

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition to terminate  
Residential Solar Water Heating  
Research Project and approve  
Commercial/Industrial Solar  
Desiccant Research Project by  
Florida Power & Light Company.

DOCKET NO. 970391-EG  
ORDER NO. PSC-97-1336-FOF-EG  
ISSUED: October 27, 1997

The following Commissioners participated in the disposition of  
this matter:

JULIA L. JOHNSON, Chairman  
J. TERRY DEASON  
SUSAN F. CLARK  
DIANE K. KIESLING  
JOE GARCIA

NOTICE OF PROPOSED AGENCY ACTION  
ORDER TERMINATING RESIDENTIAL SOLAR WATER HEATING  
RESEARCH PROJECT AND APPROVING COMMERCIAL/INDUSTRIAL  
SOLAR DESICCANT RESEARCH PROJECT

BY THE COMMISSION:

NOTICE is hereby given by the Florida Public Service Commission that the action discussed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for a formal proceeding, pursuant to Rule 25-22.029, Florida Administrative Code.

In November 1995, this Commission approved Florida Power & Light Company's (FPL) Residential Solar Water Heating Research Project (Solar WH Project) as a research and development project under its demand-side management (DSM) plan (Order Nos. PSC-95-1343-S-EG and PSC-95-1343A-S-EG). The Solar WH Project was created out of a prior FPL residential solar water heating program known as the Conservation Water Heating Program. As stated in FPL's petition, the purpose of the Solar WH Project was to:

evaluate solar water heating technology and equipment improvements, their application and installation, and their customer acceptance, and whether specific customer segments are more likely to benefit from the application of this technology.

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FPSC-RECORDS/REPORTING

Since their inception during the 1980's, FPL's residential solar water heating measures have never been cost-effective under any Commission-approved test. However, in its 1995 DSM Plan, FPL attempted once more to determine if residential solar water heating could be made cost-effective. This action is summarized in Order No. PSC-95-0691-FOF-EG, issued in Docket No. 941170-EG:

FPL's petition proposed to discontinue the residential solar water heating rebate program, and move the program over to the research and development area. This was done to identify technology improvements and market segments that could potentially help the program pass a RIM test. We agree with these proposed program modifications.

The expenditure limit, or cap, for the Solar WH Project was \$789,200. However, after spending only \$12,168 of this amount on a limited study, FPL believes that continuing the project would constitute an uneconomic use of customer DSM dollars. FPL has decided that another promising technology, solar desiccant cooling for commercial/industrial applications, may be more worthy of research. Accordingly, on March 27, 1997, FPL filed a petition (1) to terminate the Solar WH Project, and (2) to gain approval of a Commercial/Industrial Solar Desiccant Research (C/I Solar Desiccant) Project to add to its DSM Plan and to have approved for cost recovery through the Energy Conservation Cost Recovery (ECCR) Clause.

In the C/I Solar Desiccant Project, FPL proposes to research the potential demand and energy savings associated with, and the cost-effectiveness of, a hybrid solar desiccant dehumidification system combined with a traditional cooling system. FPL expects this system to be more efficient than a traditional cooling system because a desiccant, or drying, material is used to dehumidify intake air prior to cooling via currently available air conditioning systems. FPL cites a publication of the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), which shows that hybrid desiccant cooling systems can reduce the cost of air conditioning by 60% over traditional cooling systems. FPL's proposed application is unique because it employs solar thermal plate collectors, similar to those used in solar water heaters, to heat the desiccant to remove moisture.

Full-scale use of desiccant cooling systems for commercial buildings has not yet been realized. No Florida-specific solar

desiccant cooling research has been performed. The Florida Solar Energy Center has done only preliminary work on desiccant cooling technology for the U.S. Department of Energy and the Florida Energy Office.

FPL's proposed C/I Solar Desiccant Project consists of three steps: (1) a feasibility study; (2) a laboratory test of the technology; and, if these steps show that the technology is promising, (3) a field test where the technology would be tested in a single installation in a structure, such as an office building, with high humidity-related cooling costs. FPL will solicit comments on its feasibility study from the Legal Environmental Assistance Foundation (LEAF), although FPL intends to retain authority over the final design of the study. While FPL plans to coordinate the overall research project, it anticipates contracting with a laboratory to design, build, and measure the performance of the solar desiccant air conditioning system. End-use monitoring devices, installed during the field test, will provide energy, demand, and load shape data which will allow FPL to analyze the cost-effectiveness of the solar desiccant technology.

FPL estimates that the C/I Solar Desiccant Project will take approximately two years to complete, at a total cost of \$106,000 to be recovered through the ECCR Clause. The following is a proposed breakdown of the total cost:

Equipment and Supplies	\$ 20,000
Establish Research Parameters & Concepts	\$ 53,000
<u>Determine Cost-Effectiveness</u>	<u>\$ 33,000</u>
TOTAL	\$ 106,000

We find that FPL's petition should be granted. Continuing the Solar WH Project appears to result in an uneconomic use of ratepayer DSM dollars. On the other hand, FPL's proposed C/I Solar Desiccant Project will allow FPL to continue researching solar technologies, only at less cost and in an area that appears to be more promising. Granting FPL's petition will cause FPL's total DSM research and development budget to decrease by approximately \$671,000, from \$13.3 million to about \$12.629 million. These savings will be passed on to FPL's ratepayers through the ECCR Clause. Further, we authorize FPL to recover up to \$106,000 through the ECCR Clause for costs it incurs in implementing the C/I Solar Desiccant Project. If FPL finds it necessary to spend additional funds on the project, FPL must first receive our approval to exceed the \$106,000 cap. FPL must file a final report

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with this Commission within 90 days of the close of the research project.

Based on the foregoing, it is

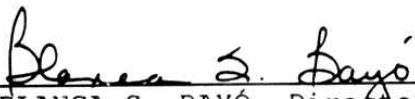
ORDERED by the Florida Public Service Commission that Florida Power & Light's Residential Solar Water Heating Research Project is terminated. It is further

ORDERED that Florida Power & Light's Commercial/Industrial Solar Desiccant Research Project is approved for cost recovery up to \$106,000 through the Energy Conservation Cost Recovery Clause.

ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective unless an appropriate petition, in the form provided by Rule 25-22.036, Florida Administrative Code, is received by the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the "Notice of Further Proceedings or Judicial Review" attached hereto. It is further

ORDERED that in the event this Order becomes final, this Docket shall be closed.

By ORDER of the Florida Public Service Commission this 27th day of October, 1997.

  
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BLANCA S. BAYÓ, Director  
Division of Records and Reporting

( S E A L )

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NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice

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should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

The action proposed herein is preliminary in nature and will not become effective or final, except as provided by Rule 25-22.029, Florida Administrative Code. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, as provided by Rule 25-22.029(4), Florida Administrative Code, in the form provided by Rule 25-22.036(7)(a) and (f), Florida Administrative Code. This petition must be received by the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on November 17, 1997.

In the absence of such a petition, this order shall become effective on the day subsequent to the above date as provided by Rule 25-22.029(6), Florida Administrative Code.

Any objection or protest filed in this docket before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

If this order becomes final and effective on the date described above, any party substantially affected may request judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or by the First District Court of Appeal in the case of a water or wastewater utility by filing a notice of appeal with the Director, Division of Records and Reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days of the effective date of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.