

State of Florida



Public Service Commission

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DATE: May 25, 2006

TO: Director, Division of the Commission Clerk & Administrative Services (Bayó)

FROM: Division of Economic Regulation (Colson, Sickel) *RC MJS RLT (19/05)*
Office of the General Counsel (Brown) *MCB WCF*

RE: Docket No. 060048-EG – Petition for approval of Modifications to Demand-Side Management programs by Progress Energy Florida, Inc.

AGENDA: 06/06/06 – Regular Agenda – Proposed Agency Action - Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: ~~Administrative~~ *DS* *hw*

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

FILE NAME AND LOCATION: S:\PSC\ECR\WP\060048.RCM.DOC

Case Background

Progress Energy Florida, Inc.'s (PEF) Demand Side Management (DSM) Plan is comprised of 14 individual programs, including five residential programs, seven commercial/industrial (C/I) programs, a qualifying (cogeneration and small power production) facilities program, and a research and development program.

On January 20, 2006, PEF, submitted a petition to the Commission requesting approval of modifications to five of its DSM programs. PEF stated in its petition that changing conditions and new information available to PEF since the programs were last approved led PEF to develop the modifications to increase participation in the programs. The DSM programs affected include three Residential Programs (Home Energy Improvement, Residential New Construction, and

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Low Income Weatherization Assistance) and two C/I Programs (Better Business, and C/I New Construction). PEF's petition for modifications also addressed the new heating, ventilation and air conditioning (HVAC) regulation changes, provided additional motivational incentives to encourage implementation of other energy efficiency measures, and provided new program standards.

The Commission is vested with jurisdiction over this matter pursuant to Section 366.80 - .85, Florida Statutes.

Discussion of Issues

Issue 1: Should the Commission approve Progress Energy Florida Inc.'s (PEF) Petition for Modifications to Certain Demand Side Management (DSM) Programs, including recovery of reasonable and prudent costs for these programs through the energy conservation cost recovery (ECCR) clause?

Recommendation: Yes. The proposed modifications will provide new program participation standards to address the increased heating, ventilation, and air conditioning (HVAC) efficiency requirements that have been enacted. The modifications will also increase incentives for certain conservation measures in order to increase participation levels and clarify customer eligibility for certain measures.

Staff Analysis: On January 23, 2006, the Department of Energy's (DOE) regulations under the National Appliance Energy Conservation Act (NAECA) established new efficiency standards for certain residential-sized central air conditioners and heat pumps. Under the new standards the minimum efficiency ratings for these appliances will increase to a seasonal energy efficiency rating (SEER) of 13 for cooling and a heating seasonal performance factor (HSPF) of 7.7 for heat pump heating. These minimum energy efficiency standards are scheduled to be incorporated in the State of Florida's Energy Efficiency Code for New Construction on July 1, 2006. In its petition, PEF stated that since these new efficiency standards will affect many of its Commission approved conservation measures, PEF's present program efficiency standards will be modified to address the increased HVAC efficiency requirements. PEF also believes that increased incentives should be offered to customers who participate in measures affected directly or indirectly by the new standards. PEF has provided new program standards that include the adjustments to the new minimum efficiency standards, increased incentives for certain conservation measures, changes to certain DSM programs in order to increase participation, and clarification of customer eligibility for certain measures. Modifications to existing program standards shown below will be represented by underline as additions, and by ~~strike-through~~ as deletions.

Modifications to the Residential Home Energy Improvement Program, Low Income Weatherization Assistance Program (LIWAP) and Better Business Program:

Proposed standard: (a) for minimum rebate - minimum heating efficiency of ~~2.9 COP/7.0~~ 7.8 HSPF and minimum cooling efficiency of ~~10.2 EER/12.0~~ 14.0 SEER, and (b) for maximum rebate - minimum heating efficiency of ~~3.0 COP/7.5~~ 8 HSPF and minimum cooling efficiency of ~~11.0 EER/13.0~~ 15.0 SEER.

Modifications to the Residential New Construction and C/I New Construction Programs:

Proposed standard: (a) for minimum rebate - minimum heating efficiency of ~~7.5~~ 7.8 HSPF and minimum cooling efficiency of ~~13.0~~ 14.0 SEER, and (b) for maximum rebate - minimum heating efficiency of ~~8~~ 8.1 HSPF and minimum cooling efficiency of ~~14.0~~ 16.0 SEER.

- **Modifications to incentives for certain conservation measures.**

According to PEF, the increased HVAC efficiency requirements have diminished customer motivation to make additional energy improvements and thereby made it harder for PEF to meet the DSM goals in its 2005 DSM plan. Therefore, PEF's program modifications include additional incentives to encourage participation by improving customer interest and satisfaction. Under PEF's current DSM programs, incentives have not increased in over five years. PEF has provided program standards that include the incentives for each DSM measure listed in the petition. The following are the programs that are affected by the modifications.

Residential Home Energy Improvement: This is an umbrella program for existing homes. It combines thermal envelope efficiency improvements with upgraded equipment and appliances. The list below contains increased incentives for attic insulation upgrades and duct leakage repairs:

1. **Proposed incentive:** \$75 to bring insulation level up to a minimum of R-19. An additional 5 cents per square foot above 1500 square feet will be paid.
2. **Proposed incentive:** \$100 to bring insulation level up to a minimum of R-30. An additional 7 cents per square foot above 1500 square feet will be paid.
3. **Proposed incentive:** 50% of the duct repair cost up to ~~\$100~~ \$125 per unit for homes with ducted electric heat. Up to an additional \$25 may be paid during off-season shoulder months (these are the months preceding and immediate following the winter or summer peak month). For multi-family \$100 per unit - no test required.

Residential New Construction: This is an umbrella program for new home construction, multi-family units, and manufactured homes. The program is designed to promote energy-efficient construction that exceeds building code requirements by providing incentives to builders to increase energy efficiency. The list below contains the new incentives PEF proposes for certain measures:

1. **Proposed incentive:** ~~\$100~~ \$125 - Obtain Level One and installation of high-efficiency electric heat pump (Specific incentive based on minimum heating efficiency of ~~7.5~~ 7.8 HSPF and minimum cooling efficiency of ~~13~~ 14 SEER), plus Manual D duct design or R-30 attic insulation or R-19 attic insulation with radiant barrier system.
2. **Proposed incentive:** ~~\$300~~ \$325 - Obtain Level One and installation of high-efficiency electric heat pump (Specific incentive based on minimum heating efficiency of ~~8~~ 8.1 HSPF and minimum cooling efficiency of ~~14~~ 16 SEER), plus Manual D duct design or R-30 attic insulation.

Low Income Weatherization Assistance Program: This is an umbrella program to improve the energy efficiency of low-income family homes. The modifications to the efficiency measures and incentives are identical to those offered in PEF's Home Energy Improvement

Program. The modifications to the HVAC efficiency standards requiring higher HSPF and SEER ratings for air conditioning and heat pumps are also identical.

Better Business: This is an umbrella program to improve efficiency of existing C/I buildings. This program gives customers information and advice on energy-related issues and efficiency measures, and offers a choice of rebates to implement certain measures. Modifications are described below:

HVAC Equipment: This program pays financial incentives for the purchase of high-efficiency HVAC equipment such as packaged terminal heat pumps, packaged rooftop units, water-cooled and air-cooled chillers, and unitary heat pumps and air conditioners.

1. **Proposed incentive:** ~~\$100~~ \$250 for minimum cooling efficiency of ~~10.2 EER/12.0~~ 14.0 SEER and minimum heating efficiency of ~~3.2 COP/7.5~~ 7.8 HSPF (Heat Pumps less than or equal to 65,000 Btu/h, replacing electric resistance heat).

2. **Proposed incentive:** ~~\$300~~ \$350 for minimum cooling efficiency of ~~11.2 EER/13.0~~ 15.0 SEER and minimum heating efficiency of ~~3.5 COP/8~~ 8 HSPF (Heat Pumps less than or equal to 65,000 Btu/h, replacing electric resistance heat).

3. **Proposed incentive:** ~~\$100~~ \$150 per kW reduced from baseline efficiency (for Package Terminal Heat Pumps).

4. **Proposed incentives:** ~~\$100~~ \$150 per kW reduced from baseline efficiency (for Unitary A/C and Heat Pump Greater than 65,000 Btu/h).

5. **Proposed incentive:** ~~\$100~~ \$150 per kW reduced from baseline efficiency, with a maximum of \$75,000 per project (for Air-Cooled and Water-Cooled Electric Chillers).

6. **Proposed incentive:** ~~\$300~~ \$150 for minimum cooling efficiency of ~~11.2 EER/12.0~~ 15.0 SEER and minimum heating efficiency of ~~3.5 COP/8~~ 8 HSPF (for Heat Pumps less than or equal to 65,000 Btu/h replacing heat Pump).

Energy Recovery Ventilation: This program pays financial incentives for the installation of high-efficiency energy recovery ventilation units that remove heat and humidity from conditioned space. Measurement of this air flow is based on cubic feet per minute (CFM). Customer must have electric heating and cooling system to participate.

1. **Proposed incentive:** ~~\$0.75~~ \$1.00 per CFM, minimum 450 CFM unit > 65% winter effectiveness per Air Conditioning and Refrigeration Institute (ARI) 1060 - 2000 with a maximum of ~~\$1500~~ \$5000 per installation.

Duct Repair: This program promotes energy efficiency through improved duct system sealing. Customers must have electric heating and centrally-ducted cooling systems to participate.

1. **Proposed incentive:** 50% of the repair cost up to a maximum of ~~\$100~~ \$125 per unit for facilities with ducted electric heat. Up to an additional \$25 may be paid if repairs are done during off season shoulder months (these are the months preceding or immediate following the winter or summer peak month).

Ceiling Insulation Upgrade: This program encourages customers who have electric space heat to add ceiling insulation. PEF will pay a portion of the installed cost. Eligibility is based on a demonstration that additional insulation results in heating and/or cooling use reductions. The specific incentive amount is based on the increase in insulation amount above a maximum of R-12.

1. **Proposed incentive:** \$75 to bring insulation level up to a minimum of R-19. An additional 5 cents per square foot above 1500 square feet will be paid.

2. **Proposed incentive:** \$100 to bring insulation level up to a minimum of R-30. An additional 7 cents per square foot above 1500 square feet will be paid.

Cool Roof: Promotes the installation of "cool roof" coating which reflects heat and sun. Customer must have electric cooling system to participate.

Proposed incentive: Energy Star Roof Product with .65 or greater solar reflectance per American Society for Testing and Material (ASTM) E 903 ~~\$50 per 1,000 square foot installed with a maximum of \$1000 per installation.~~ or ASTM C 1549; \$10 per square-foot installed with maximum of \$5,000 per building.

C/I New Construction: This is an umbrella efficiency program for new C/I buildings. The program provides information, education, and advice on energy-related issues and efficiency measures. Allows PEF to be involved early in the building's design process. It also provides incentives for energy-efficient equipment, such as HVAC equipment, energy recovery ventilation, and cool roof coating. Changes to the incentives are almost identical to those offered in Better Business, the exception is shown below:

Proposed incentive: ~~\$300~~ \$150 for minimum cooling efficiency of ~~11.2 EER/13~~ 16.0 SEER and minimum heating efficiency of ~~3.5 COP/8~~ 8.1 HSPF (for Heat Pumps less than or equal to 65,000 Btu/h).

- **Modifications to certain conservation measures.**

The proposed clarification for the Residential New Construction program addresses the eligibility requirements for when a remodeled or reconstructed home can qualify for the New Construction Program, and for which efficiency standards apply to ground source heat pumps. The new language states that "an existing home will be reclassified as new construction if more than two thirds of the original air conditioned (AC) floor space is remodeled or reconstructed."

Ground source heat pumps are eligible for incentives if they meet the minimum heating and cooling efficiencies based on the seasonal energy efficiency ratio (SEER) of 14.0 for minimum rebate or 16.0 for maximum rebate for cooling, and heating seasonal performance factor (HSPF) of 7.8 for minimum rebate or 8.1 for maximum rebate for heating.

The proposed clarifications for the Home Energy Improvement program would allow duct systems altered as a result of remodeled or added conditioned area” to be retested within a 5-year period.

The proposed clarifications for the Better Business and C/I New Construction programs address eligibility requirements and rebates for installing package terminal heat pumps, unitary AC and heat pumps greater than 65,000 Btu/h, scroll and/or centrifugal chillers, and HVAC systems less than or equal to 65,000 btu/h. Under the proposed modifications, the installers must meet certain energy efficiency standards.

Conclusion

On January 23, 2006, the Department of Energy’s (DOE) regulations under the National Appliance Energy Conservation Act (NAECA) established new efficiency standards for certain residential-sized central air conditioners and heat pumps. This has lead PEF to propose modifications to the program standards to address the expected changes. PEF stated that under the current DSM plan, incentives have not increased in over five years, and PEF is expecting a decrease in participation levels for all HVAC measures. Staff believes that the proposed modifications explained above will increase the total number of customers eligible to participate in these programs. The modifications will make it easier for customers to participate by increasing the number of conservation measures available and by providing increased incentives. Staff believes that the modifications to the five programs should accomplish PEF’s objectives to encourage participation while improving customer satisfaction. PEF has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008, Florida Administrative Code, and the planning assumptions in PEF’s 2005 – 2014 Ten-Year Site Plan to determine the cost effectiveness of the modified programs. All modified programs passed the rate impact measure (RIM) test. The analyses are shown in the table below.

Program	Rate Impact Measure (RIM) Test	Total Resource Cost (TRC)Test	Participant Test
Home Energy Improvement	1.117	2.626	2.830
Residential New Construction	1.531	2.476	2.079
Low Income Weatherization Assistance	1.054	11.180	9999
Better Business	1.153	1.588	1.407
Commercial New Construction	1.123	1.461	1.320

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Staff believes that the modifications will cost-effectively increase energy efficiency in homes and businesses, reduce PEF's coincident peak load, and reduce customers' energy consumption. These programs can be monitored and PEF has filed program standards with its petition. Therefore, staff recommends that the Commission approve PEF's Petition for modifications and program standards for the five programs listed above.

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Issue 2: Should this docket be closed.

Recommendation: Yes. If no protest is filed by a person whose substantial interests are affected within 21 days of the issuance or the Commissioner's PAA order, this docket should be closed upon issuance of a consummating order. (Brown)

Staff Analysis: If no protest is filed by a person whose substantial interests are affected within 21 days of the issuance of the Commission's PAA order, this docket should be closed upon issuance of a consummating order.