



FLORIDA
PUBLIC
SERVICE
COMMISSION

FEECA

Annual Report on Activities Pursuant to the Florida Energy Efficiency and Conservation Act

As Required by Sections 366.82(10), and 377.703(2)(f), Florida Statutes

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Florida Public Service Commission

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December 2016

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List of Acronyms

C/I	Commercial and Industrial (Customers)
DEF	Duke Energy Florida, LLC
DOE	U.S. Department of Energy
DR	Demand Response
DSM	Demand-Side Management
ECCR	Energy Conservation Cost Recovery Clause
EE	Energy Efficiency
F.A.C.	Florida Administrative Code
FEECA	Florida Energy Efficiency and Conservation Act
FPL	Florida Power & Light Company
FPSC	Florida Public Service Commission
FPUC	Florida Public Utilities Company
FRCC	Florida Reliability Coordinating Council
F.S.	Florida Statutes
GW	Gigawatt
GWh	Gigawatt-Hour
Gulf	Gulf Power Company
HVAC	Heating, Ventilation and Air Conditioning
IOU	Investor-Owned Utility
kWh	Kilowatt-Hour
LDC	Natural Gas Local Distribution Company
MW	Megawatt
MWh	Megawatt-Hour
OUC	Orlando Utilities Commission
O&M	Operations and Maintenance
PV	Solar Photovoltaic
RIM	Rate Impact Measure Test
SEER	Seasonal Energy Efficiency Ratio
TECO	Tampa Electric Company
TRC	Total Resource Cost Test

Executive Summary

Purpose

Reducing the growth of Florida's peak electric demand and energy consumption became a statutory objective in 1980, with the enactment of the Florida Energy Efficiency and Conservation Act (FEECA). Codified in Sections 366.80 through 366.83 and Section 403.519, Florida Statutes (F.S.), FEECA emphasizes reducing the growth rates of weather-sensitive peak electricity demand, reducing and controlling the growth rates of electricity consumption, and conserving expensive resources, particularly petroleum.

Section 366.82(2), F.S., requires the Florida Public Service Commission (FPSC or Commission) to set demand-side management (DSM) goals at least every five years for the seven electric utilities subject to FEECA. The Commission sets goals with respect to summer and winter electric peak demand and annual energy savings over a ten-year period, with a reevaluation review every five years. Once goals are established, the seven FEECA utilities must submit DSM plans containing cost-effective programs intended to meet the goals.

The seven electric utilities currently subject to FEECA are:

- Five Florida Investor-owned utilities (IOUs), ranked in order of sales
 - Florida Power & Light Company (FPL)
 - Duke Energy Florida, LLC (DEF)
 - Tampa Electric Company (TECO)
 - Gulf Power Company (Gulf)
 - Florida Public Utilities Company (FPUC)

- Two municipal utilities, ranked in order of sales
 - JEA
 - Orlando Utilities Commission (OUC)

The Commission regulates the electric rates and energy conservation cost recovery of the five IOUs. In contrast, the Commission does not regulate the rates of the two municipal utilities for which it sets DSM goals.

The Commission is required by Section 366.82(10), F.S., to provide an annual report to the Florida Legislature and the Governor summarizing the adopted goals and progress toward achieving these goals. Similarly, Section 377.703(2)(f), F.S., requires the Commission to file information on electricity and natural gas energy conservation programs with the Department of Agriculture and Consumer Services. This report reviews the 2015 annual goal results for each FEECA utility and fulfills these statutory obligations.

Report Layout

This report presents the FEECA utilities' progress towards achieving the Commission-established goals and the Commission's efforts in overseeing these conservation initiatives. This report details these efforts through the following four sections and appendix:

- Section 1 provides a history of FEECA, highlights savings produced by utility programs since 2000, and provides a description of existing tools for increasing electricity and natural gas conservation throughout Florida.
- Section 2 discusses 2015 goals and achievements of the FEECA utilities.
- Section 3 provides an overview of Florida’s electricity market.
- Section 4 discusses methods the Commission has used to educate consumers about conservation and provides a list of related web sites.
- Appendix 1 provides a list of the conservation programs currently offered by the FEECA utilities.

Pursuant to Section 366.82(10), F.S., this report on conservation results achieved by the FEECA utilities is due to the Florida Legislature and Governor by March 1, 2017.

2015 Achievements

The Commission has authority by statute to allow utilities to recover prudently incurred costs related to conservation.¹ The Commission has implemented this authority through the Energy Conservation Cost Recovery (ECCR) clause. The ECCR clause has been in existence since 1980. Since 1980, it is estimated that DSM programs offered by the FEECA utilities have reduced summer peak demand by 7,732 megawatts (MW) and winter peak demand by 7,263 MW. In comparison, the FEECA utilities currently have 46,584 MW of summer electric generating capacity and 50,227 MW of winter generating capacity. The history of FEECA and the ECCR clause are discussed in Section 1 of this report.

For 2015, Florida’s investor-owned electric utilities recovered approximately \$382 million in conservation program expenditures. Florida’s FEECA electric utilities also performed over 232,000 residential and commercial audits and offered 108 residential and commercial programs focused on energy conservation.

All seven FEECA utilities met the Commission’s total DSM goals. Two Florida IOUs, TECO and Gulf, and one municipal utility, OUC, also met the Commission’s energy and demand savings goals for the residential and commercial/industrial (C/I) customer classes. Three IOUs, FPL, DEF, and FPUC, and one municipal utility, JEA, did not meet every specific goal set by the Commission for the residential and C/I customer classes. Additional detail on each utility’s performance is described in Section 2.

Goal Setting Process for the Current Period

On November 25, 2014, the Commission approved winter and summer peak demand and annual energy savings goals for the seven FEECA utilities for 2015 through 2024. The Commission approved goals based on the Rate Impact Measure (RIM) test to ensure that all ratepayers benefit from energy efficiency programs that pass the RIM test and thereby create a downward pressure

¹ Section 366.82(11), F.S.

on electric rates. The 2014 approved DSM goals for the FEECA utilities were lower than the goals approved by the Commission in 2009. The Commission identified fewer cost-effective energy efficiency programs as a result of more stringent building codes and appliance efficiency standards. The higher the current efficiency standards and codes, the less opportunity there is for utility-sponsored programs to be cost-effective. Additionally, lower utility avoided costs resulting from lower natural gas prices have contributed to fewer programs being cost-effective. The 2014 goal setting process is discussed further in Section 2.4.

Additionally, in November 2014, the Commission voted to allow the IOUs' five-year solar pilot programs to expire on December 31, 2015. The Commission based its decision on evidence in the record that the existing solar pilot programs were not cost-effective. Finally in 2014, the Commission mandated in its 2014 Goals Order that a focus be placed on energy efficiency for low-income consumers. The Commission ordered "When the FEECA utilities file their DSM implementation plans, each plan should address how the utilities will assist and educate their low-income customers, specifically with respect to the measures with a two-year or less payback."² Further discussion of the utilities' low-income programs can be found in Section 2.4 of this report.

Following the Commission's establishment of the goals in late 2014, the IOUs filed DSM plans to meet the Commission's goals. In mid to late 2015, the Commission approved the IOUs' DSM plans. Subsequently, in late 2015, the IOUs filed program standards with the Commission to support these plans. At the end of 2015, the Commission approved the program standards for each IOU. The IOUs implemented the new programs in late 2015 and early 2016.

Conclusion

The potential demand and energy savings from utility-sponsored DSM programs are affected by consumer education and behavior, building codes, and appliance efficiency standards. Consumer actions to implement energy efficiency measures outside of utility programs, as well as codes and efficiency standards, create a baseline for a new program's cost-effectiveness and reduce the potential incremental electric demand and energy savings available from DSM programs.

Utilities design DSM programs to encourage conservation that exceeds the level of conservation resulting from current building codes and minimum efficiency standards. The level of savings from these programs is uncertain because it depends on voluntary participation from customers. However, all customers pay for the utility conservation programs as a portion of their monthly utility bills. Therefore, customer education on, and participation in, utility DSM programs—along with individual efforts to save electricity—are key in reducing Florida's electric demand and energy usage.

Conservation and renewable energy will play an important role in Florida's energy future. The Commission is continuing efforts to encourage cost-effective conservation, reduce the use of fossil fuels, and defer the need for new generating capacity. These initiatives support a balanced mix of resources that reliably and cost-effectively meet the needs of Florida's ratepayers.

² Order No. PSC-14-0696-FOF-EU, Docket Nos. 130199-EI through 130205-EI, In re: Commission review of numeric conservation goals, issued December 16, 2014.

Section 1. Florida Energy Efficiency and Conservation Act

1.1 History of FEECA

The Florida Energy Efficiency and Conservation Act (FEECA) emphasizes four key areas: reducing the growth rates of weather-sensitive peak demand and electricity usage, increasing the efficiency of electricity and natural gas production and use, encouraging demand-side renewable energy systems, and conserving expensive resources, particularly petroleum fuels. The Commission is required to establish goals, and the FEECA utilities are required to develop demand-side management (DSM) programs to achieve these goals.

Originally, all electric utilities in Florida were subject to FEECA. In 1989, changes were made to the law limiting the requirement to electric utilities with more than 500 gigawatt-hours (GWh) of annual retail sales. At that time, 12 Florida utilities met this threshold requirement, and their combined sales accounted for 94 percent of Florida’s retail electricity sales. An additional change to the law encouraged cogeneration projects.

In 1996, the Florida Legislature raised the minimum retail sales threshold for subject utilities to 2,000 GWh. Retail sales for FEECA utilities were measured as of July 1, 1993, and two municipal utilities met the threshold of the new law: JEA and OUC. In addition to these two utilities, all five Florida investor-owned utilities must comply with FEECA regardless of sales levels. No rural electric cooperatives are currently subject to FEECA.

The seven electric utilities subject to FEECA currently account for 86.5 percent of all Florida energy sales. Table 1 reflects the 2015 electricity sales and the percentage of total electricity sales by each FEECA utility, as well as the total for all non-FEECA utilities.

Table 1
Energy Sales by Florida's FEECA Utilities in 2015

Florida's FEECA Utilities	Energy Sales GWh	Percent of Total Energy Sales
Florida Power & Light Company	109,820	48.3%
Duke Energy Florida, LLC	38,553	17.0%
Tampa Electric Company	19,006	8.4%
JEA	11,090	4.9%
Gulf Power Company	11,086	4.9%
Orlando Utilities Commission	6,536	2.9%
Florida Public Utilities Company	638	0.3%
FEECA Utilities' Total	196,729	86.5%
Non-FEECA Utilities' Total	30,697	13.5%
Total Statewide Energy Sales	227,426	100.0%

Source: Commission's "Statistics of the Florida Electric Utility Industry" (Table 24) published in October 2016.

1.2 Conservation Tools and DSM Savings

Although utility-sponsored DSM programs are an important means of achieving energy conservation, consumer choices and mandatory efficiency standards are also keys to reducing demand and energy growth rates in Florida. Consumers respond to price signals by taking actions, such as buying energy efficient homes, installing efficiency upgrades and demand-side renewable systems, and making behavioral changes. The Commission's initiatives to educate Florida's consumers on conservation opportunities are discussed further in Section 4 of this report.

Pursuant to Section 366.82(11), F.S., all FEECA utilities are required to offer energy audits to residential customers. Home and business energy audits serve as the basis for many DSM and conservation programs which provides utilities an avenue to identify and evaluate conservation opportunities for customers. During 2015, Florida's IOUs performed more than 194,000 residential audits. Though FEECA does not require commercial energy audits, Florida's IOUs performed more than 15,000 commercial energy audits in 2015.

The FEECA utilities evaluate conservation opportunities for their customers through 108 programs for residential, commercial, and industrial customers. Table 2 shows that since FEECA's enactment, DSM programs are estimated to have reduced summer peak demand by an estimated 7,732 MW and winter peak demand by 7,263 MW.

Table 2
Estimated Cumulative DSM Savings Since 1980

Savings	
Summer Peak Demand	7,732 MW
Winter Peak Demand	7,263 MW
Annual Energy Reduction	10,363 GWh

Source: Florida Reliability Coordinating Council Load and Resource Plan 2016, S-3, S-4, S-5.

Utility-sponsored DSM programs are designed to encourage conservation efforts that exceed the minimum standards in state building codes and ever-strengthening federal appliance efficiency standards. The current level of federal efficiency standards and building codes creates a baseline used in determining the cost-effectiveness of a potential DSM program. The higher the efficiency standards and codes, the less opportunity there is for utility DSM programs to be cost-effective.

State Standards

At the state level, the Florida Building Code is amended annually to incorporate interpretations and clarifications as well as to update efficiency standards. The Florida Building Commission updates the Florida Building Code with relevant new standards every three years. The Florida Building Code's next update is scheduled for 2017. The 2014 Florida Building Code, 5th edition, places an emphasis on thermal envelopes of buildings. Additionally, the energy efficiency section focuses on insulation, ventilation measures for air conditioners, on/off switches for water heaters and pool heaters, and automatic temperature controls for hot water systems. These issues directly tie to utility and consumer energy conservation efforts.

Federal Government Standards

At the federal government level, the U.S. Department of Energy's (DOE) Building Technologies Office establishes minimum energy efficiency standards for more than 60 categories of appliances and other equipment. According to DOE, "Products covered by standards represent about 90 percent of home energy use, 60 percent of commercial building use, and 30 percent of industrial energy use."³ From August 2015 to August 2016, DOE proposed 70 rulemaking actions. DOE's rulemaking actions include final rules, notices of proposed rulemaking, preliminary analyses, framework documents, notices of data availability, proposed determinations, and requests for information. Within DOE's 70 rulemaking actions, the agency completed 28 final rules on new energy efficiency standards.

DOE's 28 final rules from August 2015 through August 2016 included the following:

- 14 conservation standards:
 - Residential boilers
 - Refrigerated beverage vending machines
 - Ceiling fan light kits
 - High-intensity discharge lamps
 - Single package vertical heat pumps and single package vertical air conditioners
 - Grid-enabled water heaters
 - Commercial package air conditioning and heating equipment
 - Commercial warm air furnaces
 - Commercial and industrial pumps
 - Commercial pre-rinse spray valves
 - Regional enforcement standards for central air conditioners
 - Dehumidifiers
 - External power supplies
 - Battery chargers

- 14 test procedures:⁴
 - Residential boilers
 - Ceiling fan light kits
 - Commercial package air conditioning and heating equipment
 - Commercial and industrial pumps
 - Commercial pre-rinse spray valves
 - External power supplies
 - Battery chargers
 - Residential furnaces
 - Clothes washers
 - Miscellaneous residential refrigeration products
 - LED lamps
 - Residential central air conditioners
 - Portable air conditioners
 - Fluorescent lamp ballasts

³ <http://energy.gov/eere/buildings/appliance-and-equipment-standards-program>.

⁴ DOE verifies through testing procedures that an appliance achieves its designated energy savings.

Further details can be found on the DOE Office of Energy Efficiency and Renewable Energy’s (EERE) buildings reports website at <http://energy.gov/eere/buildings/reports-and-publications>.

Table 3 describes pending standards being considered by DOE. The table also notes the expected timeframes for DOE’s associated rulemakings.

**Table 3
Upcoming Federal Appliance Standards Review**

Product Categories	Expected Date
Heating Products Rulemakings	
Residential Water Heaters	March 2017
Commercial Packaged Boilers	March 2018
Direct Heating Equipment	March 2018
Commercial Water Heaters	May 2018
Space Cooling Rulemakings	
Room Air Conditioners	April 2017
Central Air Conditioners	June 2017
Lighting Rulemakings	
Vibration Service Lamps	December 2016
General Service Lamps	January 2017
Fluorescent Lamp Ballasts	October 2017
Home Appliances Rulemakings	
Dishwashers	December 2016
Clothes Dryers	April 2017
Residential Ovens	May 2017
Residential Refrigerators and Freezers	September 2017
Clothes Dryers	January 2018
Walk-in Coolers and Freezers	April 2018
Residential Clothes Washers	May 2018

Source: DOE’s Report to Congress, Energy Conservation Standards Activities, August 2016.

Effect of Efficiency Standards on Florida IOUs’ DSM Programs

Florida utility DSM programs offer rebates and incentives for appliances that exceed federally established minimum efficiency standards. Increases in federal efficiency standards, independent conservation efforts by consumers, and general conservation practices make it more challenging for utilities to achieve additional demand and energy savings through these DSM programs. Moreover, participation rates in utility programs are driven by the anticipated payback to the participating customer. While utility incentives tend to increase customers’ “take rate” in conservation programs, electric rates are also a contributing factor in customers’ decisions to invest in a more efficient appliance. Thus, low or declining electric prices tend to reduce customer energy efficiency investments.

Since 2009, the cost-effectiveness of DSM measures has declined due to several factors outside of the FEECA utilities' control. First, new federal efficiency standards and state building codes have become more stringent over time. These higher standards and codes decrease the number of cost-effective DSM measures that the electric utilities can offer. Second, natural gas is the primary fuel source for electricity generation in Florida. The average price of natural gas fell from \$8.86/MMBtu in 2008 to \$3.73/MMBtu in 2013, the most recent full year before the Commission established the 2015-2024 DSM goals.⁵ In turn, lower natural gas prices reduced utility avoided costs. Lower fuel prices can impact customer participation in utility-sponsored DSM programs. For example, from October 2014 to March 2016, FPL reduced electric rates four times to reflect savings in large part due to lower natural gas prices. As a result, customers could have less of an incentive to implement energy efficiency measures.

1.3 Conservation Cost Recovery

Administrative costs, equipment, and incentive payments are all costs of implementing a DSM program. IOUs are allowed by Florida Statutes to recoup prudent and reasonable expenses for DSM programs approved by the Commission through the Energy Conservation Cost Recovery (ECCR) clause. Before attempting to recover costs through the ECCR clause, a utility must prove its DSM programs are cost-effective and benefit the general body of ratepayers. Each year, the Commission conducts financial audits of these expenses and a full evidentiary hearing is held to determine the following year's conservation cost recovery factor to be applied to customer bills.

As new cost-effective energy efficiency technologies become available, Florida's IOUs encourage customer participation by offering incentives through Commission-approved DSM programs. Utilities must also obtain Commission approval for program modifications prior to seeking cost recovery. From 2008 through 2014, there was growth in utility expenditures due to adding and modifying DSM programs.

As discussed previously, in November 2014, the Commission set lower goals for 2015 to 2024 due to finding that certain energy efficiency measures were no longer cost-effective. Most of these utility program modifications were not implemented until late 2015 to early 2016. Beginning in 2016, costs recovered through the ECCR are expected to stay flat or decline for most IOUs due to DSM program modifications.

⁵ EIA Henry Hub Natural Gas Spot Price Annual Average <https://www.eia.gov/dnav/ng/hist/rngwhhdA.htm>.

Table 4 shows the annual DSM expenditures recovered by Florida’s IOUs from 2005 through 2015.

Table 4
DSM Expenditures Recovered by IOUs

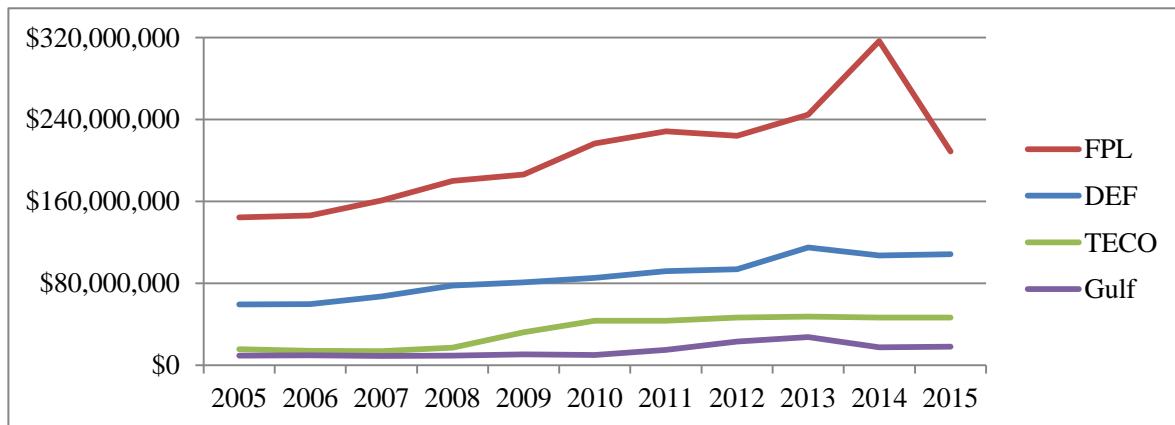
	FPL	DEF	TECO	Gulf	FPUC	Total
2005	\$144,192,697	\$59,143,255	\$15,583,726	\$9,363,182	\$473,610	\$228,756,470
2006	\$146,204,978	\$59,461,107	\$14,099,638	\$9,562,098	\$456,161	\$229,783,982
2007	\$160,749,639	\$67,109,875	\$13,652,585	\$9,107,192	\$515,022	\$251,134,253
2008	\$180,016,994	\$77,593,960	\$16,989,411	\$9,257,740	\$534,350	\$284,392,455
2009	\$186,051,381	\$80,954,071	\$32,243,315	\$10,576,197	\$540,433	\$310,365,397
2010	\$216,568,331	\$85,354,924	\$43,371,442	\$9,859,407	\$693,331	\$355,847,435
2011	\$228,293,640	\$91,738,039	\$43,349,092	\$15,003,596	\$954,297	\$379,338,664
2012	\$224,033,738	\$93,728,110	\$46,593,831	\$22,885,826	\$695,235	\$387,936,740
2013	\$244,443,534	\$115,035,455	\$47,502,652	\$27,431,962	\$806,698	\$435,220,301
2014	\$316,311,166	\$107,033,335	\$46,620,508	\$17,412,618	\$772,612	\$488,150,239
2015	\$208,643,788	\$108,455,141	\$46,516,362	\$17,961,885	\$718,616	\$382,295,792
Total						\$3,733,221,728

Source: Docket Nos. 060002-EG through 160002-EG, Schedules CT-2 from the IOUs' May testimony.

Of note, FPL’s DSM expenditures declined from \$316 million in 2014 to approximately \$209 million in 2015. The \$316 million included a one-time \$56.3 million capacity payment to Solid Waste Authority of Palm Beach County. Without this payment, FPL’s 2014 ECCR expenditures would have been approximately \$260 million. In 2015, FPL experienced additional reductions in DSM expenditures resulting primarily from changes in residential heating, ventilation, and air conditioning energy-efficiency standards and the expiration of solar rebate pilots.

Figure 1 trends the annual DSM expenditures for the four largest IOUs from 2005 to 2015.

Figure 1
Annual DSM Expenditures Recovered by IOUs



Source: Docket Nos. 060002-EG through 160002-EG, Schedules CT-2 from the IOUs' May testimony.

During the annual ECCR clause proceedings, the Commission determines the energy conservation cost recovery factors by customer class that each utility will assess to the energy and demand portions of customer bills. These factors are set using the IOUs' estimated conservation costs for the next year and reconciliation for any actual conservation cost under- or over-recovery.

In November 2016, the Commission set the ECCR factors for the 2017 billing cycle. Table 5 illustrates the five IOUs' conservation cost recovery factors for residential customers' monthly bills. For illustration purposes, these factors are applied to a typical monthly residential bill based on 1,000 kilowatt-hour (kWh) energy usage.

Table 5
Residential Energy Conservation Cost Recovery Factors in 2017

Utility*	ECCR Factor (cents per kWh)	Monthly Bill Impact (Based on 1,000 kWh)
FPL	0.15	\$1.50
DEF	0.317	\$3.17
TECO	0.225	\$2.25
Gulf	0.16	\$1.60
FPUC	0.1	\$1.00

* While JEA and OUC fall under the FEECA Statute, the Commission does not regulate electric rates for municipal utilities.

Source: Order No. PSC-16-0534-FOF-EG, Docket No. 160002-EG.

1.4 Natural Gas Conservation Cost Recovery

Commission Rule 25-17.015, F.A.C., permits natural gas distribution companies to seek recovery for costs related to Commission-approved conservation programs. Even though natural gas local distribution companies (LDCs) offer conservation programs to their customers, the Commission does not currently set conservation goals for LDCs. Natural gas conservation programs have historically spent the majority of conservation program costs in providing rebates to residential customers that support the replacement of less efficient appliances with new, energy efficient gas appliances.

In 2013, the natural gas LDCs, which already offered natural gas conservation programs to residential customers, received approval from the Commission to offer natural gas conservation programs to commercial customers.⁶ Since then, some LDCs have added commercial conservation program offerings. Starting in 2014, Peoples Gas System added the Commercial New Construction, Commercial Appliance Retention, and Commercial Appliance Replacement Programs. In 2016, St. Joe Natural Gas added a Large Food Service Commercial Conservation Rebate Program and a Commercial Hospitality and Lodging Program, which encourages owners of lodging facilities to purchase energy efficient natural gas appliances.

⁶ Order No. PSC-14-0039-PAA-EG, Docket 130167-EG, In re: Petition for approval of natural gas energy conservation programs for commercial customers, by Associated Gas Distributors of Florida, issued January 14, 2014.

Table 6 shows the amount each LDC recovered in natural gas conservation expenditures from 2006-2015.

**Table 6
Conservation Expenditures Recovered by LDCs**

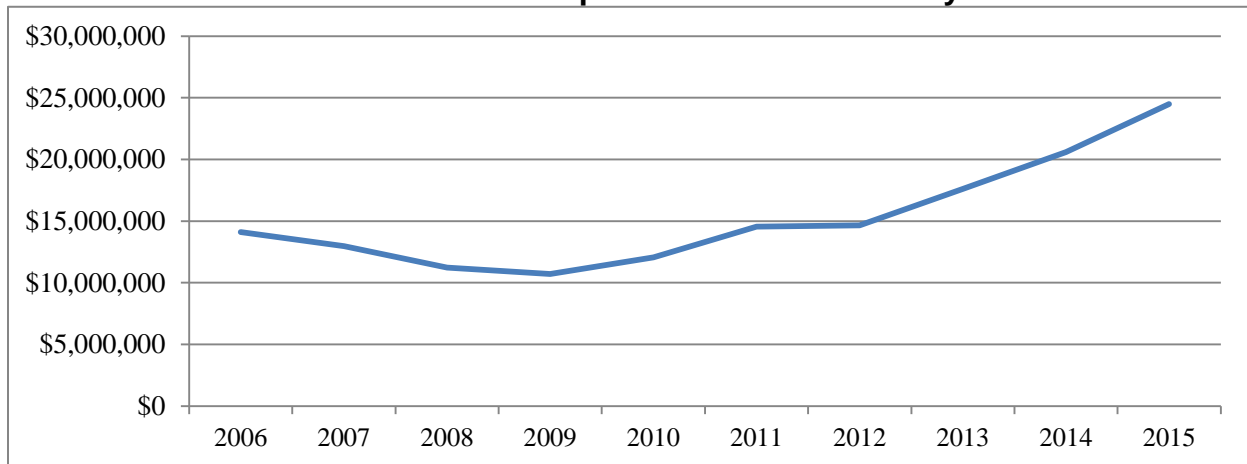
Year	Peoples Gas System	Florida City Gas	Florida Public Utilities	Chesapeake Utilities	Indiantown Gas Company	St. Joe Natural Gas	Sebring Gas System	Total
2006	\$8,934,625	\$2,176,960	\$2,032,704	\$967,263	\$0	\$9,175	\$0	\$14,120,727
2007	\$7,367,135	\$2,345,976	\$2,249,573	\$906,159	\$15,563	\$73,171	\$12,344	\$12,969,921
2008	\$5,730,116	\$2,678,650	\$1,962,670	\$714,243	\$11,970	\$116,975	\$6,816	\$11,221,440
2009	\$5,880,890	\$2,254,121	\$1,702,041	\$710,850	\$21,682	\$137,675	\$11,926	\$10,719,185
2010	\$5,721,003	\$3,404,142	\$2,084,724	\$627,734	\$8,733	\$170,374	\$37,283	\$12,053,993
2011	\$6,906,668	\$3,573,513	\$3,163,050	\$755,779	\$11,357	\$106,300	\$34,640	\$14,551,307
2012	\$7,314,940	\$3,743,811	\$2,655,654	\$806,747	\$5,238	\$102,425	\$25,090	\$14,653,905
2013	\$9,432,551	\$4,342,603	\$2,935,140	\$742,412	\$10,222	\$96,575	\$53,967	\$17,613,470
2014	\$11,229,211	\$5,343,191	\$3,844,386	*	*	\$128,000	\$58,382	\$20,603,170
2015	\$12,335,245	\$5,240,383	\$6,768,175			\$123,400	\$33,563	\$24,500,766
Total								\$153,007,884

Source: Docket Nos. 060004-GU through 160004-GU, Schedules CT-2 from LDCs' May testimony.

* Spending combined with Florida Public Utilities Company

Figure 2 trends the annual conservation expenditures for all LDCs from 2006 to 2015.

**Figure 2
Annual Conservation Expenditures Recovered by LDCs**



Source: Docket Nos. 060004-GU through 160004-GU, Schedules CT-2 from May testimony.

In November 2016, the Commission set the natural gas conservation cost recovery factors for the 2017 billing cycle. Table 7 provides the LDCs' conservation cost recovery factors for 2017 and the impact on a typical residential customer's bill using 20 therms of natural gas per month.

Table 7
Residential Natural Gas Conservation Cost Recovery Factors in 2017

Utility	Cost Recovery Factor (Cents per Therm)	Monthly Bill Impact (Based on 20 Therms)
Peoples Gas System	7.853	\$1.57
Florida City Gas	15.168	\$3.03
Florida Public Utilities	13.261	\$2.65
Chesapeake Utilities	31.789	\$6.36
Indiantown Gas Company	12.751	\$2.55
St. Joe Natural Gas	40.001	\$8.00
Sebring Gas System	19.897	\$3.98

Source: Order No. PSC-16-0533-FOF-GU, Docket 160004-GU.

Section 2. Analytics for Setting DSM Goals

2.1 Cost-Effectiveness

Utility-sponsored DSM programs can benefit the general body of electric ratepayers by offsetting the need for future power plant construction. These programs can reduce costs to ratepayers by postponing capital expenditures, improving reliability, and reducing current electrical generation costs, including fuel and variable operating and maintenance costs. However, the deferral of new power plants with advanced technology can forgo the benefits of more efficient power generation and the associated lower emission rates for certain regulated pollutants.

Section 366.82, F.S., requires utility conservation programs to be cost-effective. This statute is codified in Rule 25-17.008, F.A.C., which identifies the cost-effectiveness methodologies to be used and requires that utilities provide cost and benefit information to the Commission when requesting to add or make changes or additions to an existing program. In order to be eligible for cost recovery, the utilities are required to provide a cost-effectiveness analysis for each proposed program or program modification. The Commission requires utilities to provide three cost-effectiveness tests for its consideration: the Participants Test, the Rate Impact Measure (RIM) test, and the Total Resource Cost (TRC) test. The tests are summarized below.

Participants Test

The Participants Test analyzes costs and benefits from a program participant's point of view and ignores the impact on the utility and other ratepayers not participating in the program. The Participants Test includes the costs customers pay for equipment and maintenance. Benefits considered in the test include the incentives paid by utilities to the customers and the reduction in customer bills. Failure to demonstrate cost-effectiveness under this test would infer that rational customers would not elect to participate in this program.

Rate Impact Measure Test

The RIM test is designed to ensure that all ratepayers, not just the program's participants, will benefit from a proposed DSM program. The RIM test includes the costs associated with incentive payments to participating customers and decreased revenues to the utility. DSM programs can reduce utility revenues due to reduced kWh sales and reduced demand. The decreased utility revenues typically are recovered from the general body of ratepayers at the time of a rate case. A DSM program that passes the RIM test ensures that all customer rates are lower than rates would be without the DSM program.

Total Resource Cost Test

The TRC test measures the overall economic efficiency of a DSM program from a social perspective. This test measures the net costs of a DSM program based on its total costs, including both the participants' and the utility's costs. Unlike the RIM test, customer incentives and decreased utility revenues are not included as costs in the TRC test. Instead, these factors are treated as transfer payments among ratepayers.

Moreover, if appropriate, certain external costs and benefits such as environmental impacts may be taken into account. Because incentives and foregone revenues are not treated as "costs", electric rates for all customers tend to be higher for programs implemented using the TRC test to judge cost-effectiveness.

Table 8 illustrates the costs and benefits considered in the three Commission-approved cost-effectiveness methodologies.

**Table 8
Summary of Cost-Effectiveness Methodologies**

	Participants	RIM	TRC
Benefits			
Bill Reduction	X		
Incentives Received	X		
Avoided Generation (Capital and O&M)		X	X
Avoided Transmission (Capital and O&M)		X	X
Fuel savings		X	X
Costs			
Program Costs		X	X
Incentives Paid		X	
Lost Revenues		X	
Participant's Costs (Capital and O&M)	X		X

When IOUs determine that their programs are no longer cost-effective, the utilities must petition the Commission for modification or discontinuation of the program. For example, programs may need to be modified due to the adoption of a more stringent appliance efficiency standard or building code. In contrast, if new efficiency measures become available that are cost-effective, the utility may petition the Commission for approval of a new program.

In 2008, the Florida Legislature amended the FEECA statute, placing upon the Commission additional responsibilities when adopting conservation goals. These responsibilities include the consideration of benefits and costs to program participants and ratepayers as a whole, as well as the need for energy efficiency incentives for customers and utilities. The Commission must also consider any costs imposed by state and federal regulations on greenhouse gas emissions.

The amended FEECA statute allows the Commission to provide appropriate financial rewards and penalties to the utilities over which it has rate-setting authority. Additionally, the 2008 legislation authorized the Commission to allow an IOU to receive an additional return on equity of up to 50 basis points for exceeding 20 percent of its annual load growth through energy efficiency and conservation measures. To date, the Commission has not awarded financial rewards or assessed penalties for IOUs through FEECA.

2.2 Commission-Established Goals

After considering the evidence in the 2014 goal-setting proceeding, the Commission established goals for the FEECA utilities based on the RIM cost-effectiveness analysis.⁷ The RIM test

⁷ Order No. PSC-14-0696-FOF-EU, Docket Nos. 130199-EI through 130205-EI, In re: Commission review of numeric conservation goals, issued December 16, 2014.

ensures that all ratepayers, both participants and non-participants, benefit from utility-sponsored conservation programs. Additionally, the RIM test minimizes cross subsidies between customers. By setting goals based on the RIM test in 2014, the Commission addressed concerns voiced at the hearing regarding subsidies between individuals who participate in DSM programs and individuals who do not participate.

In accordance with Section 366.82(7), F.S. in March 2015 the utilities filed DSM plans to meet the new goals. The Commission approved the utilities’ DSM plans in August 2015. In fall 2015, the utilities submitted their program standards for approval. The 2014 goal setting process is further discussed in Section 2.4.

Table 9 shows the Commission-approved summer demand, winter demand, and annual energy reduction goals for 2015-2024 established in Order No. PSC-14-0696-FOF-EU.

Table 9
Commission-Approved DSM Goals 2015-2024

Electric Utility	Summer Demand Goals (MW)	Winter Demand Goals (MW)	Annual Energy Goals (GWh)
FPL	526.1	324.2	526.3
DEF	259.1	419.3	195.0
TECO	56.3	78.3	144.3
Gulf	68.1	36.7	84.2
FPUC	1.3	0.4	2.0
OUC	5.0	8.4	13.0
JEA	10.8	9.7	25.8
Total	926.7	877.0	990.6

Source: Order No. PSC-14-0696-FOF-EU.

2.3 Assessing Goal Achievement

Commission rules require separate goals be set for residential and commercial/industrial (C/I) customers, assigning context to measuring goal achievement within these two primary customer categories. Each utility’s achievements in these categories are also combined and compared against total goals; the value of a system’s demand and energy savings has no relation to the sector—C/I or residential—in which the savings occur.

Each FEECA utility must file an annual report for the Commission summarizing demand savings, energy savings, and customer participation rates for each approved program. The FEECA utilities also present, pursuant to Rule 25-17.0021, F.A.C., the residential, C/I, and total energy efficiency achievements compared to the approved DSM goals. The annual reports are on the Commission website at the following link:

<http://www.floridapsc.com/ElectricNaturalGas/ARDemandSidePlans>.

Monitoring annual goal achievements enables the Commission to evaluate the effectiveness of each utility’s programs. In addition to reviewing the annual reports, staff may request additional information from the FEECA utilities on their demand and energy saving achievements. Staff’s

data requests can, for example, seek explanations of factors preventing the utilities from achieving projected participation levels.

Table 10 shows the 2015 residential, C/I, and total goals and achievements for each utility. Numbers in **bold** highlight that a utility did not achieve its goals in a particular category.

Table 10
DSM Goals Compared to Annual (2015) Achievements

Utility	Winter (MW)		Summer (MW)		Annual (GWh)	
	Goals	Achieved Reduction	Goals	Achieved Reduction	Goals	Achieved Reduction
FPL						
Residential	16	33	25	59	22	108
Commercial/Industrial	14	12	23	27	20	49
Total	29	45	48	86	41	156
DEF						
Residential	58	41	26	25	26	39
Commercial/Industrial	5	28	12	35	15	36
Total	64	69	38	60	40	76
TECO						
Residential	3	12	1	11	2	21
Commercial/Industrial	1	8	2	12	4	13
Total	4	20	3	23	6	34
Gulf						
Residential	1.3	12.7	2.3	13.0	2.3	34.2
Commercial/Industrial	0.1	4.2	0.3	6.4	0.8	13.8
Total	1.4	17.0	2.6	19.6	3.1	48.3
FPUC						
Residential	0.1	0.4	0.2	0.8	0.4	1.5
Commercial/Industrial	0.1	0.0	0.1	0.0	0.1	0.0
Total	0.2	0.4	0.3	0.8	0.5	1.5
JEA						
Residential	1.0	2.5	0.9	3.3	2.5	7.2
Commercial/Industrial	0.0	0.0	0.1	0.1	0.1	0.2
Total	1.0	2.5	1.1	3.3	2.6	7.4
OUC						
Residential	0.0	0.4	0.1	0.4	0.1	0.8
Commercial/Industrial	0.5	0.7	0.2	2.2	0.3	13.4
Total	0.5	1.1	0.3	2.6	0.5	14.2

*Bold numbers indicate the utility did not meet its annual goals within that category.

Source: FEECA utility demand-side management annual reports.

Each utility's DSM performance in 2015 is discussed below. The 2015 utility achievements have been compared to the 2015 goals established by the Commission in November 2014. Of note, the approved modifications to most of the utilities' DSM plans did not go into effect until late 2015.

FPL

Overall, FPL met its 2015 total goals. However, FPL achieved only 85 percent of its C/I winter MW goal. The company stated that the implementation date of its Energy Recovery Ventilation and Demand Control Ventilation measures affected its results.

DEF

Overall, DEF met its 2015 total goals. However, for residential customers, DEF achieved only 96 percent of its summer peak demand savings goal and only 71 percent of its winter MW peak demand savings goal.

The company commented that the Residential Energy Management Program achieved fewer participants than projected. Additionally, DEF expressed that measures to achieve the residential goal were delayed pending approval of its DSM Program Standards. Lastly, DEF stated that its savings from commercial programs made up for the residential shortfall.

TECO

TECO met its 2015 total goals and all individual goals.

Gulf

Gulf met its 2015 total goals and all individual goals.

FPUC

FPUC met its 2015 total goals. However, for the C/I goals, FPUC achieved 0 percent of its winter MW goal, 0 percent of its summer MW goal, and 8 percent of its annual GWh goal. FPUC stated that it has made modifications to its DSM programs focused on C/I customers and that the timing of the Commission's approval of the DSM program plan hindered meeting the C/I goals in 2015.

JEA

Overall, JEA met its 2015 total goals. For the C/I goals, JEA achieved only 36 percent of its summer MW goal. JEA states that it fell short because of lower than expected participation in the commercial solar net metering program. Additionally, JEA comments that it exceeded the summer peak demand savings goal when one considers non-RIM DSM programs.

OUC

OUC met its 2015 total goals and all individual goals.

2.4 Summary of the 2014 DSM and Goal Setting Process

In mid 2013, the Commission set a schedule to establish goals for the seven FEECA utilities by December 2014. This ensured that the Commission met the statutory requirement specifying goals must be reviewed at least every five years. Both FPUC and OUC independently filed petitions to use proxy methodologies to establish their goals. These utilities stated that costs associated with updating the 2009 Technical Potential Study, performing the subsequent analyses required by the Order Establishing Procedure, and testifying in support of the analyses would represent a hardship to the companies and their ratepayers due to each company's small size. On August 4, 2013, the Commission voted to approve the proxy methodologies and excuse FPUC and OUC from participating in the goals hearing.⁸

⁸ Order No. PSC-13-0645-PAA-EU, Docket Nos. 130204-EM and 130205-EI, issued December 4, 2013.

On July 21 and July 22, 2014, the Commission heard evidence from FPL, DEF, TECO, Gulf, JEA, and intervenors regarding the proposed DSM goals. Highlights from the proceeding included discussions regarding the FEECA utilities' numerical goals, payback/subsidization, consumer education, and solar initiatives. When setting the goals, the Commission considered the costs and benefits of conservation programs to customers who choose to participate in a program, as well as costs and benefits to customers who do not participate. The Commission considered both participants and non-participants as costs are recovered from the general body of ratepayers.

Based on evidence from the DSM goals setting proceeding, on November 25, 2014, the Commission voted to approve goals based on a RIM cost-effectiveness analysis. By approving goals based on the RIM test, the Commission ensured that rates would remain the same or lower than rates would otherwise have been and that cross subsidies among ratepayer groups would be minimized. In addition, the Commission directed each utility to demonstrate in its DSM plan how it would make all customers, in particular low-income customers, aware of energy efficiency opportunities and utility programs.

The Commission also voted to allow the IOUs' five-year solar pilot programs to end on December 31, 2015. The Commission based its decision on evidence in the record that the existing solar pilot programs were not cost-effective and represented a subsidy between the general body of ratepayers and the limited participants in the programs. The Commission issued the DSM Final Order, Order No. PSC-14-0696-FOF-EU, on December 16, 2014. The utilities subsequently filed DSM plans designed to meet the newly established goals. The Commission approved the utilities' DSM plans in August 2015. Beginning in late 2015, the FEECA utilities began implementing program modifications to reflect the Commission's orders.

In fall 2015, the FEECA utilities submitted, for approval, their program standards providing detailed descriptions on the administrative approaches for each DSM program. Beginning in late 2015, the FEECA utilities began implementing program modifications to reflect the approved DSM plans.

Low-Income Programs

In the November 2014 DSM goal-setting proceeding, the Commission ordered the FEECA utilities to educate low-income customers on energy efficiency opportunities. The Commission Order states "When the FEECA utilities file their DSM implementation plans, each plan should address how the utilities will assist and educate their low-income customers, specifically with respect to the measures with a two-year or less payback."⁹

Each FEECA utility implemented programs within its DSM plan that address low-income conservation efforts. For each company, these programs mainly focus on efforts to provide weatherization opportunities and installation of energy efficient appliances to residential homes. In many cases, the utilities have established partnerships with government and non-profit agencies to develop programs that educate low-income customers on conservation and the financial benefits of using less energy.

⁹Order No. PSC-14-0696-FOF-EU, Docket Nos. 130199-EI through 130205-EI, In re: Commission review of numeric conservation goals, issued December 16, 2014.

Utilities also educate all customers on conservation opportunities through energy audits, bill inserts, presentations, and other measures. This report discusses the utilities' conservation efforts with respect to low-income customers below.

FPL

FPL states its energy efficiency activities initially target low-income customers through energy efficiency education. FPL's Residential Energy Survey identifies energy-saving opportunities through changes that come at little to no costs. Next, FPL's Residential Load Management program provides bill credits to residential customers of all income levels who are willing to have electric service briefly interrupted during grid emergencies. Finally, FPL's Low-Income Program is aimed exclusively at low-income customers. This program "assists low-income customers through (first) state Weatherization Assistance Provider ("WAP") agencies and (second) FPL conducted Energy Retrofits."¹⁰

DEF

DEF states that for its low-income customers, the company first offers information about energy conservation programs through bill inserts and through DEF's website. Next, the company offers the Neighborhood Energy Saver Program, which includes booklets to customers about potential energy efficiency improvements. The booklets also include phone numbers for conservation programs and the company's website links to information about energy efficiency rebates and incentives offered through Residential Incentive Programs, EnergyWise, and the Low-Income Weatherization Assistance Program. Specifically, the Low-Income Weatherization Assistance Program uses installations and incentives to weatherize (protect a home from the outside elements) the homes of low-income families.

DEF also provided a home energy report in 2016 to approximately 15,000 low-income customers. The home energy report shows where homes are using electricity inefficiently. The home energy report includes information about DEF's Low-Income Weatherization Assistance Program and low-cost and no-cost ways that customers can reduce electric consumption. Furthermore, DEF's Weatherization Program partners distribute information about energy conservation programs. Finally, DEF makes periodic presentations on energy education and participates in energy fairs and low-income meetings throughout Florida.

TECO

TECO states that in low-income neighborhoods recognized by the U.S. census bureau, the company conducts Neighborhood Weatherization work when customers reach out to the weatherization independent contractor listed on the company's website. The Neighborhood Weatherization Program provides and/or installs the necessary materials for energy conservation for low-income customers.

Also, TECO Energy Management Services team members participate in local community events and fairs to educate customers on DSM opportunities and how to participate in these programs. Furthermore, in low-income neighborhoods, TECO performs door-to-door advertising on energy efficiency opportunities. Finally, TECO works with Neighborhood Service Centers, Senior Outreach Centers, and Elder Affairs Centers to present advice on energy efficiency.

¹⁰ Docket No. 160002-EG, FPL's August 2016 filing, Document No. 06880-16.

Gulf

Gulf works with local assistance agencies to present energy conservation information through an “energy literacy” curriculum to low-income customers. Also, Gulf’s Community Energy Saver Program installs energy conservation measures at no cost to low-income families.

In addition to presenting in person through local assistance agencies, Gulf provides energy efficiency advice through company representatives as appropriate when customers call or visit. Moreover, Gulf offers home energy audits in which company representatives present advice on lowering electricity consumption. Finally, Gulf presents energy conservation advice to its customers through its website.

FPUC

FPUC states its Low-Income Energy Outreach Program partners with the Florida Department of Economic Opportunity and the department’s approved Low-Income Weatherization Program operators to offer residential energy surveys, weatherization contractor training, and energy efficiency educational literature to low-income households.

JEA

JEA states its Neighborhood Efficiency Program “offers education concerning the efficient use of energy and water as well as the direct installation of an array of energy and water efficient measures at no cost to income qualified customers.”¹¹

OUC

OUC states its Residential Efficiency Delivered Program, an income based program, “provides up to \$2,000 of energy and water efficiency upgrades, based on the needs of a customer’s home.”¹² A conservation specialist from OUC performs a home survey and advises customers on the home improvements that can save the customer the most on utility bills.

Solar Pilot Programs

In 2009, the Commission ordered the IOUs to spend 10 percent of each company’s historic energy conservation cost recovery expenditures as an annual cap for solar water heating and solar photovoltaic (PV) pilot programs.¹³ As part of its proposed DSM plan, each IOU proposed solar pilot programs. The Commission approved these programs in 2010 and 2011.

To comport with the 2009 FEECA revision encouraging demand-side renewables, the Commission approved solar pilot programs, even though these programs were determined not to be cost-effective. The Commission’s intent was to evaluate the results of the pilot programs in a subsequent goals proceeding. Table 11 represents the Commission-approved annual expenditure caps for the IOUs’ solar pilot programs through 2015.

¹¹ JEA’s 2015 Annual Demand-Side Management Report
<http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/ARDemandSide/2015/JEA.pdf>.

¹² OUC’s 2015 Annual Demand-Side Management Report
<http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/ARDemandSide/2015/Orlando%20Utilities%20Commission.pdf>.

¹³ Order No. PSC-09-855-FOF-EG, Docket Nos. 080407-EG through 080413-EG, In re: Conservation review of numeric conservation goals, issued December 30, 2009.

Table 11
Commission-Approved Annual Expenditures for
Solar Pilot Programs

Utility	Annual Expenditure Cap
FPL	\$15,536,870
DEF	\$6,467,592
TECO	\$1,531,018
GULF	\$900,338
FPUC	\$47,233
Total	\$24,483,051

Source: Order No. PSC-09-0855-FOF-GU.

During 2015, the IOUs provided 2,135 solar photovoltaic and water heating rebates for the residential and commercial sectors. For many of the IOUs, these programs reached capacity just hours after approval, demonstrating a high customer demand for solar photovoltaic rebates.

The IOUs also funded solar thermal (water heating) pilots for low-income customers as well as other residential and commercial customers. In addition, FPL, DEF, and Gulf offered solar pilot programs to fund photovoltaic panels for select schools through 2015.

Table 12 reflects the number of photovoltaic and solar water heating installations by the five IOUs in the residential and commercial sectors for 2015.

Table 12
Solar Pilot Program Installations in 2015

Installations	FPL	DEF	TECO	Gulf	FPUC	Total
Residential Solar Water Heating	931	320	54	21	-	1,326
Commercial Solar Water Heating	1	-	-	-	-	1
Residential Photovoltaic	431	154	53	47	8	693
Commercial Photovoltaic	79	29	2	5	-	115
Total	1,442	503	109	73	8	2,135

Source: 2015 Annual DSM Reports by the Florida IOUs.

Table 13 reflects the IOUs' 2015 photovoltaic and solar water heating installation expenditures.

Table 13
Solar Water Heating and Photovoltaic Expenditures in 2015

Expenditures	FPL	DEF	TECO	Gulf	FPUC	Total
Solar Water Heating	\$2,701,226	\$302,460	\$64,962	\$8,001	\$0	\$3,076,649
Photovoltaic	\$12,180,078	\$5,220,522	\$1,211,020	\$483,354	\$40,013	\$19,134,987
Total	\$14,881,304	\$5,522,982	\$1,275,982	\$491,355	\$40,013	\$22,211,636

Source: 2015 Annual DSM Reports by the Florida IOUs.

In the 2014 DSM goals docket¹⁴ the Commission voted to let the solar pilot programs expire at the end of 2015. Analysis of the pilot programs' results showed that the programs were not cost-effective, indicating that there were cross subsidies between participants and non-participants. In addition, the costs of solar photovoltaic systems had decreased significantly since the pilot programs were initiated, making utility rebates less necessary.

Community Solar Programs

Several FEECA utilities have implemented programs allowing their customers to voluntarily participate in the development and purchase of renewable solar generation. The Commission reviews these programs for the IOUs.

FPL

FPL offers SolarNow, a voluntary community solar program in which customers pay an additional \$9 per month to support the development of solar projects.¹⁵ In return, customers promote solar in Florida and receive invitations to local events, discounts, and gift certificates to local restaurants.

TECO

TECO's Renewable Energy Program allows customers to purchase blocks of renewable energy from a combination of TECO-owned solar arrays dedicated specifically to the Renewable Energy Program and of purchased biomass generated electricity.¹⁶ Customers pay an extra \$5 for each 200 kWh block of renewable energy purchased.

Gulf

Gulf's Solar Energy Share offers 750 kWh of solar to its customers for an annual participation fee of \$89 or \$99. Participating customers receive bill credits of up to \$2.50 per subscription per month. Gulf obtains the solar power from a 1 MW solar facility that it operates.¹⁷

JEA

JEA offers JEA SolarSmart, a program in which customers who do not have solar panels can request that solar energy generate a percentage or all of the electricity that they consume. A customer who elects for solar energy to generate an amount equal to 50 percent of their electricity consumption would pay a premium of approximately \$20 per month.¹⁸

OUC

OUC's Community Solar Program allows customers to subscribe to blocks of solar power generating 1 kW up to a maximum of 15 kW. The one-time deposit fee is \$50, and the rate for solar power is \$0.13/kWh, a premium over OUC's \$0.098/kWh charge for the first 1,000 kWh and \$0.118/kWh charge for all additional kWh.

Florida's utilities also conducted research related to renewables in their DSM programs. FPL finalized its Renewable Research & Demonstration Project. Several other IOUs noted that their own renewable research and development programs would be finalized at the end of 2015.

¹⁴Order No. PSC-14-0696-FOF-EU.

¹⁵ Order No. PSC-14-0468-TRF-EI.

¹⁶ Order No. PSC-06-1063-TRF-EG.

¹⁷Order No PSC-16-0119-TRF-EG, Docket No. 150248-EG, In re: Petition for approval of community solar pilot program, by Gulf Power Company, issued March 21, 2016.

¹⁸ <https://www.jea.com/solarsmart/>

Florida Utilities' Research & Development Programs

Florida's IOUs have research and development programs to learn about the technical and economic potential of various energy conservation and renewable energy technologies. In these programs, Florida's IOUs often partner with universities or established industry research organizations, such as the Electric Power Research Institute (EPRI).

FPL

In its continuing Conservation Research and Development (CRD) Program, FPL recently investigated smart thermostats, where FPL found electricity savings of 2.8 percent of total electricity consumption and 11.9 percent of air conditioning consumption were possible. FPL also researched learning thermostats and discovered that learning thermostats could help owners of single family homes save 1.3 kWh a day, or 2.4 percent, of consumption.

Next, in the CRD program, FPL found that rooftop heating, ventilation, and air conditioning (HVAC) units retrofitted with variable speed drives could reduce kWh consumption by 49 percent for air conditioners, 37 percent for compressors, and 56 percent for supply fans. Lastly, FPL investigated Advanced Metering Infrastructure (AMI) -enabled load control switches and found that they are capable of communicating and being controlled by the AMI network. However, FPL believes that AMI-enabled load control switches are not ready to replace switches currently used in FPL's Residential Load Management Program because some features needed refinement in order to meet FPL's operational criteria.

In its concluded Renewable Research and Development (RRD) Pilot Program, FPL investigated solar heat pumps and determined that a solar heat pump system can technically achieve over 70 percent of annual space conditioning energy usage. Though the technology works, FPL believes that the payback of 20 years is unattractive for consumers. Additionally, in its RRD program, FPL examined a solar assisted air-conditioning unit and found that adding a solar collector between an air-conditioner's compressor and condenser is ineffective.

FPL states it found solar trackers to be effective, generating approximately 16 percent more annual energy than a fixed solar array. FPL also found cooled hybrid photovoltaic thermal solar cells generate 20 percent more electricity on average than un-cooled thermal solar cells. Lastly, FPL studied solar hybrid thin-film panels and compared them to Trina Solar's crystalline panels. FPL found the difference in output was less than 2 percent.

DEF

DEF's continuing Technology Development Program supported the EPRI SolarTAC (Solar Technology Acceleration Center) Project. The project found that PV capacity factors ranged from 0.16 to 0.26 and that PV module nameplate ratings need standardization.

DEF also worked with EPRI to analyze the Duke Energy Distributed Photovoltaic (DPV) Monitoring Project in Florida and North Carolina. EPRI found that the difference in geography from one part of Florida to another could influence solar panel performance by 17 percent.¹⁹

¹⁹ Duke Energy Distributed Photovoltaic Monitoring in Florida and North Carolina, page viii.
<http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000003002003996>.

In its final project, DEF engaged in the University of South Florida Sustainable Electric Energy Delivery System (SEEDS) Project. Duke installed PV and energy storage together on and near the St. Petersburg campus of the University of South Florida. In the SEEDS Project, Duke used energy storage to smooth out the occasional intermittency of PV as well as to time-shift the output of PV to power system peak times.

TECO

In its continuing DSM Research and Development Program, TECO is studying thermal energy storage, such as including residential heat pump water heaters and hybrid water heaters in its Residential Price Responsive Load Management (Energy Planner) Program as an electric thermal storage device. Additionally, TECO is exploring battery storage in C/I facilities for the purpose of shifting electrical consumption from peak to non-peak times. Also, the company's continuing Renewable Energy Program allows its customers to purchase 200 kWh blocks of renewable energy and allows TECO to evaluate the technical and economic potential of renewable energy technologies.

TECO's Renewable Energy Systems Initiative Pilot Program found the cost of solar in \$/kilowatt of direct current fell 43 percent from 2011 to 2015. Furthermore, TECO's Renewable Energy Systems Initiative Pilot Program determined that homeowners who installed solar systems can have problems with shading from trees, adjacent homes, or buildings. TECO also determined that many homes that could support fixed solar panels cannot support a more optimal tilt angle for the panels or a better axis orientation to increase solar energy collected.

Gulf

Gulf's continuing Conservation, Demonstration, and Development Program is studying three projects in 2016. First, the Azalea Trace Project is obtaining data on the application of a heat pump water heater. The company's 10th Avenue North Hair Salon Heat Pump Water Heater project is evaluating a heat pump water heater. This project is studying whether a residential heat pump water heater can be used successfully in small commercial applications with high usage. Third, Gulf is launching the Residential Service Time of Use Pilot Program to measure customers' response to a variable electricity price. The program provides up to 400 residential customers with the opportunity to use customer-owned equipment to take advantage of a variable electricity pricing structure with a critical peak component. To evaluate if the pilot is successful, Gulf is collecting data on the residential customer response to a variable electricity price and will update the Commission after completion of the pilot.

Section 3. Overview of Florida's Electricity Market

3.1 Energy Demand in Florida

Florida's total electric consumption ranks among the highest in the country largely due to its sizeable population and climate-induced high demand for cooling. The state's large residential customer base influences the unique pattern of electrical demand and energy consumption. Florida's load patterns are driven by high air-conditioning loads in the summer and greater reliance on electricity rather than natural gas for heating in the winter, resulting in large swings in peak demand throughout the year. Understanding these patterns, and why they occur, is imperative to recognizing the importance of conservation in Florida.

Table 14 shows residential customers comprise approximately 89 percent of Florida's total electricity customers, while purchasing approximately 53 percent of its electrical energy. Florida's commercial class comprises approximately 11 percent of the total customers and purchases approximately 39 percent of its electrical energy. Industrial customers purchase the remaining 8 percent of electricity in Florida.

Table 14
Florida's Electric Customers by Class and Consumption in 2015

Customer Class	Number of Customers	Percent of Customers	Energy Sales (GWh)	Percent of Sales
Residential	8,659,510	88.7%	117,615	53.2%
Commercial	1,082,577	11.1%	86,027	38.9%
Industrial	22,703	0.2%	17,342	7.8%
Total	9,764,790	100.0%	220,984	100.0%

Source: 2016 Florida Reliability Coordinating Council Load and Resource Plan S-2.

Florida versus National Averages for Residential Electric Consumption

Florida's electric consumption is more dominated by residential consumers than the national average. In Florida, as shown in the above table, residential customers account for 53.2 percent of total electric sales. In contrast, nationally residential customers account for only 36 percent of total electric sales, while commercial customers represent 35 percent of electric consumption and industrial customers represent 26 percent.²⁰ The remaining 3 percent of national electric consumption is direct use.

Because Florida has a higher than average proportion of residential electric consumption, Florida's load follows residential load patterns. Compared to commercial or industrial loads, residential load is more rapidly shifting and has higher peak to trough variation. In response, many Commission-approved DSM programs are designed to lower or shift peak demand in order to reduce the need for expensive new power plants.

Small and medium commercial loads are highest during the traditional workday. Large commercial and industrial loads demonstrate more consistency throughout the 24 hour day and

²⁰ <http://www.eia.gov/electricity/data.cfm#sales> Retail sales of electricity to ultimate consumers, annual, by sector by provider.

experience fewer spikes in demand. Therefore, states that have a larger industrial presence than Florida have flatter, more consistent demand for electricity than Florida.

Effect of Weather on Electric Consumption in Florida

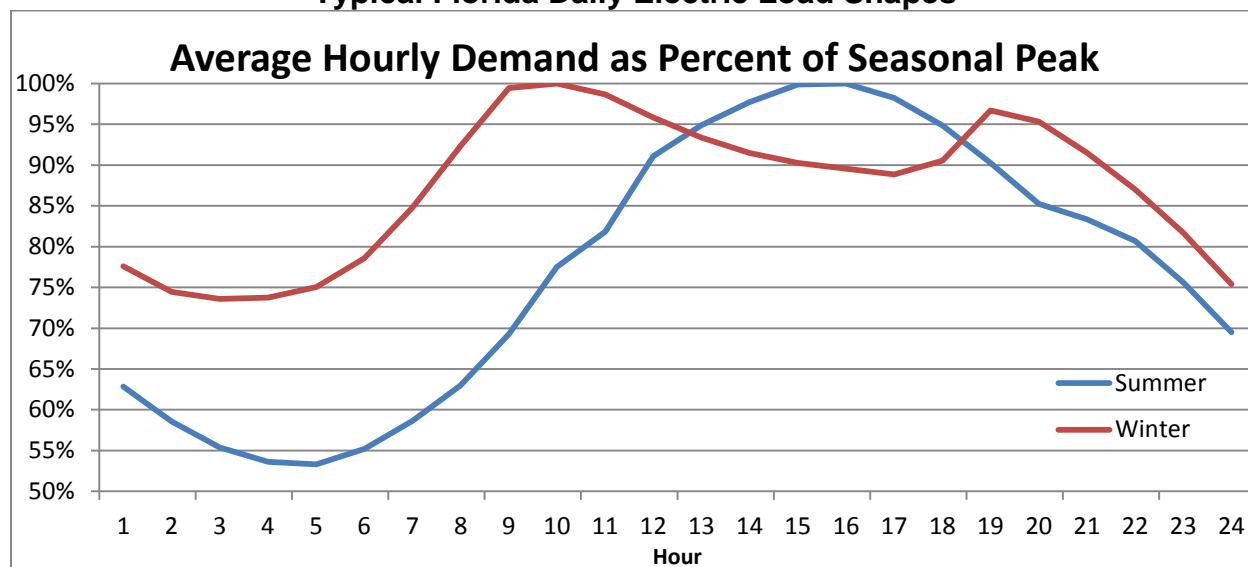
For residential customers throughout the U.S. and in Florida, residential electricity consumption peaks in early evening in the summer. With higher temperatures and humidity than other states, Florida’s residential load can have higher peaks compared to other states.

Similarly, for residential customers throughout the U.S. and in Florida, residential energy usage peaks mid-morning and late evening in the winter. Furthermore, due to the warm climate, Florida has less of a need for heating in the winter, although Florida relies more on electricity for heating compared to other states that use more direct natural gas for heating, or even heating oil.

Due to the warm weather, Florida is typically a summer-peaking state, with peak demand often coming on the hottest weekdays of the year when the need for air-conditioning is greatest. Because Florida is summer peaking, summer peak demand generally controls the amount of required generation. Florida’s 2015 summer peak demand was 48,800 MW, while the winter peak demand was 40,754 MW.²¹

Figure 3 shows the daily load curves for a typical Florida summer and winter day. In the summer, air-conditioning demand starts to increase in the morning and peaks in the early evening; a pattern which aligns with the sun’s heating of buildings. In comparison, the winter load curve has two peaks—the largest in mid-morning, followed by a smaller peak in the late evening—which correspond to heating loads.

Figure 3
Typical Florida Daily Electric Load Shapes



Source: Ten-Year Site Plan responses provided to the Commission by the IOUs in the 2015 first Data Request.

²¹ 2016 FRCC Load and Resource Plan, S-1.

<https://www.frc.com/Planning/Shared%20Documents/Load%20and%20Resource%20Plans/FRCC%202016%20Load%20and%20Resource%20Plan.pdf>

3.2 Florida's Electric Generating Resources

Florida's electric utilities' resource-planning process aims to guarantee enough installed capacity is available to meet projected customer demand and to provide a contingency reserve in the event of planned outages, forced outages, or spikes in load. Once the timing of capacity additions is known, the appropriate generating technology and fuel type is determined to provide the needed energy and maintain reliability. Electric generating units typically are categorized as baseload, intermediate, or peaking.

Aside from planned and forced outages, baseload units are scheduled to operate continuously. Intermediate units generate power to follow load for periods of time, but are not planned to operate nonstop. Peaking units supplement baseload and intermediate power, operating less frequently during high-demand periods. Utility-sponsored conservation programs help to reduce peak demand and energy consumption, offsetting the need for expensive new generating capacity.

Florida's mix of electric utilities is made up of five IOUs, 35 municipally-owned electric utilities and 18 rural electric cooperatives. In total, these utilities currently have 58,421 MW of summer electric generating capacity and 62,991 MW of winter generating capacity.²² Non-utility generators in the state provide an additional 4,226 MW of summer electric generating capacity and 4,525 MW of winter generating capacity.²³ Supplementary capacity is purchased from out-of-state utilities over the Florida-Georgia transmission interconnections.

The FEECA generating utilities currently have 46,584 MW of summer electric generating capacity and 50,227 MW of winter generating capacity. As referenced in Table 2, since inception, the FEECA DSM programs have cumulatively saved 7,732 MW of summer peak demand and 7,263 MW of winter peak demand.

²² 2016 FRCC Load and Resource Plan, S-7.

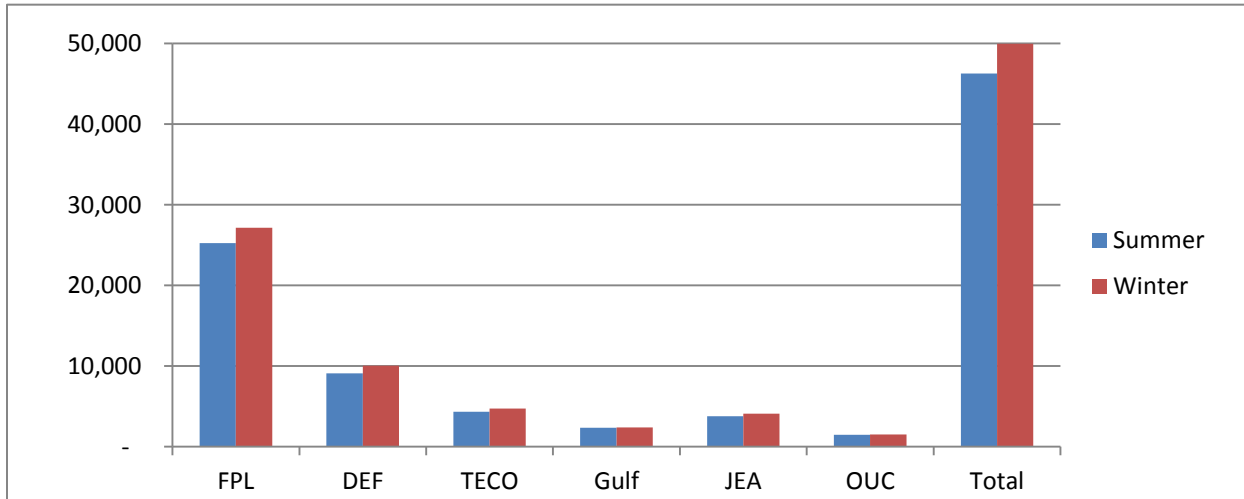
<https://www.frcc.com/Planning/Shared%20Documents/Load%20and%20Resource%20Plans/FRCC%202016%20Load%20and%20Resource%20Plan.pdf>.

²³ 2016 FRCC Load and Resource Plan, S-7.

<https://www.frcc.com/Planning/Shared%20Documents/Load%20and%20Resource%20Plans/FRCC%202016%20Load%20and%20Resource%20Plan.pdf>.

Figure 4 shows the current summer and winter capacity of each generating FEECA utility.

**Figure 4
Summer and Winter Generating Capacity by FEECA Utility**



Source: Florida Reliability Coordinating Council 2016 Load and Resource Plan, page 7 and page S-7.

The most prominent fuel source for generation in Florida is natural gas. Table 15 below provides a breakdown of the approximate percentage of fuel sources used to generate net energy for load in Florida.

**Table 15
Electric Generation Sources in Florida in 2015**

Generation Source	Percent of Net Energy for Load
Gas	62.94%
Coal	18.79%
Nuclear	11.22%
Interchange (Exports and Imports of Power to Other States)	3.40%
Other	1.30%
Non-Utility Generation, Primarily Gas	0.74%
Municipal Solid Waste	0.59%
Biomass	0.47%
Landfill Gas	0.14%
Residual Oil	0.14%
Distillate Oil	0.10%
Solar	0.08%
Hydro	0.07%

Source: 2015 Actual Data from the 2016 Florida Reliability Coordinating Council Load and Resource Plan, S-18.

The low price of natural gas and recent and potential environmental regulations are expected to continue leading Florida to substitute gas generation or renewables for coal. Between 2014 and 2015, coal decreased as a percentage of generation in Florida by 4.4 percent, from 23.2 percent to 18.8 percent.²⁴ Examples of coal plants considered for decommissioning include the 250 MW Cedar Bay plant and the 330 MW Indiantown plant. For both plants, FPL had contracts for coal-generated electricity from these facilities at prices that are now above market. The Commission approved FPL's requests to buy each plant. FPL stated that its intent is to replace the above-market coal contracts with more cost-effective energy and to potentially retire the coal plants.²⁵

With the trend towards natural gas, Florida's reliance on natural gas may increase beyond the current level of 62.9 percent. However, several IOUs have plans for additional renewable capacity or purchases.

FPL Solar

FPL currently has 110 MW of solar in operation.²⁶ Also, FPL is planning to add 225 MW more of solar photovoltaic (PV) by the end of 2016, with 3 large-scale 74.9 MW projects in DeSoto, Manatee, and Charlotte Counties. In FPL's most recent rate case, pending approval of a settlement agreement, FPL would build up to 300 MW of solar PV a year for the next four years. As a result, FPL would expect to have close to 1,200 MW of new solar PV, in addition to its existing 110 MW of solar and 225 MW of solar PV completed in 2016.

DEF Solar

DEF has 4 MW of solar in Osceola County, 5 MW of solar in Perry, 5 MW of solar at Disney World, and a partnership with OUC for 5.9 MW of solar at Stanton Solar Farm in Orlando for a total of 19.9 MW of utility-owned solar. By 2018, DEF expects to bring online an additional 30 MW of solar. By 2024, DEF plans to install up to 500 MW of solar generation.

TECO Solar

TECO currently has 2 MW of solar at the Tampa International Airport. By the end of 2016, TECO expects to add 23 MW of solar next to its existing coal-fired Big Bend Power Station.

Gulf Solar and Wind

Gulf is partnering with the Navy and Air Force to add 120 MW of solar by the end of 2016, with 30 MW at Eglin Air Force Base in Fort Walton Beach, 40 MW at Holley Field in Navarre, and 50 MW at Saufley Field in Pensacola. In addition to solar, Gulf has entered into purchase power agreements linked to 272 MW of wind energy produced by facilities located in Oklahoma. While the energy from the facilities may not be delivered to Gulf's system, the renewable attributes for their output are retained by the utility for the benefit of Gulf's customers.

²⁴ 2015 actual data from the 2016 Florida Reliability Coordinating Council Load and Resource Plan S-18, and the Commission's March 2016 Annual Report on Activities Pursuant to the Florida Energy Efficiency and Conservation Act.

²⁵ Order No. PSC-15-0401-AS-EI, Docket No. 150075-EI, In re: Petition for approval of arrangement to mitigate impact of unfavorable Cedar Bay power purchase obligation, by Florida Power & Light Company; and Order. No. PSC-16-0506-FOF-EI, Docket No. 160154-EI, In re: Petition for approval of a purchase and sale agreement between Florida Power & Light Company and Calypso Energy Holdings, LLC, for the ownership of the Indiantown Cogeneration LP and related power purchase agreement.

²⁶ 75MW of solar thermal and 35 MW of solar photovoltaic.

Consumer-Owned Generation

For the year ending December 31, 2015, there were 11,626 customer-owned renewable energy systems in Florida,²⁷ an increase of 35 percent from 2014.²⁸ Specifically for the five IOUs, there were 8,578 customer-owned renewable energy systems in operation, representing approximately 0.11 percent of the total customers served by these utilities.²⁹ Additionally, 249 customers of JEA and 94 customers of OUC owned renewable energy systems.³⁰

Total Renewables

According to the Commission's Ten-Year Site Plan Review, approximately 1,860 MW of Florida's generating capacity consists of renewables. Biomass and municipal solid waste represent the majority of renewables. Waste heat is third, and solar is fourth. There are 263 MW of solar in service and 1,849 MW of solar projected over the next ten years.

Other types of renewable generation in Florida include hydroelectric, landfill gas, and wind. Both Gulf and JEA have contracted for wind energy from out-of-state. Under these purchased power agreements, Gulf and JEA receive renewable energy credits for the contracted energy.

Nuclear generation has steadily decreased since 2010, due to the decommissioning of DEF's Crystal River Unit 3. FPL is scheduled to potentially add new nuclear generation in 2027 and 2028, when FPL's Turkey Point Units 6 and 7 are estimated to come on-line. This could contribute an additional combined capacity of 2,200 MW zero-emissions generation capacity.

²⁷ <http://www.psc.state.fl.us/ElectricNaturalGas/CustomerRenewableShowYear?folder=2015> .

²⁸ <http://www.psc.state.fl.us/ElectricNaturalGas/CustomerRenewableShowYear?folder=2014> .

²⁹ <http://www.psc.state.fl.us/ElectricNaturalGas/CustomerRenewableShowYear?folder=2015> .

³⁰ <http://www.psc.state.fl.us/ElectricNaturalGas/CustomerRenewableShowYear?folder=2015> .

Section 4. Educating Florida’s Consumers on Conservation

4.1 Commission Consumer Education Outreach

While the Commission has statutory authority to require conservation efforts by regulated utilities, as part of the agency’s outreach program, the Commission complements utility efforts with its own conservation related activities. To effectively reach as many consumers as possible, the Commission’s consumer education program uses a variety of platforms to share conservation information, including the Commission website, public events, brochures, press releases, E-Newsletters, and Twitter. Conservation information is also available through other governmental and utility websites. Section 4.2 lists related websites for state and federal agencies, investor-owned electric utilities, and local gas distribution companies to further assist consumers. Most of the data in this section covers January through September 2016, due to the report’s publication date.

Triple E Award

For the third year, the Commission is recognizing small businesses for implementing Commission-approved, cost-effective conservation programs. Covering the state’s five major geographic areas, each month the Commission presents its Triple E Award—for Energy Efficiency Efforts—to a local business that has accomplished superior energy efficiency by working with its local utility to help reduce its energy footprint. The Commission’s Triple E Award recipients receive an award plaque, are highlighted through a press release issued statewide, and are featured under Hot Topics on the Commission’s homepage, www.FloridaPSC.com.

Outreach

An assortment of information is available on the Commission website to help consumers save energy. According to Google Analytics, website page views for February through August 2016 totaled 677,724. One of the more popular website destinations is [Find Your Utility](#). Chairman Julie Brown was instrumental in designing this website feature to provide consumers with contact information for Florida’s utilities. Customers who are in a crisis situation and unable to pay their electric bills can tap into utilities’ large network of social-service organizations and weatherization programs designed to lower utility bills and increase in-home comfort. To complement the website feature, the Commission’s [A Guide to Utility Assistance in Florida](#) booklet is also available on the website. The publication provides a list of Florida’s electric companies with their contact information for consumers’ convenience.

The Commission also offers several energy conservation brochures to help consumers save energy. Brochures may be viewed and printed directly from the website, FloridaPSC.com/publications, ordered online, or requested by mail or phone. From January through August 2016, 35,865 brochures were mailed by request.

Newsletters

With its interactive design, the Commission’s quarterly *Consumer Connection E-Newsletter* features current energy and water conservation topics, consumer tips, and general Commission information. Consumer tips highlighted through video and text in 2016 include *Prepare Your Air*

Conditioner for Summer, It's Hurricane Season, So Be Prepared!, and *Save Money During Spring Break*. The *Consumer Connection E-Newsletter* is available under Consumer Corner on the Commission's homepage and distributed to consumers via Twitter and by subscribing to the free newsletter [online](#).

Chairman Julie Brown's monthly *FPSC Update* often features conservation topics and is distributed electronically to legislators, local government officials, and Florida Cabinet members. The *Update* is tweeted and also featured under Hot Topics and archived on the Commission's homepage.

National Consumer Protection Week

National Consumer Protection Week, highlighting consumer protection and education efforts, was important to the Commission's 2016 conservation education efforts. Chairman Julie Brown kicked off the 18th Annual *NCPW* (March 6-12, 2016) by hosting a press conference in Tallahassee to remind consumers of ways to avoid energy related fraud schemes and to curb high energy usage.

Also during the week, the Commission made presentations in Jacksonville, Tampa, St. Petersburg, and Panama City, showing consumers how to save money through energy and water conservation and how to avoid scams.

Older Americans Month

For the fifth year, the Commission participated in *Older Americans Month*, a national project celebrated each May to honor and recognize older Americans for their contributions to families, communities, and society. *Blaze A Trail* was this year's theme, and the Commission held 11 education sessions on ways to conserve energy and water, and on strategies to prevent becoming a victim of fraud at senior communities. The Commission also distributed brochures and publications at the Jacksonville Expo, where over 7,000 seniors attended.

Energy Awareness Month

Each October, the U.S. Department of Energy (DOE) sponsors National Energy Awareness Month to promote smart energy choices and highlight economic and job growth, environmental protection, and increased energy independence.

This year, the Commission highlighted Energy Awareness Month by recognizing an innovative solar array powering a 40,000 sq. ft. manufacturing facility—the only plant in Florida fully powered through net metering. This project's success stems from Florida using net metering to jump start solar generation in the state.

PSC Commissioner Jimmy Patronis joined Senator Denise Grimsley and Representative Halsey Beshears to tour the solar system that powers VizCo-US, the Visionary Company that produces plastic injection-molded drip pans, alarms, and pipe grips for water heaters. Jefferson County Commissioners also participated. The PSC's net metering rule allows solar power generators, such as VizCo, to tie into the power grid and gain credit for the power they contribute.

Community Events

FPSC Commissioners are active in communities around the state and regularly present energy conservation information to students at area schools, to seniors and low-income residents at local community centers, and to county and city businesses at meetings or other events.

Through ongoing partnerships with governmental entities, consumer groups, and many other service organizations, the Commission regularly distributes energy and water conservation materials. The Commission also actively looks for new community events, venues, and opportunities where conservation materials can be distributed and discussed with citizens.

Events where conservation information was shared during 2016 include:

- Senior Day at the Capitol
- Active Living Expo
- Jacksonville Senior Expo
- Second Harvest of the Big Bend
- Evergreen Missionary Baptist Church
- Trinity Café
- St. Petersburg Free Clinic
- Senior Awareness Day – Pensacola
- Lunch and Learn – Lake Jacksonville Senior Center
- Leon County Senior Outreach Appreciation Meeting
- Fraud Prevention Seminar – Florida Department of Elder Affairs
- World Elder Abuse Awareness Day – Tallahassee
- World Elder Abuse Awareness Day – Melbourne
- Springfield Center
- Daniel D. Cantor Senior Center
- Sunrise Senior Center
- Southcentral/Southeast Focal Point Senior Center
- Lifestyle Enrichment Center of Ft. White
- Woodville Community Center
- 33rd Annual Children’s Day – Florida Museum of History
- Feeding Northeast Florida
- Feeding Northeast Florida – Lunch with Luke
- Lifestyle Enrichment Center of Lake City
- Trinity Rescue Mission
- The Oaks at Riverview Senior Center
- Columbia County Public Library
- Bennie Furlong Senior Center
- Feeding Northeast Florida Christian Fellowship Ministries
- 7th Annual Southside Community Health & Fitness Fair – Maranatha Seventh Day Adventist Church
- Suwanee County Health and Wellness Fair
- Panama City Beach Senior Center

- Bay County Area Council on Aging
- Lunch and Learn Bradfordville Senior Center
- Lynn Haven Senior Center
- El Beth-El Development Center
- Light In the World Community Day

Hearings and Customer Meetings

As an ongoing outreach initiative, the Commission supplies conservation brochures to consumers at Commission hearings and customer meetings across the state. From January through July 2016, Commission staff distributed information and addressed consumer questions at 20 public hearings and meetings. Consumers who file a complaint with the Commission about high electric or natural gas bills also receive conservation information.

Library Outreach Campaign

Each August, the Commission provides educational packets, including conservation materials, to Florida public libraries across the state for consumer distribution. The Commission's Library Outreach Campaign reached 583 state public libraries and branches in 2016. To reduce mailing and production costs, the Commission sent the materials via a CD that included a print-ready copy of brochures for easy reproduction. Following the Campaign, many libraries' requests for additional publications are filled.

Media Outreach

News releases are distributed to the media on major Commission decisions, meetings, and public events. The Office of Consumer Assistance & Outreach also issues news releases urging conservation. For instance, in a March news release, the Commission highlighted the federal government's *Fix a Leak Week* and shared several water conservation strategies. In May, the Commission issued a release for Older Americans Month outlining the importance of learning to conserve resources and save money.

Youth Education

The Commission emphasizes conservation education for Florida's young consumers. During 2016, the Commission continued to produce its student resource booklet--*Get Wise and Conserve Florida!*--to teach children about energy and water conservation. The booklet is distributed to all public libraries through the Library Outreach Program and is available at all Commission outreach events. The student resource book continues to be a favorite during senior events.

4.2 Related Websites

State Agencies and Organizations

Florida Public Service Commission – <http://www.floridapsc.com/>

Florida Department of Environmental Protection – <http://www.dep.state.fl.us>

The Office of Energy – <http://www.freshfromflorida.com/Divisions-Offices/Energy>

Florida Solar Energy Center – <http://www.fsec.ucf.edu/>

Florida Weatherization Assistance - <http://floridajobs.org/community-planning-and-development/community-services/weatherization-assistance-program>

Florida's Local Weatherization Agencies List – <http://floridajobs.org/community-planning-and-development/community-services/weatherization-assistance-program/contact-your-local-weatherization-office-for-help>

U.S. Agencies and National Organizations

U.S. ENERGY STAR Program – <http://www.energystar.gov/>

U.S. Department of Energy – Energy Efficiency and Renewable Energy Information - <http://www.eere.energy.gov/>

National Energy Foundation – <https://nef1.org/>

Florida's Electric Utilities Subject to FEECA

Florida Power & Light Company – <http://www.fpl.com/>

Duke Energy Florida, LLC – <http://www.duke-energy.com/>

Tampa Electric Company – <http://www.tampaelectric.com/>

Gulf Power Company – <http://www.gulfpower.com/>

Florida Public Utilities Company – <http://www.fpuc.com/>

JEA – <http://www.jea.com/>

Orlando Utilities Commission – <http://www.ouc.com/>

Florida's Investor-Owned Natural Gas Utilities

Peoples Gas System – <http://www.peoplesgas.com/>

Florida City Gas – <http://www.floridacitygas.com/>

Florida Public Utilities Company – <http://www.fpuc.com/>

St. Joe Natural Gas Company – <http://www.stjoenaturalgas.com/>

Sebring Gas System – <http://www.sebringgas.com/>

Appendix. FEECA Utilities' Conservation Programs

FEECA IOUs

A. Duke Energy Florida, LLC

Residential Programs

Home Energy Check

The Home Energy Check is a residential energy audit program that provides residential customers with an analysis of their energy consumption and educational information on how to reduce energy usage and save money.

Residential Incentive

The Residential Incentive Program provides incentives to residential customers for energy efficiency improvements in both existing and new homes.

Low-Income Weatherization Assistance Program

The Low-Income Weatherization Assistance Program works with the Florida Department of Economic Opportunity and local weatherization providers to deliver energy education, efficiency measures, and incentives to weatherize the homes of low-income families.

Neighborhood Energy Saver

The Neighborhood Energy Saver Program installs energy conservation measures, identified through an energy assessment, in the homes of customers in selected neighborhoods where at least 50 percent of households have incomes equal to or less than 200 percent of the poverty level established by the U.S. government.

Residential Energy Management

The Residential Energy Management Program uses direct control of customer equipment to reduce system demand during winter and summer peak capacity periods by temporarily interrupting select customer appliances.

Commercial/Industrial Programs

Business Energy Check

The Business Energy Check Program provides no-cost energy audits at non-residential facilities either over the phone or at the customer's facility.

Commercial Energy Management

The Commercial Energy Management Program uses direct control of customer equipment to reduce system demand during winter and summer peak capacity periods. The Commercial Energy Management Program was closed to new participants in 2000, but is still open for existing participants.

Better Business

Better Business is an umbrella efficiency program that provides incentives to existing C/I and government customers for HVAC, roof insulation, duct leakage and repair, demand-control ventilation, and cool roof coating.

Florida Custom Incentive

The Florida Custom Incentive Program provides incentives for individual custom projects, such as new construction measures or thermal energy storage systems, that are cost effective but not addressed by DEF's other programs.

Standby Generation

The Standby Generation Program is a demand control program that reduces DEF's system demand based on control of customer equipment. This program is available to C/I customers who have on-site generation capability and are willing to reduce demand on DEF's system when DEF requests for system reliability purposes.

Interruptible Service

Interruptible Service is a direct load control DSM program in which customers allow DEF to interrupt their electrical service during times of capacity shortages based on peak or emergency conditions. In return, customers receive a monthly bill credit.

Curtable Service

Curtable Service is an indirect load control DSM program in which customers contract to curtail all or a portion of their electricity demand during times of capacity shortages. In contrast to the Interruptible Service Program, the customer, instead of DEF, controls whether or not the customer's appliances are turned off during times of stress on the grid. In return, customers receive a monthly bill credit.

Research and Development and Pilot Programs

Technology Development

The Technology Development Program allows DEF to investigate technologies that hold promise for cost-effective demand reduction and energy efficiency. DEF will investigate variable capacity heat pump air conditioners, building automated energy efficiency and demand response, energy management circuit breakers, and more.

Qualifying Facility

The Qualifying Facility Program supports the interconnection and purchase of as-available energy as well as firm energy and capacity from qualifying facilities including those that use renewable energy and distributed energy resources.

B. Florida Power & Light Company

Residential Programs

Residential Home Energy Survey

The Residential Home Energy Survey Program encourages implementation of recommended energy efficiency measures, even if they are not included in FPL's DSM programs. The Residential Home Energy Survey Program also identifies other FPL DSM programs that could be appropriate given residential customers' home layouts and electricity usage patterns.

Residential Ceiling Insulation

The Residential Ceiling Insulation Program encourages customers to improve their homes' thermal efficiency.

Residential Air-Conditioning

The Residential Air-Conditioning Program encourages customers to install high-efficiency central air-conditioning systems.

Residential New Construction (BuildSmart)

The Residential New Construction Program encourages builders and developers to design and construct new homes that achieve BuildSmart certification and move towards ENERGY STAR qualifications.

Residential Low-Income

The Residential Low-Income Program assists low-income customers through state Weatherization Assistance Provider ("WAP") agencies and FPL conducted energy retrofits.

Residential Load Management (On Call)

The Residential Load Management Program allows FPL to turn off certain customer-selected appliances using FPL-installed equipment during periods of extreme demand, capacity shortages, or system emergencies.

Commercial/Industrial Programs

Business Energy Evaluation

The Business Energy Evaluation Program educates customers on energy efficiency and encourages implementation of recommended practices and measures, even if these are not included in FPL's DSM programs. The Business Energy Evaluation is also used to identify potential candidates for other FPL DSM programs.

Business Lighting

The Business Lighting Program encourages customers to install high-efficiency lighting systems.

Business Heating, Ventilating, and Air Conditioning (HVAC)

The Business HVAC program encourages customers to install high-efficiency HVAC systems.

Business Custom Incentive

The Business Custom Incentive Program encourages customers to install unique high-efficiency technologies not covered by other FPL DSM programs.

Business On Call

The Business On Call Program allows FPL to turn off customers' direct expansion central air-conditioning units using FPL-installed equipment during periods of extreme demand, capacity shortages, or system emergencies.

Commercial/Industrial Load Control (CILC)

The Commercial/Industrial Load Control Program allows FPL to control customer loads of 200 kW or greater during periods of extreme demand, capacity shortages, or system emergencies. The CILC Program was closed to new participants as of 2000 but is available to participants who had entered into a CILC agreement as of March 19, 1996.

Commercial/Industrial Demand Reduction (CDR)

The Commercial/Industrial Demand Reduction Program allows FPL to control customer loads of 200 kW or greater during periods of extreme demand, capacity shortages, or system emergencies. FPL installs a load management device at the customer's facility and provides monthly credits to customers. Unlike the CILC program, the CDR program is still open to new customers.

Research and Development and Pilot Programs**Conservation Research and Development (CRD)**

Under Conservation Research and Development (CRD), FPL conducts research projects to identify, evaluate, and quantify the impact of new energy efficient technologies. FPL uses the findings to potentially add new energy efficient technologies to DSM programs.

Cogeneration & Small Power Production

The Cogeneration and Small Power Production Program facilitates the interconnection and administration of contracts for cogenerators and small power producers.

C. Florida Public Utilities Company

Residential Programs

Residential Energy Survey

In the Residential Energy Survey Program, FPUC provides the customer with specific whole-house energy efficiency recommendations. FPUC also provides customers with lists of blower-door test contractors who can check for duct leakage. Finally, FPUC provides the customer with a conservation kit including 2 LED light bulbs and more.

Residential Heating and Cooling Efficiency Upgrade

First, the Residential Heating and Cooling Upgrade Program incentivize customers operating inefficient heat pumps and air conditioners to replace them with more efficient units. Also, the program incentivizes customers with resistance heating to install a new heat pump. Finally, the program incentivizes customers who are replacing heat pumps or air conditioners that have reached the end of their lives to replace them with more efficient heat pump or air conditioners than are required by code.

Commercial Programs

Commercial Energy Consultation

In the Commercial Energy Consultation Program, FPUC energy conservation representatives conduct commercial site visits to assess the potential for applicable DSM programs, educate customers about FPUC's commercial DSM programs, and more.

Commercial Heating and Cooling Efficiency Upgrade

The Commercial Heating and Cooling Upgrade Program provides rebates to small commercial customers (customers with a maximum of 5 ton units) only if the customers install a high-efficiency central air conditioner or heat pump with a minimum 15 SEER.

Commercial Reflective Roof

The Commercial Reflective Roof Program provides rebates to non-residential customers who convert their existing roof to a cool roof or who install a new cool roof on an existing or new building. The rebates cover up to 25 percent of the added upfront cost of building a cool roof compared to an alternative roof.

Commercial Chiller Upgrade

The Commercial Chiller Upgrade Program offers customers an incentive of up to \$175kW of savings above minimum efficiency levels.

Educational and Research Programs

Low-Income Energy Outreach

The Low-Income Energy Outreach Program partners with Department of Economic Opportunity approved Low-Income Weatherization Program operators to offer Residential Energy Surveys, distributing energy conservation materials, and more.

Conservation Demonstration and Development

The Conservation Demonstration and Development Program researches energy efficiency and conservation projects to identify, develop, demonstrate, and evaluate promising end-use energy efficient technologies across a wide variety of applications.

D. Gulf Power Company

Residential Programs

Residential Energy Audit and Education

The Residential Energy Audit and Education Program is the primary educational program to help customers improve the energy efficiency of their new or existing home by providing energy conservation advice and information that encourages the implementation of efficiency measures and behaviors resulting in electricity bill savings.

Community Energy Saver (Low-Income)

The Community Energy Saver Program installs energy conservation measures in the homes of low-income families at no cost to the customers. The program also educates families on behavioral changes to save money by decreasing energy use.

Residential Custom Incentive

The Residential Custom Incentive Program aims to increase energy efficiency in the residential rental property sector. The program promotes the installation of efficiency measures available through other programs, such as HVAC maintenance and quality installation, high performance windows, and reflective roofing. As suitable, the program has other incentives to surmount the split-incentive barrier in a landlord/renter situation.

HVAC Efficiency Improvement

The HVAC Efficiency Improvement Program aims to increase energy efficiency and improve HVAC cooling system performance for new and existing homes. Gulf increases efficiency through HVAC maintenance, duct repair, and HVAC quality installation.

Residential Building Efficiency

The Residential Building Efficiency Program is an umbrella efficiency program for existing and new residential customers to install eligible equipment such as high performance windows, reflective roof, and ENERGY STAR window air conditioners. The goals are to increase customer demand for energy efficient technologies and to create long-term energy savings and peak demand reduction.

Energy Select

The Energy *Select* Program gives customers a way to manage their energy consumption by programming their heating and cooling systems and major appliances, such as electric water heaters and pool pumps, to respond automatically to prices that vary during the day and by season in relation to Gulf's cost of producing or purchasing energy.

Residential Service Time of Use Pilot

The Residential Service Time of Use Pilot Program provides residential customers the opportunity to use customer-owned equipment to respond automatically and take advantage of a variable pricing structure with a critical peak component. The pilot will be offered to 400 residential customers. The goal is to measure customers' response, with customer owned equipment, to a variable electricity price.

Commercial Programs

Commercial/Industrial Audit

The Commercial/Industrial Audit Program provides advice to Gulf's existing C/I customers on how to reduce energy consumption. The program ranges from an Energy Analysis Audit and walk-through surveys to a Technical Assistance Audit and computer programs that simulate options for very large, energy-intensive customers.

Commercial HVAC Retrocommissioning

The Commercial HVAC Retrocommissioning program offers retrocommissioning at a reduced cost for qualifying installations by C/I customers. Retrocommissioning is a process of identifying suboptimal performance in a facility's systems and replacing the outdated equipment.

Gulf's retrocommissioning program uses an independent computerized quality control process to diagnose the performance of HVAC cooling units (air conditioners, heat pumps, direct expansion, or geothermal cooling and heating) operating in commercial buildings. Then, Gulf works to improve or replace any suboptimal performing units in order to get closer to full efficiency.

Commercial Building Efficiency

The Commercial Building Efficiency Program is an umbrella efficiency program for C/I customers to encourage the installation of high-efficiency equipment in order to reduce energy and demand. The high-efficiency equipment is focused on commercial geothermal heat pumps, ceiling/roof insulation, and reflective roofs.

Commercial/Industrial Custom Incentive

The Commercial/Industrial Custom Incentive Program first offers energy efficient end-user equipment to C/I customers. The C/I Custom Incentive Program also offers energy services such as comprehensive audits, design, and construction of energy conservation projects. Covered projects include demand reduction or energy improvement retrofits that are beyond the scope of other programs.

Research and Development Programs

Conservation Demonstration and Development

The Conservation Demonstration and Development Program is an umbrella program for the identification, development, and evaluation of end-use energy efficient technologies. One example is the Tesla Powerwall Demand Response (DR) project, which will assess

the impact of battery storage in terms of performance, reliability, and economic return on investment. Another example is the Tesla Powerwall Demand Photovoltaic project.

E. Tampa Electric Company

Residential Programs

Residential Energy Audits

The Residential Energy Audits Program includes a walk-through free energy check, a customer assisted energy audit, a computer assisted paid energy audit, and a building energy ratings system (BERS).

Residential Ceiling Insulation

The Residential Ceiling Insulation Program offers rebates to existing residential customers to install additional ceiling insulation in existing homes.

Residential Duct Repair

The Residential Duct Repair Program encourages residential customers to repair leaky duct work of central air conditioning systems in existing homes.

Residential Electronically Commutated Motors (ECM)

The Residential Electronically Commuted Motors (ECM) Program encourages residential customers to replace their existing HVAC air handler motors with more efficient ECMs.

Energy Education, Awareness, and Agency Outreach

The Energy Education, Awareness, and Agency Outreach Program engages and educates groups of customers and students on energy efficiency in an organized setting. Also, participants receive an energy savings kit with energy saving devices and information.

ENERGY STAR for New Homes

The ENERGY STAR for New Homes Program incentivizes residential customers to build homes that qualify for the ENERGY STAR award by achieving energy efficiency levels greater than current Florida building code baseline practices.

Residential Heating and Cooling

The Residential Heating and Cooling Program offers rebates to residential customers for installing high-efficiency heating and cooling equipment in existing homes.

Neighborhood Weatherization (Low-Income)

The Neighborhood Weatherization Program provides for the installation of energy efficient measures for qualified low-income customers.

Residential Price Responsive Load Management (Energy Planner)

The Residential Price Responsive Load Management (Energy Planner) Program reduces weather-sensitive loads through an innovative price responsive rate. The price responsive

rate encourages residential customers to make behavioral or equipment usage changes by pre-programming HVAC, water heating, and pool pumps.

Residential Wall Insulation

The Residential Wall Insulation Program offers rebates to existing residential customers to install additional wall insulation in existing homes.

Residential Window Replacement

The Residential Window Replacement Program offers rebates to existing residential customers to install window upgrades in existing homes.

Commercial Programs

Commercial/Industrial Energy Audits

In the C/I Energy Audits Program, C/I customers can receive more limited free energy audits or comprehensive paid energy audits.

Commercial Ceiling Insulation

The Commercial Ceiling Insulation Program incentivizes C/I customers to install additional ceiling insulation in existing commercial buildings.

Commercial Chiller

The Commercial Chiller Program offers rebates to C/I customers for installing high efficiency chiller equipment.

Cogeneration

The Cogeneration Program incentivizes large industrial customers with waste heat or fuel resources to use their onsite energy to avoid fuel waste and install electric generating equipment. The large industrial customers may sell their surplus electric generation to TECO.

Conservation Value

The Conservation Value Program offers rebates to C/I customers to invest in energy conservation measures that are not in other C/I programs.

Commercial Cool Roof

The Commercial Cool Roof Program encourages C/I customers to install a cool roof system above conditioned spaces.

Commercial Cooling

The Commercial Cooling Program encourages C/I customers to install high efficiency direct expansion commercial air conditioning cooling equipment.

Demand Response

The Demand Response Program incentivizes C/I customers to reduce electricity demand at certain peak times.

Commercial Duct Repair

The Commercial Duct Repair Program encourages C/I customers to repair leaky ductwork of central air-conditioning systems in existing C/I facilities.

Commercial Electronically Commutated Motors (ECM)

The Commercial Electronically Commutated Motors (ECM) Program encourages C/I customers to replace air handler motors or refrigeration fan motors with ECMs.

Industrial Load Management (GSLM 2&3)

The Industrial Load Management (GSLM 2&3) Program incentivizes large industrial customers to allow TECO to interrupt part of or their entire electrical service during periods of peak stress on the grid.

Lighting Conditioned Space

The Lighting Conditioned Space Program encourages C/I customers to invest in more efficient lighting technologies in existing conditioned areas of C/I facilities.

Lighting Non-Conditioned Space

The Lighting Non-Conditioned Space Program encourages C/I customers to invest in more efficient lighting technologies in existing non-conditioned areas of C/I facilities.

Lighting Occupancy Sensors

The Lighting Occupancy Sensors Program encourages C/I customers to install occupancy sensors to control C/I lighting systems.

Commercial Load Management

The Commercial Load Management Program incentivizes C/I customers to allow TECO to control weather-sensitive heating, cooling, and water heating systems to reduce the associated weather-sensitive peak demand.

Refrigeration Anti-Condensate Control

The Refrigeration Anti-Condensate Control Program encourages C/I customers to install anti-condensate equipment sensors within refrigerated door systems.

Standby Generator

The Standby Generator Program incentivizes C/I customers to use any emergency electrical generation capacity they have in order to reduce weather-sensitive peak demand on the grid.

Thermal Energy Storage

The Thermal Energy Storage Program encourages C/I customers to install an off-peak air conditioning system.

Commercial Wall Insulation

The Commercial Wall Insulation Program encourages C/I customers to install wall insulation in existing C/I structures.

Commercial Water Heating

The Commercial Water Heating Program encourages C/I customers to install high efficiency water heating systems.

Research and Development**DSM Research and Development (R&D)**

The DSM Research and Development Program allows TECO to explore DSM measures that have insufficient data on cost-effectiveness and the impact on TECO's ratepayers.

Renewable Energy

The Renewable Energy Program delivers renewable energy options to TECO's customers through program administration, renewable electricity generation, evaluation of potential new renewable sources, and market research.

Non-IOU FEECA Utilities

A. JEA

Residential Programs

Residential Energy Audit

In the Residential Energy Audit Program, JEA examines homes, educates customers, and makes recommendations on low-cost or no-cost energy-saving practices and measures.

Residential Solar Water Heating

The Residential Solar Water Heating Program pays a financial incentive to customers to encourage the use of solar water heating technology.

Residential Solar Net Metering

The Residential Solar Net Metering Program promotes the use of PV by purchasing excess electricity from residential customers who have PV.

Neighborhood Efficiency (Low-Income)

The Neighborhood Efficiency Program offers education concerning the efficient use of energy and water as well as the direct installation of an array of energy and water efficiency measures at no cost to income qualified customers.

Residential Efficiency Upgrade

The Residential Efficiency Upgrade Program provides incentives to encourage the use of high efficiency HVAC and water heating. This is one of the DSM programs that JEA offers which has not been approved by the Commission and is not part of FEECA. Nevertheless, this program creates demand and energy savings.

Energy Efficient Products

The Energy Efficient Products Program provides incentives to encourage the use of high efficiency lighting and efficient appliances. This is one of the DSM programs that JEA offers which has not been approved by the Commission and is not part of FEECA.

Residential New Build

The Residential New Build Program promotes the use of high efficiency HVAC, water heating, lighting, and appliances in the new construction market. This is one of the DSM programs that JEA offers which has not been approved by the Commission and is not part of FEECA. Nevertheless, this program creates demand and energy savings.

Commercial Programs

Commercial Energy Audit

In the Commercial Energy Audit Program, JEA examines businesses, educates customers, and makes recommendations on low-cost or no-cost energy-saving practices.

Commercial Solar Net Metering

The Commercial Solar Net Metering Program promotes the use of PV by purchasing excess electricity from commercial customers who have PV.

Commercial Prescriptive

The Commercial Prescriptive Program provides incentives to encourage the use of high efficiency HVAC, lighting, cooking, and water heating products. This is one of the DSM programs that JEA offers which has not been approved by the Commission and is not part of FEECA. Nevertheless, this program creates demand and energy savings.

Small Business Direct Install

The Small Business Direct Install Program promotes the use of high efficiency HVAC, lighting, water heating, and appliances in the small business sector. This is one of the DSM programs that JEA offers which has not been approved by the Commission and is not part of FEECA. Nevertheless, this program creates demand and energy savings.

Custom Commercial

The Custom Commercial Program promotes the use of custom efficiency measures based on specific applications for each customer. This is one of the DSM programs that JEA offers which has not been approved by the Commission and is not part of FEECA.

B. Orlando Utilities Commission

Residential Programs

Residential Home Energy Survey

The Residential Home Energy Survey Program consists of three measures: a Residential Energy Walk-Through Survey, a Residential Energy Survey DVD, and an interactive Online Energy Survey.

Residential Duct Repair/Replacement Rebate

The Residential Duct Repair/Replacement Rebate Program provides up to a \$160 rebate to encourage customers to repair leaking ducts on existing systems.

Residential Ceiling Insulation Upgrade Rebate

The Residential Ceiling Insulation Upgrade Rebate Program is offered to residential customers to encourage them to upgrade their attic insulation. Customers receive \$0.05 per square foot for upgrading their attic insulation up to R-30. If OUC verifies that existing insulation is R-11 or less, the rebate rises to \$0.14 per square foot.

Residential Window Film/Solar Screen Rebate

The Residential Window Film/Solar Screen Rebate Program encourages solar shading on windows. Customers receive a rebate of \$1 per square foot for installing solar shading film with a shading coefficient of 0.5 or less on east, west, and south facing windows.

Residential High Performance Windows Rebate

The Residential High Performance Windows Rebate Program encourages customers to install windows that minimize heating, cooling, and lighting costs. Customers receive a \$2.00 rebate per square foot for the purchase of windows rated ENERGY STAR.

Residential Efficient Electric Heat Pump Rebate

The Residential Efficient Electric Heat Pump Rebate Program provides rebates to customers in existing homes who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher. Depending on the SEER rating and the capacity of the new heat pump, the rebate can be a bill credit ranging from \$80 to \$1,275.

Residential New Home Rebate

The Residential New Home Rebate Program offers rebates for cool/reflective roofs, block wall insulation, ceiling insulation upgrades to R-38, heat pumps, ENERGY STAR washing machines, ENERGY STAR heat pump water heaters, and solar water heaters.

Residential Efficiency Delivered (Low-Income)

The Residential Efficiency Delivered Program is income based and provides up to \$2,000 of energy and water efficiency upgrades based on the needs of the residential customer's home. An OUC Conservation Specialist visits the home, performs a home survey, and recommends which home improvements have the most potential of lowering utility bills.

Commercial Programs

Commercial Energy Audits

The Commercial Energy Audit Program includes a free survey consisting of a physical walk-through inspection of the commercial facility performed by experienced energy experts. Following the inspection, the customer receives a written report.

Commercial Efficient Electric Heat Pump Rebate

The Commercial Efficient Electric Heat Pump Rebate Program provides rebates to qualifying customers in existing buildings who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher. Depending on the SEER rating and the capacity of the new heat pump, the rebate can be a bill credit ranging from \$80 to \$1,275.

Commercial Duct Repair Rebate

The Commercial Duct Repair Rebate Program provides rebates of 100 percent of the cost, up to \$160, when qualifying customers have an existing central air conditioning system of 5.5 tons or less. Then, customers must seal ducts with mastic and fabric tape or Underwriters Laboratory (UL) approved duct tape.

Commercial Window Film/Solar Screen Rebate

The Commercial Window Film/Solar Screen Rebate Program aims to reflect heat during hot summer days and retain heat on cool winter days. The program provides rebates of \$1 per square foot for window tinting and solar screening with a solar heat gain coefficient (SHGC) of 0.44 or shading coefficient of 0.5 or less.

Commercial Ceiling Insulation Rebate

The Commercial Ceiling Insulation Rebate Program aims to increase a building's resistance to heat loss and gain. Participating customers receive \$0.05 per square foot for upgrading their attic insulation up to R-30. If OUC verifies that the existing insulation is R-11 or less, OUC will pay a rebate of \$0.14 per square foot.

Commercial Cool/Reflective Roof Rebate

The Commercial Cool/Reflective Roof Rebate Program aims to reflect the sun's rays and lower roof surface temperature while increasing the lifespan of the roof. OUC provides rebates of \$0.14 per square foot of ENERGY STAR cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.