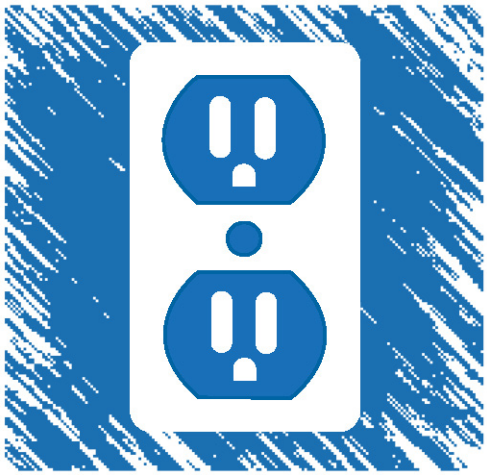


Review of Implementation of Demand-Side Management Programs by Electric IOUs

DECEMBER 2018

BY AUTHORITY OF

The Florida Public Service Commission
Office of Auditing and Performance Analysis

Review of Implementation of Demand-Side Management Programs by Electric IOUs

Jerry Hallenstein
Senior Analyst
Project Manager

David Rich
Public Utility Analyst IV

Sofia Lehmann
Public Utility Analyst II

Vic Cordiano
Engineering Specialist II

Bob Casey
Public Utility Analyst I

Melissa Hardison
Public Utility Analyst I

December 2018

By Authority of
The State of Florida
Public Service Commission
Office of Auditing and Performance Analysis

PA-18-04-003

TABLE OF CONTENTS

CHAPTER **Page**

1.0 EXECUTIVE SUMMARY
1.1 Purpose and Objectives 1
1.2 Scope 1
1.3 Methodology 2
1.4 Audit Staff Observations 2

2.0 BACKGROUND AND PERSPECTIVE
2.1 Florida Energy Efficiency and Conservation Act 5
2.2 Goal and Program Development 7
2.3 Company Monitoring and Evaluation 9
2.4 Renewables 9

3.0 DUKE ENERGY FLORIDA, LLC
3.1 DSM Programs 11
3.2 Energy Audits 12
3.3 DSM Program Development 15
3.4 DSM Program Administration 17
3.5 DSM Program Costs 20
3.6 Observations 22

4.0 FLORIDA POWER & LIGHT COMPANY
4.1 DSM Programs 23
4.2 Energy Surveys 24
4.3 DSM Program Development 26
4.4 DSM Program Administration 27
4.5 DSM Program Costs 29
4.6 Observations 30

5.0 FLORIDA PUBLIC UTILITIES COMPANY
5.1 DSM Programs 33
5.2 Energy Audits 35
5.3 DSM Program Development 37
5.4 DSM Program Administration 38

5.5 DSM Program Costs 41
5.6 Observations 42

6.0 GULF POWER COMPANY
6.1 DSM Programs 45
6.2 Energy Audits 46
6.3 DSM Program Development 48
6.4 DSM Program Administration 50
6.5 DSM Program Costs 52
6.6 Observations 54

7.0 TAMPA ELECTRIC COMPANY
7.1 DSM Programs 57
7.2 Energy Audits 59
7.3 DSM Program Development 60
7.4 DSM Program Administration 61
7.5 DSM Program Costs 63
7.6 Observations 65

APPENDIX 1 DSM Goals and Achieved Savings 2014-2017 67

APPENDIX 2 Inspections of Installed Conservation Measures 2015-2017 73

APPENDIX 3 DSM Organization 81

TABLE OF EXHIBITS

EXHIBIT		Page
1.	Summary of Cost-Effectiveness Test Components	6
2.	2019 Joint IOU DSM Goals Study Analysis Component Responsibilities	8
3.	Customer-Owned Renewable Generation 2013-2017	10
4.	Duke Energy Florida Current DSM Programs	12
5.	Duke Energy Florida Energy Audit Participants 2015-2017	13
6.	Duke Energy Florida DSM Participants and Staffing Full-Time Equivalents 2014-2017	18
7.	Duke Energy Florida DSM Expenditures as a Percentage of Retail Revenue 2013-June 2018	22
8.	Florida Power & Light Company Current DSM Programs	23
9.	Florida Power & Light Company Energy Audit Participants 2015-2017	25
10.	Florida Power & Light Company DSM Participants and Staffing Full-Time Equivalents 2014-2017	28
11.	Florida Power & Light Company DSM Expenditures as a Percentage of Retail Revenue 2013-June 2018	30
12.	Florida Public Utilities Company Current DSM Programs	34
13.	Florida Public Utilities Company Energy Audit and Site Visit Participants 2015-2017	36
14.	Florida Public Utilities Company DSM Participants and Staffing Full-Time Equivalents 2014-2017	39
15.	Florida Public Utilities Company DSM Expenditures as a Percentage of Retail Revenue 2013-June 2018	42
16.	Gulf Power Company Current DSM Programs	45
17.	Gulf Power Company Energy Audit Participants 2015-2017	47
18.	Gulf Power Company DSM Participants and Staffing Full-Time Equivalents 2014-2017	52
19.	Gulf Power Company DSM Expenditures as a Percentage of Retail Revenue 2013-June 2018	54

20. Tampa Electric Company Current DSM Programs 57

21. Tampa Electric Company Energy Audit Participants 2015-2017 59

22. Tampa Electric Company DSM Participants and Staffing Full-Time Equivalents 2014-2017 62

23. Tampa Electric Company DSM Expenditures as a Percentage of Retail Revenue 2013-August 2018 64

1.0 Executive Summary

1.1 Purpose and Objectives

The Office of Auditing and Performance Analysis initiated an operational audit in March 2018 at the request of the Commission's Division of Economics. The purpose of the audit was to verify that the investor-owned utilities (IOUs)[1] subject to the requirements of the Florida Energy and Efficiency Conservation Act (FEECA or "the Act") are developing, implementing, and managing their Commission-approved Demand-side Management (DSM) plans and programs as required in Chapter 25-17, Florida Administrative Code (F.A.C.). The Act requires utilities to pursue reduced peak electric demand and energy consumption.

The primary objectives of this audit were met by examining the following for each utility:

- Development of DSM programs to achieve the Commission-approved conservation goals as required by Section 366.82, Florida Statutes (F.S.)
- Adherence to rules regarding energy audits required by Rule 25-17.003, F.A.C., *Energy Audits*
- Adherence to cost-effectiveness methodology required in Rules 25-17.0021, *Goals for Electric Utilities*, and 25-17.008, F.A.C., *Conservation and Self-Service Wheeling Cost-Effectiveness Data Reporting Format*
- Approach in developing initial cost-effectiveness assumptions used to formulate its DSM program estimates as required in Rule 25-17.0021, F.A.C.
- Approach to monitoring and evaluating the accuracy of its initial assumptions and program cost-effectiveness throughout the implementation cycle for DSM programs
- Use of industry benchmarking in the administration and implementation of DSM programs

1.2 Scope

Given these objectives, the scope of the review focused on the organizations within each utility that are responsible for developing, implementing, and monitoring the DSM programs. Emphasis was placed upon reviewing procedures and processes used to evaluate DSM program efficiencies and cost-effectiveness and how each FEECA IOU's DSM programs are managed in accordance with applicable Florida Statutes, FPSC Rules, and Commission Orders. Audit staff performed assessments in the following DSM areas as they relate to each utility:

[1] Duke Energy Florida, LLC (DEF), Florida Power and Light Company (FPL), Florida Public Utilities Company (FPUC), Gulf Power Company (GULF), Tampa Electric Company (TEC).

- Organizational Structure
- Energy Audits
- DSM Cost-Effectiveness Methodologies
- DSM Program Administration and Monitoring
- DSM Program Costs

1.3 Methodology

The information in this audit report was gathered through responses to document requests and on-site interviews with key employees accountable for directing, developing, and implementing each utility's DSM programs. Audit staff also reviewed Florida Statutes, FPSC rules, orders, and regulations on energy conservation, FPSC's annual reports on activities pursuant to FEECA, and applicable filings provided in the Commission's prior DSM planning dockets.

Audit staff assessed the collected information to gain a thorough understanding of the processes used by each utility to manage and implement DSM programs. Specific information collected from each utility included:

- DSM program policies, procedures, and processes.
- Approach and methodologies used to determine DSM program development.
- Organization and administration of the DSM programs.
- DSM program results reported to senior and executive management.
- Internal and external audits completed on DSM programs.
- Approach and methodologies used to identify new DSM program opportunities.
- Metrics or quantification tools used to assess DSM program effectiveness.
- Benchmarking of similarly-situated utilities' DSM programs.

1.4 Audit Staff Observations

Based on its evaluation and analysis, Commission audit staff developed company-specific observations which are detailed in Chapters 3 through 7. Several common threads are identifiable among these company-specific observations.

In general, the primary ongoing focus in developing, implementing, and managing DSM programs is attainment of the FPSC-approved conservation goals. Decisions and actions regarding program design, DSM staffing, program expenditures, and management oversight of the DSM function all revolve around the kW and kWh savings targets.

Written procedures and periodic monitoring and internal reporting processes guide the execution of programs towards consistency with the DSM plans and program standards approved by the Commission in each five-year planning cycle. Internal results reporting and analysis may include

updating cost-effectiveness tests using actual program results and/or updated model assumptions to inform decision-making in the next Commission planning cycle.

Several current economic and market conditions combine to constrain the potential for sustained levels of demand and energy savings. These include low demand growth and increasingly stringent appliance efficiency standards and building codes.

Most of the utilities allocate common costs among the individual DSM programs and include the allocated costs in cost-effectiveness calculations filed with the Commission. One company does not perform these allocations, citing minimal benefits to the added administrative effort, and the lack of a reasonable and practical methodology.

2.0 Background and Perspective

2.1 Florida Energy Efficiency and Conservation Act

The five Florida IOUs and two municipal electric utilities (JEA and Orlando Utilities Commission) are subject to FEECA and FPSC Rule 25-17.0021(4), F.A.C. Each utility must obtain Commission approval of their DSM plans and programs. The utilities provide extensive analyses of the cost-effectiveness of proposed DSM programs. In its simplest form, DSM cost-effectiveness is measured by comparing projected costs and benefits of a particular conservation program or measure. Programs are determined to be cost-effective when benefits are projected to exceed costs, resulting in a benefit-to-costs ratio greater than 1.00.

As defined by the Rule 25-17.008(4), the cost effectiveness manual for DSM provides that a minimum of three specific cost-effectiveness tests are to be used to project and assess the costs and benefits of measures taken to reduce energy consumption and demand. These tests are: the Ratepayer Impact Measure (RIM) test, the Participant Cost Test (PCT) test, and the Total Resource Cost (TRC) test.

These test methods each assess benefits from different perspectives. RIM focuses on total ratepayer impact. PCT examines impact upon program participants. TRC attempts to consider all benefits and resources.

- The RIM examines the potential impact the energy efficiency program specifically has on rates overall, taking into consideration the cost of incentives paid to participating customers and lost revenues due to reduced energy sales that may result in the need for a future rate increase. RIM is used to understand the potential impact on rates, and measures how the benefits of the DSM savings are shared between participants and non-participants. A DSM program that passes the RIM test ensures that all customer rates are lower than they otherwise would have been without the DSM program.

- The PCT assesses the cost-effectiveness from the perspective of only the customers participating in DSM programs. The benefits of participation in a DSM program include any incentive paid by the utility to the customer, the reduction in the customer's utility bills, or tax credits received.

- The TRC test measures the net costs of a DSM program based on its total costs, including both the utility and the participant’s costs. A positive TRC result indicates that the program will produce a net reduction in energy costs in the utility service territory over the lifetime of the program.

Per FPSC Rule 25-17.008, F.A.C., the Commission approved a standardized cost-effectiveness manual to be used by each FEECA utility to summarize and calculate program cost-effectiveness for RIM, PCT, and TRC.

Total benefits of a DSM program in the RIM and TRC tests are quantified by forecasting avoided long-term operating and generating costs. Included in the forecast is the utility's avoided unit which is the generating plant it would need to build to meet additional capacity needs by a specific in-service date. Generally, if an avoided unit is delayed, a DSM plan's total benefits will decrease, impacting its cost-effectiveness test scores under RIM and TRC. The avoided costs are costs that would have been spent if energy efficiency savings measures had not been put in place. These avoided costs include: generation fixed costs (capacity costs), generation variable costs (energy costs), transmission and distribution costs, line loss costs, and environmental costs (reduced air emissions or savings associated with plant siting issues). Within each of these categories, specific benefits are sufficiently known and quantifiable to be included in the cost-effectiveness evaluation.

Depending on which cost-effectiveness test is being used, the total costs of a DSM program will include either utility or participant customer expenses, or both. The PCT is fundamentally different from the RIM and TRC tests. The sole cost inputs in the PCT are the *participant customer's* costs, while participant customer bill savings and incentives received are the primary benefit inputs of the programs. The PCT is typically the least restrictive of the three cost-effectiveness tests.

The costs considered in the TRC test are the DSM program expenses paid, minus incentives, and resources provided by both the utility and the participants. All equipment costs, installation and removal costs, operation and maintenance costs, and administrative costs are included in this test without regard for which stakeholder pays them. However, in so doing, the TRC test washes out (i.e., nets to zero) the participant incentives and lost utility revenues, which it treats as "transfer payments" between participating and non-participating customers.

In contrast, the RIM test includes only the utility's costs to administer a DSM program, including incentives paid to participating customers and lost utility revenues (due to reduced energy bills). The benefits of both the TRC and RIM tests are the same and include avoided costs of generation, energy, and fuel. **Exhibit 1** below provides an illustration of the costs and benefits evaluated under each test.

Summary of Cost-Effectiveness Test Components

	Participant Cost	Total Resource Cost	Rate Impact Measure
Benefits	• Bill Savings • Incentives Received • Tax Credits	• Avoided Generation Capital and O&M • Avoided Transmission and Distribution Capital and O&M • Net System Fuel Savings • Emissions Savings	• Avoided Generation Capital and O&M • Avoided Transmission and Distribution Capital and O&M • Net System Fuel Savings • Emissions Savings
Costs	• Participant Equipment Installation and O&M Costs	• Utility Equipment Costs • Administrative Costs • Participant Equipment Installation and O&M Costs	• Utility Equipment Costs • Administrative Costs • Incentive Costs • Lost Revenues

Exhibit 1 *Source: FPSC Order No. PSC-14-0696-FOF-EU*

Florida's five FEECA IOUs are allowed by FPSC Rule 25-17.015, F.A.C., to recover prudent and reasonable expenses for DSM programs approved by the Commission through the Energy Conservation Cost Recovery (ECCR) clause. However, before attempting to recover costs through the ECCR clause, each utility's DSM program must be approved. Upon staff request, the FEECA utilities provide cost-effectiveness results for their DSM programs.[2]

The four largest FEECA utilities continuously update cost-effectiveness input assumptions by using an integrated resource planning (IRP) approach that simultaneously evaluates both supply- and demand-side investments. This IRP analysis may include a simulation of the utility system with representation of all of the current and forecasted generation, transmission constraints, and loads over time. This requires a much more complex set of analysis tools, but provides more information on the right timing, necessary quantity, and value of energy efficiency with respect to the existing utility system and its expected future loads.

2.2 Goal and Program Development

Per Section 366.82(6), F.S., the Commission must evaluate goals at least every five years. The Commission's next DSM planning cycle is scheduled for 2019 to set goals for 2020 through 2029. Rule 25-17.0021(3) requires the utilities to provide numeric goals for the 10-year period during the 5-year evaluation.

2.2.1 2019 DSM Goals Study

In 2008, the Legislature updated Section 366.82, F.S., requiring the Commission to evaluate the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems. This process would also evaluate the costs and benefits to customers participating in the measure, the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions, and the need for incentives to promote both customer-owned and utility-owned energy efficiency and demand-side renewable energy systems.

To accomplish this analysis for 2009, all FEECA utilities cooperated in developing the DSM Goals Study. It is comprised of the following three interactive analysis components:

- **Technical Potential Analysis** – This analysis is a theoretical construct that represents the upper bounds of energy savings potential associated with complete penetration of all technically feasible measures *regardless* of cost or acceptability to customers.

- **Economic Potential Analysis** – This analysis takes the measures identified in the technical potential portion applies the cost-effectiveness tests (RIM and TRC) to them. For the RIM test, the only cost that is inserted for this analysis is Lost Revenue. For the TRC test, the only cost that is inserted is the full incremental cost of the measure. It provides the utility with a list of measures that are economically cost-effective.

[2] Except for energy audits required by FEECA and research and development programs.

- **Achievable Potential Analysis** – This analysis evaluates the cost-effective measures gathered from the economic potential portion and applies other inputs such as the program administration costs, rebates/incentives and customer participation projections to identify the amount of reasonable achievable energy efficiency savings that could be realized for cost-effective measures through the utility's DSM programs over the 10 year goal setting periods. This serves as the foundation of each of the utility's DSM goals.

Pursuant to a request for proposal bidding process, the FEECA utilities selected a consultant to perform the technical potential analysis component for the upcoming 2019 goal-setting proceeding. Beyond the technical potential analysis, each utility has opted to either employ the consultant, or to use its own in-house resources, or a combination of both to complete their individual economic potential and achievable analysis components. **Exhibit 2** shows how each of the IOUs plans to complete the components of its 2019 DSM Potential Study.

2019 Joint IOU DSM Goals Study
Analysis Component Responsibilities

Analysis Components	DEF	FPL	FPUC	Gulf	TEC
Technical	Consultant	Consultant	Consultant	Consultant	Consultant
Economic	Consultant	FPL	Consultant	Gulf	TEC
Achievable	Consultant	FPL	Consultant	Consultant	TEC

Exhibit 2
Source: Audit Interview Summaries

2.2.2 Commission DSM Goals

The Commission's goal-setting process applies to a ten-year period and is reviewed every five years in docketed proceedings. Each FEECA utility must propose winter and summer peak demand and annual energy reduction goals for residential and commercial/industrial customers, in accordance with Chapter 25-17.0021(3), F.A.C.

The DSM goals for 2015 through 2024 were approved in December 2014, by Order No. PSC-14-0696-FOF-EU. The conservation goals were lower compared to the goals approved in 2009 via Order No. PSC-09-0855-FOF-EG. Several factors influenced the new goals: upgrades in building codes and appliance efficiency standards, improved efficiency and lower cost of generation, decreased fuel costs, slower growth and load forecasts, and increased customer knowledge of energy savings.

2.2.3 Individual Utility DSM Plans

After issuance of a Goals Order, FEECA utilities must submit DSM plans for approval per Chapter 25-17.0021(4), F.A.C. The DSM plans are designed to achieve the Commission-established conservation goals. For each program, the DSM plans include a statement of policies and procedures, estimated participation and cost-effectiveness, projected demand and energy savings, and the methodology used to calculate actual savings. After the DSM plans are approved, the utilities file administrative program standards for approval by Commission staff. The DSM plans designed to meet the goals for 2015 through 2024 were approved in August 2015 and implemented in late 2015 or during 2016.

2.3 Company Monitoring and Evaluation

Monitoring and evaluation of each FEECA utility's DSM programs is a vital component to successful implementation, continued improvement, and measureable benefit to customers. External monitoring by the Commission and internal oversight by the utilities is integral to the process.

It is reasonable to expect utilities to monitor the effectiveness of their programs. IOUs in this review dedicate resources to measuring program effectiveness, customer benefits, and regulatory compliance. Company chapters in this report will address in detail the IOUs' monitoring efforts.

FEECA IOUs are also subject to ongoing Commission monitoring, reporting requirements, and financial audits of ECCR filings.

2.3.1 FEECA Report

Sections 366.82(10) and 377.703(2)(f), F.S. require the Commission to prepare an annual report, commonly referred to as the FEECA Report. It summarizes the FEECA utilities' prior year results towards meeting their Commission-approved conservation goals and other conservation program information. The report is provided to the Governor, Legislature, and Commissioner of Agriculture and Consumer Services and includes the utilities' achieved energy and demand savings for the year and information on DSM program expenditures.

One key source of data for producing the Commission's FEECA Report is an annual March 1 conservation results filing by each utility pursuant to Rule 25-17.0021(5), F.A.C. The filings include analyses of customer participation by program, results in kW and kWh reduction, justification of variances from goals of 15 percent or greater, reporting of total program costs, and a quantification of cumulative present value of benefits over the life of each program.

2.3.2 Energy Conservation Cost Recovery

Under Rule 25-17.015, F.A.C., the Commission is required to conduct annual ECCR proceedings each year. For these proceedings, utilities must submit filings based upon the prior year actual true-ups, current year actual and estimated project costs, and future years' program estimates. The Commission's Division of Economics and financial auditors evaluate submitted conservation cost data and requests for recovery through the ECCR clause, considering the reasonableness and prudence of DSM expenditures incurred.

2.4 Renewables

2.4.1 History

In 2008, the Florida Legislature amended FEECA to encourage the development of renewable demand-side energy systems. The Commission directed the FEECA IOUs to develop solar water heating and solar photovoltaic pilot rebate programs and cap expenditure recovery to ten percent of the average annual ECCR clause in the previous five years.

A subsequent analysis of the effectiveness of the pilot programs indicated that the programs were not cost-effective and that a subset of consumers continued to install systems without any rebates. It was determined that under prevailing market conditions, solar rebates represented a subsidy from the general body of ratepayers to program participants. Therefore, the Solar Renewable Pilot Programs were discontinued December 31, 2015.

2.4.2 Growth in Customer-Owned Renewable Generation

In recent years, vigorous growth in the customer-owned solar generation market has occurred without incentive programs. **Exhibit 3** shows customer-owned renewable generation increased 51 percent in 2017 alone. Renewable system interconnections totaled 24,157 in 2017, as opposed to 15,994 interconnections in 2016. Statewide, electric generation capacity from customer-owned renewable energy systems increased 46 percent over 2016, reaching 204,755 kW. Solar photovoltaic panels continue to be the most popular renewable choice for customer-owned renewable systems.

Customer-Owned Renewable Generation 2013-2017

	Number of Customer-Owned Renewable Interconnections					kW Gross Power Rating				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
IOU	4,832	6,308	8,578	11,560	17,843	44,790	61,571	83,914	107,360	157,304
Municipal	1,008	1,205	1,619	2,379	3,413	8,694	10,203	13,135	18,816	27,634
Rural Cooperative	857	1,058	1,429	2,055	2,901	6,472	8,014	10,495	14,345	19,817
Total	6,697	8,571	11,626	15,994	24,157	59,956	79,788	107,544	140,521	204,755

Exhibit 3 *Source: FPSC Net Metering Reports*

3.0 Duke Energy Florida, LLC

Duke Energy Florida (DEF) provides service to approximately 1.8 million customers in Florida, ninety percent of which are residential customers. As of December 31, 2017, DEF had total summer capacity resources of 10,776 MW consisting of installed capacity of 8,720 MW and 2,056 MW of firm purchased power. In August 2015, the Commission approved DEF's DSM Plan through Order PSC-15-0332-PAA-EG, and in October 2015, DEF's DSM program standards were approved.

3.1 DSM Programs

DEF maintains five DSM program implementation objectives:

- Achieve goals and comply with all FEECA requirements and Commission-established rules and standards.
- Educate and inform customers about how they can save energy.
- Offer cost-effective programs that provide value to customers.
- Enhance assistance and program offerings for low income customers.
- Manage costs, implement efficiencies, and streamline processes to minimize rate impacts to customers.

DEF promotes and markets its energy conservation programs to customers through direct mail, e-mail, bill inserts, web promotions, and radio and television advertising. DEF also participates in home shows, trade shows, community events, and works through trade allies to promote programs and provide education about energy efficiency to customers.

Commission rules require separate goals be set for residential and commercial/industrial customers for measuring goal achievement within these two primary customer categories. Each utility's achievements in these categories are also combined and compared against total goals. For internal management and goal achievement purposes, DEF breaks the Commission goals down to the program level and develops internal goals at the program level.

DEF's annual DSM goals were established by Commission Order Nos. PSC-10-1098-FOF-EG and PSC-14-0696-FOF-EU. **Appendix 1** includes the DEF actual MW and GWh savings based on the programs and the measures included in the 2009 and 2015 DSM Program Plans.

Exhibit 4 shows DEF's current DSM programs which consist of five residential programs, seven commercial and industrial programs, one research and development program, and the Qualifying Facility Program.

Duke Energy Florida Current DSM Programs	
Residential	Home Energy Check
	Residential Incentive
	Low Income Weatherization Measures
	Neighborhood Energy Saver
	Residential Energy Management
Commercial / Industrial	Better Business
	Business Energy Check
	Florida Custom Incentive
	Commercial Energy Management
	Standby Generation
	Curtailable Service
	Interruptible Service
Other	Qualifying Facility
	Technology Development

Exhibit 4 *Source: DEF's May 1, 2018, True-up filing*

In 2014, DEF achieved 66 percent of its total winter peak reduction goal, 54 percent of its total summer peak reduction goal, and 30 percent of its annual total energy saving goals. DEF notes while it did not achieve the residential goals, it exceeded its commercial and industrial goals.

Overall, DEF met its 2015 total goals, though 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.

DEF met its 2016 total goals overall and all but one of its individual customer class goals. The energy and capacity savings DEF DSM programs delivered in 2017 exceeded the Commission approved 2017 winter and summer peak reduction and energy saving goals for both the residential and commercial sectors. DEF's residential Energy Management program represents a demand response type of program where participating customers help manage future growth and costs. Approximately 432,000 customers participated in the residential Energy Management program during 2017, contributing about 694 MW of winter peak-reduction capacity.

3.2 Energy Audits

Energy audits provide DEF a valuable opportunity to promote and directly install cost-effective measures in customer homes, and educate and encourage customers to implement energy-saving practices. DEF offers the following types of energy audits through its Home Energy Check Program:

- Free Walk-Through (computer assisted)
- Customer Online (Internet Option)
- Customer Phone Assisted
- Home Energy Rating Audit

DEF performed 37,059 home energy audits in 2017 resulting in incentives to residential customers for the installation of 26,190 energy efficiency measures. The Home Energy Check Program is a residential energy audit program that provides customers with an analysis of their energy consumption as well as educational information on how to reduce energy usage.

Exhibit 5 shows the number of DEF's 2015 through 2017 energy audits by type. There were no Building Energy Rating System (BERS) or Home Energy Rating System (HERS) completed in 2017. The BERS and HERS audits provide a whole building energy evaluation of its energy consumption or energy features and allows a comparison to similar building types in similar climate zones. DEF believes the primary reason customers are not requesting BERS/HERS audits is that the free residential and commercial audits that DEF provides are comprehensive audits that are meeting customers' needs.

Duke Energy Florida Energy Audit Participants 2015-2017			
Home Energy Check Program	**2015**	**2016**	**2017**
Walk-Through	14,561	12,383	15,843
Customer Online	7,945	11,057	11,402
Phone-Assisted	8,395	8,732	9,814
Total	**30,901**	**32,172**	**37,059**
Business Energy Check Program	**2015**	**2016**	**2017**
Walk-Through	1,486	699	638
Phone-Assisted	0	0	2
Total	**1,486**	**699**	**640**

Exhibit 5 *Source: DEF's Responses to Document Requests 3.6 and 3.7*

The Business Energy Check Program is a commercial energy audit program that provides commercial customers with an analysis of their energy usage and information about energy-saving practices and cost-effective measures. The Business Energy Check Program serves as the foundation for the Better Business Program.

DEF seeks to ensure compliance with Rule 25-17.003, F.A.C., *Energy Audits*, through various processes and procedures which include the following:

- The DEF Program Management Team meets on a regular basis to review status reports and scheduling to ensure that customer requests are processed and completed on a timely basis.

- DEF sends program announcements to all customers through bill stuffers every six months to inform them about energy audits. DEF also promotes energy audits through direct mail, email, home shows, and other marketing initiatives.

- DEF conducts training sessions for new auditors per the rule requirements and auditors are required to pass an exam demonstrating their proficiency. DEF provides training for existing energy auditors to update and enhance their knowledge and foster a sustainable learning environment, and tracks its compliance with training requirements.

- DEF maintains records of audits completed and energy usage in its customer service system. DEF has developed a tool in its Salesforce software that is used as a scheduling tool for audits that can utilize GPS, travel time, current schedules, and appointment location for efficient booking.

DEF uses both employees and contracted third parties to conduct energy audits. The majority of the audits are conducted by employees, but contractors are also used to augment internal staff. The contractors are expected to perform the same audit functions as internal employees and are expected to complete the same training requirements.

Rule 25-17.003(10)(b), F.A.C., *Energy Audits*, requires that the utility perform post-audit inspections of 10 percent of each type of energy conservation measure installed as a result of the utility's recommendation. DEF tracks post-audit inspections to ensure that inspections are performed on 10 percent of each measure installed. Inspection reports are provided to management for review. **Appendix 2** shows the Inspections of Installed Conservation Measures from 2015-2017.

Completing a free Home Energy Check with a qualifying recommendation is a prerequisite to qualifying for all DEF incentives. The Home Energy Check must be completed before any work is started and must have occurred within the past 24 months.

Rebate credits for duct test/repair, insulation upgrades, and Energy Star Certified New Home rebates are applied directly on the contractor's invoice, preventing delays to a customer payment. HVAC and window incentive payments are paid or credited by DEF to the customer or their designated recipient.

DEF recently established a new contractor connect portal for the residential incentive program to allow for more efficient processing of customer rebates. The portal allows HVAC contractors to input information required to process the rebate directly into the system. DEF reviews the information submitted for completeness and compliance with rebate requirements, processes the rebate, and applies the credit to the customer's account. This speeds up payment to the customer and reduces calls back to the contractor to follow up on missing or incorrect information.

3.3 DSM Program Development

3.3.1 2019 DSM Goals Study

As mentioned in Section 2.2.1, an RFP bidding process resulted in the 2019 DSM Goals Study for Florida IOUs being performed by a consultant. The consultant will perform the technical, economical, and achievable components of the DSM Goals Study for DEF. The technical portion of the study is a hypothetical exercise to identify what energy savings are feasible without regard for cost or customer acceptance, measure costs, kW and kWh impacts, payback period, and measure life. The economic portion of the study determines which technically feasible measures are cost-effective under RIM, TRC, and the PCT. The achievable portion of the study consists of programs primarily comprised of measures that are cost-effective based on RIM test. DEF will review the three components of the consultant's Study and determine which DSM measures best meet the energy efficiency goals set by the Commission in the 2019 DSM goals docket.

3.3.2 Cost-Effectiveness Model

Integrated Resource Planning

DEF employs an Integrated Resource Planning process to determine the most cost-effective mix of supply- and demand-side alternatives that will meet its customers' future demand and energy needs. DEF's Integrated Resource Planning group incorporates computer models used to evaluate a wide range of future generation alternatives and cost-effective conservation and dispatchable demand-side management programs on a consistent and integrated basis. This detailed assessment will typically address technical requirements and cost estimates, corporate financial considerations, and the most current dynamics of the business and regulatory environments.

Demand-Side Management Option Risk Evaluator

DEF uses the Demand-Side Management Option Risk Evaluator (DSMORE), an in-house developed Excel-based tool, to evaluate the cost-effectiveness of each DSM measure and program. DSMORE includes logic to evaluate cost-effectiveness based on several screening methodologies, including RIM, PCT, TRC, the Utility Cost Test, and the Societal Cost Test. DSMORE's major features include:

- A user-friendly Excel interface.
- Market-based and cost-based evaluation methodologies.
- A calculation of all standard cost-effectiveness tests.
- A calculation of a range of results under different weather and price assumptions for each test simultaneously.
- Option value results for assessing risk.
- Load curves that can be adjusted to match customer base.
- Multiple years of weather data correlated to prices and loads.

- Fast results, allowing measure screening in less than 30 seconds.

Inputs to the DSMORE program include avoided capacity, energy, transmission and distribution costs, forecasted electric rates, discount rates, and loss factors. For avoided costs and electric rates, a base year value is input into DSMORE along with a set of annual escalators.
Once all of the required data inputs are complete, DSMORE produces cost-effectiveness output results. DEF states that DSMORE is the only modeling tool for Energy Efficiency, DSM and Demand Response that correlates weather, loads and prices on an hourly level.

DEF also uses the Utilities International DSM Model which is its source of record for actual program results including program savings (kW and kWh), program participation, and program costs. The Utilities International Model is used to track program performance against goals, support regulatory cost recovery proceedings, and the annual report filing.

Assumptions

DEF regularly assesses program performance relative to the assumptions that supported the initial program development. Monthly, DEF reviews actual program participation, achieved energy savings, and program costs relative to targets. DEF states it reassesses and adjusts its internal program goals, marketing plans, and resource assignments as appropriate to efficiently achieve the Commission established goals. The program implementation assumptions include the following:

- Estimates of demand and energy savings
  - Technical potential study that supported goal setting proceeding
  - End-use studies
  - Engineering estimates
- Estimate of participation by measure
  - Determine population of eligible customers
  - Review historical trends
  - Impacts of incentive levels
  - Appliance saturation studies
  - Market saturation
  - Economic factors
- Program Costs – basis for DSM financial budget
  - Staffing requirements – internal and contract labor
  - Marketing plans
  - Projected incentives

DEF reruns its cost-effectiveness analysis annually and updates the above assumptions as follows:

- DEF updates the assumptions to include actual program costs and actual incentives for historical years.

- DEF recalculates avoided costs and lost revenues in its cost-effectiveness analysis to include actual kW and kWh savings for historical years, but does not change the assumptions for avoided cost rates.

- DEF updates the lost revenue calculation to account for changes in customer rates.

Avoided Unit Costs

In 2015, when calculating the economic benefit of its DSM programs, DEF identified three natural gas-fired units for its avoided units. One unit was a simple-cycle combustion turbine unit with an in-service date of June 1, 2018, and two are combined cycle units with in-service dates of June 1, 2021, and June 1, 2024. Savings associated with avoiding or deferring these units was considered in determining the avoided costs for each program. DEF's avoided units are consistent with DEF's filings in the 2015 goal-setting proceeding.

DEF does not change the avoided plant outside of the five-year reviews. The company states that since the approved goals were based on the assumptions for avoided units that existed at the time goals were set, and the programs that are in place are designed to meet those goals, there is no need to perform such an update.

3.4 DSM Program Administration

3.4.1 Program Organization

The DEF Organization supporting the DSM programs is made up of three primary groups:

- Energy Efficiency Program Team
- Demand Response Program Team
- Regulatory Strategy Team

The Senior Vice President Customer Solutions has management and oversight responsibilities for all product and service offerings to DEF customers. The Vice President Retail Programs is responsible for all DEF residential and commercial Energy Efficiency programs, Demand Response programs, and customer-facing operations. The Regulatory Strategy Team manages regulatory compliance and filings, and supports program management teams. A DEF DSM program organizational chart is included in **Appendix 3.**

Exhibit 6 below shows the number of DEF full-time staffing equivalents (FTEs) for its Florida DSM operations. As of year-end 2017, 119 FTE employees and 36 contractor FTEs conducted DEF's DSM programs. **Exhibit 7** also provides the ratio of DEF's FTEs to total DSM participation levels to determine the approximate number of participants per FTE. As shown, DEF's ratios ranged from a high of 1 FTE per 752 participants in 2014 to a low of 1 FTE per 616 participants in 2017. DEF's objective is to maintain a balance of employees and contractors that allows for a flexible workforce, controlled turnover and cost management. Internal management oversight and ongoing support for demand response programs are major drivers of staffing requirements.

Duke Energy Florida DSM Participants and Staffing Full-Time Equivalents 2014-2017				
	2014	**2015**	**2016**	**2017**
Residential Participants	104,516	93,336	94,775	94,301
Commercial Participants	3,824	2,579	1,618	1,207
Total Participants	**108,340**	**95,915**	**96,393**	**95,508**
Employees	133	126	121	119
Contractors	11	19	27	36
Total FTEs	**144**	**145**	**148**	**155**
Total Participants per FTE	**752**	**661**	**651**	**616**

Exhibit 6 *Source: DEF's PowerPoint Presentation*

Consultants

DEF uses consultants to assess and improve DSM program effectiveness. Two consultant studies were performed in the 2015-2018 time period.

- 2016 Residential End-Use Study - Sparks Research was engaged to conduct a residential appliance saturation study focused on consumer interest and attitudes toward energy efficiency products and approaches. The results of this study were to assist program planning and product development efforts. The survey obtained a snapshot of the saturation level of various appliances for residential customers in all Duke Energy service territories (NC, SC, IN, OH-KY and FL). The survey provided Duke Energy estimates of the number of appliances per home by types, vintages and energy efficiency levels (Energy Star). The research also focused on consumers' interest and attitude towards energy efficiency products and approaches.

- 2016 DSM Adoption Study - Bellamy Research was retained for a study with the objective to evaluate customer perceptions of demand-side management programs and identify concerns and perceived barriers to participation. The purpose of this research was also to estimate potential customer participation with the Demand-Side Management program.

3.4.2 Program Evaluation and Modification

DEF reviews the Commission-established goals for the upcoming year and allocates those goals to each program based on actual program achievements for the prior and current year and projected achievements. DEF then develops projected participation levels by measure for each program. These estimated participation levels are considered in the development of projected incentive costs, contractor resources, and marketing costs for the upcoming year.

To assess program effectiveness, DEF reviews and analyzes actual program costs, kW and kWh achievements, and participation relative to goals for each program on a monthly basis. Monthly meetings are held with program managers to discuss results and plans and targeted achievements are modified as appropriate. Program costs are reviewed on a cost per kW and cost per kWh basis and compared to peer utilities. Annual updates of costs and achievements are completed along with reviews of RIM and TRC scores for each program.

DEF states it reviews its processes and procedures on an ongoing basis and looks for opportunities to improve the cost-effectiveness of its programs. From 2015 to 2018, it made modifications to the program participation standards for both the Neighborhood Energy Saver and Low Income Weatherization Assistance Program to replace CFL light bulbs with LED light bulbs. DEF filed changes to the Low Income Weatherization Assistance Program to increase participation by aligning the program requirements with the requirements of the agencies that provide weatherization assistance.

Between 2015 and 2018, DEF modified the energy efficiency measures included in the residential single family energy efficiency kits to reduce costs and increase energy efficiency impacts. These kits are provided to customers who complete a home energy audit. DEF made adjustments to the marketing and operational plans for the Home Energy Check program to smooth out the workload, reduce costs, and be more responsive to customers. DEF also improved the customer application and approval process for its Florida Custom Incentive Program by proactively providing information to customers about the types of projects that typically qualify for incentives through its external website and by allowing customers to submit applications online.

DEF has not conducted any formal benchmarking studies of DSM programs in recent years; however, DEF states it does review and compare program costs, cost-effectiveness scores, participation, and program standards to peer utilities. DEF also periodically meets with peer utilities to discuss new technologies, program standards, and program operations. DEF stays abreast of other utility DSM activities and program offerings through information available on industry websites, participation in industry organizations such as the Electric Power Research Institute and Edison Electric Institute, and through review of regulatory filings.

3.4.3 DSM Reporting

Internally, the DEF Customer Regulatory Strategy group informs Senior Management of key energy efficiency and demand response initiatives on an annual or as-requested basis, and includes the following:

- Program Plans are developed based on results of goal-setting proceeding – including projected participation/incentives/impacts by measure.
- Recommendation codes for each measure are set up in Customer Service System (kW/kWh impacts).
- Participation is input by customer by measure and tracked in the Customer Service System.
- Program Managers review and verify program participation and kW/kWh achievements monthly.
- Participation and achievements by measure are summarized to the program level.
- Program results are compared to goals at the program level on a monthly basis.

- Assess performance gaps–market conditions/results of marketing efforts/consult with trade allies.

- Adjust program goal assignments, marketing plans, and program requirements as appropriate.

- Program level summer kW, winter kW, and kWh impacts and participation are reported on the annual report.

Internal Audits

There have been no formal internal or external audits or reviews completed on the company's DSM programs or its administrative oversight functions during the period 2015-2018. DEF states that it has processes in place to ensure that program operations are compliant with FPSC rules and program standards. Examples include reviewing financial reports on a monthly basis to ensure that costs are appropriately charged, reviewing program results relative to goals with program managers on a monthly basis and discussing any potential operational or compliance issues, monitoring impacts of changes in building codes and standards, modifying program standards, and analyzing the cost-effectiveness of each program on a monthly and annual basis.

3.5 DSM Program Costs

DEF's 2017 total energy conservation costs were $107,890,962. Load Management for residential and commercial customers accounted for 41 percent of the cost, followed by Commercial Interruptible Service at 29 percent. On May 1, 2018, DEF petitioned the Commission for approval of an over-recovery of $2,815,663 as DEF's adjusted net true-up amount for the period January 2017 through December 2017.

For 2018, FEECA utilities requesting ECCR are required to file the prior year actuals and true-up amounts, the current year's estimated/actual amounts, actual and projected common costs, individual program costs, any revenues collected, and an annual projection filing showing 12 months projected common costs and program costs for the period beginning January 1 following the annual hearing.

The process to evaluate and develop the projected ECCR cost estimates considers a number of factors. Projected participation levels are a cost driver for incentives, outside services, marketing plans, and workforce requirements. Administrative costs to support regulatory compliance activities, financial support, and technological requirements are also evaluated as part of this process. The evaluation of technological requirements considers the costs to maintain systems to support customer and regulatory requirements as well as the evaluation of cost impacts for planned technological changes and upgrades that improve and streamline workflow processes and improve services to customers.

The projected cost estimates in the regulatory filings are also the basis for the upcoming year's internal operating budgets for each program. Each program manager is held accountable to program budgets and reviews variances to budget on a monthly basis.

Common Cost Allocation

To the extent possible, DEF states it charges costs directly to specific programs. However, costs that generally support or benefit all programs are charged to the Energy Conservation Administration account. Common costs are included in cost-effectiveness tests. Energy Conservation Administrative costs are allocated to each program based on each program's cost as a percent of total costs. For the year 2016, the Energy Conservation Administrative costs were 4.36 percent of the total $109,155,438 in Energy Conservation Program expenditures. For the year 2017, the Energy Conservation Administrative costs were 3.26 percent of the total of $107,890,962 in Energy Conservation Program costs.

The types of costs that are allocated or assigned in this manner to each DSM program include administrative functions such as finance and accounting, regulatory support, facilities, and IT support expenses. DEF states in cases where the company's resources can be leveraged to reduce overall costs across all jurisdictions, shared resources are utilized. The shared resources include functions like program management leadership and program support organizations that are not jurisdiction-specific. The program management leadership positions have responsibility for similar programs across Duke Energy's jurisdictions and provide guidance and direction to program managers located in each jurisdiction. Examples of program support organizations include the Planning and Analytics Team and the Program Performance Team. DEF utilizes a corporate manual which contains Products and Services Charging Guidelines used to ensure employee expenses and invoices are recorded appropriately, and to guide in jurisdictional allocations.

Program Costs Trend

Exhibit 7 depicts DEF's DSM program costs as a percentage of retail revenues. From 2014 to June 2018, the percentage remained relatively steady at approximately 2.5 percent. While DSM program expenditures have remained relatively stable from 2014 through June 2018, retail revenue has remained below 2014 levels, causing the percentages of DSM expenditures to retail revenue to increase.

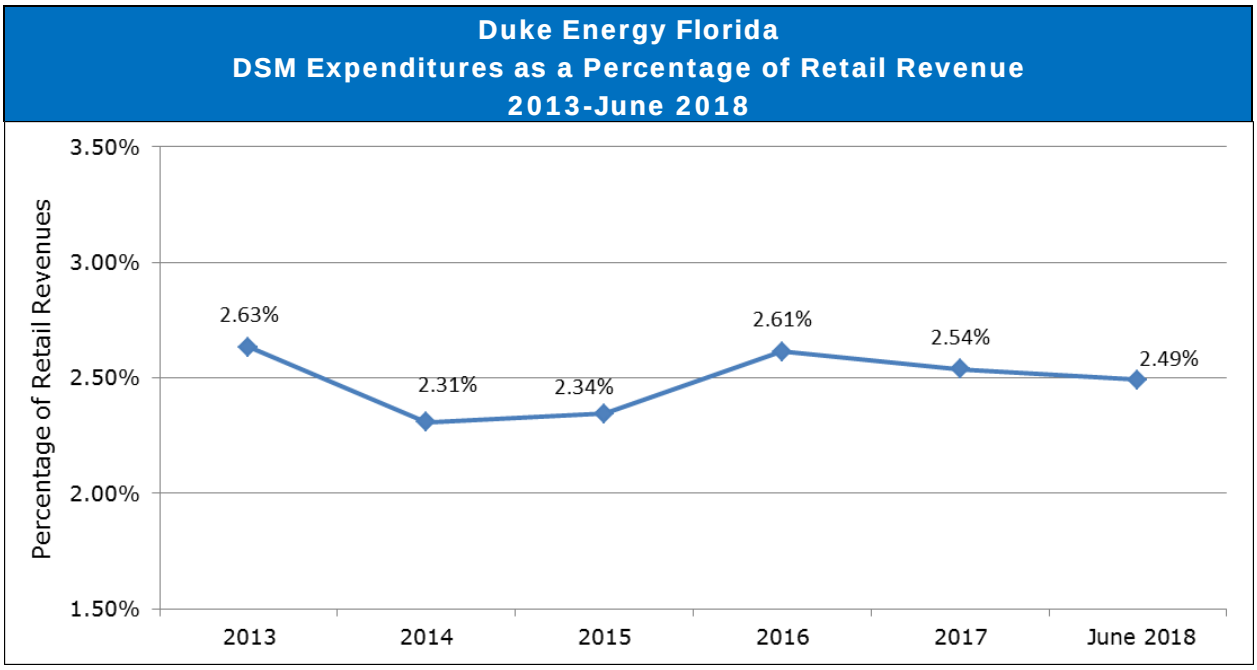


Exhibit 7 *Source: DEF's PowerPoint Presentation, DEF Responses to Document Requests 3.8 and 3.9*

3.6 Observations

- DEF manages and adjusts its DSM program goals, marketing plans, and resource assignments to achieve the Commission-established goals.
- DEF maintains internal written procedures and guidelines for the implementation, management, analysis, and operation of each of the company's residential, commercial, and industrial DSM programs.
- DEF notes that more stringent building codes, appliance standards, and economic conditions have reduced options for program and measures that DEF can cost-effectively offer its customers.
- Meetings are held with program managers and the regulatory team each month to discuss the assumptions that supported the initial program development, program participation, achieved energy savings, program costs, and progress toward goal achievement.
- DEF reviews and compares DSM program costs, cost-effectiveness, participation, and standards to peer utilities, and periodically meets with these utilities to discuss new technologies, program standards, and program operations.
- DEF charges DSM costs directly to specific programs, while DSM costs that generally support or benefit all programs are allocated and charged to the Energy Conservation Administration account based on each program's percentage of total non-administrative costs.

4.0 Florida Power & Light Company

Florida Power & Light Company (FPL) serves nearly five million customers across the state of Florida with approximately 26,000 MW of generating capacity. Pursuant to FEECA and the Commission rules implementing FEECA, FPL's current DSM Plan was developed and approved[3] by the Commission to meet the DSM goals established for FPL by Order No. PSC-14-0696-FOF-EU. FPL's DSM Plan is designed to reduce both the growth rate of weather-sensitive peak demand and energy consumption.

4.1 DSM Programs

The overall objective of FPL's DSM program is to achieve the Commission-approved residential and business sector-level MW and GWh goals. To achieve this, FPL's current DSM Plan shown in **Exhibit 8** consists of six residential programs, seven commercial/industrial programs, a conservation research and development program for evaluating new technologies, and a Cogeneration and Small Power Production Program.

Florida Power & Light Company Current DSM Programs	
Residential Programs	Residential Home Energy Survey
	Residential Ceiling Insulation
	Residential Air-Conditioning
	Residential New Construction (BuildSmart)
	Residential Low-Income
	Residential Load Management (On Call)
Commercial/Industrial Programs	Business Energy Evaluation
	Business Lighting
	Business Heating, Ventilating, and Air Conditioning (HVAC)
	Business Custom Incentive
	Business On Call
	Commercial/Industrial Load Control (CILC)
	Commercial/Industrial Demand Reduction (CDR)
Other	Conservation Research and Development (CRD)
	Cogeneration and Small Power Production

Exhibit 8 *Source: FPL's 2017 Annual Conservation Report*

In 2017, the majority of FPL's residential seasonal peak demand and annual energy goals were met through the Residential Load Management (On Call) program and Residential Air-Conditioning programs. For commercial/industrial goals, the Commercial/Industrial Demand Reduction (CDR) program was the single largest in seasonal peak demand savings while annual energy goals are primarily met by Business Lighting and Business Custom Incentive (BCI) programs.

[3]Commission approved FPL's DSM Plan by Order No. PSC-15-0331-PAA-EG, issued August 19, 2015.

FPL's achieved demand and energy savings for its residential and commercial DSM programs for each year 2014 to 2017 is shown in **Appendix 1**. FPL achievements in these sectors are compared against the annual goals set by the Commission.

FPL provides customer rebates on energy efficient appliances or equipment upgrades as a means to encourage participation in DSM programs. Residential DSM program rebates are reflected on the contractor's invoice resulting in the consumer receiving immediate credit. In turn, contractors submit a rebate reimbursement request and required documentation online through a contractor connect portal, the Web Incentive Processing System. FPL reviews the information submitted through the processing system for completeness, ensures that the equipment installed meets the rebate requirements, and then processes the rebate.

For the Residential Ceiling Insulation program, FPL must first conduct a Home Energy Survey and issue a rebate certificate to the customer. After installation, the customer presents the completed rebate certificate to the contractor who then reduces the customer's invoice to reflect the rebate amount.

The rebate process for FPL's Commercial DSM programs is similar to the residential process; however, the rebate credit goes directly from FPL to the business customer. The business customer must submit a completed rebate certificate and all required documentation to an FPL business specialist for processing upon completion of equipment installation (e.g., chiller)

4.2 Energy Surveys

Energy surveys are the key to diagnosing how and where energy consumption can be reduced. In accordance with FPSC Rule 25-17.003 F.A.C., FPL offers energy surveys for each sector, residential and commercial/industrial. While energy savings are not directly imputed to FPL's Residential Home Energy Survey and Business Energy Evaluation programs, they do generate a large percentage of the participation in other DSM programs. As shown in **Exhibit 9**, FPL conducted 111,618 Residential Home Energy Surveys (HES) and 11,514 Business Energy Evaluations (BEE) in 2017.

From 2015 to 2017, the majority of customers that participated in FPL's HES chose the online option over computer-assisted and phone surveys. Overall HES participation has declined over this time period in all channels (e.g., the percentage of online participation has decreased 35 percent - from 70,567 to 45,492). In order to enhance the customer experience, FPL has recently undertaken a comprehensive project redesign of the residential and business energy surveys to enhance the way they are offered in all three channels, particularly the online channel.

The company anticipates a significant increase in online participation as the company moves forward with the new HES and BEE platforms, which incorporate an Advanced Metering Infrastructure (AMI) - based energy audit survey process for both. Full HES product launch is planned for January 2019 and BEE in the second quarter of 2019. These new energy surveys are expected to leverage customer's hourly smart meter data and help them gain knowledge regarding their premise-specific energy use with quick and easy ways to save. FPL plans to

continue leveraging the Energy Surveys as a gateway program to educate customers about energy efficiency, create DSM program awareness and generate leads for the other DSM programs.

Florida Power & Light Company Energy Audit Participants 2015-2017			
Residential Energy Surveys	**2015**	**2016**	**2017**
Computer-Assisted (on-site)	27,795	22,416	24,893
Online	70,567	64,596	45,492
Phone	51,043	25,866	41,233
Total	**149,405**	**112,878**	**111,618**
Business Energy Surveys	**2015**	**2016**	**2017**
Computer-Assisted (on-site)	12,086	12,019	11,466
Online	167	89	48
Total	**12,253**	**12,108**	**11,514**

Exhibit 9 *Source: FPL's Response to Document Request 2.4*

Since program inception, FPL has used its own employees to perform energy surveys, but has evaluated the option of outsourcing to a third party. Upon evaluation, the use of FPL's employees was deemed the most cost-efficient approach. FPL provides a comprehensive week-long training class to provide the skill set for performing energy surveys.

Whenever FPL uses a third-party vendor to provide services related to DSM, FPL develops and uses a detailed requirements matrix for evaluation and selection of the vendors. Upon being selected, FPL monitors the vendor's progress on an ongoing basis to ensure the vendor's compliance with the terms and conditions of its contract for the particular DSM service.

To comply with Rule 25-17.003(10)(b), F.A.C., FPL is required to perform post inspections of 10 percent of each type of each DSM program where customer installations are performed. Tracking is performed by recording all customer installations and post-installation verifications in a database. A dashboard graphically displays and provides comparisons of the number of incremental installs by program and the number of post-installation verifications performed. The number of DSM program installations for each year 2015 through 2017 and the percent of installations that were post-inspected by FPL are shown in **Appendix 2**. For 2017, FPL missed the 10 percent requirement for its Business On Call program by only four inspections. According to the company, resources responsible for verification of installs were dedicated to restoring service due to Hurricane Irma. However, the same contractors perform installations for both this program and the Residential On Call program, and on a combined bases FPL inspected over 12 percent of these contractors' work.

4.3 DSM Program Development

4.3.1 2019 DSM Goals Study

As discussed in Section 2.2.1 in 2009 FEECA utilities jointly sponsored a third-party assessment to perform a DSM Goals Study. In 2019, a new Goals Study will be completed provide direct input into each FEECA utility's proposed DSM goals for 2020 through 2029.

While the consultant offers all three components of the Goals Study (i.e., technical, economic, and achievable), FPL has opted to use its own resources to conduct the economic and achievable components of the study. Using data from the technical potential analysis, FPL will screen for cost-effectiveness to determine the economic potential and establish the achievable levels of energy efficiency, demand response, and distributed energy resources (collectively DSM) potential by assessing customers' interest in participating in such measures.

4.3.2 Cost-Effectiveness Model

The projected values from the three cost-effectiveness preliminary screening tests (RIM, PCT, and TRC) are based on system assumptions from FPL's Ten-Year Site Plan. Through the use of each of these tests, FPL can determine what the general body of consumers should pay for DSM measures and seek to quantify the costs and benefits of the DSM measure. FPL packages its DSM portfolio based on its cost-effectiveness screening analyses.

To quantify the costs and benefits of a given DSM program, FPL uses a spreadsheet evaluation model consistent with the Commission-approved methodology in Rule 25-17.008, F.A.C. The model's cost and benefit inputs may differ depending on the particular cost-effectiveness test being used and there are several key areas where input assumptions have a significant effect on cost-effectiveness analysis results.

FPL's avoided cost inputs are based upon analysis provided by the company's Integrated Resource Planning (IRP) group. The IRP group is responsible for determining the amount and timing of capacity load reduction, new capacity additions, or combination thereof needed to maintain or enhance system reliability. The IRP group analysis includes a simulation of the utility system with representation of all of the generation, transmission constraints, and loads over time. In turn, this approach provides estimates of avoided cost that are closely linked to FPL operations. The IRP group is capable of providing continuous evaluation of the energy and capacity costs.

FPL recalculates the cost-effectiveness of its DSM programs in response to Commission staff's ECCR discovery process or as part of the DSM Goals and Plan proceedings. On average, this has meant performing the analyses on an annual basis. Key inputs that are updated include actual costs (i.e., administrative, equipment, and incentive costs), actual energy (kWh) and demand savings (kW), and any changes to the avoided unit in-service year.

At the time of the 2015 DSM goal-setting docket, FPL identified a 1,269 MW Combined Cycle plant as its next avoided unit with an in-service date of 2019. Numerous factors continue to affect the original avoided unit forecast. Federal and state energy-efficiency building codes and standards are more stringent, reducing FPL's projected load and resource needs. In turn, these

energy-efficiency codes and standards reduced the potential for cost-effective utility DSM programs. According to FPL, current natural gas price forecasts are approximately 50 percent lower than gas costs used in the 2014 DSM goal-setting docket.

FPL's 2018 Ten-Year Site Plan indicates a planned purchase of 325 MW in 2019 and deferral of its next avoided unit of 1,778 MW until June 2028. As a result of FPL's 2018 projected forecasts needs, FPL's potential benefits from DSM energy savings have been reduced from those foreseeable when DSM goals were established in 2015.

4.4 DSM Program Administration

4.4.1 Program Organization

An extensive staff and field organization supports FPL's residential and commercial/industrial DSM program portfolio. As shown in **Appendix 3,** the organization is headed by the Vice President of Customer Service. The organization is divided into four major DSM functions: Demand Response; Energy Efficiency; Strategy Cost and Performance; and Systems, Process and Analytics.

The Demand Response group is responsible for the implementation and performance of the company's load management programs, including budgeting and achievement of goals. Within Demand Response, personnel are accountable for program planning, operations and maintenance support, and oversight of contractors associated with the load management programs.

Energy Efficiency is responsible for the implementation and performance of the company's energy efficiency programs, including the residential and business Energy Survey programs. Similar to the Demand Response group, the Energy Efficiency operations staff oversees program planning associated with the energy efficiency programs.

Strategy Cost and Performance is responsible for performing DSM analytics, budgeting, performance reporting, performing regulatory activities, and managing the rebate process. The group oversees contractor invoice and rebate processing, manages activities related to budgets and regulatory filings (ECCR), and ensures implementation of any existing and proposed federal and state policies.

Systems, Process and Analytics is responsible for the development and analysis of the DSM systems. This group identifies and evaluates new customer technologies, manages Research & Development activities, coordinates changes to DSM applications, and provides technical support for the company's Business HVAC program.

Exhibit 10 shows the number of full-time equivalents (FTEs) charged annually to its DSM programs and the ratio of DSM participants to FTEs. Since 2014, FPL reduced total FTEs by 30 percent, from a high of 311.5 in 2014 to 218 in 2017. Over the same period, total DSM participants have declined by 54 percent, from a 2014 high of 360,892 participants to 166,570 in 2017. As shown, the ratio of DSM participants per FTE position ranged from 1,159 in 2014 to 764 in 2017.

Florida Power & Light Company DSM Participants and Staffing Full-Time Equivalents 2014-2017				
	2014	**2015**	**2016**	**2017**
Residential Participants	344,709	260,584	154,116	154,058
Commercial Participants	16,183	14,767	13,448	12,512
Total Participants	**360,892**	**275,351**	**167,564**	**166,570**
Total FTEs	**311.5**	**263.3**	**203.9**	**218.0**
Total Participants per FTEs	**1,159**	**1,046**	**822**	**764**

Exhibit 10 *Source: FPL's Response to Document Request 2.1*

To augment the Commission-approved 2015 DSM Plan and Program Standards which are provided in Docket No. 20150085-EG, FPL has developed comprehensive Program Plans, which are used to guide employees as they implement, manage, analyze, and operate each DSM program. The Program Plans address issues such as goals, administration, measurement and verification, industry assessments, technologies, market dynamics, and program performance metrics.

4.4.2 Program Evaluation and Modification

FPL uses an internally-developed DSM Dashboard as the primary tool to assess program effectiveness. The DSM Dashboard allows program administrators to assess program specific details and to make necessary adjustments to meet DSM goals and operate the programs in the most cost-effective manner. FPL believes that its DSM Dashboard employs industry best practices by aggregating all necessary data for each program into one tool displaying program and portfolio performance. The following data can be assessed through the Dashboard:

- Sector performance summary
- Key metrics
- Program performance charts and tables
- Program tracking details
- Year-to-date actuals versus forecast
- Year-end projections
- Incentives paid
- Administrative costs
- Actual versus budget spending

FPL also meets routinely with industry consultants to identify opportunities for improving DSM program performance. According to FPL, the company meets with two to three consultants a month to discuss industry direction, best practices, and opportunities for improvement. For example, FPL has frequent conversations with E Source (a consultant and research firm) to remain informed about new developments in DSM, how other utilities deliver programs, and to understand any new technologies that may be appropriate to incorporate into portfolio offerings.

By participating in trade shows and meeting with peer utilities, FPL gathers information on industry trends, development and uses of new technologies, program delivery techniques, and opportunities to improve participation and cost performance. Program Managers discuss program administration, technologies offered, delivery, execution, and performance to ensure best practices are adopted into their DSM programs.

FPL employees are also members of local and national professional organizations to provide an avenue to network with peers regarding DSM industry topics. Examples include the American Society of Heating, Refrigerating and Air-Conditioning Engineers, the Association of Energy Services Professionals, and the Association of Energy Engineers.

4.4.3 DSM Reporting

FPL states it begins each year with a year-end forecast of DSM program participation and associated budget based on the best available market data. This forecast is developed using data provided originally in the company's DSM Plan and updated based on customer and market dynamics and program performance. Each month, FPL re-evaluates the year-end forecast, by program, and adjusts participation assumptions as necessary to ensure that Commission-approved DSM demand and energy goals are met. Program results are reported monthly to senior and executive management. The reports focus on year-to-date and projected year-end achievements versus residential and business demand and energy goals, budgeted operations, maintenance, and capital expenditures.

Over the period 2015 to April 2018, one internal audit was completed pertaining to FPL's DSM programs. The internal audit specifically reviewed the controls surrounding the allocation of payroll and advertising costs charged to the ECCR clause in 2016. Auditors concluded that the controls surrounding the allocation of these costs were adequate, and as is typically the case, suggested improvements to strengthen controls already in place.

4.5 DSM Program Costs

FPL's total energy conservation costs for 2017 were $155 million. Of this amount, the company's Residential Load Management (On Call) and Commercial/Industrial Load Control account for 57 percent.

DSM common costs are those which, by their nature, cannot be directly attributed to specific programs. Examples include expenses for outside services (e.g., technology support, consulting services, employee training, and payroll and benefits for employees that support multiple DSM programs.) According to FPL, the company does not use factors to allocate these costs to individual programs to avoid unnecessarily burdensome accounting activities and costs, as well as any possible issues regarding allocation methodologies. FPL's DSM common costs are not included in the individual program cost-effectiveness tests.

For 2016 and 2017, FPL's common costs were $9.4 million and $8.5 million, respectively, representing six percent and 5.5 percent of annual total conservation costs. In both years, about two-thirds of the common costs were expensed to the Payroll and Benefits category. Because

some employees support multiple programs where the activity required varies on a day-to-day basis, FPL states it is not administratively practical or cost-efficient to attempt to capture their payroll at a DSM program level. Examples of the types of employees and their functions which are included in common expenses are budget analysts, administrative staff, management and Information Technology services.

According to FPL, if the company recalculated the utility costs used in each programs' RIM and TRC cost-effectiveness screening tests to include the percentage of total DSM costs that represent common costs, the resulting impacts would not be material. Depending on the cost-effectiveness tests being recalculated, the RIM and TRC scores would be impacted by no more than four percent.

Exhibit 11 details the annual percentage of DSM spending compared to the company's total retail revenue from 2013 through June 2018. Since 2014, FPL DSM spending declined as a percent of retail revenue from 2.46 percent to 1.46 percent. The expenditure reduction is driven by reduced spending needed to achieve the lower DSM goals established for FPL in 2015. Total DSM costs decreased from $260 million in 2014 to $158 million in 2016.

Florida Power & Light Company
DSM Expenditures as a Percentage of Retail Revenue
2013 - June 2018

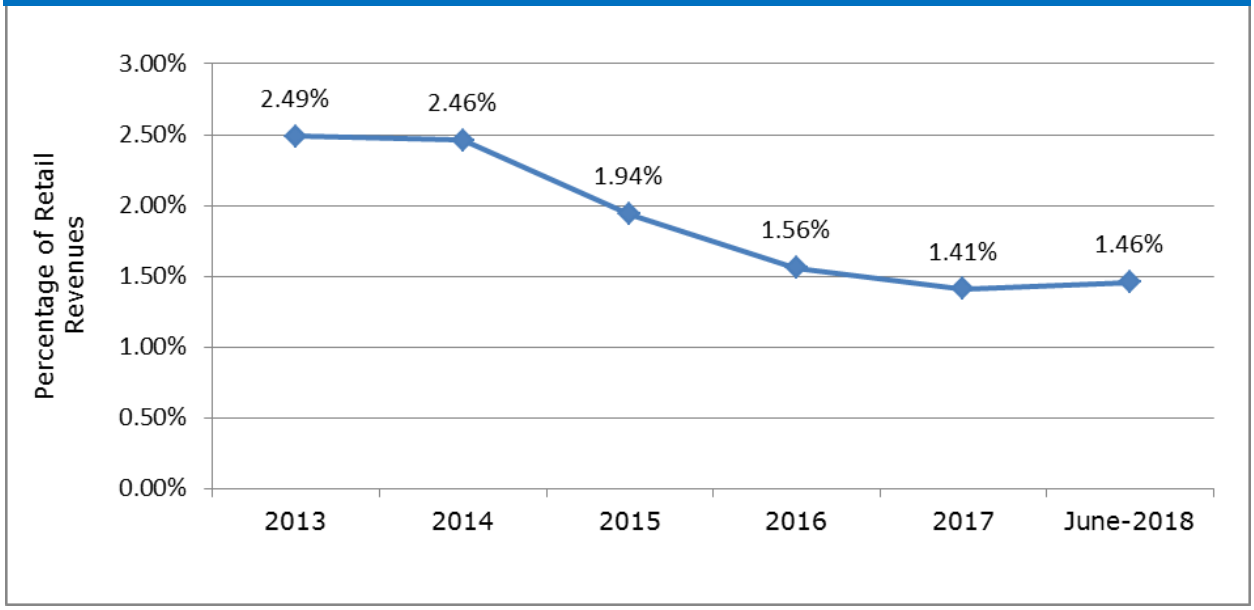


Exhibit 11

Source: FPL's Response to Document Request 2.2

4.6 Observations

- FPL uses a portfolio management approach and program-level participation projections to ensure it meets the Commission-approved overall residential and business sector-level MW and GWh goals.

- FPL has developed comprehensive program plans, which are used to guide employees as they implement, manage, analyze, and operate each DSM program.

- The impacts of increasingly energy-efficient building codes and standards and projected lower fuel costs have diminished the number and scope of FPL's cost-effective DSM programs.

- In response to Commission staff's ECCR discovery process or as part of the DSM Goals and Plan proceedings, FPL updates and monitors its cost-effectiveness tests using actual costs, kWh savings, kW savings, and any changes to the avoided unit timing and cost.

- FPL monitors and assesses program performance using a DSM Dashboard that aggregates all necessary data for each program into one tool and, each month, FPL re-evaluates the year-end forecast, by program, and adjusts participation assumptions as necessary.

- FPL captures opportunities for improving DSM program performance through the use of consultants, peer utilities, industry trade shows, and participation in local and national organizations.

- FPL's common costs account category is not a component of the individual DSM program cost-effectiveness tests.

- FPL has undertaken a comprehensive project redesign of the residential and business energy surveys to update the way they are offered in all three channels: computer-assisted (on-site), over the phone, and online.

5.0 Florida Public Utilities Company

Florida Public Utility Company (FPUC) serves more than 32,000 customers located in North Florida. FPUC's Northwest Division serves Jackson, Calhoun, and Liberty counties. The company's Northeast Division is located in the Fernandina Beach area and serves Nassau County. FPUC serves its customers through purchased power contracts. In August 2015, the Commission issued Order No. PSC-15-0326-PAA-EG approving FPUC's DSM Plan. In October 2015, Commission staff administratively approved the company's DSM program standards.

5.1 DSM Programs

Since implementation of its 2015 DSM Plan, FPUC continues to:

- Focus on providing customers and contractors with information about its programs.
- Work with industry partners and contractors to promote DSM programs to customers.
- Participate in education and advertising opportunities that promote each DSM program to its target audience.
- Emphasize activities to reach many customers at once with its energy conservation program offerings to reduce energy consumption and monthly electric bills.
- Serve customers through its Energy Expert program which provides energy conservation resources, promotes programs, and facilitates program goal achievement.
- Explore new opportunities to reach low-income customers to promote energy conservation awareness and programs.

FPUC states that it places more emphasis on digital advertising and social media in its Northeast service areas to promote DSM programs. In its Northwest service territories, the company believes face-to-face communications and community events are more effective.

Exhibit 12 shows FPUC's current DSM programs approved by the Commission in 2015. FPUC's DSM program portfolio consists of three residential programs, four commercial/industrial programs, and a Conservation Demonstration & Development program.

Florida Public Utilities Company Current DSM Programs	
Residential	Energy Survey
	Heating & Cooling Efficiency Upgrade
	Low Income Energy Outreach
Commercial / Industrial	Energy Consultation
	Heating & Cooling Efficiency Upgrade
	Chiller Upgrade
	Reflective Roof
Other	Conservation Demonstration & Development

Exhibit 12 *Source: FPUC's 2017 Annual Conservation Report*

In 2013, the Commission ordered FPUC to file numeric conservation goals using Gulf Power as a proxy utility.[4] Staff administratively validated and approved the calculations of the residential and commercial/industrial numeric conservation goals submitted by FPUC for the 2015 through 2024 implementation cycle. During the upcoming 2019 goal-setting proceeding, however, the company will propose new goals based on its own specific data.

Pursuant to Rule 25-17.0021(5), F.A.C., each utility is required to file an annual DSM program performance report with the Commission. **Appendix 1** shows FPUC's DSM program achievements compared to the Commission-approved goals for years 2014 through 2017. Over this period, FPUC significantly exceeded all of its residential winter/summer peak demand and annual energy reduction goals. Goal attainment was primarily achieved through the company's efforts in achieving high participation in its residential Heating & Cooling Efficiency Upgrade program. In 2017, FPUC's DSM programs in total reduced winter and summer peak demand by an estimated 0.248 MW and 0.440 MW, respectively. The company also achieved an annual energy reduction of 0.849 GWh.

Of the four years reviewed, FPUC met its commercial/industrial peak demand and annual energy savings goals in 2016. The company states that the small size of its commercial/industrial customer base limits the amount of commercial/industrial program participants which has made it historically difficult to meet the corresponding demand and energy savings goals. In continued efforts to increase participation, FPUC is currently pursuing three initiatives: the Commercial Energy Consultation Program, re-established yearly projections of commercial customer on-site visits, and targeted outreach activities.

The Commercial Energy Consultation Program was established in 2015 in lieu of a commercial energy audit program. The program is designed to allow FPUC's Energy Conservation Representatives to attend events such as trade shows to educate customers about the availability of incentives for installing energy conservation measures. It was created in response to the demand from commercial customers who seek information on the eligibility and procedural requirements surrounding commercial rebate programs. Without such a program, commercial customers would not have access to individuals and resources needed to become participants in commercial conservation programs. The company also plans to conduct 50 commercial customer on-site visits per year through 2024. FPUC is engaged in email campaigns coupled with online links to information about the company's commercial DSM programs and rebate processes.

[4] Order No. PSC-13-0645A-PAA-EU, issued on December 4, 2013, in Docket No. 130205-EI.

FPUC has policies and procedures in place to ensure residential and commercial/industrial DSM rebate programs are offered in keeping with Commission-approved program standards. Rebates are received via fax, mail, or online and entered into the Electric Customer Information System (ECIS) to begin the rebate process. Once FPUC verifies and compiles the rebate data, it is submitted to a third-party contractor that issues residential and commercial rebates within 30 business days. Rebates are paid directly to eligible customers in the form of a Visa gift card or check. Once the rebate is approved, FPUC pays dealer incentives to contractors who purchase and install energy conservation equipment. Dealer incentives are $25 or $75 based on the type of equipment installed. Any vendor may participate in FPUC's DSM programs and those who provide services that facilitate program participation are informed of the dealer incentives through marketing tools and advertisements. Energy Conservation Representatives also cultivate personal relationships with vendors, and FPUC's rebate coordinator mails letters to local HVAC contractors to continuously remind them of the DSM programs and associated dealer incentives.

The company anticipates implementing a new online rebate portal by December 31, 2018 to enhance the rebate processing for residential, commercial, and third-party (e.g., landlords and equipment dealers) customers. The enhancements will include:

- Increasing ease of submitting and tracking rebates.
- Reducing rebate processing time from 6-10 weeks to 2-3 weeks.
- Improving accuracy and reducing administrative time by 20 hours per week.
- Creating scalable solutions to meet growth opportunities and FPSC requirements.
- Increasing customer care availability by phone and online.
- Automating rebate reporting tools and ECIS processes.

5.2 Energy Audits

Policies and procedures are in place to ensure that residential and commercial energy audits are performed in compliance with Commission requirements. FPUC's residential energy audits and commercial consultation programs are critical opportunities for FPUC's Energy Conservation Representatives to educate and inform customers about DSM program eligibility based on rate class. The company does not make energy audits a requirement for participation in other energy conservation programs but does offer energy audits to participants of all residential programs.

FPUC's Residential Energy Survey and Commercial Energy Consultation programs set the foundation for customers to elect to participate in energy conservation programs. FPUC offers walk-through, computer-assisted, and online energy audits:

- Walk-Through – extensive observations of physical structure and components documented during evaluation of residence, simplified heat gain and loss calculated, and customer is advised of feasible energy conservation practices and measures.

- Computer-Assisted – comprehensive on-site evaluation of residence pursuant to pre-audit performance criteria and specific data collection with an audit result sheet given to the

customer, and, if applicable, provides installation arrangements and inspections pursuant to this rule.

- Online – web-based energy audit tool that provides residential customers with an integrated suite of online resources designed to answer energy questions and provide personalized information needed to effectively manage home energy use.

Exhibit 13 shows the number of residential and commercial energy audits conducted during 2015 through 2017. Over the three-year period, the total number of residential audits decreased by 51 percent. The company states the demand for audits is driven by high bill complaints which, in turn, lead to energy audit requests. Typically, the factors for high bills include weather-related events such as extended cold periods in the winter and high heat coupled with high humidity in the summer. Other factors for high bills include equipment failure and billing issues.

Florida Public Utilities Company Energy Audit and Site Visit Participants 2015-2017			
Residential	**2015**	**2016**	**2017**
Walk-Through	167	266	175
Computer-Assisted	187	14	5
Online	27	4	7
Total	**381**	**284**	**187**
Commercial	**2015**	**2016**	**2017**
Walk-Through	38	0	0
Site visit*	16	67	11
Total	**54**	**67**	**11**

*Involves an energy management consultation with customer at commercial premises.

Exhibit 13 *Source: FPUC's Response to Document Request 3.6, DN 02654-16, and DN 04526-17*

The total number of residential energy audits and installed conservation measures continue to trend downward since 2015. Similarly, except for the increase in 2016, the commercial site visits and installed conservation measures have also trended downward. FPUC states that it has been difficult to match the 22 commercial energy conservation measures installed in 2016 because of the small size of the market, limited pool of participants, and lengthy purchase cycle. The company, however, continues its efforts to increase participation.

FPUC uses its own employees to conduct energy audits in their respective service territories. Rule 25-17.003(5), F.A.C., requires all utilities to certify that each residential energy auditor complies with the minimum qualifications set forth in this rule. The company's Energy Conservation Representatives have received building science training from the Florida Solar Energy Center and engage in ongoing training and energy education. Some of the energy conservation auditor training certifications are in the following areas:

- Lighting Audit Fundamentals and Applications
- Heat Pump Fundamentals and Applications

- Association of Energy Engineers/Florida Green/NAHB Buildings
- Class 1-2-3 Home Energy Rating Systems
- Utility-Scale Solar Power Plant Design Fundamentals

Energy Conservation Representatives generate a post-energy audit report consistent with the requirements in Rule 25-17.003(3), F.A.C. The report includes a summary of the audit results and may include recommended energy conservation measures and practices for the customer's consideration. FPUC does not provide installation services for conservation measures nor does it contract with third parties for such installations.

Rule 25-17.003(10)(b), F.A.C., requires post-audit inspections of 10 percent of each type of installed energy conservation measure. **Appendix 2** shows a breakdown of the inspections and indicates that the company exceeded the 10 percent minimum inspection requirement for all measures installed from 2015 through 2017. FPUC has recently updated record-keeping policies and procedures for energy audit activities to ensure that required verifications continue to be completed on a timely basis. The company's Energy Conservation Representatives use the ECIS to process post-audit inspection verifications. Each month, FPUC's Energy Conservation Department is provided a list of customers who received an audit resulting in installed energy conservation measures. The auditors randomly select 10 percent of each type of measure installed, perform inspections, resolve issues, and close the service orders.

FPUC is currently implementing a new post-audit inspection verification process to be completed by year-end 2018. The improved system will rely on an outside vendor's software which will enable the company to more effectively monitor the post-audit inspection process.

5.3 DSM Program Development

5.3.1 2019 DSM Goals Study

Since FPUC is a non-generating utility, the company neither conducts a ten-year site plan nor operates an Integrated Resource Planning department as do other FEECA IOUs. In preparation for the 2019 goal-setting proceeding, a consultant will be conducting the technical, economic, and achievable components of the DSM potential study for FPUC based on an in-depth disaggregated analysis of the company's own load forecast. This analysis by a consultant will identify technical, economic, and achievable potential more specific to FPUC's winter and summer load in contrast to the company's historical use of Gulf Power as a proxy utility.

5.3.2 Cost-Effectiveness Model

In March 2015, FPUC filed its DSM Plan along with a cost-effectiveness analysis for each of its proposed energy conservation programs using the TRC, PCT, and RIM tests.

Consistent with the requirements of Rule 27-17.008, F.A.C. FPUC uses the Commission-approved Florida Integrated Resource Evaluator (FIRE) cost-effectiveness model. The model evaluates cost-effectiveness of energy conservation and DSM measures based on the TRC, PCT, and RIM tests.

Each cost-effectiveness test includes inputs as referenced in the DSM Cost Effectiveness Manual. These cost and savings inputs may vary based on the cost-effectiveness test being used. Examples of cost inputs include equipment, administrative, incentives, lost revenues, and participant costs. Savings inputs include avoided purchased power, avoided transmission and distribution, and energy savings. As a non-generating electric utility, FPUC's single avoided generation cost input for evaluating cost-effectiveness of its DSM programs is based on the weighted average of avoided demand and energy charges from its purchased power agreements with Gulf Power and FPL for its Northwest and Northeast divisions respectively. The company's avoided transmission and distribution cost inputs are based on the company's operation and maintenance costs from 2009 through 2013, escalated to 2017 dollars. FPUC's DSM cost-effectiveness test inputs remain the same as when the Commission approved the company's DSM Plan in 2015. FPUC states that because of the company's size and limited resources, DSM program cost-effectiveness updates are typically reserved for activities associated with the Commission's five-year DSM goal-setting proceeding.

FPUC reviews actual program results including demand and energy savings, participation levels, and program costs from its annual DSM performance report to measure whether or not the DSM goals have been met. The company recalculates its program cost-effectiveness test results in response to Commission staff's annual data request as part of the ECCR discovery process. FPUC uses the results for internal evaluation purposes only. However, the company historically only changes the FIRE model inputs during the Commission's five-year DSM goal-setting proceeding. While the updated cost-effectiveness test results may be useful for future planning purposes, FPUC does not modify any of its DSM programs prior to the Commission's proceeding. The company would, however, seek regulatory relief to modify applicable existing programs to reflect energy code changes.

In the upcoming 2019 goal-setting cycle, a consultant will rely upon FPUC's own load forecast and will provide the company a truer representation of what is theoretically possible and serve as inputs to the FIRE model to evaluate cost-effectiveness. FPUC, therefore, will be better positioned to more effectively:

- Propose DSM numeric energy conservation goals.
- Develop its DSM plan pursuant to FPSC-approved goals.
- Identify DSM program measures and strategies.
- Determine specific funding requirements to offer programs.
- Calculate cost-effectiveness of each DSM program.

5.4 DSM Program Administration

5.4.1 Program Organization

FPUC's DSM organization consists of two primary groups which include Operations & Business Development and Regulatory Affairs & Business Analysis. **Appendix 3** shows the company's operational support staffing structure within each primary group. The Vice President of Operations & Business Development manages the electric, natural gas, and propane gas operations. Additional responsibilities include overseeing all of the conservation activities,

identifying new business expansion opportunities, and improving system expansion planning to help streamline customer activation processes.

The Assistant Vice President of Regulatory Affairs & Business Analysis and the Director, Regulatory and Business Management are responsible for strategy and reporting activities. Responsibilities also include oversight of all programs and processes related to business planning and revenue protection, and supervision of the Director, Regulatory & Governmental Affairs and Director, Financial Planning Analysis, and their respective departments.

Exhibit 14 shows the number of FPUC full-time equivalent (FTE) employees who charged time to the company's DSM operations in each year, 2014 through 2017. Overall, FPUC increased its number of FTE employees by 14 percent, from a low of 3.7 in 2014 to 4.2 in 2017. The corresponding total number of participants per FTE equates to a high of 174 participants per FTE in 2014 to a low of 98 participants per FTE in 2017.

The company does not use contractors to implement its DSM programs. Rather, FPUC implements its programs with in-house representatives and relies on contractors for broad regulatory compliance efforts and non-program specific services.

Florida Public Utilities Company
DSM Participants and Staffing Full-Time Equivalents
2014-2017

	2014	2015	2016	2017
Residential Participants	579	727	506	398
Commercial Participants	61	18	89	11
Total Participants	**640**	**745**	**595**	**409**
Total FTEs	**3.7**	**4.0**	**4.5**	**4.2**
Total Participants per FTE[5]	**174**	**184**	**131**	**98**

Exhibit 14 *Source: FPUC's Response to Supplemental Document Request 3.4*

FPUC uses CLEAResult Consulting, Inc. to prepare its DSM annual performance report filed with the Commission, and the associated services include:

- Crosschecking participation numbers against previous years to find outliers.
- Comparing reported participant levels and energy savings versus goals.
- Analyzing and reviewing cost data to ensure accuracy.
- Verifying common program expenses allocated to each program.

5.4.2 Program Evaluation and Modification

FPUC performs a complete DSM plan and program assessment and evaluation during the Commission's five-year goal setting proceeding. The company recently initiated a quarterly reconciliation auditing process assessing and evaluating DSM program participants' energy

[5] Total Participants per FTE computed based on actual, not rounded, number of Total FTEs.

consumption 12 months before and after conservation measures are installed. The change in consumption associated with each type of installed conservation measure per DSM program participant is recorded in the company's ECIS. The results are compiled in a spreadsheet and reviewed quarterly by the Energy Conservation Coordinator.

FPUC also prepares participation metrics on a monthly basis by comparing each month's participants to monthly, quarterly, and annual goals. The rebate coordinator uses a tracking form with participant data collected from the ECIS to produce a monthly participation tracking report which helps the company evaluate its performance toward meeting its goals.

The company states that the program participation metric is key to determine program performance, and it continues to work toward increasing program participation via traditional, digital, and face-to-face outreach and promotions. The company further states that it only changes its incentive levels during the Commission's five-year goal setting proceeding. It takes necessary corrective action to increase participation in DSM programs by allocating more marketing resources to underperforming programs.

FPUC's Senior Energy Conservation Representative is responsible for closely monitoring and reviewing proposed changes to the Florida Energy Conservation Code and keeps the company well-positioned to be aware of, and prepare for, any updated building codes and changes to appliance efficiency standards. Proposed changes to the energy conservation building codes and appliance standards are considered in updated technical, economic, and achievable potential studies. Also, FPUC states that in the event of changes to building codes and appliance efficiency standards, the company would seek Commission approval for any changes to existing DSM program standards.

The company also closely monitors its DSM program expenditures on a monthly basis. The review process involves comparing projected and actual program costs for the previous month and making adjustments where necessary, e.g., advertising and program initiatives, to meet projected program costs and participation levels.

FPUC uses its online Energy Expert portal to provide customer resources such as energy-related tips and advice, videos, and other downloadable materials. This energy conservation resource also features an "Ask the Energy Expert" interactive tool which allows customers to submit questions and receive answers about the company's energy conservation program offerings.

FPUC states that it has not historically conducted external comparative benchmarking for its DSM programs because there are challenges associated with identifying similarly-situated, non-generating utilities for comparison purposes. However, the company has indicated to audit staff that it plans to initiate external benchmarking activities. FPUC also noted that it works collaboratively with a consultant and the other FEECA utilities when conducting the technical, economic, and achievable potential studies during the Commission's goal-setting process.

5.4.3 DSM Reporting

FPUC tracks and reports program participation levels to upper-management and energy auditors on a monthly basis. The energy auditors also review quarterly reconciliation reports to determine the before-and-after energy consumption effects of DSM program participants. Specifically, the

auditors look for energy consumption outliers such as increases over 1,000 kWh per month. Once these accounts are identified, the auditors contact the customers to schedule a visit or discuss their energy usage characteristics over the phone. Management also reviews the quarterly reports to ensure that the auditors are following up with the customers as necessary.

The company uses the consulting services provided by CLEAResult Consulting, Inc. to analyze all of the DSM energy conservation program data and produce the final annual report which is filed with the Commission pursuant to Rule 25-17.0021(5), F.A.C. FPUC's Marketing & Energy Conservation Manager reports the findings to the company's executive team during the annual Sales, Marketing & Conservation meeting in March. During this meeting, new or modified energy conservation policies, procedures, and processes, and/or specific energy conservation program improvements are addressed.

The primary objective of all three reporting methods is to ensure that FPUC satisfies its Commission-established demand and energy savings goals. The intent of the company's reporting process is not to make changes to its existing DSM programs upon monthly, quarterly, and annual findings. Rather, FPUC handles any changes to programs during the Commission's five-year goal-setting process following the completion of the DSM Potential Study.

FPUC's parent company, Chesapeake Utilities Corporation, conducted an independent internal audit based on a review of 2016 data related to FPUC's energy conservation cost recovery processes. All audit recommendations were resolved satisfactorily.

5.5 DSM Program Costs

For 2017, FPUC's total DSM program costs were $640,996. Of the specific DSM programs, the largest portion of DSM total costs was attributed to the Residential Energy Survey and Commercial Energy Consultant program at $82,918 (13 percent) and $45,580 (7 percent), respectively. Labor and payroll expenses accounted for more than half of the program costs. The company filed a petition on May 1, 2018 for approval of an over-recovery of $60,042 in total energy conservation program costs for the true-up period January 2017 through December 2017.

Of the $640,996 in total DSM costs, more than two-thirds ($434,321) of the costs were attributed to the common costs account category. FPUC states that it allocates expenditures to common costs when the incurred costs benefit more than one DSM program. Common costs for energy conservation personnel are allocated based on assumed percentages of time regularly spent on activities benefitting multiple programs.

FPUC states that it allocates a portion of common costs based on an annual net benefit calculation. Those common costs are included in the DSM program administrative costs which are inputs to the FIRE model used to evaluate the cost-effectiveness of each program.

Exhibit 15 shows FPUC's DSM program expenditures as a percentage of retail revenue. This percentage ranged from a high of 2.14 percent in 2013 to a low of 1.29 percent as of June 2018. The Commission established lower DSM goals for FPUC and the other FEECA utilities in 2015.

The lower goals resulted in reduced DSM program costs which attributed to the downward trend in the percentage of DSM expenditures to retail revenue. FPUC states that some of the attributing factors driving this downward trend include reductions in:

- Advertising costs as a result of shifting from newspaper and radio to other mediums such as billboards and email campaigns.
- Participants in the Chiller Upgrade and Reflective Roof DSM programs.
- DSM activities, program participants, and energy audits caused by Hurricane Irma.

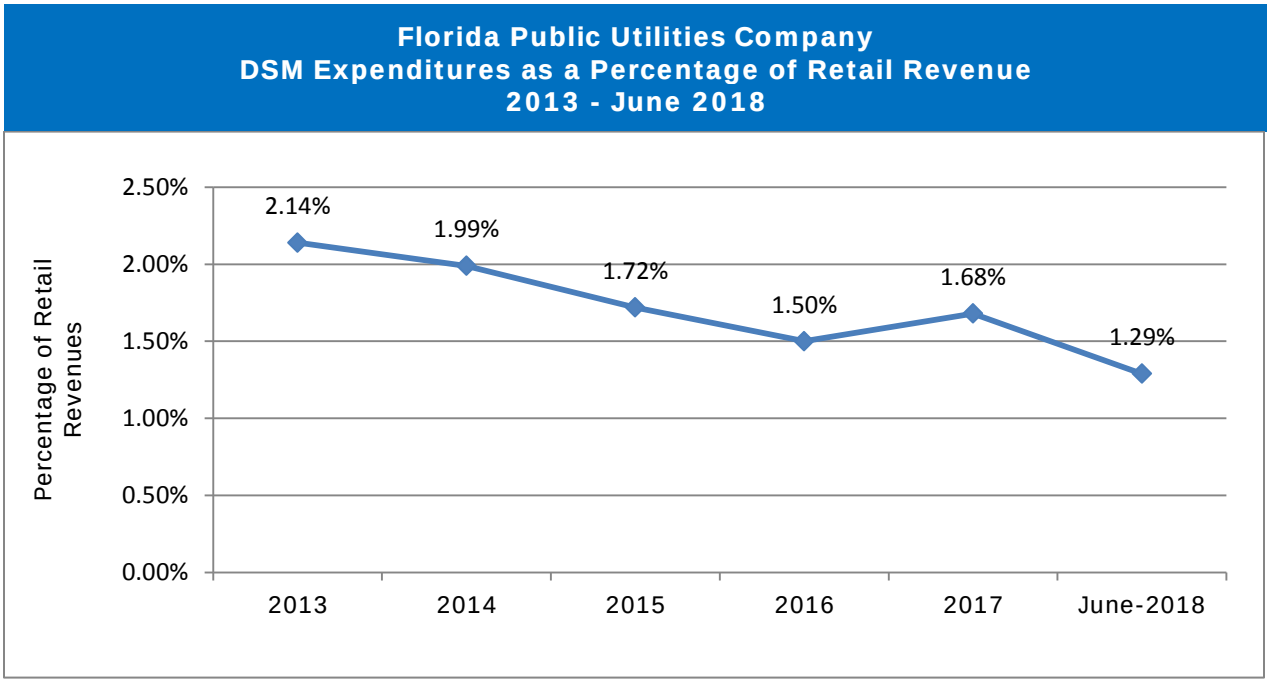


Exhibit 15 *Source: FPUC's Response to Supplemental Document Request 3.2*

DSM program costs have decreased by an average of $67,207 from year to year, except from 2016 to 2017 when costs increased $60,557. This increase combined with the $860,404 decrease in retail revenue were the two attributing factors that drove the upward trend in the percentage of DSM expenditures to retail revenue from 2016 to 2017.

5.6 Observations

- FPUC reviews DSM plan and program participation performance metrics monthly and energy consumption reports quarterly to facilitate controlling costs and achieving Commission-approved goals.
- FPUC uses documented policies and procedures to guide the company toward managing and implementing its DSM programs as approved by the Commission.

- FPUC closely monitors building codes and appliance efficiency standards and the associated impacts to its DSM programs.

- FPUC assesses and evaluates performance of its DSM programs by monthly reviewing projections versus actuals and comparing actuals against goals.

- FPUC updates and reevaluates DSM program cost-effectiveness in conjunction with the Commission's five-year goal-setting process.

- FPUC will use a consultant to perform all components of the 2019 DSM Goals Study based on a disaggregated analysis of the company's load forecast, costs, and program measures in the next planning cycle rather than using a proxy approach.

- FPUC allocates a portion of common costs based on an annual net benefit calculation; those common costs are included in the DSM program administrative costs which are inputs to the FIRE model used to evaluate the cost-effectiveness of each program.

6.0 Gulf Power Company

Gulf Power Company (Gulf) is an investor-owned utility in Northwest Florida that serves 461,806 customers. The company has a generating capacity of 2,277 MW, which includes four plants in Florida and partial ownership of two plants in Georgia and Mississippi. Gulf is a subsidiary of Southern Company. In August 2015, the Commission approved Gulf's DSM Plan through Order No. PSC-15-0330-PAA-EG.In October 2015, Gulf filed its administrative program standards, and Commission staff found the standards to be consistent with the approved DSM Plan.

6.1 DSM Programs

The main purpose of Gulf's DSM Plan is to meet the Commission's goals for peak demand reduction and annual energy reduction in residential and business sectors. To achieve the goals, Gulf's DSM Plan contains six residential and four commercial/industrial programs as shown in **Exhibit 16**. In addition, the company operates a research program, residential pilot, curtailable load program, and critical peak option. The Residential Service Time of Use pilot was scheduled to expire at the end of 2017, but the Commission approved an extension until December 2020. In March 2018, the Commission approved the experimental Curtailable Load program as part of a settlement agreement to resolve a 2016 base rate proceeding.

Gulf Power Company Current DSM Programs	
Residential	Residential Energy Audit and Education
	Community Energy Saver
	Residential Custom Incentive
	HVAC Efficiency
	Residential Building Efficiency
	Energy Select
Commercial / Industrial	Commercial/Industrial Energy Audit
	Commercial/Industrial Custom Incentive
	Commercial Building Efficiency
	HVAC Retro-commissioning
Other	Conservation Demonstration and Development
	Residential Service Time of Use
	Experimental Curtailable Load
	Critical Peak Option

Exhibit 16 *Source: Gulf's 2015 Demand Side Management Plan*

Since 2015, Gulf's DSM programs have reduced summer peak demand by 29.22 MW, winter peak demand by 24.97 MW, and annual energy usage by 60.76 GWh. In 2017, Gulf documented 19,227 residential enrollments and 446 commercial enrollments in DSM measures. In 2017, Community Energy Saver contributed the highest annual energy reduction and Energy Select contributed the largest peak demand reduction of the residential programs.

As shown in **Appendix 1**, in 2015, the company met and exceeded Commission-approved winter and summer peak reduction goals and annual energy reduction goals for both the residential and commercial/industrial sectors. However, Gulf did not meet its residential annual energy reduction goal in 2014 and fell short of commercial/industrial goals in 2016 and 2017. The company has engaged a consultant to identify ways to improve participation in commercial programs to ensure the company meets Commission goals.

Customers enrolling in certain DSM programs and installing qualifying conservation measures receive incentives to offset the premium cost of efficient products. Customers participating in the Residential and Commercial Custom Incentive programs must receive an energy audit prior to enrolling. However, no other programs have this requirement.

The rebate process varies depending on whether Gulf administers the program or contracts with a third party. Customers self-enroll and receive incentive checks for most measures in the Residential Building Efficiency, Commercial Building Efficiency, and Commercial/Industrial Custom Incentive programs. Certain DSM programs such as HVAC Efficiency and HVAC Retro-commissioning are administered by a third-party vendor. For these programs, third parties enroll customers and customers receive immediate incentives through discounts on qualifying products and services. Gulf reimburses the third-party vendor that administers the programs. Regardless of the rebate process, Gulf tracks all DSM enrollments and incentive payments via the Energy Efficiency Reporting Tool (EERT).

6.2 Energy Audits

In accordance with Rule 25-17.003, F.A.C., Gulf offers energy audits to both residential and commercial customers. The company states that energy audits increase customer awareness of other DSM programs. The Residential Energy Audit and Education program helps customers learn how to save energy in new construction or existing homes. Audits are available in walkthrough, computer-assisted walkthrough, new home pre-construction, and mail-in (paper and online) formats at no charge. Customers may also obtain an audit by calling the company. Building energy rating system audits are on-site audits that produce a home performance rating and are available to customers for an additional fee based on the utility's cost to perform the audit.

Gulf screens customers for the walkthrough and computer-assisted walkthrough audits when they schedule an appointment or meet the energy consultant. If a customer only wants general information about energy use, the company will perform a walkthrough audit. The computer-assisted walkthrough audit is performed by senior personnel and incorporates a specific analysis

of energy systems as described in Rule 25-17.003(7)(c), F.A.C. Gulf also offers a graphical tool called "My Power Usage" for residential customers to review their energy consumption.

The Commercial/Industrial Energy Audit program conducts energy audits of commercial and industrial structures and systems. Commercial/industrial customers may obtain walkthrough, computer-assisted walkthrough, and online audits. The on-site audits are performed by Gulf commercial energy specialists and are available as energy analysis audits or technical assistance audits. The technical assistance audits are advanced, customized energy conservation assessments for large customers. Technical assistance audits may require additional engineering resources, computer modeling, outside contracted labor, and guidance from a Gulf commercial employee. Gulf also provides an online energy analysis tool and reference library for commercial customers to learn about energy efficiency and calculate the potential costs and savings of installing conservation measures.

As shown in **Exhibit 17**, Gulf completed 12,314 residential energy audits and 222 commercial/industrial energy audits in 2017. Gulf notes that residential customers are increasingly seeking information through the online energy audit and the company's website. From 2015 to 2017, the number of residential energy audits performed each year increased 66 percent due to higher participation in online and pre-construction formats, although walkthrough energy audits declined in popularity. From 2015 to 2017, commercial/industrial energy audits decreased 51 percent due to lower participation across all formats.

Gulf Power Company
Energy Audit Participants
2015-2017

Residential Energy Survey	2015	2016	2017
Walkthrough and Computer-Assisted Walkthrough	2,163	1,436	1,289
Online	2,632	2,142	5,037
Pre-construction	2,643	3,118	5,988
Total	**7,438**	**6,696**	**12,314**
Business Energy Survey	**2015**	**2016**	**2017**
Walkthrough and Computer-Assisted Walkthrough	371	270	185
Online	81	72	37
Total	**452**	**342**	**222**

Exhibit 17 *Source: Gulf's Supplemental Response to Document Request 2.16*

Gulf advertises residential and commercial energy audits using annual bill inserts in April and October, in compliance with Rule 25-17.003(11)(a), F.A.C. The company also promotes residential audits using customer service representatives, home shows, exhibitions, the Internet, and a newsletter. Gulf promotes commercial audits with marketing representatives, trade allies, the Internet, and a newsletter.

Gulf uses its own employees to perform residential and commercial energy audits. To ensure that auditors can perform energy audits in accordance with Commission standards, Gulf's energy consultants are required to complete the *Gulf Power Residential Energy Consultant Technical*

Training Curriculum. The company asserts the curriculum meets the criteria required in Rule 25-17.003(5), F.A.C. Auditors in training are monitored by a senior consultant and subject to quarterly assessments. Auditors perform multiple roles for the company and may have construction backgrounds or industry certifications in energy auditing.

Per Rule 25-17.003(10), F.A.C., Gulf is required to perform post-audit inspections on 10 percent of each installed conservation measure. The company assigns inspections to a minimum 20 percent of each measure via the EERT record management system. Administrators at the company's three districts share the assignments with field representatives, who ensure installations meet the required criteria. Gulf monitors rejected applications and works with program managers to verify that field verifications and incentive approvals are completed in a timely manner. **Appendix 2** contains a list of installations, verifications, and percentage of installations verified for each currently active DSM measure from 2015 through 2017. For all measures, Gulf exceeded the minimum inspection requirement of 10 percent.

6.3 DSM Program Development

6.3.1 2019 DSM Goals Study

To develop new conservation goals and DSM plans for 2020-2029, Gulf and other FEECA IOUs will collaborate with a consultant to produce a DSM Goals Study in 2019. As discussed in Section 2.2.1, the DSM Goals Study consists of three components. The first analysis considers technical potential and is a theoretical exercise to determine what energy savings are feasible without regard for cost or customer acceptance. The second analysis considers economic potential and identifies which technically feasible measures are cost-effective under RIM, TRC, and the PCT. The third analysis considers achievable potential and calculates what savings are reasonably achievable for feasible and cost-effective measures in a DSM plan.

The consultant is available to perform all three parts of the DSM Goals Study. However, Gulf will complete some tasks using internal resources. The consultant will produce the Gulf technical potential analysis while Gulf will perform the economic potential analysis in-house. The consultant will then complete the achievable potential analysis using Gulf's economic potential to determine participation projections.

6.3.2 Cost-Effectiveness Model

To determine the cost-effectiveness of DSM programs, Gulf deploys the Florida Integrated Resource Evaluation (FIRE) model. This Excel-based resource calculates cost-effectiveness using the RIM, TRC, and the PCT. Gulf affirms that FIRE meets the Commission's requirements to evaluate cost-effectiveness per Rules 25-17.008 and 25-17.0021, F.A.C. The Commission reviews cost-effectiveness to evaluate potential DSM goals and plans every five years.

Each cost-effectiveness test documents the costs and benefits of conservation measures from a unique perspective. The RIM test is the primary cost-effectiveness test used to consider the overall ratepayer effects of a measure. RIM compares avoided energy and capacity-related costs against costs incurred by the utility such as incentives, DSM program costs, revenues lost from reduced energy consumption, and increased supply costs.

Gulf updates DSM cost-effectiveness calculations for the purpose of responding to the Commission during the discovery phase of the annual ECCR proceeding. These calculations incorporate current costs, benefits, and any changes to the avoided generating unit. The company also submits cost-effectiveness calculations to the Commission as a standard part of DSM goal and plan cycles. When Gulf proposes future DSM programs before the Commission, the company calculates cost-effectiveness based on budgeted or estimated costs and projections of participation and kW/kWh savings.

Avoided Unit Updates

Avoided costs are considered a benefit under RIM and TRC, and include energy and capacity-related costs that would occur if Gulf had no DSM programs. Avoided costs factor in variable and fixed generation benefits such as fuel and the avoided unit, transmission and distribution benefits, fuel savings from decreased sales, and other quantifiable benefits.

The avoided unit is the generating plant that a utility would need to build to meet additional capacity needs by a specific in-service date. Generally, if an avoided unit is delayed, a DSM plan's total benefits will decrease, impacting its cost-effectiveness test scores under RIM and TRC. Gulf updates avoided cost inputs using current planning assumptions and data provided by Southern Company. Avoided capacity costs and generation O&M costs are derived from Gulf's avoided unit. Gulf notes the timing of the avoided unit and associated capital and O&M costs are updated in revised runs. The company modifies the avoided unit each year to incorporate costs, benefits, and changes from its most recent ten-year site plan, which is filed each April per Rule 25-22.071, F.A.C. Gulf's ten-year site plan filing describes the assumptions used to develop the company's load and fuel forecasts, system planning, and capacity needs. The Southern Electric System Integrated Resource Planning process coordinates Gulf's capacity needs within the Southern Company enterprise.

In 2014, Gulf performed the cost-effectiveness tests for DSM goals using a combined cycle avoided unit with an in-service date of 2023. This unit is based on the 2013 ten-year site plan. In 2015, Gulf updated the cost-effectiveness calculations for its DSM Plan using a combustion turbine avoided unit with an in-service date of 2023. Gulf compared the assumptions used for both sets of calculations in its 2015 DSM Plan.

Gulf leverages data provided by Southern Company to update avoided fuel, transmission, and distribution costs annually. The company updates avoided costs, such as the avoided unit, capital, and O&M in the cost-effectiveness calculations.

Program Costs, Participation, and kW/kWh Savings Updates

Program cost assumptions are a significant factor on the cost side under the RIM and TRC tests. For RIM, program costs include but are not limited to labor, materials, advertising, and incentives. Gulf based its initial cost assumptions on participation projections from the 2015 DSM Plan and on past experience with administrative and equipment costs. Gulf continuously monitors DSM administrative costs and submits conservation expenditures for the annual ECCR filings. The company incorporates current program costs into the cost-effectiveness tests requested by the Commission during the ECCR proceeding.

Participation assumptions are inputs that can influence cost-effectiveness under the RIM and TRC tests. The company developed the initial participation assumptions for its DSM programs based on historical data, incentives, annual goals, market conditions and opportunities, administrative costs, and outputs from the DSM Potential Study. The company tracks participation monthly through EERT and reports this data to the Commission each March as part of its annual FEECA filing. Gulf also compares actual enrollments to the initial participation assumptions to verify the accuracy of the estimates. Gulf inputs current participation data into the cost-effectiveness tests requested by the Commission during the ECCR proceeding.

Customer demand (kW) and energy (kWh) savings assumptions are inputs that can influence cost-effectiveness under the RIM test. Gulf developed its initial kW and kWh savings assumptions by evaluating data from the joint DSM Potential Study, engineering modeling software, and program performance collected internally or by contracted vendors. The company provides updated demand and energy savings as part of the cost-effectiveness test results requested by the Commission during the ECCR discovery process.

6.4 DSM Program Administration

6.4.1 Program Organization

Gulf's DSM organization implements, manages, and oversees the ongoing rule compliance of the Plan. As shown in **Appendix 3**, the Marketing Services and Compliance Manager is responsible for the successful deployment of the DSM Plan. As part of DSM oversight, three marketing analysts prepare FEECA reporting, maintain EERT functionality, generate reports for program, senior, and executive managers, perform cost-effectiveness tests, or oversee initiatives in the Conservation Demonstration and Development program. The Supervisor of Energy Efficiency Programs supervises DSM program managers and related support staff and coordinates with district marketing leadership and field representatives to meet program objectives.

Gulf also deploys an array of third-party contractors to assist in meeting Commission goals. The company says it considers the potential cost savings of using vendors to administer DSM programs as well as the added expertise, experience, and resources vendors could bring to the programs. Gulf performs this analysis when it develops its DSM Plan.

Currently, three vendors fully or partially administer specific DSM programs including Community Energy Saver, HVAC Efficiency, HVAC Retro-commissioning, and Energy Select. Gulf states it evaluates vendor performance based on enrollments and customer satisfaction. Program managers review monthly performance data reported by the vendors.

Gulf maintains internal reporting documents to manage its DSM Plan. The written procedures are based on the Commission-approved DSM Plan. They define program objectives, administration, marketing and participation goals, and internal reporting functions. Desktop procedures and step-by-step flowcharts define processes for quality assurance, management oversight, verifying data in EERT, and communicating with vendors and customers. In addition, the company states that the Gulf Technical Training Curriculum for energy auditors complies with Rule 25-17.003(5), F.A.C.

6.4.2 Program Evaluation and Modification

Gulf Power implemented the web-based EERT in 2011 to monitor DSM programs and activities. Southern Company is responsible for the development and licensing of the product. This comprehensive workflow management and recordkeeping system is used to oversee DSM enrollments, installations, inspections, and incentives. EERT also stores information used for management reports, ECCR true-ups, and FEECA filings.

EERT aggregates data from multiple sources. Customers, third-party vendors, and Gulf call center employees can upload enrollments to the system. Gulf customers may submit an application through the company's website along with a receipt and manufacturer's documentation. Contracted vendors have limited administrative access in EERT and batch upload data on a weekly or monthly basis via a website portal. The company limits EERT user rights to read-only, read-write, or full administrative access. The company states it reconciles data uploaded by vendors to vendor invoices. Program managers are required to review enrollments and verify incentive amounts.

Gulf tracks enrollments on a monthly basis through EERT. When program participation fails to meet expectations, the company states it analyzes how to reach new customers through its website, trade allies, or field employees. Gulf's internal procedures include strategies to improve customer awareness of the DSM programs.

Meeting the Commission's overall energy and demand reduction goals for each sector is the focus of Gulf's management strategy. The Vice President of Customer Operations receives updates on goal performance and program managers receive monthly reports on goal achievements by district and at the company level. Gulf affirms it encourages program managers to reach the goals for programs and evaluates their performance based in part upon goal attainment. However, the company observes that factors such as customer preferences, technology advancements, building code changes, and market forces can affect enrollments. Gulf notes that though specific DSM programs may underperform, the company manages its portfolio of DSM programs to meet the overall sector targets.

Gulf managers focus on limiting DSM costs that are within their control to maximize programs' and measures' cost-effectiveness. The company notes that other factors that affect cost-effectiveness test results, such as market conditions and avoided costs, are largely outside of its control. Gulf monitors annual budget projections, with program managers reviewing expenses and budgets monthly.

Since 2013, Gulf has taken several specific steps to limit DSM costs. The company added the workflow management system IntelliSOURCE-Work to the Energy Select program to improve efficiency. Gulf notes that IntelliSOURCE-Work reduces manual labor associated with device deployment. The company has also significantly reduced staff charged to DSM operations. As shown in **Exhibit 18**, Gulf DSM full-time equivalents declined by 39 percent from 2014 to 2017. This data excludes contractor full-time equivalents. The ratio of DSM participants to full-time equivalents decreased after 2014 primarily due to a decline in customer enrollments, which fell 70 percent from 2014 to 2017. Gulf states that it reduced full-time equivalents partly due to the

lower goals set by the Commission in the last cycle. Gulf also reduced the number of programs partly as a result of the lower goals.

Gulf Power Company DSM Participants and Staffing Full-Time Equivalents 2014-2017				
	2014	**2015**	**2016**	**2017**
Residential Participants	64,801*	23,593*	17,045	19,227
Commercial Participants	844*	601*	406	446
Total Participants	**65,645***	**24,194***	**17,451**	**19,673**
Total FTEs	**46**	**38**	**32**	**28**
Total Participants to FTEs	**1,427**	**637**	**545**	**703**

*Includes solar pilots *Source: FEECA Progress Reports and Gulf's Response to Document Request 2.15*

Exhibit 18

Gulf states it analyzes third-party DSM programs and maintains regular business peer-to-peer discussions about current DSM technology. Program managers participate in summits with other utilities every nine months to share best practices and learn about other utilities' programs. Gulf also attends industry conferences, interacts with third party vendors, and engages in research with Southern Company to assess potential programs.

6.4.3 DSM Reporting

Gulf uses EERT to compile single and recurring reports tracking DSM compliance. Monthly executive sales summaries assist senior and executive managers with comparing Commission annual energy goals to total company kWh saved year-to-date for residential and commercial markets.

Program managers also review monthly energy efficiency reports that track overall DSM results. These reports monitor year-to-date energy savings and note whether specific DSM measures are meeting, exceeding, or falling below projected participation. The reports allocate energy and participation targets among the company's three districts. DSM program managers can also create custom reports using data from EERT.

From August to December 2015, Gulf's internal auditing team conducted a review of the DSM programs and related functions. The 2016 report led to changes to improve DSM administration and EERT records oversight.

6.5 DSM Program Costs

In 2017, Gulf's total energy conservation costs were approximately $11.9 million. Residential DSM programs accounted for 85 percent of the costs. The Energy Select and Residential Energy Audit and Education programs had the highest costs of all residential programs at 48 percent and 18 percent of total conservation costs, respectively. The Commercial/Industrial Energy Audit and

Commercial Building Efficiency programs had the highest costs of all commercial programs at six percent and three percent of conservation costs, respectively. In 2017, the company spent two percent of total conservation costs advertising the Residential Energy Audit and Education program. Gulf does not spend money to advertise the Commercial/Industrial Energy Audit program, relying on trade allies and other resources to promote commercial energy audits.

Common costs are costs that cannot be directly attributed to a particular DSM program. Examples of common costs are regulatory oversight, information technology, and parent company resources that support the overall DSM Plan. Gulf reports annual DSM costs in its CT-3 schedule as part of the ECCR true-up. For each program, Gulf categorizes expenses as follows:

- Capital expenses (property tax, capital expenditures, and depreciation)
- Payroll and benefits (compensation, payroll tax)
- Materials and expenses (contracts, other program expenses, travel, telecommunications, printing, and parent company support)
- Incentives
- Advertising
- Other

Gulf employs several strategies to allocate common costs. The company states it generally allocates costs based on the proportion of expense required to administer each DSM program. The company allocates labor using an expense work order and employee input about the time spent on each program. The company allocates compliance reporting based on the resources needed to compile and report data for each program. Gulf generally allocates information technology equally across the programs. Southern Company provides energy analysis tools, avoided cost input data, information technology services, and marketing support to Gulf and Gulf charges the resources to each program. Gulf includes these allocated costs in its cost-effectiveness calculations for individual DSM programs.

Over the last several years, Gulf's DSM expenditures decreased as a proportion of retail revenue. **Exhibit 19** shows DSM expenditures as a percentage of retail revenue from 2013 to June 2018.

Gulf Power Company
DSM Expenditures as a Percentage of Retail Revenue
2013-June 2018

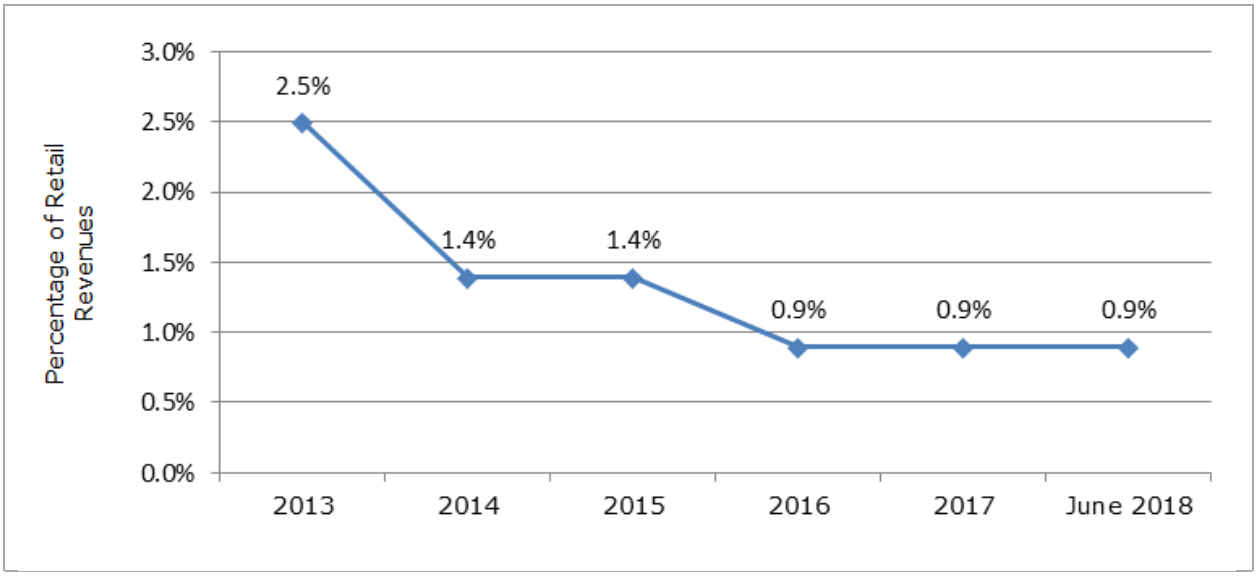


Exhibit 19 *Source: Gulf's Response to Document Request 2.9*

Since 2013, DSM expenditures as a percentage of retail revenue have fallen 64 percent, from 2.5 to 0.9 percent. The decrease is due to a combination of lower expenditure levels and higher retail revenue. From 2013 to 2016, DSM expenditures decreased from $27.4 million to $11.9 million and retail revenue increased from $1.1 billion to $1.3 billion. Since 2016, Gulf has maintained DSM expenditures at 0.9 percent of retail revenue primarily by managing program costs.

6.6 Observations

- Gulf manages its DSM portfolio to meet the Commission's overall energy and demand reduction goals and the company met them from 2014 to 2017, with the exception of commercial/industrial goals in 2016 and 2017 and residential energy savings in 2014.
- Gulf achieved substantial decreases in DSM expenditures from 2013 to 2016.
- Gulf maintains internal procedures, written desktop guidelines, and flowcharts to administer the DSM programs as outlined in its approved Plan.
- Gulf notes that customer preferences, building code changes, and market conditions have impacted participation and may have contributed to the 70 percent decrease in DSM participants that occurred from 2014 to 2017.
- Gulf has engaged a consultant to study participation barriers in specific programs.

- Gulf updates the cost-effectiveness tests in response to Commission ECCR docket discovery to reflect current costs, benefits, and changes to its avoided generating unit.

- Program managers assess DSM performance by reviewing monthly enrollments and status reports that track achievement of the energy and demand reduction goals.

- Gulf reviews other companies' DSM programs and attends industry conferences to explore potential DSM offerings.

- Gulf does not have any common costs.

7.0 Tampa Electric Company

Tampa Electric Company (TEC) is an investor-owned utility serving over 730,000 residential, commercial, and industrial customers. TEC's generating capacity is 4,668 MW and the company accounts for approximately 8.4 percent of energy sales in Florida. In August 2015, the Commission approved the company's 2015-2024 DSM Plan by Order PSC-15-0323-PAA-EG.

7.1 DSM Programs

Exhibit 20 lists the 15 residential and 23 commercial/industrial programs identified by TEC.

Tampa Electric Company Current DSM Programs	
Commercial / Industrial Programs	**Residential Programs**
Commercial / Industrial Audit (Free) *	Residential Walk-Thru Energy Audit (Free Energy Check) *
Comprehensive Commercial / Industrial Audit (Paid) *	Residential Customer Assisted Energy Audit *
Commercial Ceiling Insulation	Residential Computer Assisted Energy Audit *
Commercial Chiller	Residential Ceiling Insulation
Cogeneration	Residential Duct Repair
Conservation Value	Residential Electronic Commutated Motors (ECM)
Cool Roof	Energy Education Awareness and Agency Outreach
Commercial Cooling	ENERGY STAR for New Multi-Family Homes
Demand Response	ENERGY STAR for New Homes
Commercial Duct Repair	Residential Heating and Cooling
Commercial Electronically Commutated Motors (ECM)	Neighborhood Weatherization
Commercial Wall Insulation	Residential Price Responsive Load Management (Energy Planner)
Commercial Water Heating	Residential Wall Insulation
Industrial Load Management (GSLM 2&3)	Residential Window Replacement
Lighting Conditioned Space	**Other**
Lighting Non-Conditioned Space	Renewable Energy Program *
Lighting Occupancy Sensors	* These programs do not count towards energy savings goals but are eligible for recovery.
Commercial Load Management	
Refrigeration Anti-Condensate Control	
Standby Generator	
Thermal Energy Storage	
Conservation Research and Development *	
LED Street and Outdoor Lighting Conversion *	

Exhibit 20 *Source: TEC's Response to 2015 DSM Plan and Document Request 6.2*

The savings from TEC's three Residential Energy Audit and two Commercial Energy Audit programs do not count towards TEC's established energy goals but the program costs are recoverable under the approved DSM Plan. Similarly, the results from the commercial/industrial LED Street and Outdoor Lighting Conversion and Conservation Research and Development programs do not count toward energy savings goals but are eligible for cost recovery. TEC's Renewable Energy Program is a stand-alone program that is self-funding and is only budgeted as part of the Energy Conservation Cost Recover Clause.

For the years 2014-2017, TEC surpassed the residential and commercial/industrial annual summer peak demand, winter peak demand, and energy savings goals approved by the Commission. The 2017 residential program with the highest summer peak kW reduction, winter peak kW reduction, and the greatest annual energy reduction was the Neighborhood Weatherization Program. The 2017 commercial/industrial program achieving the highest summer peak kW reduction was Commercial Lighting – Conditioned Space, while Commercial Lighting – Non-Conditioned Space had the highest winter peak kW and annual energy reductions.

Appendix 1 depicts TEC DSM goal contribution from each program, actual results, and identifies the degree of variance from each demand and energy reduction goal.

Completing an energy audit is not a prerequisite for TEC customers to receive a rebate. Customers and contractors processing customer requests who are seeking rebates can submit a rebate application via TEC's website. TEC utilizes a software program called the Energy Efficiency Collaboration Platform (EECP) to facilitate the application, verification, approval, and payment processing of customer rebates.

Where required, pre- and post-installation rebate verifications can also be obtained via a complete energy audit or a pre-verification authorization inspection conducted by a Residential or Commercial Energy Analyst. On some of TEC's Residential DSM programs, once approved, the customer is given a list of TEC-approved contractors from which to choose. When installation is complete, application may be made for the rebate.

All residential and commercial/industrial rebate applications are subject to a two-level review. After approval, payment is made by check within two weeks, either to the customer or to the contractor if the customer authorized payment direct to the installer.

For residential and commercial/industrial rebates that require a pre-installation verification, the customer or contractor must first submit a rebate application through TEC's website. Following field pre-verification, the customer is provided a certificate approving installation. After installation, the customer returns to the online portal to apply for rebate and the request undergoes the same internal two-level TEC review.

For residential and commercial/industrial rebates that do not require a pre-installation verification, the customer or contractor submits their rebate application through TEC's website for the installation, and the request undergoes the same internal two-level review.

7.2 Energy Audits

TEC offers and conducts free energy audits for residential and commercial/industrial customers to make customers aware of its DSM programs and to demonstrate the benefits of participation. Residential audits are available in walkthrough, computer-assisted walkthrough, online with a TEC service representative, and mail-in formats. Commercial/industrial audits are available in walkthrough and comprehensive formats.

TEC Energy Analysts conduct home energy audits throughout the year and TEC will hire temporary employees to assist with the free home energy audits when needed, if the volume of energy audit requests exceeds TEC's current Energy Analyst staffing levels. All commercial/industrial energy audits are done by TEC Energy Analysts.

Temporary Energy Analysts hired to conduct home energy audits have the same responsibilities, performance expectations, and audit quality standards as TEC employees. They must meet the same performance standards and have at least two years utility customer service and/or energy management experience in addition to demonstrating proficiency in auditor qualifications as listed in Rule 25-17.003, F.A.C.

Residential energy audits include walk-through (free) and computer-assisted (paid) energy audits. In 2017, TEC completed 5,914 residential energy audits, performing 93 percent (5,501) of these as part of the Residential Walk-Through Audit (Free Energy Check) program. The balance consisted of online Residential Customer Assisted Energy Audits (409) and Residential Computer Assisted Energy Audits (4).

TEC Energy Analysts also completed 1,211 commercial/industrial energy audits during 2017. Commercial/industrial energy audits include both walk-through and comprehensive energy audits. The company does not offer online commercial/industrial energy audits at this time. **Exhibit 21** shows the number of energy audits from 2015 through 2017:

Tampa Electric Company
Energy Audit Participants
2015-2017

Residential Energy Survey	2015	2016	2017
Walk-through and computer-assisted	8,309	6,911	5,505
Online	658	1,017	409
Total	**8,967**	**7,928**	**5,914**
Commercial / Industrial Energy Survey	**2015**	**2016**	**2017**
Walk-through and comprehensive energy audits	914	768	1,211
Total	**914**	**768**	**1,211**

Exhibit 21 *Source: TEC's Response to Document Request 9.3*

TEC attributes a decrease in residential energy audits, 2015 through 2017 mainly to two items. The first is the discontinuation in November 2015 of providing compact fluorescent lamps as

part of the energy audit. The company also believes the overall reduction of residential energy audits is due to the improving economy and reducing customer interest in energy cost savings.

Online energy audits increased in 2016. TEC believes the increase resulted from more educational outreach. TEC attributes the 2017 decrease to transitioning the online audit tool for 2018 replacement, less advertising, and a reduction in outreach associated with the online audit. TEC's new residential online energy audit was implemented in July 2018.

For 2017, the number of commercial/industrial audits rose due to an increase in requests and TEC initiating a mid-market account management team that generated additional requests. The commercial team also rolled out a new automated energy audit tool increasing efficiency, allowing the team to perform more field audits.

TEC requires its energy analysts to complete additional training to meet the requirements of Rule 25-17.003(5), F.A.C.

All TEC Residential Energy Analysts complete an audit training program that includes classroom instruction, field training, and a final test. Every energy analyst is required to pass the Residential Energy Auditor certification test within 18 months of hiring. Commercial/Industrial Energy analysts must also complete a training program, phased testing, and a commercial facilities final exam. New energy analysts shadow an experienced energy analyst in the field prior to working alone. Each commercial/industrial energy analyst must obtain either the Certified Energy Manager or Business Energy Professional certification within 18 months. All residential and commercial/industrial analysts must also complete 10 continuing education credits every three years.

To comply with Rule 25-17.003(10), F.A.C., TEC is required to perform post-audit verifications on 10 percent of each conservation measure. TEC uses its Energy Efficiency Collaboration Platform (EECP) to track the required inspections. In addition to using EECP to track and verify installations, program managers use the system to review applications, generate invoices, and authorize incentive payments.

Appendix 2 shows a breakdown of installations, verifications, and the percentage of field verified installations for residential and commercial/industrial programs from 2015 to 2017.

7.3 DSM Program Development

7.3.1 2019 DSM Goals Study

To develop new conservation goals and the 2020-2029 DSM plans, TEC and other FEECA IOUs will collaborate with a consultant to produce a new DSM Potential Study in 2019.

As discussed in Section 2.2.1, the DSM Goals Study consists of three parts evaluating measures. The first component analyzes technical potential, determining what energy savings are feasible regardless of cost or customer acceptance. The second component is the economic potential analysis determining which technically feasible measures are cost effective under RIM and TRC.

The third component of the DSM goals Study is the achievable potential analysis calculating what savings are reasonably achievable for feasible and cost-effective measures.

For the 2019 DSM Goals Study, a consultant will produce the technical potential analysis for TEC and the company will conduct its economic potential and achievable potential analyses in-house.

7.3.2 Cost-Effectiveness Model

To meet requirements established in Rules 25-17.008 and 25-17.0021, F.A.C., TEC uses an internally developed, Excel-based cost-effectiveness model that evaluates the economic impact of proposed DSM measures using the RIM, TRC, and PCT. This process compares relative cost-effectiveness of the measures to the avoided supply-side unit.

A resource planning team provides the analysis for DSM integrated resource planning. This team analyzes avoided unit data and assumptions annually for the ten year site plan and provides these inputs to the Manager, Regulatory Rates who performs TEC's annual cost-effectiveness runs.

Based on ten-year site plan updates, TEC adjusts factors for calculation of DSM program cost-effectiveness and produces new TRC, PCT, and RIM cost-effectiveness results for each DSM program. Adjustments include the avoided unit size, in-service date, fuel cost changes, escalation factor changes, and changes to capital and O&M costs. In the event of a lower than original cost-effectiveness score, TEC determines the root cause and looks for ways to improve performance. The company understands that modifications may not alter its Commission-approved program description or standards.

Depending on the impact of documented issues and needed changes, the company may choose to wait until the next DSM Plan design to initiate changes or may choose to file a petition seeking an immediate program modification.

7.4 DSM Program Administration

7.4.1 Program Organization

The Manager, Regulatory Rates provides program oversight, reviews all DSM programs, creates marketing plans and program modifications, and oversees development of DSM results and analysis. The managers of Residential Energy Management Services and Commercial Energy Management Services collaborate with the Manager, Regulatory Rates to execute all DSM programs but report to the Director, Customer Solutions & Business Customer Experience. The TEC DSM organization is shown in **Appendix 3**.

Exhibit 22 below shows the number of residential and commercial/industrial participants for the years 2014 to 2017 along with TEC and contractor FTEs. In 2014, on average, there were 1,355 participants per TEC DSM employee. Since then, the data shows a substantial decline in total DSM participants. By 2017, this number had decreased to 592 participants per DSM employee.

TEC states that the company has been able to reduce contractor FTEs through increased training, knowledge and capabilities of its DSM team members. Previously outsourced requirements are now done by TEC energy management services team members. In addition, when a specific situation or project arises, DSM management seeks ways to more fully leverage internal team members to meet the need, shifting resources rather than outsourcing the function which would mean additional costs to the applicable DSM program.

Tampa Electric Company DSM Participants and Staffing Full-Time Equivalents 2014-2017				
	2014	**2015**	**2016**	**2017**
Residential Participants	73,990	51,008	26,396	25,561
Commercial Participants	1,901	2,253	2,647	2,267
Total Participants	**75,891**	**53,261**	**29,043**	**27,828**
Employees	48	49	50	47
Contractors	8	8	4	0
Total FTEs	**56**	**57**	**54**	**47**
Total Participants per DSM FTE	**1,355**	**934**	**538**	**592**

Exhibit 22 *Source: TEC's Response to Document Request 1.2 and 9.1*

Written policies, procedures, and guidelines provide standards for TEC's DSM operations. The Energy Efficiency Collaborative Platform augments these resources, facilitating customer communication, program administration, audit and tracking, capturing vendor results, and generating management reports.

TEC's written procedures also guide the evaluation, selection, and monitoring of third-party DSM vendors. For the Duct Seal and Ceiling Insulation programs, TEC provides customers a list of its approved contractors from which customers choose to qualify for rebates. To maintain adherence to the DSM programs' standards, only TEC-approved contractors may be used.

TEC conducts post-verifications to ensure vendors are meeting company standards and surveys customers to determine satisfaction with vendor performance. Vendor metrics are tracked by the DSM Program Manager through the EECP system, identifying performance trends and scheduling any needed follow up.

7.4.2 Program Evaluation and Modification

The Energy Efficiency Collaborative Platform and its Energy Efficiency Reporting Tool are used to produce dashboard reports. These reports provide year-to-date and historical results such as participation, actual year-to-date kW and kWh savings against conservation targets, incentives paid to date, DSM program administrative costs, and budget variances.

TEC states that it regularly takes part in industry conferences, communicates with other IOUs regarding demand side management issues, and monitors their DSM activities to capture lessons learned to improve TEC DSM program cost-effectiveness.

TEC acknowledges that dynamic factors such as technological advances, changes in building codes, customer preferences, and shifts in the economy can impact DSM participation and cost-effectiveness. The company monitors these factors and manages its DSM programs taking them into consideration.

7.4.3 DSM Reporting

The Manager, Regulatory Rates oversees reporting, facilitates a quarterly business review meeting with all DSM Program Managers, and develops presentations to update senior and executive Management and the Board of Directors on historical, current and future DSM activities.

DSM program managers create monthly dashboards to update program participation, progress toward approved goals, and review program costs to update senior leadership on activity in their area of responsibility. These monthly reports are used to assess performance against expectations and the amount of program spending compared to projections. Senior Management at the vice president level reviews the reports monthly.

The Board of Directors is updated on DSM each time they convene, usually quarterly. The Vice President or the Director over the DSM area provides this update.

From 2015 through August 2018, TEC did not conduct any internal operations or management audits of its DSM program. However, an internal review of the General Service Load Management 2 & 3 metric began this year and is currently ongoing. This review is documenting process flow with the intent of improving management and operations activities.

7.5 DSM Program Costs

In 2017, the total cost of the TEC DSM Plan was $37.6 million. The residential program with the highest program cost was Residential Price Responsive Load Management (Energy Planner), totaling $4.0 million. Capital investment ($1.4 million) and outside services ($1.2 million) each represent about a third of the total program cost. Capital investment is the value of equipment actually installed in customer homes and outside services costs are those associated with paying vendors to install the devices.

The commercial program with the highest 2017 program cost was General Service Load Management 2 & 3 Program, at $17.0 million. Incentive payments totaled $16.8 million, accounting for nearly the entire total.

Together, the Residential Price Responsive Load Management (Energy Planner) and General Service Load Management 2 & 3 programs accounted for over half of TEC's 2017 DSM costs.

Common Cost Allocation

DSM plan expenses that cannot be assigned to a specific DSM program are charged as common costs. The company believes that accounting for such costs in this manner most accurately recognizes the benefit derived by multiple programs. Common costs include labor, employee

training, professional dues, and travel. Some DSM team members' work benefits both residential and commercial/industrial programs, such as regulatory personnel, senior leadership, and employees supervising data tracking and storage of multiple DSM programs. Costs for team members whose work benefits a specific residential program are charged to the specific DSM program deriving benefit. If an employee's work activity benefits multiple programs, the expenses are split between the specific programs in proportion to the estimated time worked on each. Common costs are reviewed monthly and those charges which may be attributable to a specific program are subjected to further review.

TEC states that common costs are not included for internal annual program cost-effectiveness reviews. However, common costs are included in calculations when designing and submitting the portfolio of new programs for Commission approval.

Program Costs Trend

As shown in **Exhibit 23**, from 2013 through August 2018, DSM expenditures as a percentage of TEC retail sales ranged from two to three percent.

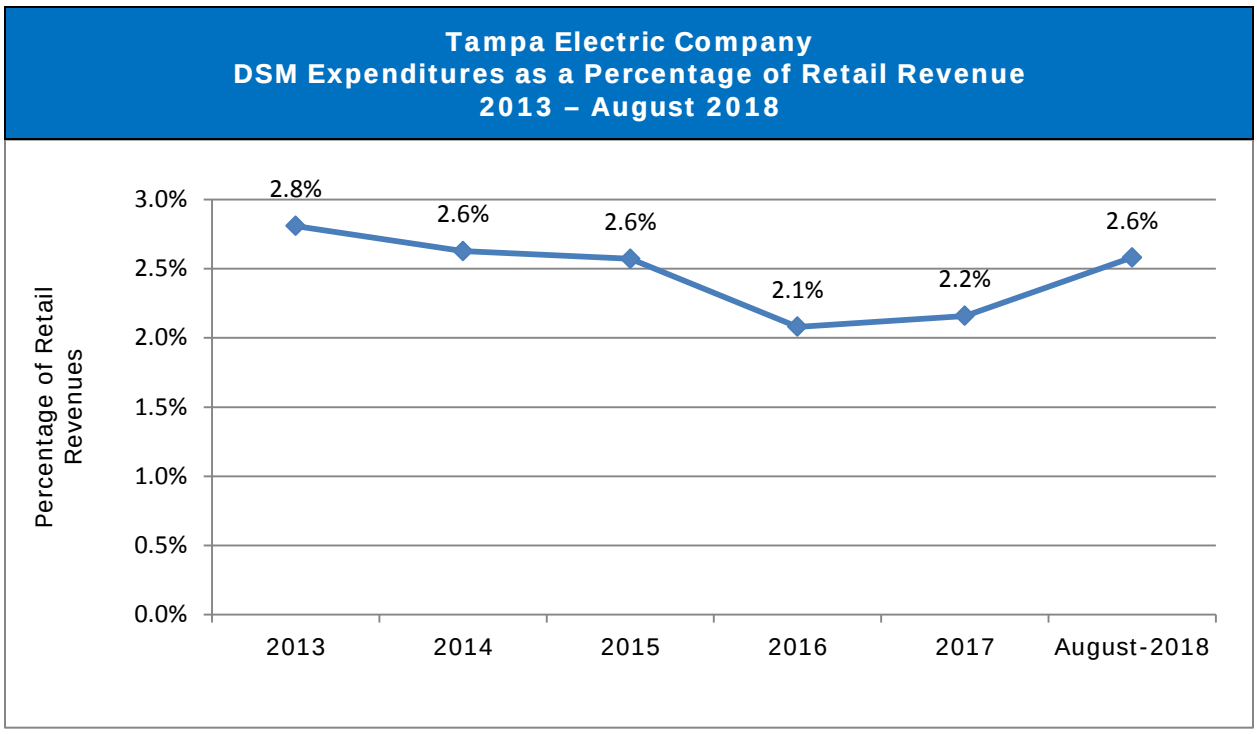


Exhibit 23 *Source: TEC's Response to Document Response 5.1*

TEC states that the 2016-2017 downward trend resulted from new goals and reduced incentives. The upward trend experienced in through August 2018 is due to increased costs associated with the recently approved street and outdoor lighting LED conversion program. TEC anticipates that DSM expenditures as a percentage of retail sales will continue at or above 2.6 percent through the end of 2018 and for approximately four more years. TEC does not internally utilize this metric based upon the variations of retail revenue that occurs each year due to variations of weather, customer energy usage, and customer growth.

7.6 Observations

- TEC has a written procedure for each program that assists TEC in implementing, managing, and evaluating its DSM operations.
- TEC's DSM programs met or exceeded residential and commercial/industrial demand and consumption goals in each year 2014 to 2017.
- TEC assesses its DSM program on a monthly basis, measuring results against the assumptions that supported initial program development.
- TEC updates its DSM program assumptions annually to evaluate cost-effectiveness.
- From 2014 to 2017, TEC reduced DSM contractor FTEs from eight in 2014 to zero by a combination of factors including internalizing previously outsourced tasks and shifting DSM resources to meet requirements.
- TEC seeks out comparisons and best practices from other Florida utilities to improve its DSM administration and implementation.
- TEC assigns plan expenditures to the specific DSM program deriving direct benefit if possible; those that cannot be assigned to a specific program are charged as common costs.
- TEC acknowledges that changes in technology, building codes, customer preferences, and the economy can affect DSM participation and cost-effectiveness.

Appendix 1

Duke Energy Florida DSM Goals and Achieved Savings 2014-2017									
2014	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	96	41	43%	88	25	28%	289	43	15%
Commercial/ Industrial	12	30	250%	26	36	138%	40	57	143%
Total	108	71	66%	115	61	53%	328	100	30%
2015	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	58	41	71%	26	25	96%	26	39	150%
Commercial/ Industrial	5	28	560%	12	35	292%	15	36	240%
Total	64	69	108%	38	60	158%	40	76	190%
2016	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	53	52	98%	24	30	125%	24	47	196%
Commercial/ Industrial	5	72	1,440%	12	85	708%	14	28	200%
Total	59	124	210%	36	115	319%	37	75	203%
2017	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	49	54	110%	22	31	141%	21	46	219%
Commercial/ Industrial	6	26	433%	11	52	473%	12	35	292%
Total	54	81	150	33	82	248%	33	82	248%

Source: DEF's DSM Annual Reports

Florida Power and Light Company DSM Goals and Achieved Savings 2014-2017									
2014	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	60.2	51.1	85%	104.3	99.1	95%	200	162.6	81%
Commercial/ Industrial	14.4	15.5	108%	79.3	43.0	54%	194.1	59.4	31%
Total	74.6	66.6	89%	183.6	142.1	77%	394.1	222.1	56%
2015	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	15.6	32.9	211%	25.3	58.7	232%	21.6	107.7	499%
Commercial/ Industrial	13.6	11.6	85%	22.8	27.3	120%	19.6	48.6	248%
Total	29.2	44.5	152%	48.1	86.0	179%	41.2	156.2	379%
2016	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	15.8	18.0	114%	25.6	26.1	102%	22.2	22.5	101%
Commerical/ Industrial	14.3	14.9	104%	24.0	26.1	109%	23.4	40.1	171%
Total	30.1	32.9	109%	49.6	52.2	105%	45.6	62.6	137%
2017	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	16.0	17.6	110%	25.9	26.2	101%	22.8	23.6	104%
Commercial/ Industrial	14.9	21.9	147%	24.9	35.8	144%	24.7	47.7	193%
Total	30.9	39.6	128%	50.8	62.0	122%	47.5	71.4	150%

Source: FPL's DSM Annual Reports

Florida Public Utilities Company DSM Goals and Achieved Savings 2014-2017									
2014	**Winter Peak (MW)**			**Summer Peak (MW)**			**Annual (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	0.13	0.43	331%	0.2	0.68	340%	0.51	1.48	290%
Commercial/ Industrial	0.06	0.13	217%	0.23	0.2	87%	0.78	0.7	90%
Total	0.19	0.56	295%	0.43	0.88	205%	1.29	2.18	169%
2015	**Winter Peak (MW)**			**Summer Peak (MW)**			**Annual (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	0.012	0.428	3,567%	0.036	0.756	2,100%	0.023	1.459	6,343%
Commercial/ Industrial	0.01	0.002	20%	0.012	0.004	33%	0.055	0.008	15%
Total	0.022	0.43	1,955%	0.048	0.76	1,583%	0.078	1.467	1,881%
2016	**Winter Peak (MW)**			**Summer Peak (MW)**			**Annual (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	0.015	0.263	1,753%	0.046	0.462	1,004%	0.03	0.894	2,980%
Commercial/ Industrial	0.008	0.039	488%	0.027	0.072	267%	0.078	0.143	183%
Total	0.023	0.302	1,313%	0.073	0.534	732%	0.108	1.037	960%
2017	**Winter Peak (MW)**			**Summer Peak (MW)**			**Annual (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	0.018	0.248	1,378%	0.056	0.44	786%	0.038	0.849	2,234%
Commercial/ Industrial	0.009	0	0%	0.031	0	0%	0.094	0	0%
Total	0.027	0.248	919%	0.087	0.44	506%	0.132	0.849	643%

Source: FPUC's DSM Annual Reports

Gulf Power Company DSM Goals and Achieved Savings 2014-2017									
2014	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	9.5	15.76	166%	11.7	14.70	126%	46.8	44.21	94%
Commercial/ Industrial	1.0	4.77	577%	2.7	7.38	273%	10.8	16.47	153%
Total	10.5	20.64*	197%	14.4	22.29*	155%	57.6	61.09*	106%
2015	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	1.3	12.69	976%	2.3	12.97	564%	2.3	34.98	1,520%
Commercial/ Industrial	0.1	4.24	4,240%	0.3	6.38	2,127%	0.8	13.77	1,721%
Total	1.4	17.04*	1,217%	2.6	19.57*	753%	3.1	48.33*	1,559%
2016	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	1.8	4.75	264%	3.2	5.12	160%	3.2	6.75	211%
Commercial/ Industrial	0.1	0.02	20%	0.4	0.27	68%	1.2	0.59	49%
Total	1.9	4.77	251%	3.6	5.39	150%	4.4	7.34	167%
2017	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	2.3	3.16	137%	4.1	4.14	101%	4.2	4.79	114%
Commercial/ Industrial	0.1	0.0	0%	0.5	0.12	24%	1.5	0.30	20%
Total	2.4	3.16	132%	4.6	4.26	93%	5.7	5.09	89%

*includes solar pilots

Source: Gulf's DSM Annual Reports

Tampa Electric Company DSM Goals and Achieved Savings 2014-2017									
2014	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	12.0	17.0	142%	11.0	13.0	118%	23.0	44.0	191%
Commercial/ Industrial	2.0	10.0	500%	5.0	13.0	260%	20.0	22.0	110%
Total	14.0	27.0	193%	16.0	26.0	163%	42.0	66.0	157%
2015	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	2.6	12.3	473%	1.1	10.8	982%	1.8	21.2	1,178%
Commercial/ Industrial	1.2	8.1	675%	1.7	11.7	688%	3.9	12.5	320%
Total	3.8	20.4	537%	2.8	22.5	804%	5.7	33.7	591%
2016	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	4.1	7.7	188%	1.6	5.1	319%	3.5	13.2	377%
Commercial/ Industrial	1.3	2.9	223%	2.5	4.4	176%	6.0	17.8	297%
Total	5.4	10.6	196%	4.1	9.5	232%	9.5	31.0	326%
2017	**Winter Peak (MW)**			**Summer Peak (MW)**			**Energy Savings (GWh)**		
	Goal	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**	**Goal**	**Actual**	**% Achieved**
Residential	5.2	6.9	132%	2.2	4.7	212%	4.8	14.9	311%
Commercial/ Industrial	1.6	9.2	578%	2.7	10.4	386%	8.0	30.2	378%
Total	6.8	16.1	237%	4.9	15.1	308%	12.8	45.2	353%

Sources: TEC's DSM Annual Reports

Appendix 2

Duke Energy Florida Inspections of Installed Conservation Measures[6] 2015-2017									
	2015			2016			2017		
Residential	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
Attic Insulation	3,493	467	13%	4,023	441	11%	4,703	628	13%
Duct Repair	4,365	489	11%	3,963	546	14%	4,528	701	15%
Heat Pump Purchase	7,242	792	11%	9,514	1,018	11%	9,028	1,404	16%
Window Replacement	2,483	339	14%	1,948	199	10%	1,792	230	13%
Central A/C	30	4	13%	13	3	23%	N/A	N/A	N/A
Commercial/ Industrial	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
HVAC Commissioning	3,403	365	11%	593	59	10%	N/A	N/A	N/A
Reflective Roof	141	17	12%	28	5	18%	N/A	N/A	N/A
Wall Insulation	113	19	17%	9	2	22%	N/A	N/A	N/A
Window Film/Screen	106	14	13%	25	4	16%	N/A	N/A	N/A

Source: DEF's Response to Staff Data Request 1.18a

[6] Central A/C, HVAC Commissioning, Reflective Roof, Wall Insulation, and Window Film/Screen measures were discontinued in 2017.

Florida Power & Light Company Inspections of Installed Conservation Measures 2015-2017									
	2015			2016			2017		
Residential	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
Residential Air Conditioning	93,077	9,453	10%	26,574	2,822	11%	26,590	2,818	11%
Residential Load Management (On Call)	4,422	888	20%	7,302	1,026	14%	7,226	922	13%
Residential Ceiling Insulation	7,052	740	10%	3,909	427	11%	3,600	366	10%
Residential New Construction (BuildSmart)	3,000	2,991	100%	2,400	2,400	100%	2,648	1,609	61%
Residential Low Income	264	103	39%	1,054	1,033	98%	2,376	2,376	100%
Commercial / Industrial	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
Business Heating, Ventilating & A/C	434	369	85%	595	343	58%	499	105	21%
Business On Call	319	92	29%	521	107	21%	288	24	8%
Business Lighting	115	50	43%	96	20	21%	168	22	13%
Business Customer Incentive	21	21	100%	17	17	100%	12	12	100%

Source: FPL's Response to Staff Data Request 1.18a

Florida Public Utilities Company Inspections of Installed Conservation Measures 2015-2017									
	2015			2016			2017		
Residential	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
Heating & Cooling Efficiency Upgrade	373	48	13%	226	38	17%	218	25	11%
Commercial / Industrial	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
Heating & Cooling Efficiency Upgrade	2	2	100%	4	4	100%	0	0	N/A
Chiller Upgrade	0	0	N/A	1	1	100%	0	0	N/A
Reflective Roof	0	0	N/A	17	17	100%	0	0	N/A

Source: FPUC's Response to Document Request 3.7

Gulf Power Company Inspections of Installed Conservation Measures 2015-2017									
	2015			2016			2017		
Residential	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
Community Energy Saver	2,751	2,214	81%	2,500	2,102	84%	2,500	2,278	91%
Energy Star Appliances	1,974	1,398	71%	20	18	90%	9	9	100%
HVAC Efficiency	12,807	12,215	95%	5,780	3,746	65%	2,464	2,328	95%
Reflective Roof	215	42	20%	310	61	20%	206	42	20%
High Performance Window Replacement	762	99	13%	266	61	23%	295	61	21%
Commercial / Industrial	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**	**Installed**	**Verified**	**%**
HVAC Retro-commissioning	23	21	91%	41	10	24%	214	214	100%
Geothermal	-	-	-	4	4	100%	-	-	-
Reflective Roof	9	9	100%	15	14	93%	6	6	100%
Ceiling Insulation	7	7	100%	4	4	100%	3	3	100%

Source: Gulf's Response to Document Request 2.15

Tampa Electric Company Inspections of Installed Residential Conservation Measures 2015-2017									
	2015			2016			2017		
Program	Installed	Verified	%	Installed	Verified	%	Installed	Verified	%
Residential Ceiling Insulation	3,057	400	13%	1,293	144	11%	945	141	15%
Residential Duct Seal	1,895	211	11%	1,293	190	15%	1,176	141	12%
Residential ECM	4	1	25%	0	0	N/A	0	0	N/A
Energy, Education, Awareness and Agency Outreach	1,412	1,412	100%	461	461	100%	975	975	100%
ENERGY STAR for New Multi-Family Residences	N/A	N/A	N/A	N/A	N/A	N/A	0	0	N/A
ENERGY STAR for New Homes	1	0	N/A	403	69	17%	640	69	11%
Residential Heating and Cooling	5,214	562	11%	3,669	461	13%	3,341	344	10%
Neighborhood Weatherization	7,912	1,051	13%	5,495	784	14%	6,550	1,043	16%
Residential New Construction	2,493	302	12%	N/A	N/A	N/A	N/A	N/A	N/A
Residential Price Responsive Load Management (Energy Planner)	1,088	1,088	100%	910	910	100%	574	574	100%
Residential Wall Insulation	122	21	17%	5	2	40%	5	3	60%
Residential Window Replacement	1,811	296	16%	1,417	215	15%	1,482	177	12%
Residential HVAC Re-Commissioning	138	25	18%	N/A	N/A	N/A	N/A	N/A	N/A
Residential Window Film	379	48	13%	N/A	N/A	N/A	N/A	N/A	N/A
Residential Photovoltaics	53	53	100%	N/A	N/A	N/A	N/A	N/A	N/A
Renewable – Solar Water Heating	54	54	100%	N/A	N/A	N/A	N/A	N/A	N/A
Renewable – Low Income Water Heating	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

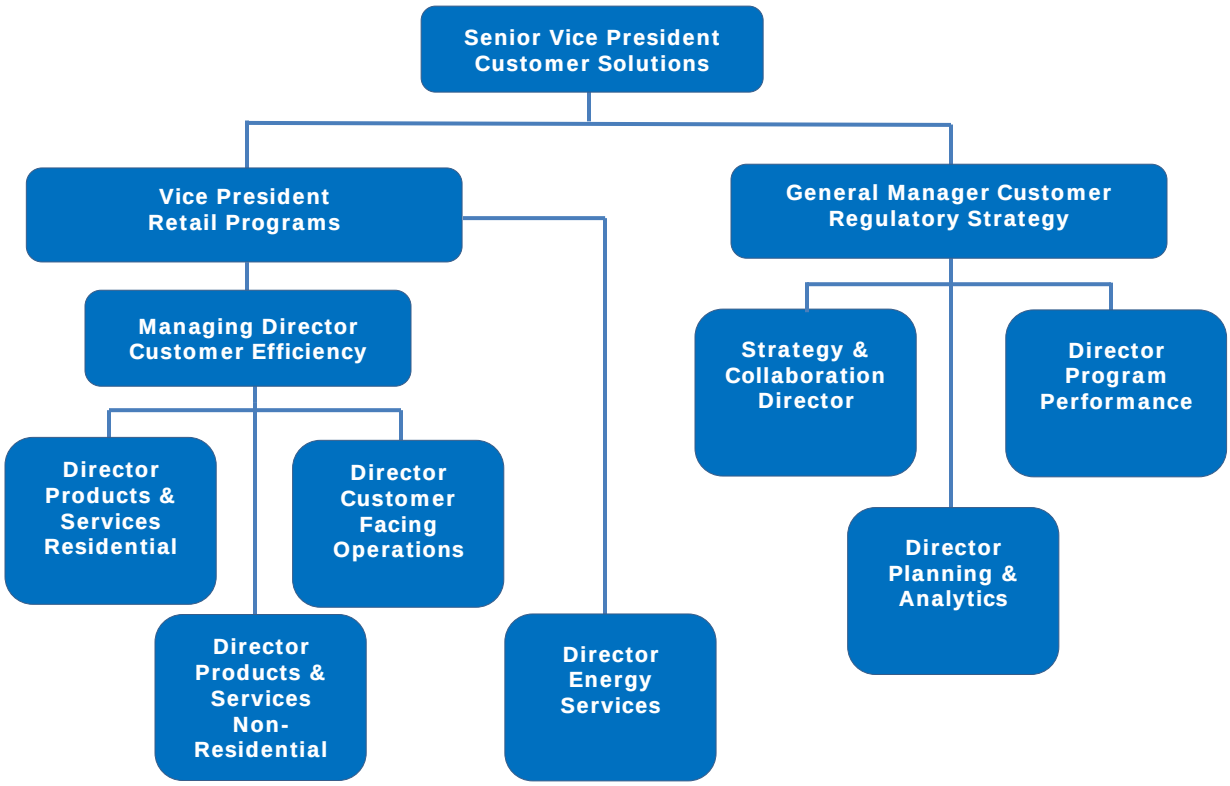
Source: TEC's Response to Document Request 4.1

Tampa Electric Company Inspections of Installed Commercial / Industrial Conservation Measures 2015-2017									
	2015			2016			2017		
Commercial / Industrial	Installed	Verified	%	Installed	Verified	%	Installed	Verified	%
Commercial Ceiling Insulation	41	4	10%	14	2	14%	5	1	20%
Commercial Chiller	7	2	29%	5	2	40%	7	1	14%
Conservation Value	4	4	100%	2	2	100%	0	0	N/A
Cool Roof	45	5	11%	25	3	12%	13	2	15%
Commercial Cooling	234	30	13%	9	1	11%	0	0	N/A
Commercial Demand Response	4	4	100%	0	0	N/A	0	0	N/A
Commercial Duct Repair	257	31	12%	96	11	12%	3	2	67%
Commercial ECM	85	5	6%	1,225	171	14%	202	20	10%
Industrial Load Management	0	0	N/A	0	0	N/A	0	0	N/A
Lighting Conditioned Space	86	18	21%	159	36	23%	228	29	13%
Lighting Non-Conditioned Space	16	2	13%	60	8	13%	338	36	11%
Lighting Occupancy Sensors	2	1	50%	12	4	33%	4	1	25%
Commercial Load Management	0	0	N/A	0	0	N/A	0	0	N/A
Refrigeration Anti-Condensate Control	0	0	N/A	0	0	N/A	0	0	N/A
Standby Generator	4	4	100%	0	0	N/A	6	6	100%
Thermal Energy Storage	N/A	N/A	N/A	N/A	N/A	N/A	1	1	100%
Commercial Wall Insulation	0	0	N/A	0	0	N/A	0	0	N/A
Commercial Water Heating	0	0	N/A	0	0	N/A	0	0	N/A
Commercial Energy Recovery Ventilation	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lighting Exit Signs	2	1	50%	N/A	N/A	N/A	N/A	N/A	N/A
Commercial HVAC Re-Commissioning	250	27	11%	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Energy Efficient Motors	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Roof Insulation	2	2	100%	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Window Film	18	3	17%	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Photovoltaics	1	1	100%	N/A	N/A	N/A	N/A	N/A	N/A
Renewable – Photovoltaics for Schools	1	1	100%	N/A	N/A	N/A	N/A	N/A	N/A

Source: TEC's Response to Document Request 4.1

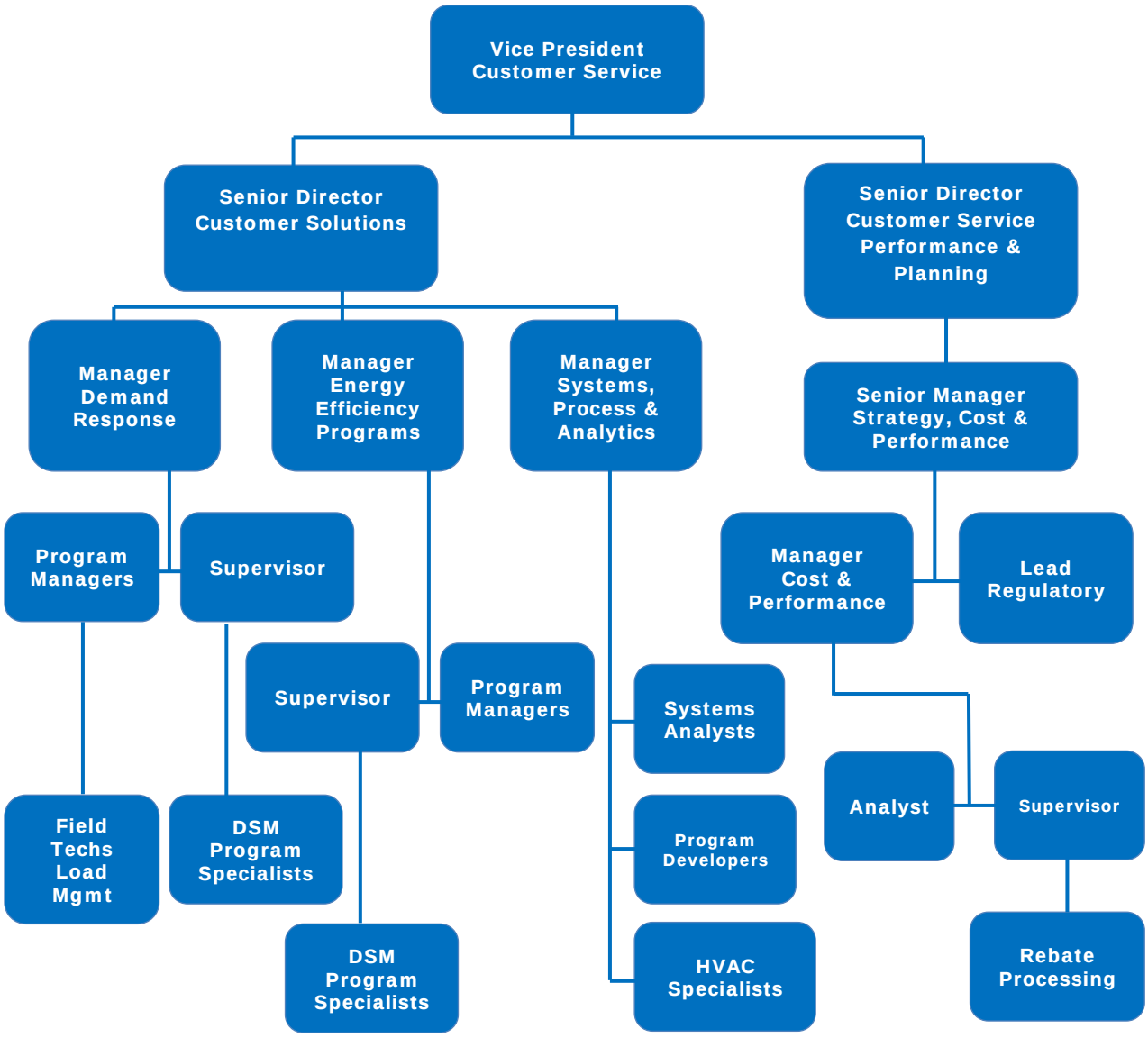
Appendix 3

Duke Energy Florida
DSM Organization



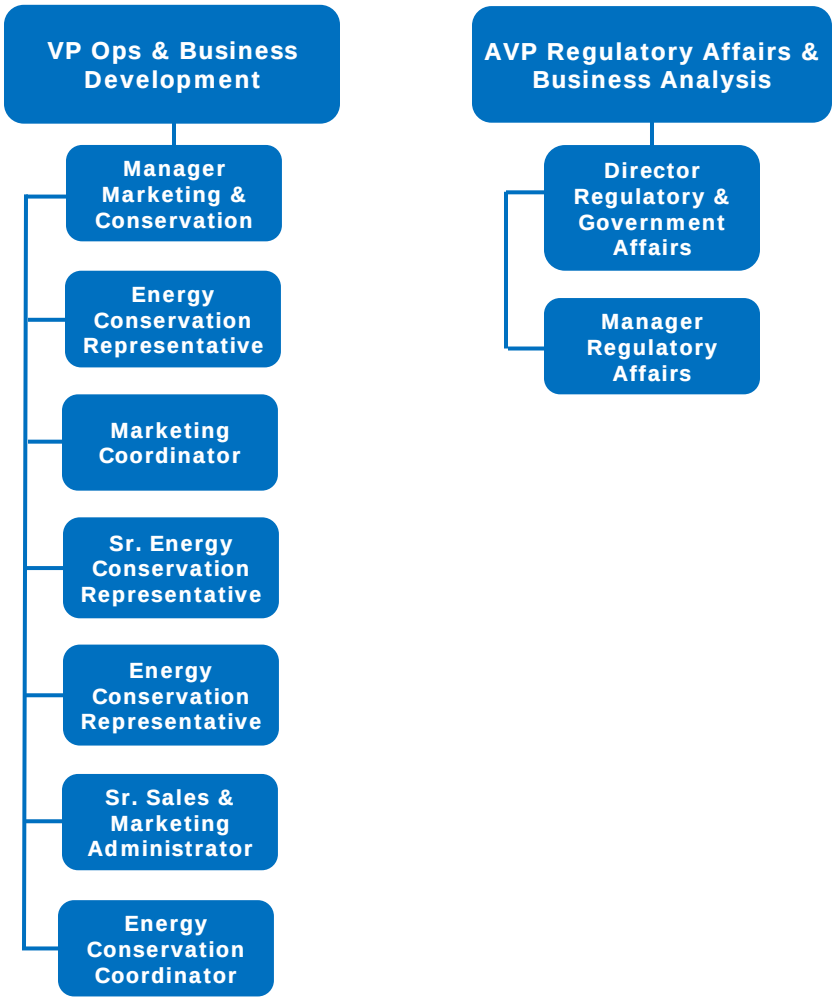
Source: DEF's Response to Document Request 1.2a

Florida Power & Light Company
DSM Organization



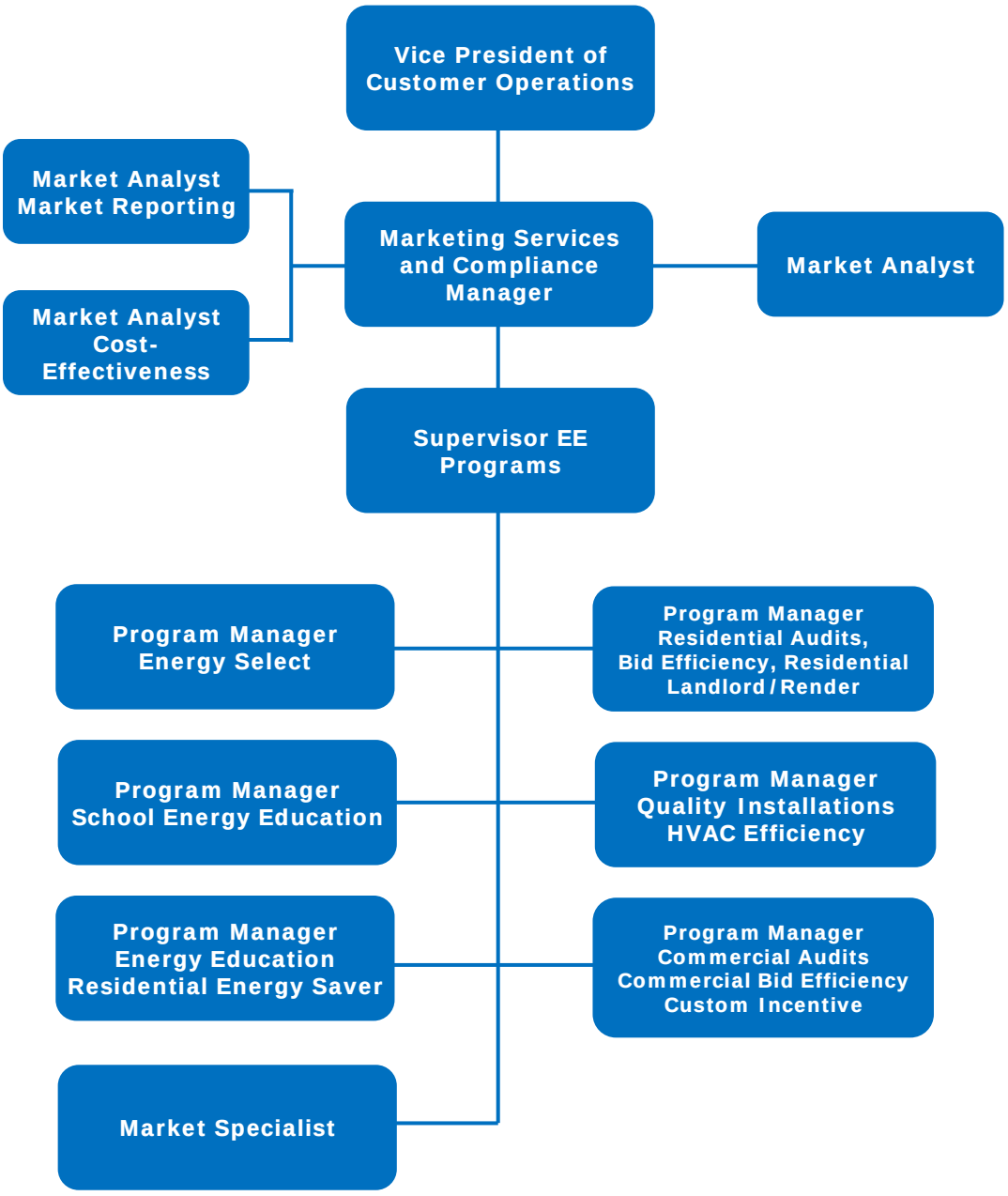
Source: FPL's Response to Document Request 1.2 and 2.3

Florida Public Utilities Company
DSM Organization



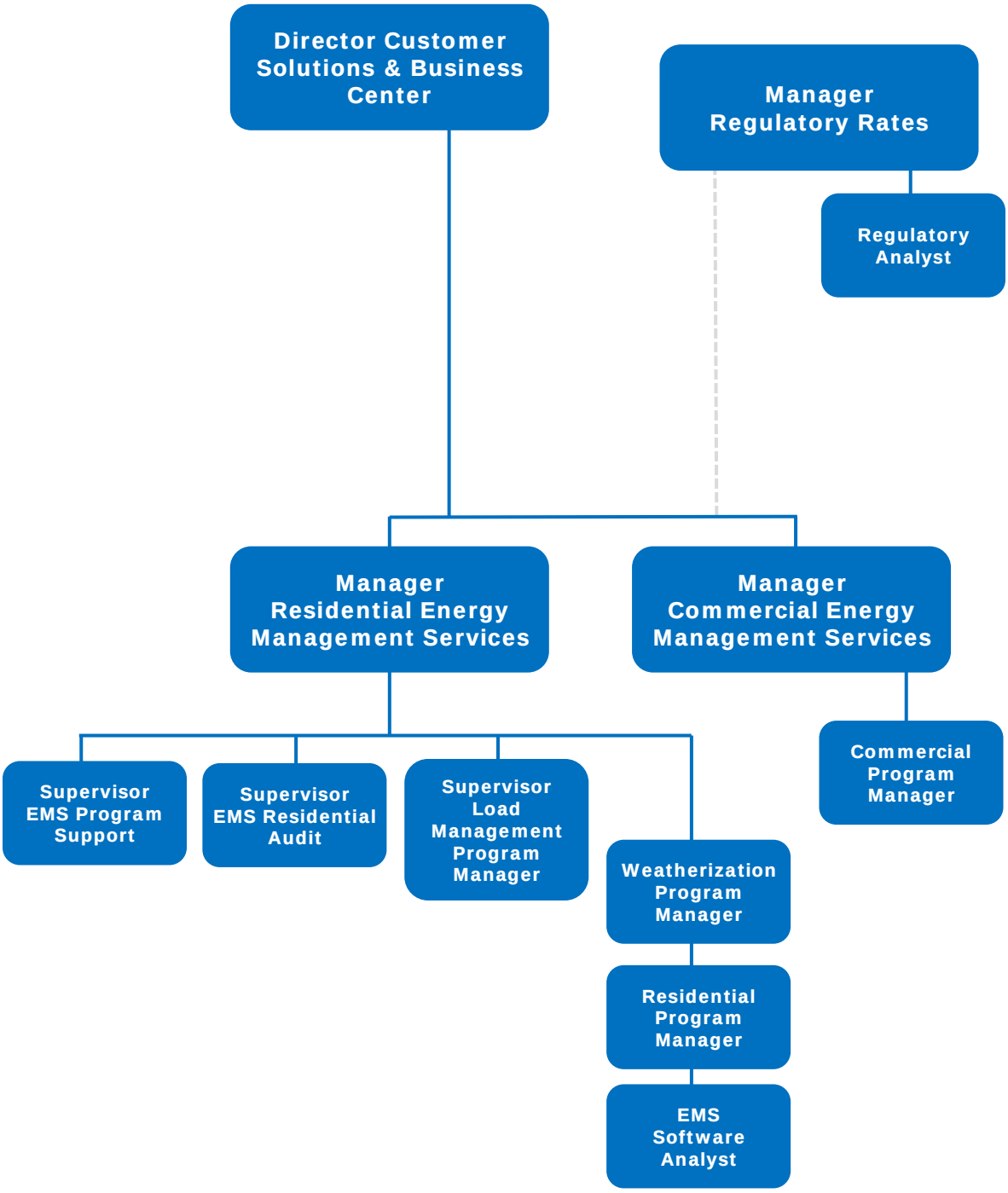
Source: FPUC's Response to Document Request 1.2a

Gulf Power Company
DSM Organization



Source: Gulf's Response to Document Request 2.1

Tampa Electric Company
DSM Organization



Source: TEC's Response to Document Request 1.2a