

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-

**DATE:** August 19, 2010

**TO:** Office of Commission Clerk (Cole)

**FROM:** Division of Regulatory Analysis (Garl, Brown, Harlow, Lewis)  
Office of the General Counsel (Fleming, Sayler)

**RE:** Docket No. 100155-EG – Petition of approval of demand-side management plan of Florida Power & Light Company.

**AGENDA:** 08/31/10 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

**COMMISSIONERS ASSIGNED:** All Commissioners

**PREHEARING OFFICER:** Administrative

**CRITICAL DATES:** None

**SPECIAL INSTRUCTIONS:** None

**FILE NAME AND LOCATION:** S:\PSC\RAD\WP\100155.RCM.08-19-10.DOC

*Handwritten initials and signatures:*  
 SBR, GWH, KL, TB, mg, JEF, SC, M7, RLT, D7, ELS

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### Case Background

The Commission, as required by the Florida Energy Efficiency and Conservation Act (FEECA), Sections 366.80 through 366.85 and 403.519, Florida Statutes (F.S.), adopted annual goals for seasonal peak demand and annual energy consumption for the FEECA Utilities. These include Florida Power & Light Company (FPL), Progress Energy Florida (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, the Commission requires 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)

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, the Commission established conservation goals based on measures that pass both the Participants Test and the RIM Test.

The 2008 Legislative Session resulted in several changes to the FEECA Statute, and the Commission's goal-setting proceeding was the first implementation of these modifications. By Order No. PSC-09-0855-FOF-EG,<sup>1</sup> the Commission established annual numeric goals for summer peak demand, winter peak demand, and annual energy consumption 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. In addition, the numeric impact of certain measures with a payback period of two years or less were also included in the goals. 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) installations.

On January 14, 2010, FPL filed a Motion for Reconsideration of the Commission's decision in Docket No. 080407-EI. Order No. PSC-10-0198-FOF-EG<sup>2</sup> denied FPL's motion. On March 30, 2010, FPL filed a petition requesting approval of its Demand-Side Management (DSM) Plan pursuant to Rule 25-17.0021, F.A.C.

On May 7, 2010, the Florida Industrial Users Group (FIPUG) was granted leave to intervene by the Commission.<sup>3</sup> The Southern Alliance for Clean Energy (SACE) was granted leave to intervene on August 9, 2010.<sup>4</sup> The Florida Solar Energy Industry Association (FlaSEIA) was granted leave to intervene on August 11, 2010.<sup>5</sup> Wal-Mart Stores East, LP, and Sam's East, Inc. (Walmart) was granted leave to intervene on August 18, 2010.<sup>6</sup>

On July 14, 2010, 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

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<sup>1</sup> See Order No. PSC-09-0855-FOF-EG, issued December 30, 2009, in Docket No. 080407-EG, In re: Commission review of numeric conservation goals (Florida Power & Light Company).

<sup>2</sup> See Order No. PSC-10-0198-FOF-EG, issued March 31, 2010, in Docket No. 080407-EG, In re: Commission review of numeric conservation goals (Florida Power & Light Company).

<sup>3</sup> See Order No. PSC-10-0287-PCO-EG, issued May 7, 2010, in Docket No. 100155-EG, In re: Petition of approval of demand-side management plan of Florida Power & Light Company. (FIPUG)

<sup>4</sup> See Order No. PSC-10-0494-PCO-EG, issued August 9, 2010, in Docket No. 100155-EG, In re: Petition of approval of demand-side management plan of Florida Power & Light Company. (SACE)

<sup>5</sup> See Order No. PSC-10-0506-PCO-EG, issued August 11, 2010, in Docket No. 100155-EG, In re: Petition of approval of demand-side management plan of Florida Power & Light Company. (FlaSEIA)

<sup>6</sup> See Order No. PSC-10-0525-PCO-EG, issued August 18, 2010, in Docket No. 100155-EG, In re: Petition of approval of demand-side management plan of Florida Power & Light Company. (Walmart)

responses to SACE's comments. On page 2 of its comments, SACE offers four recommendations for the Commission to consider.

SACE's first and second recommendations are that the utilities should develop their programs further with the exception of PEF whose entire plan should be revised within a 90-day period. As discussed in Issue 1, the five IOUs have proposed plans that do not meet the Commission's approved goals in terms of kilowatt (kW) or kilowatt-hour (kWh) savings. Consistent with Florida Statutes, staff is recommending a 30-day period to correct the deficiencies.

The third recommendation made by SACE is that the Commission should initiate a proceeding to develop an incentive mechanism for utilities that exceed their goals as well as addressing lost revenues. During the DSM goals proceeding, the Commission addressed the issue of utility incentives. Page 24 of Order No. PSC-09-0855-FOF-EG states that:

We believe establishing incentives during this proceeding would unnecessarily increase costs to ratepayers at a time when consumers are already facing financial challenges. Increasing rates in order to provide incentives to utilities is more appropriately addressed in a future proceeding after utilities have demonstrated and we have evaluated their performance.

SACE's final recommendation is that the Commission should "evaluate alternative means of providing energy efficiency opportunities to utility customers, such as third-party administered programs, if it determines that one or more utilities are not willing or able to offer a leading program." As discussed in Issue 1, the Commission has the authority to penalize a utility if it does not meet its approved goals. However, the Commission does not have the statutory authority to require a third-party administrator to offer a particular program.

The Commission has jurisdiction over this matter pursuant to Sections 366.80 through 366.85 and 403.519, F.S.

**Discussion of Issues**

**Issue 1:** Does FPL’s proposed 2010 Demand-Side Management (DSM) Plan satisfy the Company’s numeric conservation goals set by the Commission in Order No. PSC-09-0855-FOF-EG?

**Recommendation:** No. FPL’s proposed DSM Plan fails to meet its residential goals in at least one category for eight years. Similarly, the Company’s Plan does not meet all the annual commercial/industrial goals for eight years of the ten-year period. FPL’s failure to meet its annual conservation goals may result in financial penalties or other appropriate action.

Consistent with Section 366.82(7), F.S., staff recommends that FPL file specific program modifications or additions that are needed for the 2010 DSM Plan to be in compliance with Order No. PSC-09-0855-FOF-EG within 30 days of the Commission’s Order in this docket. (Garl)

**Staff Analysis:** By Order No. PSC-09-0855-FOF-EG, the Commission established annual goals for the FEECA Utilities for the period 2010 through 2019. These goals are divided into residential and commercial/industrial, with each of these further subdivided into three categories: summer peak demand, winter peak demand, and annual energy consumption. FPL is responsible for meeting its required conservation goals, yet the projections provided by the Company show that they plan to fail, as discussed below.

As detailed below in Table 1, FPL’s proposed DSM Plan fails to meet its annual residential goals in at least one category for eight years. Similarly, Table 2 shows that FPL’s Plan does not meet all the annual commercial/industrial goals for eight years of the ten-year period.

Table 1 – Comparison of Residential Goals and Projected Savings

Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	Commission Approved Goal	FPL Projected Savings	Commission Approved Goal	FPL Projected Savings	Commission Approved Goal	FPL Projected Savings
2010	67.7	73.2	33.2	43.9	119.6	116.5
2011	79.7	80.3	42.4	52.7	145.8	137.2
2012	90.2	92.6	50.3	59.8	168.8	160.5
2013	98.5	93.8	56.3	57.8	186.7	178.4
2014	104.3	100.7	60.2	61.2	200.0	191.6
2015	100.7	101.5	55.9	61.6	193.0	192.6
2016	95.9	98.3	51.3	59.3	183.4	186.1
2017	91.4	92.1	47.0	56.6	174.2	173.7
2018	87.4	88.8	43.2	51.8	166.4	167.2
2019	83.3	82.6	39.4	44.9	157.5	157.0
Total	899.0	904.0	479.0	549.5	1,695.3	1,660.8

Table 2 – Comparison of Commercial/Industrial Goals and Projected Savings

Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	Commission Approved Goal	FPL Projected Savings	Commission Approved Goal	FPL Projected Savings	Commission Approved Goal	FPL Projected Savings
2010	42.7	44.0	8.1	43.7	84.7	83.2
2011	62.5	65.9	9.9	43.8	149.4	153.7
2012	76.3	73.4	11.6	51.6	191.5	200.2
2013	81.3	79.0	13.1	53.8	202.7	220.6
2014	79.3	78.6	14.4	54.1	194.1	219.6
2015	71.5	71.5	15.1	52.4	167.5	186.4
2016	60.0	61.1	15.0	42.7	134.2	120.6
2017	48.7	46.3	14.1	39.0	104.8	78.4
2018	41.3	41.0	13.2	39.7	86.9	70.1
2019	35.0	36.2	12.0	40.3	71.0	62.4
Total	598.7	597.0	126.3	461.0	1,386.7	1395.1

Order No. PSC-09-0855-FOF-EG sets annual goals for conservation in a total of six areas. The Commission did not establish cumulative goals and FPL's DSM Plan should reflect this. Staff is 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 FPL does not plan to meet each of the Commission's annual goals. However, FPL did not request a waiver or modification of its approved goals. Depending on the actual results realized, failure to meet its goals in any year may result in financial penalties or other appropriate action by the Commission at the time of the violation. Pursuant to Section 366.82(7), F.S., the Commission could deny FPL's DSM Plan and require FPL to submit a modified Plan within 30 days. However, such action would delay the implementation of cost-effective DSM programs for many months. Therefore, as discussed in Issue 2, staff is recommending that the programs contained in FPL's 2010 DSM Plan be approved at this time and that FPL be required to file specific program modifications or additions that are needed in order for the 2010 DSM Plan to be in compliance with Order No. PSC-09-0855-FOF-EG within 30 days of the Commission's Order in this docket.

#### Conclusion

FPL's proposed DSM Plan does not satisfy the Company's annual numeric goals set by the Commission. The Commission did not establish cumulative goals, and the Company's DSM Plan should reflect this. It would appear that FPL will not meet the Commission's annual goals which may result in financial penalties or other appropriate action by the Commission. Therefore, consistent with Section 366.82(7), F.S., staff recommends that FPL file specific program modifications or additions that are needed for the 2010 DSM Plan to be in compliance with Order No. PSC-09-0855-FOF-EG within 30 days of the Commission's Order in this docket.

**Issue 2:** Are the programs contained in FPL’s proposed 2010 DSM Plan cost-effective as this criterion is used in Commission Order No. PSC-09-0855-FOF-EG?

**Recommendation:** Yes. All programs in FPL’s proposed 2010 DSM Plan pass the E-TRC and Participants tests. Audits, Pilot Programs, and Research & Development Programs are not included in this evaluation because they are not required to pass cost-effectiveness testing. FPL should be required to file program standards within 30 days of the Commission’s Order in this docket.

The Commission should approve cost-effective programs to allow FPL to file for cost recovery. However, FPL must still demonstrate, during the cost recovery proceeding, that expenditures in executing its DSM Plan were reasonable and prudent. In addition, the Commission will evaluate FPL’s compliance filing and make a final determination at that time regarding the cost-effectiveness of any modified or new programs. (Garl)

**Staff Analysis:** FPL’s DSM Plan includes a variety of programs, some of which are retained from previous plans without modification, others incorporated with changes to incentive levels or other design aspects, as well as new programs. In total, FPL’s Plan consists of 34 programs, which are broken down in Table 3 below. A summary of each program can be found in Attachment A.

Table 3 – Summary of FPL’s Proposed DSM Programs

Program Type	Residential	Comm./Ind.	Other*	Total
Existing	1	6	1	8
Modified	6	5	0	11
New	7	4	4	15
<b>Total</b>	<b>14</b>	<b>15</b>	<b>5</b>	<b>34</b>

\*This includes programs classified as both residential and commercial/industrial.

In reviewing FPL’s DSM Plan, staff analyzed the assumptions made for a variety of aspects of the programs, including, but not limited to, rebate and incentive levels, participation rates, energy savings, and avoided costs. Staff issued multiple data requests, and used previously submitted data from the utility’s DSM programs, the goal-setting docket, and the Company’s Ten-Year Site Plan to examine each category. Overall, staff believes the assumptions in FPL’s DSM Plan are reasonable for use in evaluating FPL’s DSM Plan.

For rebates and incentives, about 70 percent of the programs were limited to a cap of 75 percent of the customer’s cost or less. While incentives do not impact the E-TRC Test, they can have a role in customers’ rates, as discussed in Issue 4. It should be noted that several programs which did not feature rebates or incentives did provide free equipment to customers. These programs include audits and several targeting low income customers. The equipment consisted of items such as compact fluorescent light bulbs, water heater blankets, and other simple devices.

Participation rates in the proposed plan were compared to existing programs when applicable. FPL projects that its 4 existing, unmodified programs, primarily demand response

programs, will experience about a 60-70 percent reduction in participation as compared to the average of the past 5 years. Staff views this reduction being due to market saturation, since these programs have been active several years. FPL proposes modifying ten of its existing programs, primarily by increasing or adding rebates and incentives. As would be expected with increased incentives, FPL projects participation in the ten modified programs will increase, dramatically in some cases. Staff notes, however, that as these are voluntary programs, FPL is responsible for continual monitoring of actual participation rates.

Seasonal peak demand and annual energy savings from the proposed programs in FPL'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, as well as increased incentives driving greater participation. For example, FPL's Business Water Heating Program has a proposed 141 percent incentive increase leading to a projection of a 943 percent participation increase and a 491 percent increase in annual energy savings. Savings increases in eight other programs similarly result, at least in part, from incentive increases prompting participation increases. Should participation fall below expected values, FPL is responsible for taking appropriate action to meet its conservation goals.

FPL used a natural gas-fired combined cycle 1,219 MW unit with an in-service date of 2019 as its avoided unit in calculating the economic benefit of its demand-side management programs. In addition to those savings associated with avoided or deferred generation or transmission assets, FPL included the potential cost of greenhouse gas emissions in its cost of energy, which it calculated as \$14 per ton, starting in 2013, and escalating in the future. The avoided unit and greenhouse gas data, as well as transmission and distribution line loss percentages are the same that FPL used during the goal-setting proceeding. As a result, the resulting cost-effectiveness tests are referred to as the E-TRC and E-RIM tests.

### **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 both the E-TRC and Participants tests with ratios greater than 1.00. All but four programs also pass the E-RIM Test. Though the Commission's Order states E-RIM Test results shall be considered in evaluating programs, it does not require programs to pass the E-RIM Test. Cost-effectiveness test results for FPL's programs are shown in Table 4 below:

Table 4 - Cost Effectiveness Test Results by Program

Program Name	E-TRC	E-RIM	Participant
<b>Residential Low Income Portfolio</b>			
1. Res. Low Income Weatherization	1.80	0.90	2.98
2. Res. Power Savers Energy Audit	3.46	0.77	9.17
3. Res. Power Savers Energy Efficiency	2.00	0.96	2.61
<b>Residential Portfolio</b>			
1. Res. Home Energy Survey	-	-	-
2. Res. Air Conditioning	1.61	1.08	1.83
3. Res. Duct System Testing & Repair	2.90	1.26	3.40
4. Res. Building Envelope	1.33	1.11	1.47
5. Res. New Construction (BuildSmart ®)	2.81	1.26	3.00
6. Res. Load Management (On Call)	6.41	2.81	-
7. Res. Air Conditioning Tune-up & Maintenance	1.98	1.23	2.42
8. Res. Refrigerator Replacement	1.11	0.72	2.13
<b>Business Portfolio</b>			
1. Bus. Energy Evaluation	-	-	-
2. Bus. Heating, Ventilating & Air Conditioning	3.07	1.09	3.27
3. Bus. Lighting	4.30	1.20	4.20
4. Bus. Refrigeration	4.33	1.11	4.81
5. Bus. Building Envelope	1.53	1.02	1.67
6. Bus. Water Heating	2.89	1.01	3.43
7. Bus. Custom Incentive	-	-	-
8. Cogeneration & Small Power Production	-	-	-
9. Bus. On Call	7.70	3.23	-
10. C/I Demand Reduction	88.80	3.10	-
11. C/I Load Control	-	-	-
12. Bus. Motors	6.75	1.24	6.61

Several types of programs are not evaluated for cost-effectiveness. These include audits, which are mandated by the Commission to be available for ratepayers, and pilot programs, which are designed to gather additional information on conservation measures or methods. FPL does not include any kW or kWh savings associated with audits to meet its goals. Notable pilot programs incorporated in FPL's DSM Plan are its seven new solar thermal water heating and photovoltaic programs, which are necessary to fulfill Commission Order No. PSC-09-0855-FOF-EG. These programs are discussed further in Issue 3.

### Program Standards

Most programs have an administrative component that describes the eligibility requirements, billing practices, etc. Historically, this information is provided to staff, for administrative approval, after a program has been approved by the Commission. Therefore, FPL should file its program standards for all its programs, including any modified or new programs, within 30 days of the Commission's Order in this docket. If final incentive levels are estimated in the program standards, these will be brought back to the Commission for approval.

**Conclusion**

All programs in FPL's proposed 2010 DSM Plan pass the E-TRC and Participants tests. Audits, Pilot Programs, and Research & Development Programs are not included in this evaluation because they are not required to pass cost-effectiveness testing. FPL should be required to file program standards within 30 days of the Commission's Order in this docket.

The Commission should approve cost-effective programs to allow FPL to file for cost recovery. However, FPL must still demonstrate, during the cost recovery proceeding, that expenditures in executing its DSM Plan were reasonable and prudent. In addition, the Commission will evaluate FPL's compliance filing and make a final determination at that time regarding the cost-effectiveness of any modified or new programs.

**Issue 3:** Does FPL's proposed 2010 DSM Plan include pilot programs that encourage the development of solar water heating and solar PV technologies consistent with Commission Order No. PSC-09-0855-FOF-EG?

**Recommendation:** Yes. The cost of the proposed pilot programs is within the annual expenditure cap of \$15,536,870 specified by Commission Order No. PSC-09-0855-FOF-EG. However, the allocation of funds to: (1) solar thermal vs. solar PV, (2) private customers vs. public institutions, and (3) low-income residential varies widely among the investor-owned utilities. If the Commission desires to have more uniformity among the IOUs' programs, then the Commission should initiate public workshops to explore that issue further. (Garl)

**Staff Analysis:** Commission Order No. PSC-09-0855-FOF-EG directed the IOUs to file pilot programs focused on encouraging solar water heating and solar PV technologies subject to an expenditure cap of 10 percent of the average annual recovery through the ECCR clause in the previous 5 years. The Commission-approved annual expense cap for FPL is \$15,536,870. The projected annual expenditures for FPL's pilot programs do not exceed the approved annual expense cap as shown in Table 5 below.

Table 5 - Solar Pilot Program Costs

Program Name	First Full Year Expenditures (\$)	First Full Year Percentage of Annual Expenditure Cap (%)
Residential Solar Water Heating	\$4,330,175	27.9%
Residential Solar Water Heating (Low Income New Construction)	\$848,437	5.5%
Business Solar Water Heating	\$73,198	0.5%
Residential Photovoltaics	\$2,491,855	16.0%
Business Photovoltaics	\$1,885,252	12.1%
Business Photovoltaics for Schools	\$1,347,755	8.7%
Solar Research and Demonstration	\$0	0.0%
Administrative & Education/Marketing Costs	\$3,001,407	19.3%
<b>Total</b>	<b>\$13,978,079</b>	<b>90.0%</b>

As a pilot program, the utility should collect information relating to customer acceptance rates, energy production, and other data to refine potential future program offerings for solar renewable technologies. FPL proposed six pilot programs and one research and development program to encourage the development of solar water heating and solar PV technologies. Each program is for a period of five years. A summary of each is provided below:

**Residential Solar Water Heating Pilot** – This program encourages customers to install solar water heating systems in residential homes. FPL will offer up to a maximum of \$1,000 per installed solar water heating system. The Company projects participation by 4,970 customers.

**Residential Solar Water Heating (Low Income New Construction) Pilot** – This program will provide solar water heating systems to selected low income, new construction housing developments. The selected houses will receive an installed solar water heating system at no cost to the customer. FPL plans to install 200 systems throughout its service territory.

**Business Solar Water Heating Pilot** – This program encourages customers to install solar water heating systems in businesses. FPL will offer up to a maximum of \$30 per 1,000 BTU/day of the maximum rated output of the installed solar water heating system. The Company expects 76 participants.

**Residential Photovoltaic Pilot** – This program encourages customers to install photovoltaic systems in residential homes. FPL will offer a maximum incentive of \$2,000 per the rated kW (\$2/watt) of the installed photovoltaic panels. Participation is projected to be 340 customers.

**Business Photovoltaic Pilot** – This program encourages business customers to install photovoltaic systems. FPL will offer a maximum incentive of \$2,000 per the rated kW (\$2/watt) of the installed photovoltaic panels. FPL projects 79 participants.

**Business Photovoltaic for Schools Pilot** – This program is designed to provide PV systems and educational materials for selected schools in all public school districts throughout the FPL territory. The selected schools will receive an installed PV system at no cost to the school. Installations will be performed in 21 schools.

**Renewable Research and Demonstration Project** – FPL is proposing to conduct a series of demonstration and renewable technology research projects to increase awareness of solar technologies and to understand and quantify the energy effectiveness of emerging renewable technologies and their applications. FPL is proposing to accomplish this through three primary activities: (1) partnering with universities and technical centers to increase the accessibility to renewable technology education for contractors, building officials, FPL personnel, and the general public; (2) installing small scale solar technologies at public non-profit and government facilities which can accommodate educational displays and materials; and, (3) partnering with universities to test new applications and new emerging renewable energy technologies to quantify benefits to customers and establish energy performance profiles.

### **Allocation of Funds**

Because the costs of these pilot programs are shared by all customers, staff looked at whether or not the programs offered opportunities for participation by all customer classes. FPL offers programs for residential, low-income, commercial, and public facilities. The allocation of funds to each of the programs is listed above in Table 5. Staff also looked at the allocation of funds between solar PV and solar water heating programs. As shown in Table 6, approximately 41 percent of the funding goes towards solar PV technology and 38 percent towards solar thermal installations.

**Comparison With Other Utilities**

Commission Order No. PSC-09-0855-FOF-EG provided no guidance on how the annual expense cap was to be allocated. While each utility has complied with Order No PSC-09-0855-FOF-EG, the renewable pilot programs of each of the IOUs varies in the weight it provides to the two major types of solar renewable resources, photovoltaics (PV) and thermal water heating, as outlined in the Table 6 below. However, all IOUs generally tend to allocate a greater percentage of funding to PV applications.

Table 6 - Percentage of Funds Allocated by Technology Type<sup>7</sup>

Company	FPL	PEF	TECO	GULF	FPUC
PV	41.0%	67.3%	86.7%	63.9%	Not Available
Thermal	37.6%	20.9%	13.3%	19.4%	
The percentages above do not sum to 100% as administrative, education, and R&D costs are excluded.					

The distribution of funds between solar installations intended for public facilities, such as schools, and privately owned facilities, including residential housing and commercial properties, is another area of variation among the utilities. Table 7 below, illustrates these differences, which overall favor private installations.

Table 7 - Percentage of Funds Allocated by Ownership Type

Company	FPL	PEF	TECO	GULF	FPUC
Public	9.6%	31.7%	10.4%	15.5%	Not Available
Private	68.9%	56.5%	89.6%	67.8%	
The percentages above do not sum to 100% due to administrative and education costs being excluded.					

The variations between the utilities’ plans represent different service territories and program designs. If the Commission desires increased uniformity in the values of the pilot programs between utilities, it could initiate a workshop or other proceeding to determine the appropriate split between these technological and customer categories.

<sup>7</sup> Refer to Docket No. 100154-EG – In re: Petition of approval of demand-side management plan of Gulf Power Company. Docket No. 100155-EG – In re: Petition of approval of demand-side management plan of Florida Power & Light Company. Docket No. 100158-EG – In re: Petition of approval of demand-side management plan of Florida Public Utilities Company. Docket No. 100159-EG – In re: Petition of approval of demand-side management plan of Tampa Electric Company. Docket No. 100160-EG – In re: Petition of approval of demand-side management plan of Progress Energy Florida, Inc.

### **Conclusion**

FPL's proposed DSM Plan includes pilot programs to encourage the development of solar water heating and solar PV technologies. The cost of the proposed pilot programs is within the annual expenditure cap specified by Commission Order No. PSC-09-0855-FOF-EG. Staff recommends that the pilot programs included in FPL's proposed DSM Plan be approved and incorporated into the compliance filing. However, the allocation of funds to: (1) solar thermal vs. solar PV, (2) private customers vs. public institutions, and (3) low-income residential varies widely among the investor-owned utilities. If the Commission desires to have more uniformity among the IOUs' programs, then the Commission should initiate public workshops to explore that issue further.

**Issue 4:** Do any of the programs in FPL’s proposed Demand-Side Management Plan have an undue impact on the costs passed on to customers?

**Recommendation:** No. The proposed program costs are not undue because the increase in program costs correlates with the increase in goals. The Commission should evaluate the Company’s compliance filing and make a final determination in the ECCR proceedings regarding the appropriateness of incentive levels. (Garl)

**Staff Analysis:** The level of annual energy savings FPL is to achieve from 2010 to 2019 is nearly three times the previous goal set by the Commission for the period 2005 to 2014. Table 8 below shows the magnitude of the increase in FPL’s savings goals.

Table 8 – Goals Comparison

2005-2014 Goals			2010-2019 Goals			% Change		
Summer (MW)	Winter (MW)	Energy (GWH)	Summer (MW)	Winter (MW)	Energy (GWH)	Summer (MW)	Winter (MW)	Energy (GWH)
801.70	512.40	1058.60	1497.7	605.3	3082	86.8%	18.1%	191.1%

When setting conservation goals there are two basic components to a rate impact: ECCR and base rates. The challenge then becomes determining criteria for what constitutes “undue” rate impact. Staff first reviewed the changes between the previous DSM goals and those set by the Commission in Order No. PSC-09-0855-FOF-EG.

**ECCR Clause**

The costs to implement a DSM program consist of administrative, equipment, and incentive payments to the participants, which is recovered by the Company through the ECCR proceeding. This clause represents a monthly bill impact to customers as part of the non-fuel cost of energy on their bill. As discussed in Issue 2, 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.

FPL estimates the cost to deploy the proposed DSM plan to be \$4.1 billion (nominal) over the ten-year period 2010-2019. As shown in Table 9, for a residential customer using 1,200 kWh per month, the impact to the ECCR clause is projected to increase from the current level of \$2.26/mo. to \$3.27/mo., or about a 48 percent increase for 2010. FPL’s projections show a continuing increase to a peak level of \$4.11/mo. in 2014. In comparing Tables 8 and 9, the percentage increase in rates is significantly lower than the percentage increase in energy goals. While the rate impact of FPL’s new DSM Plan appears to nearly double, the annual energy savings is projected to nearly triple. However, as noted in Issue 1, the FPL’s DSM Plan does not comply with the Commission’s annual goals, and these projections may not represent the final rate impact to customers.

Table 9 – Estimated Rate Impact

Year		ECCR Revenue Requirement	Rate Impact (\$/Mo.)	% Increase
Current		\$179,713,960	\$2.26	-
Projected	2010	\$265,441,001	\$3.27	44.7%
	2014	\$356,396,522	\$4.11	81.9%
	2019	\$274,289,223	\$2.91	28.8%
Current Rates refer to those established in Docket 090002				
Rate impact assumes a residential customer with 1,200 kWh/Mo. usage				

Staff ranked FPL's programs based upon their contribution to the ECCR rate impact and has identified the top five programs that account for the greatest percentage of rate impact in Table 10 below. However, some of these five programs also account for substantial demand and energy savings. For example, the residential and business air conditioning programs are projected to save over 99 percent of the annual energy goal, but contribute only about 28 percent of the ECCR requirement passed on to FPL's customers.

Table 10 – Programs Accounting for Greatest Percentage of ECCR

Program Name	% of ECCR Total	% of Goals		
		Summer	Winter	Energy
Residential Load Management (On Call)	20.36%	6.92%	11.84%	0.06%
Residential Air Conditioning	19.68%	50.52%	45.54%	50.26%
Commercial/Industrial Load Control (Closed)	9.88%	-	-	-
Business Heating, Ventilating & Air-Conditioning (HVAC)	8.18%	28.98%	188.81%	49.21%
Business Building Envelope	7.04%	22.88%	8.30%	19.25%
<b>Total</b>	<b>65.14%</b>	<b>109.30%</b>	<b>254.49%</b>	<b>118.78%</b>

In the event the Commission desires to reduce the rate impact of FPL's DSM Plan, these five programs represent the largest contributors to the ECCR clause. The increase in monthly rates required by FPL's DSM Plan is compounded by the current economic situation in which an increase in the cost of electricity is undesirable. Staff would note that if a program is removed to reduce the rate impact, the Company's goals should be modified accordingly.

As discussed in Issue 1, FPL should file specific program modifications or additions that are needed for the 2010 DSM Plan to be in compliance with Order No. PSC-09-0855-FOF-EG within 30 days of the Commission's Order in this docket. The Commission will have an

opportunity to review these updated values upon receipt of the filing, and can make a determination on whether the programs have an undue rate impact at that time.

### **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 to maintain a reasonable Return on Equity (ROE). If a company's ROE falls below the 100 basis point range authorized by the Commission, the utility may file a petition with the Commission for a rate increase. Based on FPL's current projections, the Company's lost revenue from energy savings will not have a basis point impact of more than 100 points until 2016. It is possible that FPL's filing, as discussed in Issue 1, could increase the lost revenue contribution and therefore accelerate the need for a base rate proceeding. Other factors interact with a company's earnings, and may either delay or accelerate the need for a base rate proceeding.

Staff notes that FPL'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. While rates may increase due to additional DSM programs, customers should be able to reduce or eliminate the potential rate impact of FPL's DSM Plan by participating in a DSM program. However, because the Commission 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.

### **Conclusion**

FPL's proposed DSM Plan does not include any programs which have an undue rate impact because the increase in program costs correlates with the increase in goals. The Commission will evaluate the Company's compliance filing and make a final determination at that time regarding its rate impact to customers.

Docket No. 100155-EG

Date: August 19, 2010

**Issue 5:** Should this docket be closed?

**Recommendation:** No. This docket should remain open for FPL to refile its demand-side management plan within 30 days from the date of this Order. In addition, if the Commission approves any programs, the programs should become effective on the date of the Consummating Order. If a protest is filed within 21 days of the issuance of the Order, the programs should not be implemented until after the resolution of the protest. (Fleming)

**Staff Analysis:** This docket should remain open for FPL to refile its demand-side management plan within 30 days from the date of this Order. In addition, if the Commission approves any programs, the programs should become effective on the date of the Consummating Order. If a protest is filed within 21 days of the issuance of the Order, the programs should not be implemented until after the resolution of the protest.

**Florida Power & Light  
2010 Demand-side Management Plan Programs**

**Residential Low Income Portfolio:**

1. *Residential Low Income Weatherization:* The Residential Low Income Weatherization Program is designed to reduce energy consumption and growth of coincidental peak demand by partnering with government and non-profit agencies to assist eligible low income FPL residential customers to reduce the cost of heating and cooling their homes. The program employs a combination of energy audits and incentives for room air conditioners, central air-conditioning maintenance and reduced air infiltration. FPL is revising the maximum incentives by measures as follows:
  - Air-conditioning unit maintenance from \$45 per participant to \$190 per participant.
  - Reduced air infiltration from \$60 per participant to \$75 per participant.
  - Room air conditioner replacement from \$25 per participant to \$350 per participant.
2. *Residential Power Savers Energy Audit:* The Residential Power Savers Energy Audit Program is designed to reduce energy consumption and growth of coincident peak demand by offering home energy audits and an energy efficiency kit to customers. The home energy audit is a walk through audit and the energy efficiency kit includes compact fluorescent light bulbs, faucet aerators, low flow shower heads and water heater pipe insulation. Incentives for the individual measures in this program will be set up to full participant cost, regardless of the length of time to payback.
3. *Residential Power Savers Energy Efficiency:* The Residential Power Savers Energy Efficiency Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to implement recommendations resulting from the Residential Power Savers Energy Audit or other FPL-approved home energy audit. The measures included are: room air-conditioner replacement, refrigerator replacement, ceiling insulation, air-conditioning duct repair, air-conditioning unit maintenance and reduced air infiltration. Incentives for the individual measures in this program will be set up to full participant cost, regardless of the length of time to payback.

**Residential Portfolio:**

1. *Residential Home Energy Survey:* The Residential Home Energy Survey Program, formerly known as the Residential Conservation Service Program, is designed to reduce energy consumption and growth of coincident peak demand by offering home energy surveys to customers. This objective is accomplished by educating customers on energy efficiency and encouraging customers to perform recommended practices and measures, even if they are not included in FPL's DSM Plan. The energy survey is also used to identify customers for other residential incentive programs dependant upon survey findings. There are three types of home energy surveys available: Home Energy Survey, which is a walk-through survey performed by an FPL representative in the customer's

home; Phone Energy Survey, which is performed by an FPL representative with information provided by the customer over the phone; and, Online Home Energy Survey, which is performed by the customer using an FPL provided online survey. The energy survey helps to determine which practices and measures are most appropriate for a particular dwelling, and which measures may qualify for FPL incentives from other residential incentive programs.

2. *Residential Air Conditioning*: The Residential Air Conditioning Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install high-efficiency central air conditioning (AC) systems. The primary types of eligible AC systems include: straight cool and heat pumps. FPL is revising the maximum incentives by measures as follows:
  - Straight Cool AC units -from \$1,429 to \$1,444 per summer kW.
  - Heat Pump AC units -from \$1,643 to \$1,426 per summer kW.
  - ECM -from \$208 to \$238 per summer kW.
  - Supplemental Verified Sizing Calculations -from \$272 to \$563 per summer kW.
  - Plenum Seal -from \$309 to \$611 per summer kW.
3. *Residential Duct System Testing & Repair*: The Residential Duct System Testing & Repair Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to repair air leaks identified in air-conditioning duct systems. FPL is revising the maximum incentive from \$466 to \$905 per summer kW.
4. *Residential Building Envelope*: The Residential Building Envelope Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to improve the thermal efficiency of the building structure. The measures included are: ceiling insulation; reflective roof replacement or coating; and, solar window screen. FPL is adding one new measure with the following maximum incentive:
  - Solar Window Screen -\$309 per summer kW.FPL is revising the maximum incentive by measures as follows:
  - Ceiling Insulation -from \$1,676 to \$1,877 per summer kW.
  - Reflective Roof Coating -from \$1,518 to \$1,367 per summer kW.
  - Reflective Roof Replacement -from \$706 to \$773 per summer kW.
5. *Residential New Construction (BuildSmart®)*: The Residential New Construction Program (BuildSmart®) is designed to reduce energy consumption and growth of coincident peak demand through the design and construction of energy-efficient homes. The program will encourage builders and developers to achieve the ENERGY STAR®

qualification. FPL is adding a maximum incentive of \$1,286 per summer kW. Customers receive an incentive payment, in the form of a monthly credit on their bill

6. *Residential Air-Conditioning (AC) Tune-up & Maintenance:* The Residential Air-Conditioning (AC) Tune-up & Maintenance Program is a new program designed to reduce energy consumption and growth of coincident peak demand attributable to central AC equipment by encouraging customers to have an AC unit tune-up and maintenance performed. Incentive will be provided on a per AC unit basis up to a maximum incentive of \$609 per summer kW.
7. *Residential Refrigerator Replacement:* The Residential Refrigerator Replacement Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install high-efficiency ENERGY STAR® refrigerators. Incentives will be paid to customers or their designees for ENERGY STAR® refrigerators that are 20% more efficient than the Department of Energy Appliance Standards program code. The incentive will be provided on a per qualifying refrigerator basis up to a maximum incentive of \$2,354 per summer kW, or approximately \$50-\$75 per participant.

#### **Commercial/Industry Portfolio:**

1. *Business Energy Evaluation:* The Business Energy Evaluation (BEE) Program is designed to reduce energy consumption and growth of coincident peak demand by offering energy audits (BEEs) to business customers. This objective is accomplished by educating customers on energy efficiency and encouraging customers to perform recommended practices and measures. The BEE is also used to qualify customers for other business incentive programs dependent upon audit findings. There are two types of BEEs available: the in-field BEE, which is an energy audit performed by an FPL representative in the customer's facility; and the online BEE (OBEE), which is performed by the customer using an FPL-provided OBEE survey. The BEE helps to determine which practices and measures are most appropriate for a particular facility and which measures may qualify for FPL incentives from other business incentive programs.
2. *Business Heating, Ventilating & Air-Conditioning (HVAC):* The Business Heating, Ventilating & Air-Conditioning (HVAC) Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install high-efficiency HVAC systems. The primary types of eligible HVAC systems include: thermal energy storage (TES); chillers; split/package direct expansion (DX); electronically commutated motor (ECM) for DX; energy recovery ventilator (ERV); demand control ventilation (DCV) for both HVAC and kitchen hood applications; and, variable frequency drives (VFD) for chillers. FPL is adding one new measure with a maximum incentive as follows:
  - VFD for chillers -\$472 per summer kW.

FPL is revising the maximum incentives for measures as follows:

- TES -from \$898 to \$720 per summer kW.
  - Chillers -from \$99 to \$574 per summer kW.
  - DX -from \$168 to \$1 ,100 per summer kW.
  - ECM for DX -from \$102 to \$808 per summer kW.
  - ERV -from \$417 to \$3,323 per summer kW.
  - DCV for HVAC applications -from \$627 to \$3,536 per summer kW.
  - DCV for kitchen hood applications -from \$627 to \$2,027 per summer kW.
3. *Business Lighting:* The Business Lighting Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install high-efficiency lighting systems. The primary types of eligible lighting systems include premium linear fluorescents with high efficiency electronic ballasts, compact fluorescent lights (CFL), pulse-start metal halides (PSMH), and light-emitting diode (LED) exit signs. FPL is expanding eligibility of this program to include new construction customers. FPL is adding one new measure with a maximum incentive as follows:

- LED exit signs -\$101 per summer kW

FPL is revising the maximum incentives for measures as follows:

- Premium linear fluorescents with high efficiency electronic ballasts -from \$132 to \$478 per summer kW
- CFL -from \$132 to \$349 per summer kW
- PSMH -from \$132 to \$297 per summer kW

4. *Business Refrigeration:* The Business Refrigeration Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install high-efficiency refrigeration systems. The primary types of eligible refrigeration systems include anti-sweat heat controls, special doors with low or no anti-sweat heat, hot gas reclaim on freezer doors, compressor variable frequency drive (VFD) retrofit, oversized air cooled condensers, electronically commutated motors (ECM), and evaporator fan controller for medium temperature (MT) walk-in coolers. FPL is adding four new measures with maximum incentives as follows:

- Compressor VFD retrofit -\$910 per summer kW.
- Oversized air cooled condenser -\$347 per summer kW.
- ECM -\$808 per summer kW.

- Evaporator fan controller MT walk-in coolers -\$812 per summer kW.

FPL is revising the maximum incentives for measures as follows:

- Anti-sweat heat controls -from \$80 to \$230 per summer kW.
  - Special doors with low or no anti-sweat heat -from \$80 to \$754 per summer kW.
  - Hot gas reclaim -from \$80 to \$1,374 per summer kW.
5. *Business Building Envelope*: The Business Building Envelope Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install eligible building envelope measures. The primary types of eligible building envelope measures include ceiling insulation, roof insulation, window treatment, and reflective roofing. FPL is revising the maximum incentives by measures as follows:
- Ceiling insulation -from \$185 to \$527 per summer kW
  - Roof insulation -from \$219 to \$641 per summer kW
  - Window treatment -from \$429 to \$979 per summer kW
  - Reflective roofing -from \$579 to \$1,487 per summer kW
6. *Business Water Heating Program*: The Business Water Heating Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install high-efficiency water heating systems. The primary types of eligible water heating systems include heat recovery units (HRU) and heat pump water heaters (HPWH). FPL is revising the maximum incentives by measures as follows:
- HRU -from \$881 to \$2,832 per summer kW
  - • HPWH -from \$881 to \$1,413 per summer kW
7. *Business Custom Incentive (BCI)*: The Business Custom Incentive Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install unique high-efficiency systems not covered by other FPL DSM programs. The primary types of custom measures include process improvement changes, process controls, efficient machinery, and other measures unique to industrial processes or business customers. FPL will calculate each individual incentive based on the differential between the customer-provided equipment specifications and the equivalent summer coincident peak kW for the specific technology under consideration.
8. *Cogeneration and Small Power Production*: FPL's Cogeneration and Small Power Production Program was established in order to implement and execute FPL's obligations to facilities defined as Qualifying Facilities (QF) under the Public Utility Regulatory

Policies Act of 1978 (PURPA) and FPSC rules. A QF may be classified as either a cogeneration facility (Cogenerator) or a small power production facility (SPP). A Cogenerator is a facility which produces electric energy and forms of useful thermal energy (such as heat or steam) used for industrial, commercial, heating or cooling purposes, through the sequential use of energy. An SPP facility is one which is less than 80 MW and that produces electric energy using, as a primary source of fuel, biomass, waste, renewable resources or any combination thereof.

9. *Business On Call*: The Business On Call Program, also referred to as the General Service Load Management Program, is a voluntary program primarily used to reduce the summer and winter coincident peak demand and energy by turning off customers' direct expansion central electric air-conditioning units. Load control equipment is installed at selected customer end-use equipment, allowing FPL to control these loads. Customers receive an incentive payment, in the form of a monthly credit on their bill. The incentive amount is dependent on the air-conditioning tonnage signed up by the customer, which is connected to the load control equipment.
10. *Commercial/Industrial Demand Reduction (CDR)*: The Commercial/Industrial Demand Reduction Program, also referred to as the Commercial/Industrial Demand Reduction Rider, is designed to reduce the growth of coincident peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand, capacity shortages, or system emergencies. Participation in this program involves the installation of direct load control equipment to allow FPL to control customer loads. Customers receive an incentive payment in the form of a credit on their monthly bills. FPL will calculate all incentives based on the customer's average demand during controllable rating periods less the customer's contracted firm demand.
11. *Commercial/Industrial Load Control (CILC)*: The Commercial/Industrial Load Control Program is designed to reduce the growth of coincident peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand, capacity shortages, or system emergencies. Participation in this program involves the installation of direct load control equipment to allow FPL to control customer loads. Participants in the CILC Program receive service under a lower rate in return for allowing FPL to control its load. FPL will calculate all incentives based on the customer's maximum demand, on-peak demand, and the contracted firm demand.
12. *Business Motors*: The Business Motors Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to improve their motor efficiency primarily through the use of variable frequency drives (VFD). FPL will calculate each individual incentive based on the differential between the customer-provided equipment specifications and the equivalent sununer coincident peak kW baselines as derived from VFD -size of motor.

#### **Solar Pilot Portfolio:**

1. *Residential Solar Water Heating Pilot*: The Residential Solar Water Heating Pilot Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install solar water heating systems in residential

homes. The primary components of an eligible solar water heating system include: a solar collector, mounting hardware, an 80 gallon water retention tank and associated plumbing, controls and sensors. FPL will offer up to a maximum of \$1,000 per installed solar water heating system.

2. *Residential Solar Water Heating (Low Income New Construction) Pilot:* The Residential Solar for Low Income New Construction (LINC) Pilot Program is designed to reduce energy consumption and growth of coincident peak demand, increase the efficiency of low income housing, and demonstrate the practical application of solar water heating in residential new construction by providing solar water heating systems to selected low income housing developments throughout the FPL territory. The primary components of eligible solar water heating systems include: a solar collector, mounting hardware, an 80 gallon water retention tank, and associated plumbing, controls, and sensors. The selected houses will receive an installed solar water heating system.
3. *Business Solar Water Heating Pilot:* The Business Solar Water Heating Pilot Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install solar water heating systems in businesses. The primary components of eligible solar water heating systems include: solar collectors, mounting hardware, a water retention tank, and associated plumbing, controls, and sensors. FPL will offer up to a maximum of \$30 per 1,000 BTU/h/day of the maximum rated output of the installed solar water heating system.
4. *Residential Photovoltaic Pilot:* The Residential Photovoltaic Pilot Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install photovoltaic systems in residential homes. The primary components of eligible photovoltaic systems include: various photo voltaic panels, mounting hardware, electric inverter, cabling, a disconnect device for systems greater than 10 kW direct current (dc) and optional backup battery systems. FPL will offer up to a maximum incentive of \$2,000 per the rated kWdc of the installed photovoltaic panels.
5. *Business Photovoltaic Pilot:* The Business Photovoltaic Pilot Program is designed to reduce energy consumption and growth of coincident peak demand by encouraging customers to install photovoltaic systems. The primary components of eligible photovoltaic systems includes: PV modules, mounting hardware, electric inverters, optional battery systems, associated cabling, and a disconnect device for systems greater than 10 kWdc. FPL will offer up to a maximum incentive of \$2,000 per the rated kW dc of the installed photovoltaic panels.
6. *Business Photovoltaic for Schools Pilot:* The Photovoltaic for Schools Pilot Program is designed to reduce energy consumption and growth of coincident peak demand and demonstrate and educate future generations on the practical application of photovoltaic by providing PV systems and educational materials for selected schools in all public school districts throughout the FPL territory. The primary components that will be offered per installed system include: photovoltaic panels, with inverter, mounting hardware, controls, and sensors; classroom educational materials; system monitoring and comparison tools; and, training for teachers and facility personnel. The selected schools will receive an installed PV system.

7. *Renewable Research and Demonstration Project*: FPL is proposing to conduct a series of demonstration and renewable technology research projects to increase awareness of solar technologies and to understand and quantify the energy effectiveness of emerging renewable technologies and their applications. FPL is proposing to accomplish this through three primary activities: partnering with universities and technical centers to increase the accessibility to renewable technology education for contractors, building officials, FPL personnel, and the general public; installing small scale solar technologies at public non-profit and government facilities which can accommodate educational displays and materials; and, partnering with universities to test new applications and new emerging renewable energy technologies in order to quantify benefits to customers and establish energy performance profiles.

**Research and Development Projects:**

1. *Conservation Research and Development (CRD)*: The purpose of the Conservation Research and Development Program is to identify new energy efficient technologies, evaluate and quantify their impacts on energy, demand and customers and where appropriate, develop emerging technologies into DSM programs. FPL will continue such activities under this Plan. Such efforts are an integral part of FPL's strategy to achieve the goals established for FPL in the recent conservation goals proceeding. These efforts will examine a wide variety of technologies, building on prior FPL research, where applicable, and expanding the research to new and promising technologies as they emerge.
2. *Residential Two-Story Home Wind Washing Research Project*: FPL is proposing to conduct a research project to measure the effects on energy consumption and the growth of coincident peak demand from inspecting and repairing two story homes which have air spaces between floors open to infiltration of outside air between the first and second stories. This research project will provide the data essential for evaluating this practice as a permanent component of the Company's DSM plan.
3. *Residential Proactive Energy Information Communications Research Project*: FPL is proposing to conduct a research project to measure the effects on energy consumption and coincident peak demand over time when providing customers proactive periodic personalized energy reports and tips. This research project will provide the data essential for evaluating this practice as a permanent component of the Company's DSM plan.
4. *Business Building Retro-Commissioning Research Project*: FPL is proposing to conduct a research project to measure the effects on energy consumption and the growth of coincident peak demand from Building Retro-Commissioning (BRC). BRC is a process of investigating, analyzing, and optimizing the performance of existing building systems. This research project will provide the data essential for evaluating this practice as a permanent component of the Company's DSM plan. This program is unique in that it targets optimizing performance of existing energy consuming systems as compared with other energy and demand saving programs which focus on system replacements or additions.