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COMMISSION  
CLERK

August 4, 2010

**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

100155-EG

Re: Petition for Approval of Florida Power & Light Company's Demand Side  
Management Plan – Responses to Staff's Fourth Data Request

Dear Ms. Cole:

Enclosed for filing on behalf of Florida Power & Light Company ("FPL") are an  
original and 5 copies of FPL's response to Staff's Fourth Data Request dated July 15, 2010.

Please contact me should you or your staff have any questions regarding this filing.

Sincerely,  
*Jessica Cano*  
for Jessica Cano

Enclosures

CC: Katherine Fleming  
Vicki Kaufman  
George Cavros  
Susanne Brownless  
John McWhirter  
Rick D. Chamberlain

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- APA \_\_\_\_\_
- ECR \_\_\_\_\_
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FPSC-COMMUNICATIONS

**Q.**

Please refer to FPL's Revised Plan Document, pages 107-112. Please respond to the following:

- a. Please identify the source for the Customer kWh Reduction data shown in the referenced six charts.
- b. Please explain or describe whether the savings data presented in the six charts correspond with certification and testing data published by the Florida Solar Energy Center (FSEC).
- c. Please explain or describe what process FPL has used for determining energy and peak demand savings from the certification and testing data provided by organizations like FSEC.
- d. Please explain or describe whether there are any disparities between the data from the source(s) used and the data published by FSEC.
- e. If the response to 1d is yes, please explain or describe how those disparities are reconciled to assure valid data is used to calculate projected savings.

**A.**

- a. In order to ensure reasonable, reliable and territory-specific results, FPL supplemented its actual data with other applicable data from independent, accepted sources: the U.S. Department of Energy's National Renewable Energy Laboratory (NREL); and Office of Energy Efficiency & Renewable Energy (EERE); and formulas from the Florida Solar Energy Center (FSEC). For clarity, FPL has grouped its response below by the technology evaluated, Solar Water Heating or Photovoltaics, because somewhat differing data sources were applicable to each.

**Solar Water Heating** - FPL utilized data from NREL and EERE. These sources provided reliable, independent input data that was used to model the typical performance of a solar water heating system in FPL's territory. NREL data was used for solar irradiance and ambient temperature. EERE data was used to develop residential hourly hot water usage profiles. To develop business hot water usage profiles, FPL used its own end-use load shape data.

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These inputs were then used in FPL-developed proprietary models that estimated energy and demand savings for residential and business solar water heating systems. FPL's models also utilized the solar efficiency curve equations for a representative glazed solar collector, developed by FSEC (as listed in FSEC Standard 101-09 "Operation of the Solar Thermal Collector Certification Program"). The models converted solar irradiance and ambient temperature inputs into hot water production on an hourly basis for an assumed typical meteorological year. The hot water production was matched with storage configurations to develop hourly estimates of the annual available hot water supply. These hot water supply estimates were then matched against residential and business customer hot water consumption profiles, developed as previously described, and aligned to FPL's system peak load shapes in order to determine demand reductions and energy savings.

**Photovoltaics (PV)** - FPL used data from NREL as well as NREL's PV performance simulator model, PVWatts™, to calculate the projected electric output for customer-owned PV systems in FPL's territory. This is consistent with the data and modeling FPL has used for its annual Net Metering filing with the Commission. In order to calculate FPL-specific energy and demand savings for PV systems, PVWatts™ uses: local weather data; the average PV system size (from FPL's internal log of Net Metering interconnected systems through December, 2009); and the Direct Current (DC) Rating to Gross Power Rating efficiency factor from Rule 25-6.065 (2) (b), Florida Administrative Code, Interconnection and Metering of Customer-Owned Renewable Generation. These projected PV output estimates were then aligned to FPL's system peak load shapes in order to determine demand reduction and energy savings provided in FPL's DSM Plan.

- b. FPL did not directly utilize certification and testing data from FSEC to determine the savings data for the solar water heating or photovoltaic pilot programs. Please see FPL's Response to Staff's Fourth Set of Data Requests, 1.a. for a description of the various data sources and estimation tools FPL used to develop its territory-specific savings values.
- c. Please see FPL's Response to Staff's Fourth Set of Data Requests, 1.a.
- d. Please see FPL's Response to Staff's Fourth Set of Data Requests, 1.a. and 1.b. As discussed, FPL's process did not directly use FSEC-published information other than in the manner previously described and this did not include evaluation or comparison of any like input data from FSEC for solar water heating and photovoltaic technologies. Therefore, it is unknown to FPL whether or not any particular disparities may exist. However, as a reasonableness check, FPL shared its modeled savings results with FSEC personnel prior to filing its DSM Plan. Based on that review, it is FPL's understanding that the savings fall within FSEC's expected range of results. Therefore, it is reasonable to assume that any disparities, if they exist, did not meaningfully affect the results.
- e. Please see FPL's Response to Staff's Fourth Set of Data Requests, 1.a and 1.d.