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May 22, 2012

VIA HAND DELIVERY

Ms. Ann Cole
Division of the Commission Clerk and
Administrative Services
Florida Public Service Commission
Betty Easley Conference Center
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

120000-OT

RE: Staff's Second Data Request; Florida Power & Light Company's 2012 Ten Year Power Plant Site Plan

Dear Ms. Cole:

Enclosed are an original and five copies of Florida Power & Light Company's responses to Staff's Second Data Request in both hard copy and electronic format, as requested.

If you have any questions or concerns please feel free to call me.

Sincerely,

Jessica A. Cano

Enclosure
cc: Charles Murphy

COM _____
APA _____
ECR _____
GCL 1
RAD 4 fcd
SRC _____
ADM _____
OPC _____
CLK _____

Q.

Please discuss whether the company included plug-in electric vehicle loads in its demand and energy forecasts for the 2012 Ten-Year Site Plan. If yes, please discuss the methodology used to estimate the number of vehicles operating in the company's service territory and their cumulative impact on system demand and energy consumption, and include the following information if available: an estimate of the number of electric vehicles, by year, and the estimated demand and energy impacts, by year.

Year	Number of Electric Vehicles (#)	Cumulative Impact		
		Summer Demand (MW)	Winter Demand (MW)	Annual Energy (GWh)
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				

A.

Projections on the number of plug-in electric vehicles in FPL's service territory were developed using the following methodology. First, projections of the U.S. market for plug-in electric vehicles were developed based on a review of multiple forecasts from leading experts and discussions with knowledgeable professionals in the automotive industry. FPL's share of the U.S. market for plug-in electric vehicles was then estimated based on the share of U.S. hybrid electric vehicles (excluding plug-in electric vehicles) that is currently located in FPL's service area.

The contribution to net energy for load from plug-in electric vehicles was derived from the vehicle forecast using an estimated kWh per vehicle. It was assumed that charging would take place 365 days per year with an average daily charge of 12.3 kWh. The 12.3 kWh per day is based on EPA's estimate of 34 kWh per 100 miles of driving and the typical driver going about 36 miles per day. This estimate of miles driven per day is consistent with actual data provided by Nissan on the Leaf. The resulting kWh forecast was then grossed up to account for losses.

For summer and winter peaks, an estimate was made, based on the most likely charging schedule, for the percent of vehicles that would be charging during the forecast summer and winter peak times. A forecast of kW per vehicle was developed based on knowledge of the specific charge rates of plug-in electric vehicles already on the market and those soon to be available in Florida. The number of vehicles, times the percentage of vehicles charging during our peak hour, times the kW per vehicle, grossed up for losses, provided the summer and winter coincident peak forecast.

The table below provides annual estimates of the number of electric vehicles, the estimated demand impacts at the time of our summer and winter peak, and the estimated annual energy impacts.

Year	Number of Electric Vehicles	Cumulative Impact		
		Summer Demand	Winter Demand	Annual Energy
	(#)	(MW)	(MW)	(GWh)
2011	1,100	1.0	0.4	6
2012	3,024	2.9	1.1	18
2013	5,852	6.0	2.2	38
2014	10,021	11.1	3.9	69
2015	15,874	19.2	6.3	118
2016	23,811	29.8	9.6	182
2017	36,510	44.3	14.6	272
2018	49,289	60.6	19.8	371
2019	65,554	80.8	26.3	495
2020	98,332	114.8	38.9	707
2021	147,497	162.6	57.6	1,010

Q.

Does the company anticipate developing load management programs relating to plug-in electric vehicles within the ten-year period? If yes, is this reflected in the company's forecasted impact of electric vehicles on the company's system demand?

A.

At this time, FPL does not have plans to develop a load management program for plug-in electric vehicles.

Q.

Explain the process used to identify, evaluate and select supply-side conservation and efficiency measures, including but not limited to heat rate improvements of individual generating facilities, improvements to system fuel efficiency, and improvements in transmission losses.

A.

In responding to Staff's 2nd DR Nos. 3, 4, and 5, FPL is interpreting the request for "supply-side measure" information to relate to improvements with efficiency attributes. As such, FPL recognized in the early 1990s that the potential to significantly improve its supply-side system energy efficiency and achieve significant cost savings rested in large part in the modernization of its fossil-fueled generating fleet. From FPL's capacity planning process, the most economically beneficial generating capability alternatives selected have generally involved increasingly more efficient generating technology. Ongoing support from the Commission for FPL's various capacity modernization/expansion proposals proved instrumental in FPL achieving significant progress in transforming its supply-side facilities to a much more efficient generating system overall.

Consequently, in just over 20 years from 1990 to 2013, with the addition of more than 13,000 MW of combined cycle capacity upon the completion of the Canaveral Modernization Project, FPL's fossil fleet capacity will have been distinctively transformed from approximately an 80:20 mix to a 20:80 mix of FERC "Steam" Production (e.g. conventional boiler-based units) to FERC "Other" Production (e.g. modern combustion turbine-based combined cycle units). These actions, along with ongoing efforts to improve operating reliability performance, have helped successfully drive the majority of FPL's generation-based supply-side efficiency improvements.

Q.

Describe each of the supply-side conservation and efficiency measures implemented during the period 2002-2011 and provide the annual capital and O&M cost savings from each measure in dollars, Btus, and/or other appropriate unit of measurement (ie- therms, barrels of oil, etc.).

A.

Consistent with FPL's response to Staff's DR No. 3, FPL's primary measure for tracking generation-based supply-side efficiency improvement is fossil system net heat rate. Heat rate is measured in British Thermal Units/kilowatt hour ("Btu/kWh") by essentially dividing the total Btu heat input from the fuel burned by the net kWh of electricity produced. As the generating fleet reduces its heat rate and improves efficiency, it generates the same megawatt hours of electricity with less fuel, saving money for FPL customers and reducing emission rates. Adding highly efficient generating capacity is therefore a significant contributor to improving supply-side efficiency.

Achieving high reliability further supports generating fleet efficiency by providing more opportunity for highly efficient capacity to be operating and, in the case of FPL's fossil generation "PEPO" (Perfect Execution of Peak Operations) program and strong focus on low EFOR (Equivalent Forced Outage Rate), averaging only two percent since 2001, has further helped support efficient, cost-effective operations.

FPL's fossil fleet net average heat rate decreased (improved) by almost 24 percent over the 1990 to the present timeframe and, more dramatically, by 19 percent over the 2002 through 2011 timeframe. Since the 2001 baseline year, the Company has been able to avoid a cumulative $5.5 billion in fuel costs, and reduce annual oil usage 97 percent (40 million barrels) by 2011.

Repowering, modernizing and expanding the generating fleet with new highly efficient and reliable gas-fired generating technology on primarily existing sites has an added benefit of helping to reduce line losses by concentrating this capacity in FPL's south Florida load center region.

High level assessments indicate that FPL's energy losses as a percentage of total energy transmitted have also dropped by more than 12 percent from 2002 to 2011, saving more than a cumulative 4 million MWhr of energy over this timeframe. Since 2001, FPL's annual energy losses have improved consistently from 6.97% in 2001 to 6.12% in 2011. This improvement is due to several factors at both the transmission and distribution levels. At the transmission level, one of the major contributors to the decline in losses is FPL's reduced reliance on purchased power and building generation closer to the load centers. At the distribution level, there are a couple of initiatives that have contributed to the decline in distribution losses. The first is FPL's VAR program, where FPL has repaired/installed capacitor banks throughout the system to improve power factor on feeders. The second is the DOE energy conservation efforts which began in 2010 requiring utilities to install more efficient transformers.

Q.

Describe each of the supply-side conservation and efficiency measures planned during the period 2012-2021 and provide the projected annual capital and O&M cost savings from each measure in dollars, Btus, and/or other appropriate unit of measurement (ie- therms, barrels of oil, etc.).

A.

Please see FPL's responses to Staff's 2nd DR Nos. 3 and 4.

In looking ahead to the 2012–2021 timeframe, FPL will continue to make fossil-fueled generation improvements through modernizations at several existing generation sites: the Cape Canaveral Modernization in 2013, the Riviera Modernization in 2014, and the Port Everglades Modernization in 2016 (FPL currently projects no additional fossil-fueled generating unit additions from 2017 through 2021). These additional generating plant modernizations should further improve FPL's fossil system heat rate and associated fuel cost savings going forward.

Q.

Please review Schedule 3.1, specifically Net Firm Demand (Column 10) for the historic period. The notation below the schedule suggests that this value is the Total Demand (Column 2) minus Load Management (Columns 6 and 8), but the resulting value is off by the value of Conservation (Columns 7 and 9). Please submit a corrected sheet for this schedule.

A.

The corrections were made in Col 10 for years 2010 and 2011, see Attachment No. 1.

Schedule 3.1
History and Forecast of Summer Peak Demand (MW)
(Historical)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2002	19,219	261	18,958	0	879	754	489	517	17,851
2003	19,668	253	19,415	0	892	798	577	554	18,200
2004	20,545	258	20,287	0	894	846	588	577	19,063
2005	22,361	264	22,097	0	902	895	600	611	20,858
2006	21,819	256	21,563	0	928	948	635	640	20,256
2007	21,962	261	21,701	0	952	982	716	683	20,295
2008	21,060	181	20,879	0	966	1,042	760	706	19,334
2009	22,351	249	22,102	0	981	1,097	811	732	20,558
2010	22,256	419	21,837	0	990	1,181	815	758	**20,451**
2011	21,618	427	21,191	0	1,002	1,252	821	776	**19,795**

Historical Values (2002 - 2011):

Col. (2) - Col. (4) are actual values for historical Summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) represent actual DSM capabilities starting from January 1988 and are annual (12-month) values except for 2011 values which are through August. Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC), CILC, and Commercial /Industrial Demand Reduction (CDR).

Col. (10) represents a HYPOTHETICAL "Net Firm Demand" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

Schedule 3.1
History and Forecast of Summer Peak Demand (MW)
(Projected)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management*	Residential Conservation	C/I Load Management*	C/I Conservation	Net Firm Demand
2012	21,623	432	21,191	0	1,036	64	865	26	19,632
2013	21,931	389	21,542	0	1,048	125	884	58	19,817
2014	23,243	1,187	22,056	0	1,075	190	922	90	20,966
2015	23,786	1,194	22,592	0	1,088	257	940	123	21,378
2016	24,315	1,201	23,114	0	1,101	324	959	155	21,775
2017	24,529	1,195	23,334	0	1,114	391	978	188	21,858
2018	24,674	1,202	23,472	0	1,127	458	996	221	21,871
2019	25,041	1,210	23,832	0	1,140	526	1,015	253	22,107
2020	25,499	1,217	24,282	0	1,156	579	1,028	280	22,456
2021	25,960	1,225	24,735	0	1,172	626	1,042	303	22,816

Projected Values (2012 - 2021):

Col. (2) - Col. (4) represent FPL's forecasted peak w/o incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected August values. The projections for 2012 through 2019 are based on the FPSC's 2011 order in the DSM Plan docket. Projected DSM values for 2020 and 2021 assume 100 MW/year of incremental DSM.

Col. (8) represents FPL's Business On Call, CDR, CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

* Res. Load Management and C/I Load Management include MW values of load management from Lee County.

Q.

Please discuss in more detail the St. Lucie Wind Project, including the results of wind measurements at the site, and estimated potential annual energy output from the Project. In addition, please provide a cost estimate of the St. Lucie Wind Project, assuming the earliest potential in-service date once approvals are received.

A.

No wind measurements have been performed at the site. FPL's 2008 application for rezoning is still pending with the county. Until such time as renewable energy policy is enacted at the state level, and the local approvals are moving forward, the Company does not plan to expend additional resources with development of the site. In the meantime, we have received permission to evaluate the wind potential in the western part of St. Lucie County, and we will decide how to proceed with any such studies pending a change in status of federal and/or state renewable policy.

Q.

Please discuss whether any additional sites have been identified by the company as having the potential for economic wind turbine development, including inland, coastal, or off-shore installations.

A.

No additional sites have been identified for future wind projects in Florida at this time, due primarily to the continued lack of renewable energy policy in the state. However, it is also important to note that the capabilities and costs associated with renewable technologies are continuing to evolve, and we are constantly monitoring these changes to determine which renewable technologies make the most sense in Florida.

For example, since 2008, when the original application for the St. Lucie project was filed, the cost of implementing solar photovoltaic technology has dropped dramatically, while at the same time solar panel efficiency has increased. Overall cost and efficiency will be key considerations for future renewable energy projects in Florida. Once state and regulatory processes are in place to support renewable project development, a detailed analysis will be conducted to determine the optimal technologies that will best serve our customers.