



# Public Service Commission

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DATE: MARCH 16, 2000

TO: DIRECTOR, DIVISION OF RECORDS AND REPORTING (BAYO)

FROM: DIVISION OF ELECTRIC AND GAS (HAFF, GING) *msw DW*  
DIVISION OF LEGAL SERVICES (CROSSMAN) *RUE*

RE: DOCKET NO. 991789-EG - APPROVAL OF DEMAND-SIDE MANAGEMENT PLAN OF FLORIDA POWER CORPORATION.

AGENDA: 3/28/2000 - REGULAR AGENDA - PROPOSED AGENCY ACTION - INTERESTED PERSONS MAY PARTICIPATE

CRITICAL DATES: NONE

SPECIAL INSTRUCTIONS: NONE

FILE NAME AND LOCATION: S:\PSC\LEG\WP\991789-B.RCM

### CASE BACKGROUND

The Florida Energy Efficiency and Conservation Act (FEECA), Chapter 366.82, Florida Statutes, requires the Commission to adopt goals to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. In Docket No. 971005-EG (Order No. PSC-99-1942-FOF-EG, issued October 1, 1999), the Commission set numeric demand-side management (DSM) goals for Florida Power Corporation (FPC). Goals were set by the Commission after accepting a joint stipulation between FPC and an intervenor, Legal Environmental Assistance Foundation, Inc. (LEAF), in Docket No. 971005-EG.

Rule 25-17.0021(4), Florida Administrative Code, states that within 90 days of a final order establishing goals, a utility shall submit a DSM plan designed to meet its goals. FPC timely filed its DSM Plan on December 29, 1999.

In Order No. 22176, issued November 14, 1989 in Docket No. 890737-PU, the Commission stated that conservation programs will be evaluated using the following criteria:

1. Whether the program advances the policy objectives of Rule 25-17.001, Florida Administrative Code, and Sections 366.80

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through 366.85, Florida Statutes, also known as the "Florida Energy Efficiency and Conservation Act" (FEECA);

2. Whether the program is directly monitorable and yields measurable results; and
3. Whether the program is cost-effective.

### DISCUSSION OF ISSUES

ISSUE 1: Should the Commission approve Florida Power Corporation's Demand-Side Management Plan, including approval for cost recovery?

RECOMMENDATION: Yes, FPC's DSM Plan should be approved.

STAFF ANALYSIS: FPC's DSM Plan contains five residential programs, eight commercial and industrial (C/I) programs, and one research and development program. These programs are summarized starting on page 6. The attached tables on pages 8 and 11 illustrate each DSM program's projected demand and energy savings and contribution towards FPC's numeric DSM goals. Demand savings from FPC's DSM Plan are expected to meet the residential summer and winter peak demand goals set by the Commission in Order No. PSC-99-1942-FOF-EG. FPC expects to slightly exceed its residential energy savings goal and all three commercial/industrial goals.

FPC's DSM programs are designed to minimize free riders, minimize rate impacts, and meet the Commission-prescribed DSM goals. The programs contained in FPC's DSM plan appear to meet the policy objectives of Rule 25-17.001, Florida Administrative Code, and FEECA. FPC's measurement plan to evaluate assumed demand and energy savings appears reasonable. Each program included in FPC's DSM plan is cost-effective under the rate impact measure (RIM), total resource cost (TRC), and Participants tests. However, it must be emphasized that staff is not addressing the prudence of expenditures for the programs contained in FPC's DSM plan; such a review is performed annually in the Energy Conservation Cost Recovery docket.

Most of the programs in FPC's DSM Plan are either unchanged or minimally modified since their approval by the Commission in 1995. As discussed below, the only new program contained in FPC's DSM Plan is a Low Income Weatherization Assistance Program. The only substantial DSM program change is to FPC's existing year-round Residential and Commercial Energy Management programs, which have been closed to new customers and replaced with a winter-only load management program.

FPC's Low Income Weatherization Assistance Program (LIWAP) is offered in response to the stipulation with LEAF in the DSM Goals

docket. LIWAP is an umbrella program to improve energy efficiency for low-income customers in existing homes. FPC has been involved in conservation activities in the low-income segment for years through some of its other DSM programs. The new LIWAP will continue these activities. The primary goals of the LIWAP are to:

- Continue coordination with the Department of Community Affairs (DCA) and local weatherization providers to deliver energy efficiency measures to low-income families;
- Identify and educate contractors and low-income customers about opportunities to improve home energy efficiency;
- Increase participation of low income families in FPC's other DSM programs; and
- Minimize lost opportunities in the existing marketplace.

LIWAP provides incentives for attic insulation upgrades, duct testing and repair, reduced air infiltration, water heater wrap, heating and air conditioning maintenance, high-efficiency heat pumps, heat recovery units, and dedicated heat pump water heaters. FPC forecasts that demand and energy savings from LIWAP will contribute approximately one percent towards FPC's residential DSM goals. Total cost for the program is expected to be far less than one percent of the total cost of FPC's DSM Plan.

FPC's plan also contains substantial changes to the Residential Energy Management Program (RSL-1 tariff) and Commercial Energy Management Program (GSLM-1 tariff). Due to declining cost-effectiveness, these year-round load control programs will no longer be available to new customers. Existing customers can continue to receive monthly credits for year-round interruptions as long as no changes occur to the appliances being controlled or to the interruption schedule. Future residential and small commercial customers can participate in FPC's Winter-Only Energy Management Program (RSL-2 tariff), which provides for direct load control of electric water heating and central electric heating appliances between November and March. The monthly credit paid for both residential and small commercial participants in the winter-only program is the same as under the existing RSL-1 tariff, but is paid only between November and March. The amount of the credit remains unchanged from when the program was last modified in 1995.

FPC's research & development program, named the Technology Development Program, is essentially unchanged from what was approved by the Commission in 1995. FPC agreed to pursue certain projects in photovoltaics and energy efficiency as part of its stipulation with LEAF in the DSM Goals docket. A summary of the program is contained on page 11. Program expenses are capped at \$800,000 per year, with a \$100,000 annual cap on expenditures for any single project. FPC does not count any kW and kWh savings from its proposed Technology Development program. The purpose of this program is to research potential DSM programs, determine their

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estimated kW and kWh savings, and evaluate them for cost-effectiveness. If a legitimate DSM program results from FPC's research efforts, the program would be incorporated into the DSM Plan and its kW and kWh savings would be applied toward the goals.

Based on the above discussion, staff recommends that the Commission approve Florida Power Corporation's Demand-Side Management Plan, including approval for cost recovery.

**ISSUE 2:** Should Florida Power Corporation be required to submit detailed program participation standards?

**RECOMMENDATION:** Yes. FPC should file program participation standards within 30 days of the issuance of the order in this docket. Staff should be allowed to administratively approve the program participation standards if they conform to the description of the programs contained in FPC's DSM Plan.

**STAFF ANALYSIS:** FPC's program standards should clearly state the requirements for participation in the programs, customer eligibility requirements, details on how rebates or incentives will be processed, technical specifications on equipment eligibility, and necessary reporting requirements. Staff recommends that it be allowed to administratively approve these program participation standards if they conform to the description of the programs contained in FPC's DSM Plan.

**ISSUE 3:** Should this docket be closed?

**RECOMMENDATION:** Yes, this docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's proposed agency action in Issue 1 files a protest within 21 days of the issuance of the order.

**STAFF ANALYSIS:** If no person whose substantial interests are affected by the Commission's proposed agency action in Issue 1 files a protest within 21 days of the issuance of the order, this docket should be closed upon issuance of a Consummating Order.

## FLORIDA POWER CORPORATION / DEMAND-SIDE MANAGEMENT PLAN

### RESIDENTIAL PROGRAMS

1. Home Energy Check: Residential energy audit program. Company auditor examines home and makes recommendations on low-cost or no-cost energy-saving practices and measures. Offers four types of audits: *mail-in* (completed by customer), *free walk-through*, *paid walk-through* (\$15 cost), and *home energy rating* (BERS audit promoted by DCA).
2. Home Energy Improvement: Umbrella program for existing homes. Combines thermal envelope efficiency improvements with upgraded equipment and appliances. Promotes the following energy-efficiency measures:
  - a. Attic Insulation Upgrade: Encourages customers who have electric space heat to add ceiling insulation. FPC pays portion of the installed cost. Specific incentive amount based on increase in insulation amount above a maximum of R-12, with maximum incentive amount of \$100 per customer.
  - b. Duct Leakage Test and Repair: Promotes energy efficiency through improved duct system sealing. Program helps identify and reduce energy loss by measuring air leakage rate through the central duct system. Customer must have electric heating and centrally-ducted cooling system to participate. FPC pays up to \$30 per unit for duct leakage test and up to \$100 per unit for duct repair.
  - c. High Efficiency Electric Heat Pumps: Pays financial incentive, not exceeding \$350 per unit, to replace existing electric heating equipment with high-efficiency electric heat pumps. Specific incentive based on minimum heating and/or cooling efficiency levels. Indoor air handler and outdoor condenser must both be replaced to qualify for this rebate.
  - d. High-Efficiency Alternate Electric Water Heating: Promotes installation of high-efficiency alternative electric water heating equipment. Provides incentive of up to \$100 for each heat recovery unit and up to \$200 per unit for each dedicated heat pump water heater unit.
  - e. Supplemental Incentive Bonus: Encourages adoption of several energy-efficiency measures through an additional incentive of up to \$50. Incentive is paid to a participant in FPC's high efficiency electric heat pump program who also implements the ceiling insulation upgrade, duct leakage repair, or both, within 90 days.

Home Energy Improvement program offers two financing options in lieu of rebates mentioned above: interest-free installment

billing over 12 months, and financing assistance through participating financial institutions and/or Federal programs.

3. Residential New Construction: Umbrella program for new home construction, multi-family, and manufactured homes. Promotes energy-efficient construction which exceeds the building code. Provides information, education, and advice to home builders and contractors on energy-related issues and efficiency measures. Promotes energy-efficient electric heat pumps and alternate electric water heating units with incentives that are identical to those offered in the Home Energy Improvement program for existing homes.
4. Low Income Weatherization Assistance (LIWAP): Umbrella program for the weatherization of low income family homes. Offered pursuant to stipulation with LEAF in the DSM Goals docket. Efficiency measures and incentives are identical to those offered in FPC's Home Energy Improvement Program, with the following additions:
  - a. Reduced Air Infiltration: A \$75 incentive is paid for work which reduces air infiltration by a minimum specified amount.
  - b. Water Heater Wrap / Replacement: Provides wrap for water heater and associated piping near the tank. A \$25 incentive may be paid towards the purchase of a high-efficiency water heater in lieu of an insulating jacket.
5. Residential Energy Management: Voluntary load control program in which FPC reduces peak demand by interrupting electric service to water heaters and central electric heating units. Program is offered only during winter months (November through March). Existing program also interrupts service to pool pumps and central cooling units during summer months, but is no longer cost-effective and will be closed to new customers. Maximum monthly bill credit is \$11.50, but is paid only during winter months when customer usage exceeds 600 kWh per month.

FPC'S RESIDENTIAL DSM PROGRAMS

DSM Program	Summer Peak Demand		Winter Peak Demand		Annual Energy Consumption		B/C Ratio (RIM)
	Savings (MW)	% of Goal	Savings (MW)	% of Goal	Savings (GWH)	% of Goal	
Home Energy Check	20.3	16.3	20.3	5.2	65.9	35.6	N/A
Home Energy Improvement	45.1	36.1	114.8	29.5	63.4	34.3	1.11
Residential New Construction	58.0	46.4	119.3	30.7	62.7	33.9	1.13
Low Income Weatherization Assistance	1.2	1.0	2.9	0.8	1.7	0.9	1.02
Res. Winter-Only Energy Management <sup>1</sup>	0.0	0.0	131.9	33.9	0.0	0.0	1.24
TOTAL SAVINGS	124.6	99.7	389.3	100.1	193.7	104.7	
GOAL	125.0		389.0		185.0		

<sup>1</sup> Winter-only program offered to new participants. Existing participants may continue on the old year-round program as long as there are no changes to the interruption schedule.

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**COMMERCIAL / INDUSTRIAL (C/I) PROGRAMS**

1. **Business Energy Check**: C/I energy audit program. Offers a *free walk-through audit* (inspection) and a *paid walk-through audit* (energy analysis) whose cost varies based on facility's average monthly energy use.
2. **Better Business**: Umbrella efficiency program for existing C/I buildings. Gives customers information and advice on energy-related issues and efficiency measures. Provides incentives or financing for the following energy-efficiency measures:
  - a. **HVAC Equipment**: Pays financial incentive, of up to \$100 per kW reduced, for the purchase of high-efficiency HVAC equipment such as packaged terminal heat pumps, water-cooled and air-cooled chillers, and unitary heat pumps and air conditioners.
  - b. **Motors**: Promotes installation of high-efficiency poly-phase motors. Incentives paid according to motor size on a per-horsepower basis, with larger motors receiving up to \$2 per horsepower.
  - c. **Roof Insulation Upgrade**: Encourages customers who have electric space heat to add roof insulation. FPC pays portion of the installed cost. Eligibility based on demonstration that additional insulation results in heating and/or cooling use reductions. Specific incentive amount based on increase in insulation amount above a maximum of R-12, with maximum incentive amount of \$100 per customer.
  - d. **Duct Leakage Test and Repair**: Promotes energy efficiency through improved duct system sealing. Program helps identify and reduce energy loss by measuring air leakage rate through the central duct system. Customer must have electric heating and centrally-ducted cooling system to participate. FPC pays up to \$30 per unit for duct leakage test and up to \$100 per unit for duct repair.
  - e. **Window Film**: Provides incentive for installation of window film having a shading coefficient of 0.45 or less on an existing window with a shading coefficient of 0.84 or greater. Incentive paid on a per-square foot of installed film basis; maximum incentive is \$125 per customer. Facilities with multiple guest rooms (hotels, hospitals, etc.) are eligible for maximum incentive of \$50 per room.

Better Business program offers two financing options in lieu of incentives mentioned above: interest-free installment billing over a 12 month period (amount not to exceed \$500), and financing assistance through participating financial institutions and/or Federal programs.

3. C/I New Construction: Umbrella efficiency program for new C/I buildings. Provides information, education, and advice on energy-related issues and efficiency measures. Allows FPC to be involved early in the building's design process. Also provides incentives for energy-efficient equipment, such as HVAC equipment, motors, and heat recovery units, which exceed the building code. Incentive levels are identical to those offered in the Better Business program for existing buildings.
4. Innovation Incentive: Subsidizes demand and energy conservation projects, on a customer-specific basis, where cost-effective to all FPC customers. To be eligible, projects must reduce or shift a minimum of 10 kW. Rebates will be limited to \$150 per kW reduced or shifted. Focuses on measures not offered in FPC's other DSM programs. Examples include *refrigeration equipment replacement, thermal energy storage, microwave drying systems, and inductive heating (to replace resistance heat)*.
5. Commercial Energy Management: Voluntary load control program in which FPC reduces peak demand by interrupting electric service to water heaters and central electric heating units. Program is offered only to small commercial customers during winter months (November through March). Existing program for small commercial customers also interrupts service to pool pumps and central cooling units during summer months, but is no longer cost-effective and will be closed to new customers. Maximum monthly bill credit is \$11.50, same as for residential load management participants, and is paid only during the winter months.
6. Standby Generation: Voluntary demand control program available to all C/I customers having on-site generation capability. Customer controls the equipment but operates it when needed by FPC. Incentive based on the load served by the customer's generator and is based on FPC's GSLM-2 rate schedule.
7. Interruptible Service: Direct load control program. FPC interrupts service by disconnecting electric service at the breaker during peak or emergency conditions. Offered under FPC's IS-1 and IST-1 tariffs. Available to any non-residential customer with an average billing demand of at least 500 kW. Monthly credit paid to customer based on level of billing demand.
8. Curtable Service: Direct load control program that is similar to interruptible service, only the customer's entire load is not shed. Offered under the CS-1 and CST-1 tariffs. Available to any non-residential customer with an average billing demand of at least 500 kW. Customer must be willing to reduce 25% of its average monthly billing demand upon request by FPC. Monthly credit paid to customer based on level of curtable demand.

FPC'S COMMERCIAL / INDUSTRIAL DSM PROGRAMS

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	Savings (MW)	% of Goal	Savings (MW)	% of Goal	Savings (GWH)	% of Goal	
Business Energy Check	1.4	3.7	1.4	3.8	3.0	15.8	N/A
Better Business	5.6	14.8	4.8	13.1	11.2	59.1	1.13
C/I New Construction	2.3	5.9	2.1	5.5	3.7	19.7	1.05
Innovation Incentive	0.8	2.2	0.8	2.3	1.4	7.6	N/A
Commercial Energy Management <sup>2</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.79
Standby Generation	30.0	78.9	30.0	81.1	0.3	1.6	1.14
Interruptible Service	0.9	2.3	1.0	2.7	8.5	44.7	1.00
Curtailable Service <sup>3</sup>	0.0	0.0	0.0	0.0	0.0	0.0	1.32
TOTAL SAVINGS	41.0	107.9	40.1	108.5	28.2	148.4	
GOAL	38.0		37.0		19.0		

<sup>2</sup> Closed to new participants. Existing participants may continue on the old year-round program as long as there are no changes to the interruption schedule.

<sup>3</sup> FPC does not forecast any new participants in this program.

**RESEARCH & DEVELOPMENT PROGRAM**

1. Technology Development Program: Program used by FPC to research, develop, and demonstrate potential cost-effective conservation programs. Includes field testing or a pilot program. Program expenses are capped at \$800,000 per year. FPC will notify the Commission, through ECCR filings, if any single project's expenditures exceed \$100,000.

Examples of potential projects include demand reduction energy efficiency techniques, market transformation initiatives, indoor air quality measures, thermal energy storage technologies, and innovative metering techniques. FPC will provide a final report on each demonstration project or file and offer a permanent conservation program for each program investigated.

FPC agreed to pursue the following projects as part of its stipulation with LEAF in the DSM goals docket:

- New construction "energy star" initiative -- HVAC diagnostics
- Photovoltaic initiative -- R&D project (including a "green power" component)