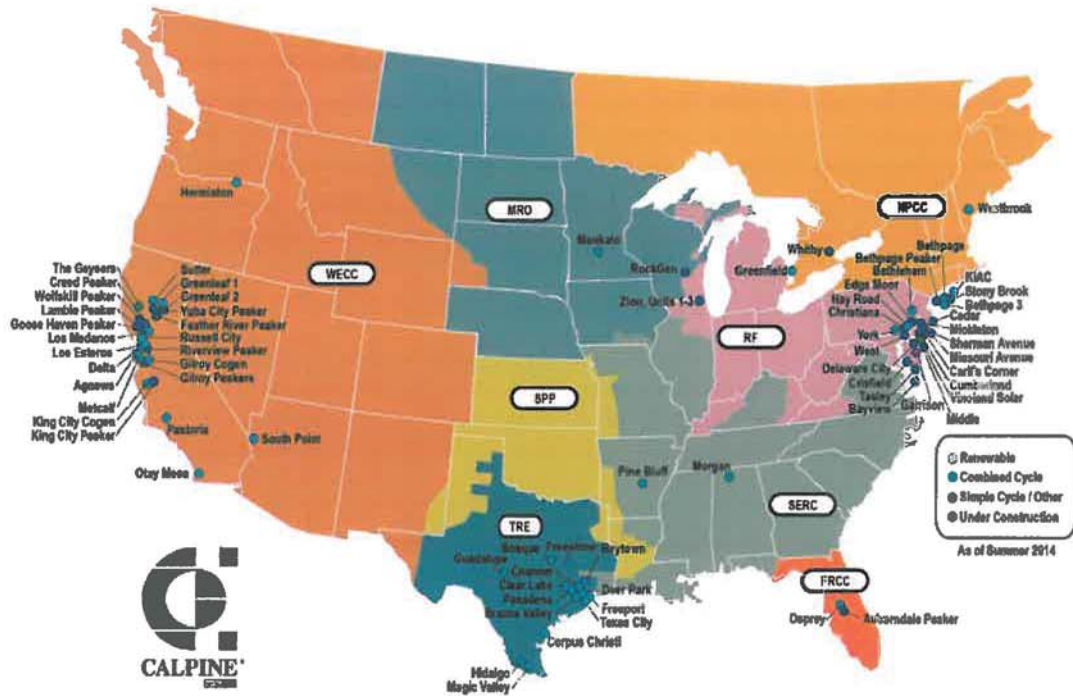
3 **III. Calpine Corporation and Osprey Energy Center**

4 **Q: Please briefly describe Calpine Corporation.**

5 A: Calpine is an independent power producer founded in 1984 that specializes in the
6 development, construction, ownership, and operation of wholesale electric
7 generating facilities. Calpine owns and operates the largest and most modern fleet of
8 clean, reliable and fuel-efficient gas-fired and geothermal power plants in North
9 America, with a portfolio of 87 power plants in operation or under construction
10 located throughout the U.S. and Canada with a combined total of approximately
11 26,000 MW of electric generating capacity. Calpine currently has three new electric
12 generation projects under construction and its existing fleet produced more than 100
13 billion kilowatt-hours of electric energy during 2013. Calpine is a leader in gas-fired
14 power plant development and construction in the United States.

15 Calpine owns and operates two power plants in Florida, Osprey and the
16 Auburndale Peaking Energy Center, which total approximately 700 MW of electric
17 generating capacity. Both projects are in Auburndale, Florida, within the Tampa
18 Electric Company’s (“TECO”) service area and are identified on the map of
19 Calpine’s existing North American generation fleet shown below:

CALPINE - A GENERATION AHEAD, TODAY



1

2

3 **Q: Please briefly describe the Osprey Energy Center.**

4 A: Osprey is a nominal 599 MW, 2x1 natural gas fired combined-cycle facility located
 5 in Auburndale, Florida, that began commercial operation in 2004. The facility
 6 consists of two Siemens 501FD combustion turbine generators connected to two
 7 Nooter-Erikson heat recovery steam generators and one Siemens steam turbine
 8 generator. Osprey can provide 515 MW of electricity in the summer and 545 MW at
 9 winter reference conditions, plus an additional 55 MW using its duct firing
 10 capability. Osprey is a highly efficient combined cycle facility.

1 Osprey is interconnected to the Florida transmission grid at TECO's 230 kV
2 electrical transmission system at the Recker substation. In addition, Calpine holds
3 the rights to 249 MW of Firm point-to-point transmission for Osprey to deliver
4 power to Duke's system, which includes roll-over rights. Calpine also has firm gas
5 transportation rights on the Gulfstream interstate pipeline system ("Gulfstream"),
6 which are assignable by Calpine.

7 Osprey represents a very competitive, highly efficient and environmentally
8 advantageous resource, with full dispatch flexibility to meet Duke's need for supply-
9 side resources.

10
11 **IV. Calpine's Participation in Duke's 2018 Long-Term RFP**

12 **Q: Did Calpine participate in Duke's effort to solicit long-term supply-side**
13 **resources to meet its needs in 2018?**

14 A: Yes. Duke originally issued the Long-Term RFP on October 8, 2013. Calpine timely
15 submitted a proposed power purchase agreement to Duke, which would have
16 provided Duke 515 MW of capacity and energy at the busbar, for a term of 23-years
17 (May 1, 2018 through December 31, 2041) ("Osprey PPA"). The capacity charge
18 was \$72.24/kW-year, escalating at 2.3%, delivered to Duke. Calpine would assign to
19 Duke its firm natural gas transportation rights on the Gulfstream system, at its cost,
20 and Duke would provide the physical fuel for the toll.

21
22 **Q: Did Calpine submit a purchase option to Duke?**

1 A: Yes. Calpine submitted an offer to sell Osprey to Duke after the response date in the
2 Long-Term RFP. Duke notified Calpine it would not consider or otherwise evaluate
3 the offer to sell. Specifically, after being notified by Duke on April 29, 2014 that
4 Duke intended to proceed with its Suwannee Peak and Hines Chillers Projects
5 instead of Osprey, on May 1, 2014, Calpine submitted its offer to sell the Osprey
6 Facility to Duke for \$300 million.

7
8 **Q: What were the results of the Long-Term RFP?**

9 A: Although Duke evaluated the Osprey PPA, Duke rejected Calpine's offer as well as
10 the other responses and instead is seeking Commission approval of the Citrus County
11 Project.

12
13 **V. Calpine's July 2014 Offer**

14 **Q: Did Calpine submit an offer to Duke after being notified Duke was proceeding
15 with the Citrus County Project?**

16 A: Yes. Calpine submitted an offer to Duke dated June 16, 2014, and, in response to
17 issues identified by Duke, Calpine prepared and submitted an updated offer to Duke
18 on July 3, 2014 ("the July Offer").

19
20 **Q: Please describe Calpine's July Offer.**

21 A: Calpine's July Offer includes a 5-year PPA for 515MW of capacity and energy
22 (summer and winter reference), with a guaranteed heat rate of [REDACTED], with a +/-2%
23 dead band. Duke has the option to purchase the plant on January 1, 2020, subject to

1 certain conditions described below. The PPA would start on January 1, 2015 and
2 terminate on December 31, 2019. During the term of the PPA, the annual capacity
3 payment for each of the years 2015-2019, respectively, is [REDACTED]
4 [REDACTED]/kW-month. The capacity payments in the July Offer are significantly
5 lower than Calpine's September 6, 2013 offer of \$5.75/kWh, escalating at 2.3%.
6 Calpine included its 249 MW of firm, point-to-point transmission capacity on
7 TECO's transmission system and Calpine's firm natural gas transportation rights on
8 the Gulfstream pipeline system and Duke would provide the fuel.

9 The July Offer includes an option for Duke to purchase the plant for [REDACTED] million,
10 subject to certain adjustments the terms of which would be negotiated by Calpine
11 and Duke as part of a definitive agreement. The acquisition cost in the July Offer is
12 significantly lower than Calpine's May 1, 2014 offer to sell Duke the plant for \$300
13 million.

14 Under the terms of the July Offer, Duke would buy Osprey subject only to
15 FERC's review for market power and its approval of the transaction. To address
16 Duke's concern about both whether FERC would approve the proposed transaction
17 and the timing of its decision Calpine has offered the following:

- 18 • Pay Duke a one-time breakage cost of [REDACTED] million, which is intended to cover
19 the Suwanee Peakers cost increase and carrying cost for one year; and
- 20 • Include a provision, subject to terms to be negotiated, that the PPA would
21 terminate after two years (through December 31, 2016), unless the parties
22 agree to a reasonable extension.

23

1 **VI. Osprey's Option Value**

2 **Q: What is the value of Osprey relative to the Citrus County Project?**

3 A: Osprey represents an option the Commission should consider to determine the best
4 set of operating and/or new resources to meet the need identified by Duke in this
5 docket and in the companion docket addressing Duke's petition for approval of its
6 proposed Suwannee Peakers and Hines Chillers. In re: Petition for Determination of
7 Cost Effective Generation Alternative to Meet Need Prior to 2018, by Duke Energy
8 Florida, Florida Public Service Commission Docket No. 140111-EI. Although
9 Osprey cannot serve the entire need claimed by Duke in this Petition, at 515MW,
10 Osprey is large enough to meet Duke's needs through 2017 and depending on
11 circumstances and Duke's actual need, Osprey can serve needs beyond 2017 as
12 proposed by Calpine's July Offer. The direct testimony of Paul Hibbard, of the
13 Analysis Group, Inc., describes and provides analysis to support an alternative
14 scenario to the Citrus County Project in 2018: Contracting with Osprey and
15 proceeding with Duke's inlet chiller project at the Hines facility may support
16 delaying the Citrus County Project and still serve Duke's near term need, timely and
17 reliably. In addition, Osprey can provide the needed power to reliably meet the
18 peaking requirements and long-term need to serve demand that Duke proposes to be
19 served by the Suwannee Peaker project.

20

21 **VII. Osprey's Advantages**

22 **Q: Please describe Osprey's operational track record.**

23 A: The Commission should recognize the advantages of Osprey as an operating facility

1 as compared to a proposed new self-build project. Osprey has an outstanding track
2 record of delivering wholesale power to utilities in Florida and meeting the plant's
3 contractual obligations. Since 2006, Osprey has delivered more than 14 million
4 MWh of electricity to Florida customers. Duke, TECO and Seminole Electric
5 Cooperative are some of the utility customers Osprey has served during the last eight
6 years.

7 Osprey is a very reliable unit with a low equivalent forced outage rate of 1.43% in
8 2013. During January-March 2014, Osprey's forced outage rate was 0.13%.
9 Osprey had a forced outage rate of only 0.27% in January 2014, the month when
10 Florida experienced the "Polar Vortex."

11
12 **Q: Please describe Osprey's construction risk advantages.**

13 A: As with all construction projects, including the proposed Citrus County Project, there
14 is construction and permit risk, which cannot be dismissed simply as
15 inconsequential. A delay in commercial operation of the proposed project due to
16 construction delays would be costly and could result in Duke not meeting its 20%
17 planning reserve margin. Such a delay could result in additional costs to Duke's
18 customers in the form of project cost overruns and for the purchase of replacement
19 power. Duke can avoid the immediate construction risks by contracting for Osprey,
20 an operating facility with a great operational track record.

21
22 **VIII. Transmission and Market Power Issues**

1 **Q: Did Duke's evaluation of Calpine's Osprey proposals raise other concerns you**
2 **would like to address?**

3 **A:** Yes. Duke's Petition and the testimony of two of its witnesses, Ed Scott and Julie
4 Solomon, expressed concerns about the impact of transmission on deliverability and
5 costs and market power, respectively.

6
7
8 **Q: What is Calpine's position on transmission for Osprey?**

9 **A:** As stated in the terms of a PPA in the July Offer, Osprey will be contracted to
10 deliver 515 MW to Duke's system. Duke has expressed a concern that the delivered
11 output will be limited because Calpine only holds 249 MW of firm point-to-point
12 transmission service on the TECO system. Based on the direct testimony of John
13 Simpson, however, it appears likely that Duke and TECO can use operating
14 procedures and redispatch measures to ensure that Duke is able to reliably access the
15 515 MW of contracted capacity through the 5-year term of the PPA, and avoid the
16 cost of previously identified transmission upgrades. For the longer term, Duke's
17 transmission witness, Ed Scott, and Mr. Simpson appear to agree that a direct
18 connection line between Osprey and Duke will ensure delivery of Osprey's full
19 output. The estimated cost of the direct connection is \$150 million. Mr. Hibbard's
20 analysis discusses the cost impact of the direct connection and still concludes Osprey
21 is a superior choice to serve Duke's need for capacity and energy.

22

23 **Q: Does the July Offer take into consideration Duke's concerns about market**

1 **power or otherwise protect Duke's interests?**

2 A: Yes. Duke expressed concern that the near term acquisition or option to acquire
3 Osprey might trigger an adverse finding of market power by FERC, which might
4 result in FERC's denial of the acquisition, or an approval conditioned on Duke
5 incurring excessive mitigation costs. Calpine, however, addresses this concern
6 through the testimony of its witness, David Hunger, who worked on hundreds of
7 market power evaluations in his 14-year career at FERC. Moreover, Calpine has
8 proposed to mitigate the potential for Duke to incur either financial or operational
9 risk (i.e., a delay in building the Suwannee Peakers) even if FERC were to make an
10 adverse finding of market power due to the acquisition of Osprey.

11
12

13 **Q: Please summarize your testimony.**

14 A: Although Duke has requested the Commission to consider the Citrus County Project
15 and the Suwannee Peakers and Hines Chillers Project in separate dockets, the
16 Commission should review Duke's proposed projects as a portfolio, as well as on a
17 project-specific basis. Calpine's offer includes a 5-year PPA with extremely low
18 capacity charges and the opportunity to buy the Osprey Facility for [REDACTED] million, or
19 about [REDACTED] per kilowatt of capacity. Even when adding in the \$150 million cost to
20 provide a direct interconnection of Osprey to Duke's transmission system, the
21 Osprey Facility, as made available to Duke by Calpine's July Offer, provides
22 superior value to Duke and its customers. I conclude that, in the best interests of its
23 customers, Duke should contract with Osprey as an operating, more cost efficient
24 resource that can timely and reliably meet part of the need to be served by Duke's

1 proposed three self-build projects, including the option value of Osprey in
2 connection with a possible decision to delay moving forward with the Citrus County
3 Project.

4

5 **Q: Does this conclude your testimony?**

6 **A: Yes, it does.**