

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for approval of demand-side management plan of Florida Public Utilities Company. | DOCKET NO. 100158-EG
ORDER NO. PSC-10-0678-PAA-EG
ISSUED: November 12, 2010

The following Commissioners participated in the disposition of this matter:

ART GRAHAM, Chairman
LISA POLAK EDGAR
NATHAN A. SKOP
RONALD A. BRISÉ

NOTICE OF PROPOSED AGENCY ACTION
ORDER APPROVING DEMAND-SIDE MANAGEMENT PLAN
AND SOLAR PILOT PROGRAMS

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 (F.A.C.).

BACKGROUND

As required by the Florida Energy Efficiency and Conservation Act (FEECA), Sections 366.80 through 366.85, and 403.519, Florida Statutes (F.S.), we adopted annual goals for seasonal demand and annual energy consumption for the FEECA Utilities. These include Florida Power & Light Company (FPL), Progress Energy Florida, Inc. (PEF), Tampa Electric Company (TECO), Gulf Power Company (Gulf), Florida Public Utilities Company (FPUC), JEA, and Orlando Utilities Commission (OUC).

Pursuant to Rule 25-17.008, F.A.C., in any conservation goal setting proceeding, we require each FEECA utility to submit cost-effectiveness information based on, at a minimum, three tests: (1) the Participants Test; (2) the Rate Impact Measure (RIM) Test, and (3) the Total Resource Cost (TRC) Test. The Participants Test measures program cost-effectiveness to the participating customer. The RIM Test measures program cost-effectiveness to the utility's overall rate payers, taking into consideration the cost of incentives paid to participating customers and lost revenues due to reduced energy sales that may result in the need for a future rate case. The TRC Test measures total net savings on a utility system-wide basis. In past goal setting proceedings, we established conservation goals based on measures that pass both the Participants Test and the RIM Test.

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The 2008 Legislative Session resulted in several changes to the FEECA Statute, and our goal-setting proceeding was the first implementation of these modifications. By Order No. PSC-09-0855-FOF-EG,¹ we established annual numeric goals for summer peak demand, winter peak demand, and annual energy conservation for the period 2010 through 2019, based upon an unconstrained Enhanced-Total Resource Test (E-TRC) for the investor-owned utilities (IOUs). The E-TRC Test differs from the conventional TRC Test by taking into consideration the estimated additional costs imposed by the potential regulation of greenhouse gas emissions. Further, the IOUs subject to FEECA were authorized to spend up to 10 percent of their historic expenditures through the Energy Conservation Cost Recovery (ECCR) clause as an annual cap for pilot programs to promote solar water heating (Thermal) and solar photovoltaic (PV) installation.

On March 30, 2010, FPUC filed a petition requesting approval of its Demand-Side Management (DSM) Plan pursuant to Rule 25-17.0021, F.A.C. The Southern Alliance for Clean Energy (SACE) was granted leave to intervene on August 9, 2010.² The Florida Solar Energy Industry Association (FlaSEIA) was granted leave to intervene on August 11, 2010.³ Wal-Mart Stores East, LP, and Sam's East, Inc. (Walmart) was granted leave to intervene on August 18, 2010.⁴

On July 14, 2010, the SACE filed comments on the FEECA Utilities' DSM Plans. These comments were amended on August 3, 2010, to include comments regarding FPUC. No other interveners filed comments. On July 28, and August 12, 2010, PEF and Gulf, respectively, filed responses to SACE's comments.

We have jurisdiction over this matter pursuant to Sections 366.80 through 366.85, and 403.19, F.S.

DEMAND-SIDE MANAGEMENT PLAN

By Order No. PSC-09-0855-FOF-EG, we established annual goals for the FEECA Utilities for the period 2010 through 2019. FPUC's approved goals are divided into residential and commercial/industrial sectors, with each of these sectors further subdivided into three categories: summer demand, winter demand, and annual energy. Furthermore, the FEECA Utilities were ordered to file a demand-side management plan to meet these goals within 90 days of Order No. PSC-09-0855-FOF-EG. The revised 2010 DSM Plan submitted by FPUC on September 24, 2010, consists of programs which fulfill these requirements, as discussed below.

¹ See Order No. PSC-09-0855-FOF-EG, issued December 30, 2009, in Docket No. 080411-EG, In re: Commission review of numeric conservation goals (Florida Public Utilities Company).

² See Order No. PSC-10-0496-PCO-EG, issued August 9, 2010, in Docket No. 100159-EG, In re: Petition of approval of demand-side management plan of Florida Public Utilities Company. (SACE)

³ See Order No. PSC-10-0507-PCO-EG, issued August 11, 2010, in Docket No. 100159-EG, In re: Petition of approval of demand-side management plan of Florida Public Utilities Company. (FlaSEIA)

⁴ See Order No. PSC-10-0527-PCO-EG, issued August 18, 2010, in Docket No. 100158-EG, In re: Petition of approval of demand-side management plan of Florida Public Utilities Company. (Walmart)

Based on FPUC's current estimates and projections, the Company's revised 2010 DSM Plan as filed on September 24, 2010, will sufficiently meet our approved annual demand and energy goals for the residential sector and the commercial/industrial (C/I) sector. The projected demand and energy savings stated in FPUC's 2010 DSM Plan, along with the goals approved in Order No. PSC-09-0855-FOF-EG, are summarized in Tables 1 and 2 below.

Table 1: Comparison of Residential Goals to DSM Plan

Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	Commission Approved Goal	FPUC Projected Savings	Commission Approved Goal	FPUC Projected Savings	Commission Approved Goal	FPUC Projected Savings
2010	0.2	0.42	0.13	0.28	0.51	0.94
2011	0.2	0.42	0.13	0.28	0.51	0.94
2012	0.2	0.42	0.13	0.28	0.51	0.94
2013	0.2	0.42	0.13	0.28	0.51	0.94
2014	0.2	0.42	0.13	0.28	0.51	0.94
2015	0.2	0.42	0.13	0.28	0.51	0.94
2016	0.2	0.42	0.13	0.28	0.51	0.94
2017	0.2	0.42	0.13	0.28	0.51	0.94
2018	0.2	0.42	0.13	0.28	0.51	0.94
2019	0.2	0.42	0.13	0.28	0.51	0.94
Total	2.0	4.2	1.3	2.8	5.1	9.4

Table 2: Comparison of Commercial/Industrial Goals to DSM Plan

Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	Commission Approved Goal	FPUC Projected Savings	Commission Approved Goal	FPUC Projected Savings	Commission Approved Goal	FPUC Projected Savings
2010	0.23	0.25	0.06	0.15	0.78	0.80
2011	0.23	0.25	0.06	0.15	0.78	0.80
2012	0.23	0.25	0.06	0.15	0.78	0.80
2013	0.23	0.25	0.06	0.15	0.78	0.80
2014	0.23	0.25	0.06	0.15	0.78	0.80
2015	0.23	0.25	0.06	0.15	0.78	0.80
2016	0.23	0.25	0.06	0.15	0.78	0.80
2017	0.23	0.25	0.06	0.15	0.78	0.80
2018	0.23	0.25	0.06	0.15	0.78	0.80
2019	0.23	0.25	0.06	0.15	0.78	0.80
Total	2.3	2.5	0.6	1.5	7.8	8.0

Order No. PSC-09-0855-FOF-EG set annual goals for conservation in a total of six areas. We are aware that the values presented in this docket are projections based upon participation

rates which may or may not occur. Based on these projections, it would appear that FPUC's proposed DSM Plan satisfies the Company's numeric conservation goals set forth in Order No. PSC-09-0855-FOF-EG. Depending on the actual results realized, failure to meet its goals in any year may result in financial penalties or other appropriate action at the time of the violation.

FPUC did identify seasonal peak demand and annual energy savings associated with its solar pilot programs as part of its September 24, 2010, filing. Based on our vote in Docket Nos. 100154-EG (Gulf), 100159-EG (TECO), and 100160-EG (PEF) at the September 14, 2010, Commission Conference, we included the demand and energy savings in the totals for FPUC.

Conclusion

We find that the proposed annual energy and seasonal peak demand savings contained in FPUC's modified DSM Plan filed September 24, 2010, satisfy the numeric conservation goals set by the Commission in Order No. PSC-09-0855-FOF-EG and is hereby approved.

DEMAND-SIDE MANAGEMENT PROGRAMS

FPUC's proposed DSM Plan for the period 2010-2019 includes a variety of programs, all of which are either new or have been modified from previous plans. In total, the Company's Plan consists of nine programs, which are broken down in Table 3 below. A summary of each program can be found in Attachment A, attached hereto.

Table 3: Summary of FPUC's Proposed DSM Programs

	Residential	Commercial/Industrial	Renewable
Existing (unmodified)	0	0	0
Existing (modified)	2	1	0
New	0	4	2
Total	2	5	2

In reviewing FPUC's DSM Plan, we analyzed the assumptions made for a variety of aspects of the programs, including but not limited to: rebate and incentive levels, participation rates, avoided costs, and program savings. Our staff issued multiple data requests, and used previously submitted data from the utility's DSM programs, and the goal-setting docket to examine each category. Overall, we believe the assumptions in FPUC's DSM Plan filed September 24, 2010, are reasonable for use in evaluating FPUC's 2010 DSM Plan.

All of the DSM programs included in FPUC's 2010 DSM Plan include some type of incentive or rebate. These figures were adapted from the other utilities' programs on which the FPUC programs were modeled. In the case of the energy survey programs, the customer receives up to ten compact fluorescent light (CFL) bulbs that are installed by the auditor during the survey process. In general, for each program the incentive/rebate is between 12 percent and 35 percent of the customer's equipment cost.

Participation rates were compared to existing programs when applicable. The participation rates assumed for existing programs are similar to the actual participation achieved in previous years. The participation rates assumed for new programs do not appear to be overly aggressive.

Seasonal peak demand and annual energy savings assumed from the proposed programs in FPUC's DSM Plan were compared to existing programs when applicable. Program energy savings vary from previous programs, partially due to increased efficiency standards and building codes, but also due to modifications and new additions to the program's component measures. The expected values for new programs are generally equivalent to those of the utilities from which the programs were derived. These new programs were developed from programs previously implemented by other utilities, and therefore the expected savings are similar on a per-participant basis.

Typically savings from energy audits are not included in either the Company's annual goals or as part of the savings attributed to the DSM Plan. However, FPUC has historically included audits and their associated savings in its conservation goals, including in the 2009 goal-setting proceeding. It is therefore proper to include savings from audits in FPUC's DSM Plan. Our rules do require that program savings be measurable, monitorable, and verifiable. FPUC currently proposes to measure savings from audits to include two components: an "energy audit" or behavior-based portion, and a "CFL installation" or equipment-based portion. The savings from the CFL bulbs were developed from the data in the record of the goals proceeding. The remaining savings were developed from PEF's Residential Audit program, and from OUC's Commercial Energy Survey program. Staff finds this approach reasonable but recommends continued monitoring of the effectiveness of this measuring methodology.

Because FPUC is a non-generating investor-owned utility, the avoided unit is replaced by purchased power. The value of the avoided unit equivalent of purchased power used in the cost-effectiveness evaluations for the DSM Plan is consistent with that utilized throughout Docket No. 080411-EG (FPUC), which provided the basis for the DSM goals approved for FPUC by the Commission in Order No. PSC-09-0855-FOF-EG.

All of FPUC's assumptions appear reasonable and are consistent with the information on which we based the Company's goals. The tables below summarize the E-TRC, E-RIM, and Participants test results for each of FPUC's proposed programs.

Cost-Effectiveness Results

By definition, a program passes a cost-effectiveness test if the benefits-to-cost ratio is greater than 1.00. All proposed programs pass the Participants Test. None of the measures pass the E-RIM Test. Cost-effectiveness test results for FPUC's programs are shown in Table 4 below, with shaded areas highlighting the values that do not pass the referenced test.

Table 4: Cost-Effectiveness Test Results by Program

Program	E-TRC	E-RIM	Participants
<i>Residential Programs</i>			
Energy Survey	1.276	0.538	1.000
Heating and Cooling Efficiency	1.407	0.845	1.406
<i>Commercial Programs</i>			
Energy Survey	2.301	0.655	1.000
Indoor Efficient Lighting Program	3.267	0.743	11.166
Heating and Cooling Efficiency	1.407	0.845	2.630
Window Film Installation	2.646	0.776	4.249
Chiller Upgrade	2.652	0.825	3.204

Although not required to pass cost-effectiveness screening tests, the residential and commercial Energy Survey programs are included in the table above. FPUC’s DSM Plan states that the estimates for demand savings achieved from residential audits, which are approximately 15 percent of the total savings, are adopted from Progress Energy Florida’s Home Energy Check Program. The estimated demand savings from commercial audits account for approximately 30 percent of the total savings, and were adopted from OUC’s Commercial Energy Survey. Annual energy savings from audits were estimated to be 20 percent and 45 percent for residential and commercial sectors, respectively. However, FPUC provided no information verifying that similar results could be achieved in their service territory. FPUC’s DSM Plan also states that the Company “conducts follow-up surveys after the customers have implemented the specific recommendations.” No further explanation is provided regarding how these savings will be verified. Rule 25-17.0021(4)(i), F.A.C., requires a utility’s DSM Plan to include “[a] methodology for measuring actual kilowatt and kilowatt-hour savings achieved from each program, including a description of research design, instrumentation, use of control groups, and other details sufficient to ensure that results are valid.” We find that FPUC shall provide additional justification for including audit savings to be filed along with the program standards, as discussed below.

Program Standards

Most programs have an administrative component that describes the eligibility requirements, billing practices, etc. Historically, this information is provided to our staff for administrative approval after a program has been approved by this Commission. Therefore, FPUC shall file its program standards for all its programs within 30 days of this Order. If final incentive levels are changed in the program standards, these will be brought back to the Commission for approval. Additionally, we hereby approve cost-effective programs to allow FPUC to file for cost recovery. However, FPUC must still demonstrate, during the cost recovery proceeding, that expenditures in executing its DSM Plan were reasonable and prudent. A final determination will be made at that time regarding the cost-effectiveness of any modified or new programs.

SOLAR PILOT PROGRAMS

Order No. PSC-09-0855-FOF-EG directed the IOUs to file pilot programs focused on encouraging solar thermal and solar PV technologies subject to an expenditure cap of 10 percent of the average annual recovery through the ECCR clause in the previous five years. The Commission-approved annual expense cap for FPUC is \$47,233. The projected annual expenditures for FPUC's pilot programs do not exceed the approved annual expense cap.

FPUC has proposed two programs which are designed to promote the deployment of demand-side renewable technologies. In the course of implementing these pilot programs, FPUC will perform cost-effectiveness analyses for both the solar thermal and the solar PV programs. As shown in Table 5 below, the majority of the expenditures will be made on the solar PV program, which is consistent with DSM Plans filed by other Florida IOUs in response to Order No. PSC-09-0855-FOF-EG. At the September 14, 2010 Commission Conference, the Commission directed staff to conduct a workshop to address how the distribution of funds should be allocated. We recommend that FPUC participate in the workshop.

Table 5: Allocation of Costs for Solar Pilot Programs

Program Name	First Full Year Expenditures (\$)	Percentage of Annual (%)
Solar PV	40,000	84.9%
Solar Thermal	2,400	5.1%
Administrative & Education/Marketing	4,723	10%
Total	\$47,233	100%

As a pilot program, the utility shall collect information relating to customer acceptance rates, energy production, and other data to refine potential future program offerings for solar renewable technologies. FPUC's demand-side renewable energy portfolio is comprised of the following pilot programs:

Solar Water Heating – This program is designed to encourage the installation of solar water heaters and thereby reduce the consumption of fossil fuels. Each participating customer is eligible for only one incentive payment of \$200 for the installation of a solar water heating system. The payment of incentives under this program is subject to the cap for renewable energy systems. FPUC has no experience with respect to the penetration levels for solar thermal programs, and if adequate penetration levels are not achieved FPUC may request a modification to the program to increase the incentive level.

Solar Photovoltaic – This program is designed to encourage the installation of solar PV systems and thereby reduce the consumption of fossil fuels. Each participating customer is eligible for only one incentive payment of \$2.00 per watt of solar PV installed, up to a maximum of \$5,000. The payment of incentives under this program is subject to the cap for renewable energy systems. FPUC selected an incentive of \$2.00 per watt based on pilot programs of the other IOUs. FPUC has no experience with respect to the penetration levels for solar PV

programs, and if adequate penetration levels are not achieved FPUC may request a modification to the program to increase the incentive level.

Conclusion

FPUC’s proposed DSM Plan includes pilot programs to encourage the development of solar thermal and solar PV technologies. The cost of the proposed pilot programs is within the annual expenditure cap specified by Order No. PSC-09-0855-FOF-EG. Accordingly, we find that the solar pilot programs included in FPUC’s proposed DSM Plan are hereby approved.

RATE IMPACT

ECCR Clause

When setting conservation goals there are two basic components to a rate impact: ECCR and base rates. The costs to implement a DSM program consist of administrative, equipment, and incentive payments to the participants, which is recovered by the Company throughout its ECCR clause. This clause represents a monthly bill impact to customers as part of the non-fuel cost of energy on their monthly bill. As previously discussed, if a program passes the E-TRC Test it is cost-effective from a system basis. However, utility incentive payments are not included in the E-TRC Test but are recovered through the utility’s ECCR factor and have an immediate impact on customer rates.

FPUC’s energy goals for the 2010 through 2019 period are 91 percent higher than the previous 10-year period, as illustrated in Table 6 below. This increase also results in higher expenditures required for conservation programs, as more participants and new programs add costs. FPUC estimates the cost to deploy the proposed DSM Plan to be approximately \$2.3 million (nominal) over the 10-year period 2010-2019. As shown in Table 7 below, for a residential customer, the impact to the ECCR clause is projected to increase from the current level of \$0.96/month to a peak level of \$1.47, or 53 percent, in the first year of the period. In comparing Tables 6 and 7, the percentage increase in rates is significantly lower than the percentage increase in energy goals.

Table 6: Goal Comparison

2004-2014 GOALS			2009-2019 GOALS			% Change		
Sum (MW)	Win (MW)	Energy (GWh)	Sum (MW)	Win (MW)	Energy (GWh)	Sum (MW)	Win (MW)	Energy (GWh)
2.69	2.96	6.77	4.3	1.9	12.9	60%	-36%	91%

Table 7: Estimated Rate Impact

Year		ECCR Revenue Requirement	Rate Impact (\$/Mo.)	% Increase
Current		\$309,065	\$0.96	-
Projected	2010	\$591,724	\$1.47	53%
	2014	\$621,069	\$1.23	28%
	2019	\$662,067	\$1.01	5%
Current Rates refer to those established in Docket 090002-EG				
Rate impact assumes a residential customer with 1,200 kWh/mo. usage				

Base Rates

While not immediately applied to customer’s bills, energy saving DSM programs can also have an impact on a utility’s base rates. When revenues go down because fewer kWh were consumed, the utility may have to make up the difference by requesting an increase in rates in order to maintain its authorized Return on Equity (ROE). Based on FPUC’s current projections, the Company’s energy savings will not have a basis point impact of more than 100 points before 2014. Other factors interact with a company earnings, and may either delay or accelerate a base rate proceeding.

FPUC’s DSM Plan does include a variety of programs that would allow participation by a wide spectrum of customer groups, including low-income, residential, and commercial customers. By participating in a DSM program, customers should be able to reduce or eliminate the potential rate impact of FPUC’s DSM Plan. However, because the approved goals were based on the E-TRC Test, which does not consider costs associated with utility incentives, those who do not or cannot participate in an incentive program will not see their monthly utility bill go down unless they directly decrease their consumption of electricity. If that is not possible, non-participants could actually see an increase in the monthly utility bill.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Florida Public Utilities Company’s modified Demand-Side Management Plan, summarized in Attachment A, and incorporated herein by reference, is hereby approved as set forth in the body of this Order. It is further

ORDERED that Florida Public Utilities Company’s solar pilot programs contained in its Proposed Demand-Side Management Plan are hereby approved as set forth herein. It is further

ORDERED that the Demand-Side Management and solar pilot programs shall be effective on the date of the Consummating Order. It is further

ORDERED that if a protest is filed, the Demand-Side Management and solar pilot programs shall not be implemented until after the resolution of the protest. It is further

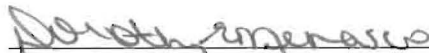
ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective upon the issuance of a Consummating Order unless an appropriate petition, in the form provided by Rule 28-106.201, Florida Administrative Code, is received by the Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the "Notice of Further Proceedings" attached hereto. It is further

ORDERED that if no person whose substantial interests are affected by the proposed agency action issues files a protest within twenty-one days of the issuance of the order, a Consummating Order will be issued. However, the docket shall remain open for Commission staff's verification that the program standards have been filed by the utility and approved by staff. Upon receipt and approval, the docket shall be closed administratively.

By ORDER of the Florida Public Service Commission this 12th day of November, 2010.

ANN COLE
Commission Clerk

By:



Dorothy E. Manasco
Chief Deputy Commission Clerk

(S E A L)

KEF

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 that is available under Section 120.57, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing 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. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, in the form provided by Rule 28-106.201, Florida Administrative Code. This petition must be received by the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on December 3, 2010.

In the absence of such a petition, this order shall become final and effective upon the issuance of a Consummating Order.

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

Descriptions of FPUC's DSM Programs

Residential Programs:

1. *Residential Energy Survey:* The Residential Energy Survey is designed to provide customers with energy conservation advice and to encourage the implementation of efficiency measures resulting in energy savings. During the survey, up to ten compact fluorescent bulbs are installed by the FPUC auditor in locations with the highest probability of being in use during times of peak demand. The survey process also checks the residence for possible duct leakage, and the customer is provided with information regarding further analysis and repairs should a potential problem be identified. Follow-up work monitors and tracks the installation of additional conservation features and/or duct repairs.
2. *Residential Heating & Cooling Efficiency Upgrade:* The Residential Heating & Cooling Efficiency Upgrade program is designed to reduce the rate of growth in peak demand and energy consumption by increasing the saturation of high-efficiency heat pumps and central air-conditioning systems. This objective is accomplished by installing new equipment with a minimum 14 Seasonal Energy Efficiency Rating (SEER). FPUC will provide a \$100 incentive to the customer, and a \$25 or \$75 incentive to the equipment dealer, depending on the type of system being replaced.

Commercial Programs:

1. *Commercial Energy Survey:* The Commercial Energy Survey program is designed to meet the individual needs of large customers in identifying advanced energy conservation opportunities. The process consists of an on-site review of the facility operation, equipment, and energy usage pattern by an FPUC Conservation Specialist, who identifies areas of potential reduction in peak demand and energy consumption. The economic payback or life cycle cost for recommended improvements, along with end-use technology opportunities, is determined. During the survey, up to ten compact fluorescent bulbs are installed by the FPUC auditor in locations with the highest probability of being in use during times of peak demand.
2. *Commercial Indoor Efficient Lighting Rebate:* The Commercial Indoor Efficient Lighting Rebate program is designed to reduce peak demand and energy consumption by decreasing the load presented by commercial lighting equipment, and also by reducing the load on cooling equipment. This program features a two-tiered rebate system. Tier 1 requires that commercial customers achieve a lighting load reduction of at least 1 kW by replacing both ballasts and lamps, while Tier 2 requires a reduction of at least 1kW by replacing lamps only. Customers that improve the efficiency of their lighting systems in this way will qualify for incentives of \$0.10 per watt (Tier 1), or \$0.025 per watt (Tier 2).

3. *Commercial Heating & Cooling Efficiency Upgrade:* The Commercial Heating & Cooling Efficiency Upgrade program is designed to reduce the rate of growth in peak demand and energy consumption by increasing the saturation of high-efficiency heat pumps and central air-conditioning systems in the commercial sector. This objective is accomplished by installing new equipment with a minimum 14 Seasonal Energy Efficiency Rating (SEER). FPUC will provide a \$100 incentive to the customer, and a \$25 or \$75 incentive to the equipment dealer, depending on the type of system being replaced.
4. *Commercial Window Film Installation:* The Commercial Window Film Installation program is designed to reduce peak demand and energy consumption by decreasing the load presented on commercial air-conditioning and heating equipment. The program requires commercial customers to install solar window film with a shading coefficient of 0.45 or less on eastern facing or western facing windows. This program features an incentive of \$0.50 per square foot of covered area, up to a maximum of \$100, in the form of a rebate.
5. *Commercial Chiller Upgrade:* The Commercial Chiller Upgrade program is designed to reduce the rate of growth in peak demand and energy consumption by replacing existing chillers in commercial buildings with a more efficient system. This program includes water-cooled centrifugal chillers, water-cooled scroll or screw chillers, and air-cooled electric chillers. Participating customers will qualify for a rebate of up to \$100 per kW of additional savings above the minimum efficiency levels.

Renewable Energy Programs:

1. *Solar Water Heating:* The Solar Water Heating program is designed to encourage the installation of solar water heaters and thereby reduce the consumption of fossil fuels. Each participating customer is eligible for only one incentive payment of \$200 for the installation of a solar water heating system. The payment of incentives under this program is subject to the cap for renewable energy systems.
2. *Solar PV:* The Solar PV program is designed to encourage the installation of solar photovoltaic systems and thereby reduce the consumption of fossil fuels. Each participating customer is eligible for only one incentive payment of \$2.00 per watt of ac solar PV installed, up to a maximum of \$5,000. The payment of incentives under this program is subject to the cap for renewable energy systems.

Energy Education Programs:

1. *Conservation Demonstration and Development:* The Conservation Demonstration and Development (CDD) program is designed to promote energy efficiency and conservation by pursuing research, development, and demonstration projects for the identification and evaluation of promising new end-use technologies. The CDD program does not focus on any specific end-use technology but, instead, will address a wide variety of energy applications.
2. *Low Income:* FPUC presently has energy education programs that identify low-cost and no-cost energy conservation measures. These programs are tailored to better assist low-income customers in managing their energy purchases.
3. *Affordable Housing Builders and Providers:* FPUC will identify the affordable housing builders within the service area and will encourage them to attend educational seminars and workshops related to energy efficient construction, retrofit programs, and financing programs. FPUC will work with sponsors to reduce or eliminate attendance fees at a minimum of two seminars and/or workshops per year.