

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

RECEIVED-FPSC
APR -5 AM 9:21
PROPOSING AND

DATE: APRIL 6, 2000

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

FROM: DIVISION OF ELECTRIC AND GAS (HARLOW, BALLINGER, GING) *DS RUE RLT*
DIVISION OF LEGAL SERVICES (ELIAS) *JA*

RE: DOCKET NO. 991788-EG - APPROVAL OF DEMAND-SIDE MANAGEMENT
PLAN OF FLORIDA POWER AND LIGHT COMPANY

AGENDA: 4/18/2000 - REGULAR AGENDA - PROPOSED AGENCY ACTION -
INTERESTED PERSONS MAY PARTICIPATE

CRITICAL DATES: NONE

SPECIAL INSTRUCTIONS: NONE

FILE NAME AND LOCATION: S:\PSC\EAG\WP\991788.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 Order No. PSC-99-1942-FOF-EG, issued October 1, 1999, the Commission set numeric conservation goals for each of the four largest investor-owned electric utilities.

Prior to the adoption of numeric goals for Florida Power and Light Company (FPL), the Commission approved the Joint Motion to Approve a Stipulation by FPL and the Legal Environmental Assistance Foundation (LEAF) (Order No. PSC-99-1412-S-EG, issued July 23, 1999). In the stipulation, LEAF agreed to withdraw from the goal setting docket and take no position on FPL's numeric goals. In return, FPL agreed to investigate and, if feasible, develop various energy-efficiency measures such as low income weatherization assistance and green pricing.

DOCUMENT NUMBER-DATE

04147 APR-58

FPSC-RECORDS/REPORTING

DOCKET NO. 991788-EG
DATE: April 6, 2000

Rule 25-17.0021(4), Florida Administrative Code, requires that within 90 days of a final Commission order establishing goals, each utility shall submit a demand-side management (DSM) plan designed to meet the utility's goals. On December 29, 1999, FPL timely filed its DSM Plan. FPL requests approval of its DSM Plan, including approval for cost recovery.

DISCUSSION OF ISSUES

ISSUE 1: Should Florida Power and Light Company's (FPL) Demand-Side Management (DSM) Plan be approved, including approval for cost recovery?

RECOMMENDATION: Yes. FPL's DSM Plan should be approved because the Plan: 1) meets the objectives of Rule 25-17.001 and FEECA; 2) contains programs that appear to be cost effective and directly monitorable; 3) appears to meet FPL's numeric conservation goals; and, 4) appears to adhere to the stipulation between FPL and LEAF. Expenditures on FPL's proposed R&D programs should be capped at the levels contained in FPL's Plan.

STAFF ANALYSIS: FPL's proposed DSM Plan contains 21 programs, including six residential programs, nine commercial/industrial (C/I) programs, and six research and development (R&D) programs. FPL proposes to continue all existing programs, except for the C/I Off Peak Battery program and the Thermal Energy Storage R&D program. FPL has proposed one new program, the C/I Demand Reduction program. The Plan also includes three new R&D programs: the Green Energy R&D program; Photovoltaic Research, Development and Education R&D program; and, the Low Income Weatherization Retrofit R&D program. A summary of each of these programs is included beginning on page 10.

In Order No. 22176, issued November 14, 1989, the Commission stated that conservation programs will be judged by the following criteria:

1. Does each component program advance the policy objectives set forth in Rule 25-17.001 and the FEECA statute?
2. Is each component program directly monitorable and does it yield measurable results?
3. Is each component program cost-effective?

Staff has reviewed FPL's Plan and believes that the DSM programs meet the Commission's three-pronged test. The resulting demand and energy savings also appear to meet the numeric goals set by the Commission in Order No. PSC-99-1942-FOF-EG. FPL's Plan also includes six R&D programs and a cogeneration program which, while not directly measurable, are specifically identified in FEECA. The proposed R&D programs appear to meet the requirements of the stipulation between FPL and LEAF.

FPL's Plan includes slightly increased incentives in three residential and three C/I programs. Specifics on the proposed incentive increases are discussed on pages 10 through 13. Staff had some concern about these increased incentives, given the general trend toward lower avoided costs, and several petitions filed by FPL in 1997 which reduced program incentives. Further, each of the six programs marginally passes the RIM test. This increases the potential that these programs will not benefit the general body of ratepayers if FPL's assumptions in its cost effectiveness tests prove to be incorrect over time.

Staff reviewed the incentive levels proposed in FPL's 1995 DSM Plan and as expected (due to declining avoided costs), found the current proposed incentives to be lower than those approved in 1995. However, a combination of factors has allowed FPL to offer higher incentives than those offered in 1997. FPL's avoided units used in the analysis were two combined cycle units, rather than combustion turbines. All else being equal, this change would lead to lower cost effectiveness due to the higher efficiency of the combined cycle units. However, several offsetting factors are assumed in FPL's analysis, including an annual charge for obtaining firm gas supply, and a reduction in lost revenue. These assumptions have the net effect of increasing cost effectiveness. Staff has reviewed these assumptions and found them to be reasonable and agrees that the increase in cost effectiveness of these six programs has allowed FPL to slightly increase program incentives compared to 1997.

Staff's concerns about the marginal cost effectiveness of these programs is further reduced by FPL's requirement that all DSM programs have a payback period greater than two years for participating consumers. This reduces the possibility of free riders in each program, adding assurance that the projected savings occur as a result of the DSM program. However, FPL should closely monitor the cost effectiveness ratios of the programs and petition for changes if necessary.

FPL has proposed several additional changes to its C/I DSM programs, including: 1) discontinuing the Off Peak Battery Charging Program, 2) adding General Service Demand customers to the Business On Call program; 3) closing the CILC program to new participants; and, 4) adding the C/I Demand Reduction program.

FPL intends to terminate the Off Peak Battery Charging Program because participation in this program has reached a near saturation point. Therefore, the potential savings from the program will not offset administrative costs. Eligible customers who are interested in participating in the program will be offered an incentive under the Business Custom Incentive Program. The Business Custom

DATE: April 6, 2000

Incentive program is an existing "catch-all" program for C/I cost-effective efficiency measures which are not included in other FPL programs. Eligible DSM measures must reduce or shift at least 25 kW during peak hours, have verifiable demand and energy savings, and pass RIM.

FPL has proposed increasing the participant base for the Business On Call Program. This program currently offers incentives to General Service customers for the direct control of customers' direct expansion, central air conditioners. FPL plans to add General Service Demand customers to the program. FPL has proposed no changes to the existing incentive structure.

FPL also plans to close the C/I Load Control (CILC) program to new participants after December 31, 2000, as approved by Order No. PSC-99-0505-PCO-EG, issued March 10, 1999. The CILC program reduces peak demand by allowing FPL to directly control customer loads of 200 kW or greater during peak periods. In return, participating customers receive service under a reduced rate.

FPL's Plan includes one new C/I DSM program, the C/I Demand Reduction Program. This program is similar to the CILC program in that it is designed to reduce peak demand by allowing the direct control of customer loads of 200 kW or greater during periods of extreme demand or capacity shortages. Under the new program, participants contract for a firm demand level which may not be exceeded during capacity shortage periods. In return, participants receive a monthly credit of \$4.75 per kW based upon the difference between firm demand and total demand. Participants must provide a five-year termination notice to discontinue service under this rider. The program will be offered to customers no longer eligible for the CILC program. The new program has a reduced incentive structure relative to the CILC program.

Staff has several concerns about FPL's proposed C/I Demand Reduction program. Total costs of the program are projected to be \$15.0 million over the ten year Plan period, with total projected benefits of \$16.9 million. Given how infrequently FPL exercised the CILC load control program within the last five years, staff believes there is a potential for this program to be used to provide credits to C/I customers with little benefit to the general body of ratepayers.

FPL's analysis determined that the program is marginally cost effective, with a RIM value of 1.13. Unlike the other IOUs, FPL's cost effectiveness analysis is based on a combined cycle avoided unit. Combined cycle units are typically dispatched as base load units, while load management programs such as the C/I Demand Reduction program are only activated during capacity shortage

situations. FPL provided staff with a letter dated January 6, 2000 which indicates that in the last five years, customers were interrupted an average of 1.6 times per year for an average 3.2 hours per interruption under the CILC program. Therefore staff believes that a load management program is much more likely to avoid or defer a peaking unit, such as a combustion turbine, rather than a combined cycle unit. However, with such low usage, a peaking unit might not even be avoided. Staff intends to hold a series of meetings or workshops with the utilities to discuss this issue. As a sensitivity, staff requested a cost effectiveness analysis for the C/I Demand Reduction program using a 2003 combustion turbine as the avoided unit. FPL's analysis shows that the program remains cost effective using a combustion turbine as the avoided unit, with a RIM value of 2.14.

Similar to the CILC program, the C/I Demand Reduction program includes a special provision for space launch activities which provides power to NASA and the U.S. Air Force Range during launch periods even if FPL has declared a control period for other program participants. If the control of load is in the hands of the customer, the participating customers could provide no kW reductions while receiving credits at the expense of the general body of ratepayers. Staff also questions the use of specific customer exemptions while paying a credit based on average costs. If the program is to substitute for a generating unit that otherwise was to be built, this special provision may be unnecessary.

Despite these concerns, staff recommends approval of the proposed C/I Demand Reduction program. Although FPL has agreed to increase capacity reserves to 20% by the summer of 2004, FPL will experience tighter capacity reserve margins in the near future. FPL's 1999 Ten-Year Site Plan reports a summer 2000 reserve margin of 15.4%. Participation in the C/I Demand Reduction program will help ease these short term capacity concerns in the near term. FPL's Plan, as currently proposed, will not meet FPL's demand goals without the C/I Demand Reduction program. In addition, staff notes that the credits are reduced approximately 15% per kW relative to the rate offered under the CILC program. However, staff recommends that FPL monitor the program's cost effectiveness closely to ensure that the program provides benefits to the general body of ratepayers. FPL should petition for the appropriate changes to, including deleting of, the program should the program prove to be non cost-effective.

FPL has also proposed discontinuing one R&D program and adding three additional R&D programs. FPL plans to terminate the Residential Thermal Energy Storage Project. The goal of this project was to determine the technical feasibility and cost

effectiveness of using thermal energy storage to displace residential space cooling loads. At the time this project was developed, several manufacturers had prototype thermal energy storage systems under development. Since that time, manufacturers have moved away from this technology. FPL has spent approximately \$227,300 of the approved \$413,400 budget.

The three new R&D projects contained in FPL's Plan were developed partially in response to FPL's stipulation with LEAF. These projects include: the Green Energy Project; the Photovoltaic Research, Development and Education Project; and, the Low Income Weatherization Retrofit Project. Staff recommends that the budgets of each project be capped at FPL's expected costs. Specific costs for each project are discussed below.

The goal of the Green Energy Project is to investigate customer acceptance of a green pricing program and develop a Green Energy Program if such a program is found to be feasible. As part of the stipulation with LEAF, FPL will provide LEAF a timely opportunity to comment on FPL's research results, program design plans and procedures. FPL expects initial project development time to be at least three years, with a budget of \$700,000. Program participants will pay an additional fee designed to recover incremental costs, including program administration costs and incremental power production costs.

Under the proposed Photovoltaic, Research, Development and Education Project FPL will analyze the feasibility of a program to replace existing roofing materials with photovoltaic (PV) materials. The project will assist homeowners in installing five to ten PV roof systems in new single family homes. FPL will analyze the impact on FPL's system, relevant demand and energy data, the homeowners' financial benefit, and the durability of the technology. FPL also plans to hold workshops reporting the results to contractors. FPL expects that the development and analysis phase of the project will take at least three years, with total project costs estimated at \$471,000.

FPL intends to analyze the cost-effectiveness of retrofitting the homes of low income customers with higher efficiency energy equipment in the Low Income Weatherization Project. The program will provide monetary incentives to the appropriate housing authorities to increase the overall energy efficiency of homes which are being retrofitted. Incentives will be based on the incentives available in other FPL residential DSM programs for similar DSM measures, plus an additional \$300 per home for various other efficiency measures. FPL expects the development and analysis phase of the program to last 36 months, with a total expenditure of \$375,000.

DATE: April 6, 2000

ISSUE 2: Should Florida Power and Light Company (FPL) be required to submit detailed program participation standards?

RECOMMENDATION: Yes. FPL has recently filed proposed program participation standards with staff. Staff should administratively approve the program standards if they conform to the description of the programs contained in FPL's approved DSM Plan.

STAFF ANALYSIS: On March 2, 2000, FPL filed proposed program participation standards with staff. Staff needs additional time to ensure that these standards clearly state the requirements for participation in the programs, eligibility requirements, details on how rebates or incentives will be processed, technical specifications on equipment eligibility, and necessary reporting requirements. Staff recommends that these standards be administratively approved by staff if they conform to the description of the programs contained in FPL's approved DSM Plan. Staff expects to administratively approve these proposed standards soon after the Commission's decision.

DOCKET NO. 991788-EG
DATE: April 6, 2000

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 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 files a protest within 21 days of the issuance of the order, this docket should be closed upon issuance of a Consummating Order.

RESIDENTIAL PROGRAMS

1. **Residential Conservation Service:** This is an existing energy audit program which currently offers walk-through and mail-in audits. The program will be expanded to include phone and Internet audits.
2. **Residential Building Envelope:** The Residential Building Envelope program is an existing program which offers incentives to residential customers to install energy efficient roof and ceiling insulation measures. FPL plans to increase the maximum incentive offered from \$614 per kW to \$626 per kW. FPL also plans to increase efforts to reach low income participants by targeting public agencies and governmental housing agencies with educational program materials.
3. **Duct System Testing and Repair Program:** This existing program performs on-site duct system tests for air leak identification. Incentives are offered for duct system repair. FPL has proposed increasing the incentive from \$369 to \$406 per kW, and included free tests for multi-family and manufactured homes in the program.
4. **Residential Air Conditioning Program:** This existing program offers incentives to customers to purchase higher efficiency heating, ventilating, and air conditioning (HVAC) equipment. FPL has proposed several changes to the program, including: 1) increasing the minimum efficiency level of qualifying equipment from 11 to 11.5 SEER; 2) excluding window units; and, 3) increasing incentive levels from a range not exceeding \$182 to \$303 per kW of summer demand reduction to a range of \$216 to \$436 per kW of summer demand reduction.
5. **Residential Load Management Program:** This is an existing load management program in which direct load control equipment is installed on selected customer end-use equipment, allowing FPL to control these customer loads as needed. Qualifying end-use equipment includes central air conditioners, central electric space heaters, electric water heaters and swimming pool pumps. FPL has proposed no changes to this program.
6. **Residential New Construction Program (BuildSmart):** BuildSmart is an existing program which encourages the design and construction of energy efficient homes. The program offers education to contractors on energy efficiency measures, construction design reviews and home inspections, and an energy rating system. FPL currently charges a fixed fee of \$175 per participating home. FPL proposed to change the fee

DOCKET NO. 991788-EG
DATE: April 6, 2000

to a tiered structure in which higher efficiency homes will be charged a lower fee.

COMMERCIAL/INDUSTRIAL PROGRAMS

1. **Business Energy Evaluation:** This is a C/I audit program which offers free standard level energy evaluations. More detailed evaluations are offered for a fee. Participation in FPL's other C/I DSM programs is promoted through this program. FPL has proposed no substantive changes to this program.
2. **C/I HVAC Program:** This is an existing program which offers C/I customers financial incentives to upgrade to higher efficiency HVAC equipment. FPL has proposed several changes to the program regarding the minimal efficiency levels of qualifying equipment. FPL has also proposed increasing the maximum DX HVAC incentive from \$77 to \$100 per kW, and the maximum thermal storage incentive from \$330 to \$367 per kW.
3. **C/I Efficient Lighting Program:** The Efficient Lighting program offers C/I customers financial incentives to install high efficiency lighting measures at the time of replacement. FPL has proposed increasing the existing program's maximum incentive from \$75 to \$119 per kW.
4. **C/I Building Envelope Program:** This existing program offers financial incentives to C/I customers to install high-efficiency building envelope measures such as window treatments, roof/ceiling insulation and reflective roof coatings. FPL has proposed a change to the incentive structure from a range not exceeding \$155 to \$288 per kW of summer demand reduction to a range not exceeding \$150 to \$320 per kW.
5. **Business Custom Incentive Program:** This is an existing "catch-all" program for C/I cost-effective efficiency measures which are not included in other FPL programs. DSM measures must reduce or shift at least 25 kW during peak hours, have verifiable demand and energy savings, and pass RIM. FPL has proposed no changes to this program.
6. **Business On Call Program:** This is an existing program which offers incentives to General Service customers for the direct control of customers direct expansion, central air conditioners. FPL plans to add General Service Demand customers to the program. FPL has proposed no changes to the existing incentive structure.
7. **Cogeneration and Small Power Production:** This program is designed to facilitate FPL in complying with all regulatory requirements concerning qualifying facilities and small power producers. One role of the program is to assist customers in

the evaluation of potential cogeneration projects, including self-generation. FPL does not project demand and energy savings from this program. Therefore a cost effectiveness analysis is not performed and demand and energy savings attributable to the program are not included in FPL's goals.

8. **C/I Load Control (CILC):** The CILC program reduces peak demand by controlling customer loads of 200 kW or greater during peak periods. In return, participating customers receive service under a reduced rate. Pursuant to Order No. PSC-99-0505-PCO-EG, issued March 10, 1999, the program will not be offered to new participants after December 31, 2000.
9. **C/I Demand Reduction Program:** This is a new program designed to reduce peak demand by allowing the direct control of customer loads of 200 kW or greater during periods of extreme demand or capacity shortages. Participants contract for a firm demand level which may not be exceeded during capacity shortage periods. In return, participants receive a monthly credit of \$4.75 per kW based upon the difference between firm demand and total demand. Participants must provide a five-year termination notice to discontinue service under this rider.
10. **Off Peak Battery Charging Program:** FPL plans to terminate this program and include potential participants in the Business Custom Incentive Program. This program offered incentives for the installation of direct control equipment on battery charging equipment. The primary target for this program was golf facilities and participation has reached a saturation level.

RESEARCH AND DEVELOPMENT PROGRAMS

1. **Conservation Research and Development Program:** This is an existing blanket research project under which new DSM technologies are analyzed. Several FPL DSM programs have emerged from the CRD program, including the C/I Building Envelop, Business On Call and Residential New Construction programs. FPL proposes extending the program through December 31, 2002, with a spending cap of \$1,500,000. FPL also proposes removing annual spending caps to increase research flexibility.
2. **Cool Communities:** This is an existing program in which FPL is working with American Forests. FPL's role is to quantify energy saving potential of cooling homes in the Miami/Dade area by lightening roof color and tree planting. Total costs for the project are \$550,000, with approximately \$350,000 spent through 1999. FPL anticipates project completion by March 2001. FPL has proposed no changes to project costs.
3. **C/I New Construction:** The objective of this existing program is to evaluate the demand and energy savings potential in C/I new construction projects. FPL's ultimate goal is to develop a C/I new construction DSM program which will encourage C/I buildings to be more energy efficient than current building codes. FPL received Commission approval in June 1999, to extend the project through December 2000, with no changes to the approved expenditure cap of \$1,525,000.
4. **Residential Thermal Energy Storage Project:** The intent of this program was to determine DSM potential for residential thermal energy storage space conditioning equipment. FPL proposes to terminate this program as air conditioning manufacturers have moved away from this technology. FPL has spent approximately \$227,300 of the approved \$413,400 spending cap on the program.
5. **Green Energy:** This is a new program under which FPL will investigate customer acceptance of a green pricing program and potentially develop a Green Energy Program. As part of the stipulation with LEAF, FPL will provide LEAF a timely opportunity to comment on FPL's research results, and program design plans and procedures. FPL expects initial project development time to be at least three years, with a budget of \$700,000. Program participants will be charged an additional charge designed to recover incremental costs including program administration costs and incremental power production costs.

DATE: April 6, 2000

6. **Photovoltaic, Research, Development and Education:** FPL plans to analyze the feasibility of a program to replace existing roofing materials with photovoltaic materials which provide the same protection as standard roofing materials. This proposed project emerged partially as a result of FPL's stipulation with LEAF. The project will assist homeowners in installing five to ten PV roof systems in new single family homes. FPL will analyze the impact on FPL's system, demand and energy data, homeowner's financial benefit, and durability of the technology. FPL also plans to hold workshops reporting the results to contractors. FPL expects that the development and analysis phase of the project will take at least three years, with total project costs estimated at \$471,000.

7. **Low Income Weatherization Retrofit:** This proposed program will analyze cost-effective methods of retrofitting the homes of low income customers with higher efficiency energy equipment. The program will provide monetary incentives for housing authorities to increase the overall energy efficiency of homes which are to be retrofitted. Incentives will be based on the incentives available in other FPL residential DSM programs, plus an additional \$300 per home for various other efficiency measures. FPL expects the development and analysis phase of the program to last 36 months, with a total expenditure of \$375,000. This program is another offshoot of FPL's stipulation with LEAF.