

ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition for Determination ) DOCKET NO. 991462-EU  
of Need for an Electrical Power )  
Plant in Okeechobee County by ) FILED: SEPTEMBER 24, 1999  
Okeechobee Generating Company, )  
L.L.C. )  
\_\_\_\_\_ )

PETITION FOR DETERMINATION OF  
NEED FOR AN ELECTRICAL POWER PLANT

Okeechobee Generating Company, L.L.C. ("OGC"), an electric utility under Section 366.02(2), Florida Statutes, and a public utility under the Federal Power Act, hereby respectfully petitions the Florida Public Service Commission ("FPSC" or "Commission") for an affirmative determination of need for the Okeechobee Generating Project (the "Project"). This Project is a 550 megawatt ("MW") (nominal), natural gas-fired, combined cycle power plant to be located in Okeechobee County, Florida, together with on-site back-up fuel capabilities, and the directly associated transmission facilities that will connect the Project to the Florida electric transmission grid. This Petition is filed pursuant to the Florida Electrical Power Plant Siting Act, Sections 403.501 - 403.518, Florida Statutes ("the Siting Act"), Section 403.519, Florida Statutes, and Commission Rule 25-22.080, Florida Administrative Code.

The Okeechobee Generating Project will have a net output capability of 550 megawatts (nominal) at ISO temperature (59F<sup>0</sup>) and relative humidity (60% R.H.) conditions (514.3 MW summer and 561.3 MW winter) and will consist of two advanced technology, combustion turbine generators, two heat recovery steam generators, and two steam turbine generators. The Project is expected to commence commercial operation in April 2003. Associated facilities will include a natural gas pipeline to be constructed by Gulfstream Natural Gas System, L.L.C. ("Gulfstream") to which the Project will be connected. The Project will be connected to the Peninsular Florida transmission grid by looping the Florida Power & Light Company ("FP&L") 230 kV Sherman-Martin transmission line into the switchyard of the Project. The direct construction cost of the Project is projected to be approximately \$190 million. The Project will be constructed and brought into commercial service with funds arranged by PG&E Generating Company, L.L.C. ("PG&E Generating") and its affiliates. It is anticipated that the Okeechobee Generating Project will be financed with debt and equity that will be used to pay construction and development costs. The direct construction cost equates to approximately \$345 per kW of installed capacity (based on 550 MW).

Accompanying this Petition are Exhibits describing Okeechobee Generating Company, the Project site, the Project and its operating

characteristics, the permitting and construction schedules for the Project and the Project's electrical interconnection to the Peninsular Florida grid planned to facilitate delivery of capacity and energy from the Project to other utilities and power marketers in Peninsular Florida. In accordance with Rule 25-22.081, Florida Administrative Code, the Exhibits contain the following information:

- A general description of OGC's load and electrical characteristics, generating capability and interconnections;
- A description of the proposed Okeechobee Generating Project, including the size, number of units, fuel type and supply modes, the approximate costs, and the projected in-service date of the Project;
- A statement of the specific conditions and other factors that indicate a need for the proposed electrical power plant, including load forecasts, the model or models on which they were based, and analyses and supporting documentation of the costs and benefits of the Project;
- A summary discussion of the major available generating alternatives that were evaluated in terms of economics, reliability, long-term flexibility and usefulness and other relevant factors, including strategic factors; and
- An evaluation of the adverse consequences that will result if

the Project is not brought into service in April 2003, as set forth in the Petition.

The discussion of viable non-generating alternatives required by the rule is contained in this Petition. The Exhibits also demonstrate OGC's and Peninsular Florida's need for the Project, the cost-effectiveness of the Project, the reliability benefits that the Project will provide to Peninsular Florida, the consistency of the Project with Peninsular Florida's need for adequate electricity at a reasonable cost, and the fuel savings and economic and environmental benefits that the Project will provide to Peninsular Florida electric customers and citizens.

In accordance with Rule 25-22.080(1), Florida Administrative Code, OGC has submitted this Petition to the FPSC before filing its application for site certification pursuant to the Siting Act.

**PROCEDURAL BACKGROUND AND INFORMATION**

1. The name and address of the Petitioner is as follows:

Okeechobee Generating Company, L.L.C.  
c/o PG&E Generating  
ATTN: Sanford L. Hartman, Esquire  
Vice President & General Counsel  
7500 Old Georgetown Road  
Bethesda, Maryland 20814

2. All pleadings, motions, orders, and other documents directed to Petitioner are to be served on the following:

Jon C. Moyle, Jr.  
Moyle, Flannigan, Katz,  
Kolins, Raymond & Sheehan, P.A.  
The Perkins House  
118 North Gadsden Street  
Tallahassee, Florida 32301

and

Robert Scheffel Wright and  
John T. LaVia, III  
Landers & Parsons, P.A.  
310 West College Avenue (ZIP 32301)  
Post Office Box 271  
Tallahassee, Florida 32302,

with courtesy copies to:

Sean J. Finnerty  
Manager, Project Development  
PG&E Generating  
One Bowdoin Square  
Boston, MA 02114-2910

and

Sanford L. Hartman, Esquire  
Vice President & General Counsel  
PG&E Generating  
7500 Old Georgetown Road  
Bethesda, Maryland 20814.

**PRIMARILY AFFECTED UTILITY**

3. Okeechobee Generating Company, the applicant for the Commissioner's determination of need herein, is the utility primarily affected by the Project. OGC expects to sell approximately 514.3 MW of power from the Project to other utilities

and power marketers in Peninsular Florida at each summer peak (i.e., its full rated summer peak capacity) and approximately 561.3 MW of power to other utilities and power marketers in Peninsular Florida at each winter peak ( i.e., its full rated winter peak capacity) over the first ten years of the Project's operation (and for all foreseeable years beyond that initial period). OGC expects to sell approximately 4.3 million MWH of electric energy from the Project to other utilities and power marketers in Peninsular Florida per year from 2004 through 2013, reflecting an average (or typical) annual load factor of approximately 93 percent.

4. OGC is a public utility under the Federal Power Act, 16 U.S.C.S. § 824(b)(1)&(e) (1994). OGC will own the Project and will market the Project's capacity and associated energy to other utilities and power marketers under negotiated arrangements entered into pursuant to OGC's Rate Schedule No. 1 approved by the Federal Energy Regulatory Commission ("FERC"). Okeechobee Generating Company, 88 FERC ¶61,219. That rate schedule, which applies to all sales by OGC, permits OGC to enter into agreements with willing purchasers of energy and capacity provided by the Project.

5. OGC is an exempt wholesale generator ("EWG") under the Public Utility Holding Company Act of 1935.<sup>1</sup> 15 U.S.C.S. § 79z-5a

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<sup>1</sup> 15 U.S.C. § 79z-5a(a)(1) provides as follows: "The term 'exempt wholesale generator' means any person determined by the

(1994 & Supp. 1997) The FERC confirmed OGC's EWG status by its order dated August 24, 1999.<sup>2</sup> 88 FERC ¶62,177. As an EWG, OGC is prohibited by the Public Utility Holding Company Act of 1935 from making retail sales of electricity from the Project, and may only sell power to wholesale purchasers, that is, to other utilities and power marketers. OGC projects that virtually all of its wholesale sales will be made to other utilities and power marketers for use in Peninsular Florida. Copies of the above-referenced FERC orders are included in the Appendix to the Exhibits accompanying this Petition.

6. Okeechobee Generating Company, L.L.C., a Delaware corporation, is a wholly-owned indirect affiliate of PG&E Generating, a Delaware corporation. PG&E Generating is a wholly-owned indirect subsidiary of PG&E Corporation, a California corporation. PG&E Corporation is an energy-based holding company

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Federal Energy Regulatory Commission to be engaged . . . exclusively in the business of owning or operating, or both owning and operating, all or part of one or more eligible facilities and selling electric energy at wholesale." An "eligible facility" is a facility "used for the generation of electric energy exclusively for sale at wholesale . . . ." 15 U.S.C. § 79z-5a(a)(2).

<sup>2</sup> OGC's current EWG certification was based on a 500 MW (nominal) generating plant. Due to changes in the Project's design since the original EWG certification application was filed, the Project is now expected to have 550 MW (nominal) of capacity, and OGC is in the process of seeking EWG certification reflecting the design change.

headquartered in San Francisco, California, that markets energy services throughout North America. PG&E Corporation has five wholly-owned subsidiaries. The subsidiaries are PG&E Energy Services, PG&E Energy Trading, PG&E Gas Transmission, PG&E Generating, and Pacific Gas and Electric Company.<sup>3</sup>

7. Affiliates of PG&E Generating own, manage, operate or control more than 7,300 MW of electricity generation capacity across the United States, including 580 MW originating from facilities located in the State of Florida. Nationally, PG&E Generating has 1,162 MW under construction and more than 8,500 MW in active development. Approximately 4,000 MW of PG&E Generating's total operating capacity is merchant power, in which the electricity is sold into competitive wholesale power markets.

#### THE PROPOSED POWER PLANT

8. The proposed Okeechobee Generating Project will be a natural gas-fired, combined cycle generating plant with 550 MW (nominal) of net generating capacity at ISO temperature and relative humidity. The Project's rated winter capacity will be 561.3 MW and its rated summer capacity will be 514.3 MW. The

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<sup>3</sup> PG&E Generating is not the same company as Pacific Gas & Electric Company, the regulated California utility. PG&E Generating is not regulated by the California Public Utilities Commission. California customers do not have to buy PG&E Generating's products in order to continue to receive quality regulated services from Pacific Gas & Electric Company.



Project will consist of two combustion turbine generators ("CTGs") (ABB GT24 or equivalent), two heat recovery steam generators ("HRSGs"), and two steam turbine generators ("STGs"). The facility will utilize state-of-the-art, dry low-NO<sub>x</sub><sup>4</sup> combustion technology and selective catalytic reduction ("SCR") to minimize NO<sub>x</sub> emissions. The Project's primary source of makeup water to the cooling towers will be surface water provided from the South Florida Water Management District's channelized canal C-59 at Taylor Creek/Nubbin Slough. On-site groundwater wells are expected to provide back-up water supply during extreme drought conditions, if needed. The Project will use wet cooling towers to condense steam back to water for reuse in the HRSGs and STGs.

9. The Project will be located north-northeast of Lake Okeechobee, in a rural area approximately five miles southeast of the City of Okeechobee, in Okeechobee County, Florida. The facility will be located on approximately 40 acres of an approximately 771 acre site located west of Nubbin Slough on the north side of State Route 710. Maps of the site location and site layout are shown in Figures 3, 4 and 5 of the Exhibits accompanying this Petition. The site is cleared and located on fairly level ground. An access road will be constructed to the site from State

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<sup>4</sup> "NO<sub>x</sub>" is used to refer generically to the oxides of nitrogen produced in the combustion process.

Route 710. The Project is consistent with the zoning and comprehensive plan designation for the area in which the Project will be located. The site is zoned specifically for power plants. OGC anticipates that it will successfully obtain all required permits for the Project in a timely manner.

10. The Project will be fueled primarily by natural gas, which will be delivered through the Gulfstream Natural Gas System. The natural gas pipeline is planned to traverse the southern portion of the site as illustrated in Figure 12 of the Exhibits accompanying this Petition. Gas transportation will be arranged pursuant to a Precedent Agreement between OGC and Gulfstream. Pursuant to the Precedent Agreement, Gulfstream has committed to provide sufficient firm gas transportation service to operate the Project at full capacity for a term of 20 years. Natural gas fuel supply for the Project will be provided to Gulfstream receipt points by natural gas marketing companies or producers through an optimized combination of short-term contract purchases, long-term contract purchases, and spot market purchases. Specifically, the Project will purchase natural gas from gas producers and gas marketing companies which have access to those gas treatment plants, processing plants and interstate natural gas transmission systems with supply located in the vicinity of Mobile Bay, Alabama, and Pascagoula, Mississippi. In addition, Gulfstream proposes

interconnections with the Mobile Bay Pipeline (Koch), the Destin Plant, the Dauphin Island Gathering System Plant, the Williams Plant and the Mobil Mary Ann Plant. Capacity of the proposed Gulfstream system is anticipated to be more than one billion cubic feet per day.

11. A back-up supply of distillate fuel oil will be maintained at the Project site to ensure continued operation of the plant in the event that natural gas is not available. The Project will have on-site fuel oil storage capacity sufficient to provide the maximum daily fuel quantity required by the plant to generate at its maximum capacity for 24 hours without refilling storage. The on-site oil storage facility will be designed to hold approximately 650,000 gallons of fuel oil, equivalent to 90,000 MMBtu of natural gas, the maximum daily quantity of natural gas required for the Project. As the fuel oil storage starts to be drawn down, local suppliers will commence refilling the on-site oil storage facility. This arrangement provides a high level of assurance that the Project will be able to maintain its full output during any reasonably foreseeable gas supply interruption.

12. The Project will be electrically interconnected to the Peninsular Florida bulk transmission grid by looping the 230 kV FP&L Sherman-Martin transmission line into the switchyard of the Project. Transmission system impact studies prepared for OGC

included power flow contingency studies, voltage instability studies, dynamic stability studies, and short circuit studies. These studies indicate that the proposed interconnection, and the existing Peninsular Florida transmission grid, will generally accommodate the delivery of the net output of the Project, regardless which utilities purchase and receive the Project's output. The power system impact studies also indicate that, under normal conditions, the Project will not burden the transmission system or violate any transmission constraints or contingencies in Peninsular Florida. The transmission studies indicate that, under two contingency conditions (outage of Project switchyard to Sherman, outage of Project switchyard to Martin), there are apparent marginal exceedences (approximately 8%) of the winter seasonal ratings of the 230 kV Sherman-Project switchyard and Project switchyard-Martin lines. In addition, there are three other apparent marginal exceedences (3-5%) of winter seasonal ratings on transmission lines operating at 138 kV. If these apparent marginal exceedences prove to represent significant concerns, they can be remedied. OGC expects to be represented on the Florida Reliability Coordinating Council ("FRCC").

13. The Project's advanced technology, combined cycle design with natural gas as its primary fuel will provide: (a) high availability, with a projected Equivalent Availability Factor of 93

percent; (b) high reliability, with a projected Equivalent Forced Outage Rate of 2 percent and a Planned Outage Factor of 5 percent; and (c) high efficiency, with a projected full load net heat rate of 6,775 Btu per kWh based on the Higher Heating Value ("HHV") of natural gas at ambient site conditions. The Project will utilize state-of-the-art dry low-NO<sub>x</sub> combustion technology and SCR to control NO<sub>x</sub> emissions. (When firing oil, the Project will use SCR and water injection to control NO<sub>x</sub> emissions.) The Project has been designed with careful consideration of environmental issues and will have a favorable environmental profile. In fact, the Project will be one of the cleanest power plants in Florida and in the United States. Operation of the Project is likely to result in measurable reductions in emissions of SO<sub>2</sub>, CO<sub>2</sub>, NO<sub>x</sub> and other air pollutants in Peninsular Florida, due to the Project's displacement of generation from less efficient units and units that burn fuels that produce more pollution than is produced by the natural gas fuel used in the Project.

14. The specific conditions that indicate a need for the Project are Peninsular Florida's need for system reliability and integrity, the need for the provision of adequate electricity at a reasonable cost, the demonstrated economic benefits of the Project with respect to the suppression of wholesale (and thus retail) electricity prices, the constrained Peninsular Florida electric

reserve margin, and the Project's environmental benefits. The need is immediate. Analyses of these conditions and the historical and forecasted Peninsular Florida summer and winter peaks, number of customers, net energy for load and load factors are included in the Exhibits. Descriptions of the models used to project OGC's operations, and analyses of the costs and benefits of the Project are set forth more fully below and in the Exhibits attached hereto.

15. The major available generating alternatives that were examined and evaluated in arriving at the decision to pursue the proposed generating units were gas-fired combined cycle, gas-fired combustion turbine, integrated coal gasification-combined cycle, conventional coal-fired steam generation, and conventional gas-fired steam generation technologies. See Table 11 of the Exhibits. These evaluations clearly indicate that the best choice for OGC, considering economics, cost-effectiveness, reliability, long-term flexibility, and strategic factors, is gas-fired combined cycle capacity. See Table 12 of the Exhibits. This is borne out by the fact that other Florida utilities are planning to add capacity of similar technology and design, and by the fact that the type of power plant proposed by OGC is the technology of choice for the large majority of new power plant capacity planned in the United States.

16. There are no viable non-generating alternatives to the Project. OGC is in the business of providing efficient, cost-effective wholesale power to other utilities. As a federally regulated public utility, OGC does not engage in end-use conservation programs and is not required to have conservation goals pursuant to section 366.82(2), Florida Statutes. Nonetheless, the Project, like other gas-fired combined cycle units, provides energy efficiency benefits to Florida by using less primary fuel to produce a given quantity of electricity and provides environmental benefits in the form of reduced emissions that would otherwise occur if oil-fired or gas-fired steam turbine plants, or other fossil fuel baseload or peaking units were dispatched instead of the Project.

**NEED FOR THE PROPOSED POWER PLANT**

17. The Project is needed by Okeechobee Generating Company to participate in the Peninsular Florida competitive wholesale power market. The Project is also needed by Peninsular Florida for system reliability and integrity and for the provision of adequate electricity at a reasonable cost. The following discussion addresses in detail the manner in which the Project meets these needs.

**A. Need For The Project.**

18. As previously stated, Okeechobee Generating Company, L.L.C., is an indirect wholly-owned affiliate of PG&E Generating. PG&E Generating is an indirect wholly-owned subsidiary of PG&E Corporation, an energy-based holding company that markets energy services throughout North America. PG&E Generating is the competitive power generation affiliate of PG&E Corporation. The sole business purpose of OGC is to own and operate the Project in a manner that will provide reliable, competitively priced, environmentally clean power in the Peninsular Florida wholesale market without risk to Florida's retail electric customers. As expressed in Order No. 888 relating to transmission access, the Federal Energy Regulatory Commission's goal is to "...remove impediments to competition in the wholesale bulk power marketplace and to bring more efficient, lower cost power to the Nation's electricity consumers."<sup>5</sup> PG&E Generating is developing the Project consistent with the policies of the FERC to develop and promote a robust, competitive wholesale electricity market. The FPSC has also recognized that a competitive wholesale electricity market is enhanced by merchant plants: "Merchant plants increase wholesale competition thereby in theory lowering wholesale electric prices

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<sup>5</sup> Order 888, 61 Fed. Reg. 21,539 (1996) .



from what they otherwise may be."<sup>6</sup> PG&E Generating, through OGC, seeks to continue its role in developing merchant plants and needs the Project to pursue the state and federal governments' goal of ensuring competitively priced wholesale generation for the benefit of electric customers.

19. There are immediate reliability (kilowatt) and economic needs in Peninsular Florida for the Project. The "need for power" issue often encompasses several aspects of need.<sup>7</sup> The reliability need for 550 MW (nominal) of highly-efficient electric capacity and associated energy production in Peninsular Florida is evidenced by the State's current constrained reserve margins. Peninsular Florida needs the Okeechobee Generating Project because the Project will provide 550 MW (nominal) of bulk power and energy at the lowest cost available to customers as compared to the continued use of traditional rate-based power plants. Moreover, the high-efficiency, gas-fired combined cycle technology chosen for the Okeechobee Generating Project represents the lowest cost technology available to serve Peninsular Florida's future power supply needs.

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<sup>6</sup> In re: Joint Petition for Determination of Need for an Electrical Power Plant in Volusia County by the Utilities Commission, City of New Smyrna Beach, Florida, and Duke Energy New Smyrna Beach Power Company Ltd., L.L.P., 99 FPSC 3:401, 438.

<sup>7</sup> See In re: JEA/FPL's Application of need for St. John's River Power Park Units 1 and 2 and related facilities, 81 FPSC 6:220, 6:221.

In addition, the Project represents an environmentally preferred alternative to conventional power plants. As such, there is a demonstrable need for the Project in Peninsular Florida.

**B. Need For Electric System Reliability and Integrity.**

20. The Project is consistent with and meets Peninsular Florida's needs for generating capacity to maintain system reliability and integrity. According to the 1999 Regional Load & Resource Plan prepared by the Florida Reliability Coordinating Council and dated July 1999 ("1999 FRCC Regional Plan"), Peninsular Florida needs more than 10,000 MW of new installed capacity in order to maintain winter reserve margins generally between 4 % and 9 % without exercising load management and interruptible resources from the winter of 1999-2000 through the winter of 2008-2009. Even with the exercise of load management and interruptible resources, Peninsular Florida needs more than 10,000 MW of new capacity to maintain reserve margins generally between 15% and 20% during the same period. A 20% reserve margin is recommended for Peninsular Florida by the FPSC Staff in its testimony filed in Docket NO. 981890-EU, Generic Investigation Into Aggregate Electric Utility Reserve Margins Planned for Peninsular Florida. (Direct Testimony of Robert L. Trapp at 16.) Only two of the ten years identified in the 1999 FRCC Regional Plan meet or exceed the FPSC Staff's recommendation. The foregoing clearly demonstrates that there is

a significant and substantial reliability need for new generating capacity in Peninsular Florida. The Project will contribute to meeting that need either (a) by providing firm capacity (if other utilities contract for the Project's output), or (b) if the Project's capacity remains uncommitted, by providing additional reliability protection by the Project's presence and availability. The Project will improve the winter reserve margin by about 1.3 % in the winter of 2003-2004. The winter 2003-2004 reserve margin of generation resources will increase from 9.23 % to 10.52 % with the Project's additional 561.3 MW. The Okeechobee Generating Project will provide similar reserve margin improvements in subsequent years.

21. Under any scenario, the Project is expected to provide an additional 561.3 MW of net capacity to Peninsular Florida utilities during extreme winter peaking conditions and an additional 514.3 MW of additional capacity during extreme summer peaking conditions. In an extreme weather event, e.g., a prolonged period in the summer with daily high temperatures exceeding 100 degrees F., or winter weather similar to that experienced at Christmas of 1989, the Project will provide substantial additional generating capacity to Peninsular Florida that would not otherwise be available. Assuming an average coincident peak demand of 5 to 6 kW per residential customer, the Project's capacity would be sufficient to maintain

electric service to approximately 90,000 to 110,000 homes during such an event.

C. Need for Adequate Electricity at a Reasonable Cost.

22. The Project meets Peninsular Florida's need for adequate electricity at a reasonable cost. Most new capacity proposed by other Florida utilities is similar gas-fired combined cycle capacity. See Table 9 in the Exhibits; see also FRCC 1999 Regional Plan. The direct construction cost and heat rate of the Okeechobee Generating Project compare favorably to those of other proposed similar power plants in Peninsular Florida. Because no utilities or retail customers are subject to being required to pay for the costs of the Project, and because other Peninsular Florida utilities can reasonably be expected to buy power from the Project only when it is cost-effective, as compared to other supply sources, the Project is also necessarily consistent with and meets Peninsular Florida's need for adequate electricity at a reasonable cost.

23. As indicated above, the Project will be a "merchant plant." "Merchant plant" has been defined by the FPSC as "a power plant with no rate base and no captive retail customers."<sup>8</sup> A

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<sup>8</sup> In re: Joint Petition for Determination of Need for an Electrical Power Plant in Volusia County by the Utilities Commission, City of New Smyrna Beach, Florida, and Duke Energy New Smyrna Beach Power Company Ltd., L.L.P., 99 FPSC 3:401, 407.

merchant plant differs from a traditional "rate-based" plant in that the costs of a rate-based plant are recovered through rates charged to the utility's captive customers. If, after a rate-based plant is constructed, lower cost power becomes available, the utility nevertheless remains entitled to recover the costs of its plants through its rates. Hence, the utility's ratepayers, rather than its shareholders, bear the risks associated with obsolescence. Similarly, absent a finding of imprudence, a utility is permitted to recover the fixed and operating costs of its rate-based plant, even if these costs are higher than originally projected or if the plant fails to operate as well as projected.

24. In contrast, a merchant plant has no rate base and no captive customers. A merchant plant simply offers its capacity and energy to potential wholesale customers, who are free to purchase or decline to purchase capacity and energy offered by the merchant plant. An economically rational purchasing utility will only enter into an agreement to purchase electric capacity or energy from a merchant plant if the costs of that capacity or energy are lower than the costs of alternatives otherwise available to the utility, e.g., generation from its own power plants or purchases from others. If the cost of power from the merchant plant is higher than the costs of other alternatives, a purchasing utility will simply choose not to buy the merchant plant's output. In such

circumstances, the unrecovered costs of the merchant plant will be borne by the plant's owners, and not by any customer. The same result will occur if the merchant plant incurs cost overruns or fails to operate as efficiently or reliably as projected - the merchant plant owners, rather than any ratepayer, bears all of the capital, operating, and market risks associated with the power plant. Consequently, if the merchant plant's economics are favorable, other utilities and power marketers will purchase its output and enjoy cost savings. If the plant turns out not to be economic, customers will incur no financial harm. For these reasons, a merchant plant can only benefit other utilities and their customers.

**D. Strategic Considerations.**

25. The Project is also consistent with strategic factors that may be considered when building a power plant, both from OGC's perspective and from the perspective of the State. The Project will be fueled by domestically produced natural gas rather than by imported fuel that may be subject to interruption due to political or other events. In addition, the Project provides a primary impetus and will be a significant customer contributing to the construction of a second, major trans-Florida gas pipeline. A second pipeline will greatly enhance Florida's gas supply reliability. Moreover, a second pipeline will help avoid a serious

power disruption like the one that occurred in August 1998, when the State's gas supply was interrupted by a lightning strike at the Perry compressor station.

26. The Project has a low installed cost and a highly efficient heat rate, assuring its long-term economic viability. The Project's gas-fired combined cycle technology is exceptionally clean and minimizes airborne emissions. Since the Project will use a very clean fuel, natural gas, as its primary fuel, there is substantially less risk (than with older, less efficient, and dirtier power plants) that the Project will be adversely affected by future changes in environmental regulations. Moreover, the Project's use of natural gas in a very efficient generation technology will improve the overall environmental profile of electricity generation in Florida. The Project will also conserve primary energy consumed for electricity production in Florida. It will enhance the overall efficiency of electricity production and of natural gas use, as well as reduce the consumption of petroleum fuels for electricity generation in Florida.

#### **COST-EFFECTIVENESS**

27. The Project is the most cost-effective alternative available to Peninsular Florida for meeting the future power supply needs of Peninsular Florida utilities and their retail electric customers. The Project is also the most cost-effective alternative

available to OGC for meeting its projected wholesale sales obligations. Moreover, based on its highly efficient heat rate and low direct construction cost, the Project is demonstrably cost-effective relative to virtually all other gas-fired combined cycle power plants proposed for Florida over the next ten years. Accordingly, the Project will provide cost-effective power to Peninsular Florida.

**A. Cost-Effectiveness to Peninsular Florida.**

28. The Project will be a cost-effective power supply resource for Peninsular Florida. Projections of the Project's operations prepared for OGC show that the Project will operate, economically, at annual capacity factors of approximately 93 percent from 2004 through 2013. This result is not surprising because most new capacity proposed for Peninsular Florida (and for the State of Florida) is gas-fired combined cycle capacity. The presence of the Project, with its high efficiency, is expected to suppress wholesale power prices in Florida below what they would otherwise be. As a merchant plant, the output of which no utility is obligated to buy, the Project will minimize power supply costs; it will not--indeed, cannot--increase them above the cost of alternatives.

29. Power produced by the Project will be sold in the wholesale market to other utilities and power marketers for use in



Peninsular Florida. OGC projects that virtually all of the Project's output over the 2003 through 2013 period is expected to be sold to other utilities and power marketers in Peninsular Florida (i.e., within the FRCC region), on the basis of the relative economics of the Project and other Peninsular Florida generation facilities. Moreover, generation costs are generally lower in Georgia than Florida, and additional transmission wheeling charges would be incurred to make such sales. In addition, transmission export capability at the Georgia/Florida interface is limited.

30. OGC will only be able to sell its wholesale power to other utilities if and when utility purchasers determine that such purchases are cost-effective relative to those utilities' alternative power supply options, e.g., self-generation or other purchases. In addition, the FPSC's ongoing regulatory oversight of utilities' fuel and purchased power costs ensures that Florida's ratepayers are responsible only for reasonable and prudent expenses. In other words, not only will the market ensure that Florida retail-serving utilities' purchases are cost-effective, the FPSC's ongoing regulation will similarly ensure that purchases from the Project are cost-effective.

31. Even if the Project were not needed to maintain reliable service to Florida electric customers (which it is), the Commission

should grant the requested need determination because the Project will necessarily provide cost-effective power to utilities that provide retail service in Florida. Since the savings resulting from cost-effective purchases from OGC will be passed directly through to retail customers through the purchasing utilities' fuel and purchased power cost recovery charges, the Project will also provide cost-effective power to those utilities' retail customers. The Project will not be subject to inclusion in any utility's rate base; accordingly, there is no risk that captive retail (or wholesale) customers will be required to bear the Project's capital or other costs. Retail customers can only be asked to pay the cost of power from the Project when their retail-serving utility elects to buy power from the Project, and these purchases will occur only when such transactions are cost-effective to the purchasing utility, i.e., when the Project offers power that costs less than what is available elsewhere.

32. The Project is also demonstrably cost-effective based on a comparison of the Project's construction cost and heat rate to the costs and heat rates of other proposed units. (This analysis is based on the reasonable assumption that the cost of natural gas to the Project would be similar to the cost of natural gas to other proposed power plants.) As previously stated, the direct construction cost of the Project is projected to be approximately

\$190 million. This construction cost equates to approximately \$345 per kW of installed capacity (based on 550 MW). The Project's full load net heat rate is projected to be 6,775 Btu per kWh (HHV of natural gas) at ambient site conditions. Both the Project's direct construction cost and its heat rate compare favorably to those of other new gas-fired combined cycle power plants proposed for Florida; only the proposed Cane Island 3 unit of the Florida Municipal Power Agency and the Kissimmee Utility Authority and the proposed Duke Energy New Smyrna Beach Power Company's projects have similar projected construction costs and heat rates. Comparative construction cost and heat rate data for the Project and for other proposed power plants in Florida is included in Table 9 in the Exhibits.

33. By virtue of the no-risk and "no-strings-attached" characteristics of this proposed merchant power plant, the Project will necessarily be a cost-effective power supply option for the utilities to which OGC sells its merchant power. This will translate into lower rates for customers of those utilities. Because no utility or retail customer will be obligated to purchase the Project's output, and assuming economically rational behavior by purchasing utilities, it is reasonable to conclude that any purchases from OGC will be made at prices less than or equal to the cost of the purchasing utility's next-best alternative. In light

of these facts, OGC's actual costs are not essential to a determination of cost-effectiveness to Florida ratepayers. In this case, unlike cases involving traditional rate-based plants built by retail utilities, Florida electric ratepayers cannot be required to bear the Project's costs in their utility rates.

**B. Cost-Effectiveness to OGC.**

34. As described more fully in the Exhibits, OGC has considered various generating technologies and various configurations of combined cycle power plants and determined that the proposed combined cycle power plant represents the most cost-effective alternative for OGC to meet its projected wholesale power sales commitments.

**ENERGY CONSERVATION**

35. As a federally-regulated public utility selling electricity only at wholesale, OGC does not engage directly in the implementation of end-use energy conservation programs. Moreover, OGC is not required to have conservation goals pursuant to Section 366.82(2), Florida Statutes. The Project meets the overall goals of the Florida Energy Efficiency and Conservation Act ("FEECA"), Sections 366.80-.85 and 403.519, Florida Statutes, because the Project contributes directly and significantly to the increased efficiency and cost-effectiveness of electricity production and natural gas use. Fla. Stat. § 366.81 (1997). The Project does so

by using state-of-the-art generation technology. The Project's primary energy conversion efficiency of approximately 50.4 % is significantly better than almost all existing utility generating capacity in Florida, better than most cogeneration facilities, and as good as or better than the vast majority of other Florida utilities' proposed new gas-fired combined cycle capacity. To the extent that the Project, with its average heat rate of 6,775 Btu per kWh (HHV of natural gas) at ambient site conditions, displaces generation from less efficient gas-fired units, the Project will result in substantial increases in the efficiency of natural gas use. (For example, when the Project displaces generation from less efficient gas-fired steam units, which have heat rates generally in the range of 10,000 to 11,000 Btu per kWh, the Project will result in net natural gas savings of approximately 32 to 38 %.) Moreover, to the extent that the Project displaces oil-fired generation, it will contribute to the express statutory goal of conserving expensive resources, especially petroleum fuels. Fla. Stat. §§ 366.81 & 366.82(2) (1997).

36. In addition, the Project's capacity and energy will be economically and environmentally preferable to other supply-side alternatives. Thus, future cost-effective conservation measures would likely displace other supply-side alternatives, rather than displace the capacity and energy available from the Project.

### TRANSMISSION FACILITIES

37. The Project will be electrically interconnected to the Peninsular Florida transmission system by looping the 230 kV FP&L Sherman-Martin transmission line into the switchyard of the Project. FP&L's 230 kV transmission lines between the Sherman and Martin Substations traverse the site. The transmission interconnection, switching equipment, and transmission lines are described in Figures 6, 9, and 10 of the Exhibits. Based on transmission system impact studies commissioned independently by OGC, OGC has concluded that this interconnection will support deliveries of power from the Project to other utilities in Peninsular Florida, without any significant additions or upgrades to the transmission grid.

### ASSOCIATED FACILITIES

38. The Project's natural gas fuel will be delivered over the Gulfstream Natural Gas System. Gulfstream's mainline facility will directly serve the Project. The diameter of the Gulfstream pipeline directly servicing the plant will be 30 inches. The pipeline pressure at the OGC site is guaranteed by Gulfstream to be 725 psig.<sup>9</sup>

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<sup>9</sup> Details of the natural gas transportation arrangements are provided for informational purposes only. Permitting of the pipeline will be sought by Gulfstream in a separate proceeding.

### CONSEQUENCES OF DELAY

39. Delaying the construction and operation of the Project will result in lower reserve margins for Peninsular Florida for each month that the Project's construction and operation are delayed. Such delays will in turn increase the probability that the power supply resources available to Peninsular Florida will be insufficient to maintain reliable service. For every day that the Project's operation is delayed, the probability of brownouts and blackouts in Peninsular Florida is greater than it should be, and greater than it would be, with the Project in operation.

40. Delaying the construction and operation of the Project will also delay the availability of cost-effective power to the other utilities in Peninsular Florida and their retail customers. OGC anticipates sales of approximately 4.3 million MWH to other Peninsular Florida utilities in 2004, the Project's first full year of projected operation, and similar amounts in following years. OGC's projections reflect the realistic assumption that such sales will be made only when cost-effective to the purchasing utilities. Thus, while actual purchase prices will depend on negotiations between OGC and its wholesale customers, the output of the Project can reasonably be expected to provide significant power cost savings to OGC's wholesale customers and to their retail customers (again reasonably assuming that such savings are passed through to those

retail customers). Delaying the Project's operation will cost those customers, and the State of Florida, these savings.

41. Delay also costs the State the fuel savings that the Project would provide in terms of reduced primary fuel consumption for the same amount of electricity produced. According to projections prepared for OGC, the Project is expected to displace approximately 4.3 million MWH per year of power produced by less efficient heavy oil-fired and gas-fired generation units (i.e., steam generators fired by heavy oil, natural gas, or both, with heat rates generally between 10,000 and 11,000 Btu per kWh) in each year from 2004 through 2013 (the last year of the analysis period). Assuming an average heat rate of 10,300 Btu per kWh for gas/oil-fired steam generation, the Project would provide annual primary fuel savings of approximately 15.2 trillion Btu (15,162,824 MMBtu) from 2004 through 2013. If all of the Project's output displaced oil-fired steam generation, approximately 6.9 million barrels of oil would be saved annually. If all of the Project's output displaced gas-fired steam generation, approximately 15.1 million Mcf of natural gas would be saved annually from 2004 through 2013. Delaying the construction and operation of the Project will deprive the State of these fuel savings benefits.

42. Delaying the Project's construction and operation will deprive the State of the environmental benefits of the Project's



operations. More specifically, delaying the Project will postpone the realization of the reductions in air pollutant emissions that will result from the significantly greater efficiency of the Project, and its use of clean natural gas fuel, as compared to the efficiency and emission rates of the power supply resources whose output will be displaced by the Project. OGC's analyses indicate that the Project would displace approximately 4.3 million MWH of electric energy produced from oil-fired and less efficient gas-fired generation facilities in each year from 2004 through 2013.

#### CONCLUSION

43. The proposed Okeechobee Generating Project meets the needs of Peninsular Florida for system reliability and integrity, and for reliable electricity at a reasonable cost. The Project will contribute meaningfully to the reliability of electric supply in Peninsular Florida, enhancing reserve margins in 2003 and thereafter. Moreover, the Project will help establish the presence of a second major natural gas pipeline in the state in that it is a key customer of the Gulfstream project.

44. The Project will necessarily be cost-effective to other wholesale purchasers and their retail customers, because the costs of the Project will not be included in rate base, and because no utility nor any electric customer will be obligated to purchase the Project's output. Wholesale purchasers will buy the Project's power

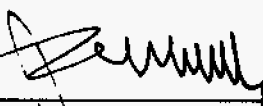
only if it is cost-effective when compared to other alternatives. Unlike conventional rate-based plants built and operated by traditional retail-serving utilities, all of the investment, market, and operating risks of the Project will be borne by OGC and PG&E Generating. Given the relative economics of current generating plants in Florida and the southeast, OGC expects that virtually all of the Project's output will be sold at wholesale to power marketers and to Florida utilities serving retail customers in Florida. Finally, the Project is consistent with, and promotes the goals of, the Florida Energy Efficiency and Conservation Act.

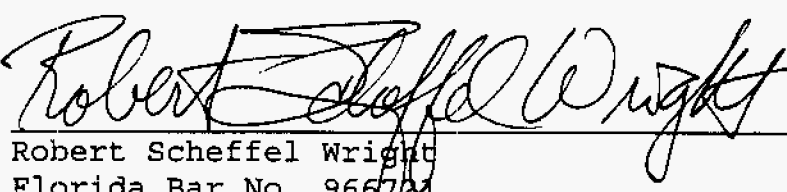
45. Accordingly, the Commission should grant the requested determination of need for the Okeechobee Generating Project, as described herein.

RELIEF REQUESTED

WHEREFORE, Okeechobee Generating Company, L.L.C., respectfully requests the Commission to enter its order GRANTING this Petition for an affirmative determination of need for the proposed Okeechobee Generating Project, as described herein.

Respectfully submitted this 24th day of September, 1999.

  
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