

**2015 Demand-Side**

**Management Plan**

**March 16, 2015**

**TABLE OF CONTENTS**

**Introduction ii**

**Section 1 – Executive Summary 1-1**

**Section 2 – Demand-Side Management Plan 2-1**

**Residential Conservation Programs**

Residential Energy Audit and Education 2-1

Community Energy Saver 2-7

Residential Custom Incentive 2-12

HVAC Efficiency Improvement 2-15

Residential Building Efficiency 2-21

Energy *Select* 2-28

**Commercial / Industrial Conservation Programs**

Commercial / Industrial Audit 2-32

HVAC Retrocommissioning 2-35

Commercial Building Efficiency 2-39

Commercial/Industrial Custom Incentive 2-46

**Renewable Energy Plan**

Solar for Schools 2-49

Solar Thermal Water Heating 2-49

Solar PV 2-50

Solar Thermal Water Heating for Low-Income 2-50

**Section 3 – Conservation Demonstration and Development 3-1**

**Section 4 – Cost-effectiveness Results 4-1**

Introduction

In accordance with Rule 25-17.0021, Florida Administrative Code, the Florida Public Service Commission (FPSC) considered numeric conservation goals proposed by Gulf Power Company (Gulf) in Docket No. 130202-EI. In Commission Order No. PSC-14-0696-FOF-EU (the Goals Order), the Commission approved numeric goals as requested by Gulf for the period 2015 through 2024 as follows:

Residential: Summer (MW) 60.9; Winter (MW) 34.8; and Annual Energy (GWh) 62.1

Commercial/Industrial: Summer (MW) 7.1; Winter (MW) 1.9; and Annual Energy (GWh) 22.2.

In response to the Goals Order, Gulf petitions the FPSC for approval of this Demand-Side Management (DSM) Plan as described herein and for authorization for Gulf to recover through its Energy Conservation Cost Recovery (ECCR) clause reasonable and prudent expenditures associated with implementation of these programs. The following report contains Gulf Power’s 2015 Demand-Side Management Plan and is organized into four (4) sections:

Section 1 contains an Executive Summary of the Plan Gulf Power Company proposes to meet the numerical demand and energy savings approved by the FPSC Goals Order. Tables are also included which summarize the demand and energy savings by year for the residential and commercial/industrial markets.

Section 2 contains the actual DSM Plan and is sub-divided into Residential, Commercial/Industrial, and Renewable Program sections. The Plan includes 11 programs, encompassing multiple measures. Each proposed program contains a description and participation projections. Program standards will be filed upon approval of the Plan.

Section 3 contains a description of Gulf Power Company’s Conservation Demonstration and Development program. The Conservation Demonstration and Development program pursues research to promote energy efficiency and conservation. This program enhances and complements the other DSM programs offered by the Company.

Section 4 contains the cost-effectiveness results for each of the programs and measures contained in the DSM Plan. Each report includes results of the Total Resource Cost (TRC) test, the Rate Impact Measure (RIM) test, and the Participant’s Test (PT). These evaluations are based on the marketing and administrative costs projected by Gulf Power Company to achieve the RIM portfolio ten year energy and demand savings and the maximum incentive levels contemplated in the Plan. This section also contains a table detailing the differences in input assumptions used in the goal setting process and DSM Plan development.

Section 1: Executive Summary

Gulf Power Company’s 2015 Demand-Side Management (DSM) Plan represents the collection of programs designed to achieve the numeric goals as approved in the Goals Order. These programs target all customer classes and offer increased emphasis on low-income customers and renters. This Plan also includes a fifth year of the solar photovoltaic (PV) and Solar Thermal Water Heating (STWH) demand-side renewable pilot programs as originally approved by the Commission in Order No. PSC-10-0608-PAA-EG.

This new Plan is comprised primarily of measures that represent the Achievable Potential that was cost-effective under the Rate Impact Measure (RIM) test and Participant’s Test (PT) as determined through the goal-setting process. Measures that pass these cost-effectiveness tests ensure that participating customers benefit from programs that non-participating customers benefit as well through downward pressure on electric rates over time. In contrast, Gulf’s previous DSM Plan was designed to meet a much higher goal level, a goal level that was established based on cost-effectiveness under the TRC test. In the 2014 Goals docket, Gulf Power requested and the Commission approved goals based on measures that passed the RIM test. Using the RIM test resulted in a substantially reduced level of goals that were determined to be cost-effective. Consequently, Gulf Power’s new DSM Plan differs significantly from its previous Plan in two ways. First, there are fewer programs in the new Plan. The number of measures comprising the Achievable Potential as determined in the goals process is smaller, thus requiring fewer programs to deploy. Second, the design of the programs is focused primarily on being cost-effective under the RIM test. In some cases, this limits the customer incentives associated with programs in the new Plan as compared to Gulf’s previous Plan. Gulf does, however, continue to place a special emphasis on providing beneficial energy conservation services to low-income customers.

**Program Summaries**

Gulf Power’s proposed DSM Plan for the period 2015-2024 contains 11 programs. The programs include 19 energy and demand saving measures intended to achieve the goals established in the Goals Order. Designed to produce a thorough level of awareness and education about energy efficiency opportunities, the programs strive to overcome many of the barriers that limit customer adoption of energy efficiency opportunities. Awareness and education are two key components of Gulf’s strategy for customer engagement. Gulf will continue to promote the energy audit programs as the primary awareness and educational offering. An energy education program designed for schools, community groups, contractors and trade allies will supplement the process. Gulf’s energy education initiatives will include an increased emphasis on renewable energy, particularly solar PV.

In the Residential sector, Gulf is focusing primarily on programs to save energy in HVAC systems and building envelope performance. With new efficiency standards being implemented for HVAC systems in 2015, Gulf’s program is designed to encourage tune-up of existing systems and the quality installation of new systems. These are both lower cost alternatives to investing in higher efficiency systems and provide real energy savings and comfort satisfaction to customers.

Focusing on difficult-to-reach customers, Gulf is continuing its Community Energy Saver program designed to provide direct installation of short payback energy efficiency measures in qualifying low-income neighborhoods. Additionally, a Residential Custom Incentive program is available to address the unique opportunities that exist in many rental or multi-family properties. Gulf is also expanding awareness efforts for low-income customers, especially for energy saving opportunities that have a short payback. Gulf will work with low-income assistance agencies throughout Northwest Florida to provide simple, easy to understand literature explaining these savings opportunities. This literature will also be available in company payment centers and other venues where customers may find value in this kind of information.

In the Commercial sector, the Plan includes programs to increase the efficiency of HVAC systems and thermal building envelope performance. In addition, the Plan includes a Custom Incentive program to facilitate unique energy saving opportunities that meet certain cost-effectiveness criteria.

The Plan includes one final year of four pilot programs designed to increase the deployment of demand-side renewable technologies. These programs remain unchanged from Gulf’s 2010 DSM Plan.

Tables summarizing the changes from the currently approved Residential, Commercial/Industrial and Renewable Energy programs and measures to the list comprising the proposed Plan for 2015 are included below:

**Residential Programs**

|  |  |
| --- | --- |
| **2010** | **2015** |
| **Residential Energy Audit and Education** | **Residential Energy Audit and Education** |
| Energy Audit | Energy Audit |
| Home Energy Reporting | *Discontinued* |
| **Community Energy Saver** | **Community Energy Saver** |
| **Landlord/Renter Custom Incentive** | **Residential Custom Incentive (Renamed)** |
| **HVAC Efficiency Program** | **HVAC Efficiency Program** |
| HVAC Maintenance | HVAC Maintenance |
|  | HVAC Quality Installation (new) |
| HVAC Retirement Tier 1 | *Discontinued* |
| HVAC Retirement Tier 2 | *Discontinued* |
| HVAC Retirement Tier 3 | *Discontinued* |
| HVAC Upgrade Tier 1 | *Discontinued* |
| HVAC Upgrade Tier 2 | *Discontinued* |
| HVAC Upgrade Tier 3 | *Discontinued* |
| Duct Repair | Duct Repair |
| ECM Fan | *Discontinued* |
|  | **Residential Building Efficiency (new program encompassing existing and new measures)** |
| **Heat Pump Water Heater** | *Discontinued* |
| **Ceiling Insulation** | *Discontinued* |
| **High Performance Window** | High Performance Window |
| **Reflective Roof** | Reflective Roof |
|  | ENERGY STAR Window A/C (previously included in Self-Install Energy Efficiency) |
| **Variable Speed/Flow Pool Pump** | *Discontinued* |
| **Energy *Select*** | **Energy *Select*** |
| **Energy *Select* LITE** | *Discontinued* |
| **Self-Install Energy Efficiency** | *Discontinued* |
| Refrigerator | *Discontinued* |
| Freezer | *Discontinued* |
| Clothes Washer | *Discontinued* |
| ENERGY STAR Window A/C | *Moved to Residential Building Efficiency* |
| CFL | *Discontinued* |
| **Refrigerator Recycling** | *Discontinued* |

**Commercial Programs**

|  |  |
| --- | --- |
| **2010** | **2015** |
| **Commercial/Industrial Energy Audit** | **Commercial/Industrial Energy Audit** |
| **HVAC Retrocommissioning** | **HVAC Retrocommissioning** |
| **Commercial Building Efficiency** | **Commercial Building Efficiency** |
| HVAC Upgrade – Air Source A/C or Heat Pump | *Discontinued* |
| HVAC Upgrade -- Geothermal | Geothermal Heat Pump |
| Heat Pump Water Heater | *Discontinued* |
| Ceiling/Roof Insulation | Ceiling/Roof Insulation |
| Window Film | *Discontinued* |
| Lighting: T-5, T-8 Retrofit; Hard-wired CFL | *Discontinued* |
| Lighting: LED Exit Signs, Display Case | *Discontinued* |
| Lighting: Occupancy Sensor | *Discontinued* |
| Reflective Roof | Reflective Roof |
| **Occupancy Sensor HVAC Control** | *Discontinued* |
| **High Efficiency Motor Program** | *Discontinued* |
| 1 to 5 HP | *Discontinued* |
| 6 to 50 HP | *Discontinued* |
| 51+HP | *Discontinued* |
| **Food Service Efficiency Program** | *Discontinued* |
| Convection Oven | *Discontinued* |
| Fryer | *Discontinued* |
| Griddle | *Discontinued* |
| Steamer | *Discontinued* |
| Holding Cabinet | *Discontinued* |
| Ice Machine | *Discontinued* |
| **Commercial/Industrial Custom Incentive** | **Commercial/Industrial Custom Incentive** |
| **Real Time Pricing1** | *Rate option – removed from program list* |

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1Gulf had previously reflected Real Time Pricing in its DSM Plan. It is a rate option available in Gulf Power’s Tariff for Retail Electric Services. Gulf has never sought and has no plans to seek recovery of any type of program costs through the ECCR Clause associated with RTP and is simply removing it from the list of DSM programs for administrative clarity and simplicity. RTP continues to be available.

Overall, Gulf Power Company’s 2015 DSM Plan has been designed to achieve the demand and energy numeric goals approved by the FPSC in the Goals Order as well as to provide program offerings specifically designed for low-income customers. A summary of the annual program targets by market, residential and commercial/industrial, is provided below:





Section 2: 2015 Demand-Side Management Plan

Residential Conservation Programs

Residential Energy Audit and Education

Program Start Date: 2010

**Program Description**

The Residential Energy Audit and Education Program is the primary educational program to help customers improve the energy efficiency of their new or existing home through energy conservation advice and information that encourages the implementation of efficiency measures and behaviors resulting in energy and utility bill savings. This program also increases the awareness of energy savings opportunities among Gulf’s customers.

As part of Gulf Power’s overall DSM Plan, many of the recommendations associated with this program are complemented with incentive-based programs to increase the likelihood of customer adoption. In addition to encouraging the installation of energy efficient HVAC equipment and appliances, Gulf Power views this program as a vehicle to promote energy efficient new home construction techniques and thermal envelope upgrades to existing homes.

**Individual Measures**

**Energy Audit**

The Energy Audit program provides customers an assessment of their home energy usage and energy savings opportunities. Customers may choose to have a Gulf Power representative conduct an on-site audit of their home, or they may opt to participate in either a mail-in or on-line, interactive version of the audit. As part of both the new and existing home audit processes, the customer is provided with specific whole-house recommendations including available incentives and other alternatives to facilitate implementation. In addition, each customer participating in the new home pre-construction audit is also provided with a whole-house heat gain and heat loss calculation in accordance with the Air Conditioning Contractors of America’s “Manual J” procedures in order to properly size and maximize the efficiency of the HVAC system.

This measure is required under FPSC Rule 25-17.003.

**School-based Awareness and Education**

This measure will provide science-based energy-related curricula and training to science teachers at elementary schools which are in Gulf’s service area. Since the 2009 pilot program, Gulf employees have led energy efficiency, solar and other renewable energy activities at elementary, middle and high schools in Gulf’s service area, reaching more than 2,000 students and their teachers each year. Energy-related curricula and activity kits were provided for an average of 40 teachers annually through professional development workshops. These kits included materials covering the science of energy, basic electricity, efficient energy usage and renewable energy. Gulf also conducts energy camps during the summer covering these topics. Gulf will continue this school program in elementary schools by providing teacher training and energy-related curricula and materials that correlate to state science standards and include real world projects such as home and school energy audits. Renewable energy education will include viewing solar panel energy production data from installations provided under the Solar for Schools pilot program. In each additional year of the program, Gulf will expand the program to a minimum of 50 elementary school teachers annually, reaching approximately 2,500 students. The overall goal of the program is to implement energy conservation, solar and other renewable energy education in 4th and 5th grades in Gulf’s service area.

Gulf will continue to promote the ENERGY STAR Save 10% Challenge, a national call-to-action to improve the energy efficiency of America’s commercial and industrial buildings by 10 percent or more. With nearly 200 public schools in Gulf’s service area, there is great value in increasing the awareness of energy conservation among staff and students. Gulf will encourage schools to create Energy Teams at a target group of elementary schools which have implemented Gulf’s Energy Education curricula, and will challenge the school staff and students to reduce energy use through low-cost measures and behavioral changes.

**Community Awareness and Education**

This measure provides widespread customer awareness of energy-related topics including the benefits of efficient building standards and high efficiency components, understanding solar and other renewable energy sources and how they interact with the electric grid, as well as the efficient use of electricity. These elements will be delivered through multiple methods such as live presentations, exhibits, demonstrations, workshops, printed brochures and guides, recorded advice and web-based information such as resource links and self-use tools. Gulf will use company personnel, advertising and other means to raise awareness of all energy sources used to produce electricity and the importance of meeting future energy needs through an increased reliance on energy efficiency as well as through the use of solar and other renewable energy sources.

**Low Income**

Gulf Power will continue and expand its longstanding energy efficiency outreach efforts to the low-income customer segment. This outreach will entail an expansion of current partnerships with the various low-income assistance agencies and organizations that already exist within Gulf’s service area. Gulf Power will provide educational materials that focus on basic energy efficiency awareness, as well as the benefits of low-cost, no-cost, and two-year payback measures and equipment. Gulf Power will also provide educational resources to increase awareness of solar and other renewable energy opportunities in low-income applications. These educational materials will be made available to all partner organizations and agencies who service the low-income customer segment for distribution to all qualifying individuals and families at the point of need and/or initial contact with these third-party low-income service providers. Gulf will also work with partner agencies to provide training to agency clients on understanding payback and making sound choices when considering energy-related purchases.

**Trade-Ally Education**

This component of the Energy Education program will consist of educational initiatives and training for local building designers, contractors, solar energy installers, facility managers and others who make an impact in decisions to retrofit, build or buy high efficiency buildings. These initiatives and training will address efficiency in home design and construction, HVAC performance, and building envelope considerations. In addition, this program will increase education on opportunities to incorporate renewable energy resources like solar PV and solar thermal water heating into the electric grid. This program will also be utilized to provide education and training on new building code requirements and methods for compliance.

**Program Benefits and Cost**

The primary benefits of the Energy Audit and Education Program include: general energy education and renewable energy education for customers, customer-specific energy efficiency and renewable energy recommendations and increased awareness of the numerous energy conservation and renewable energy opportunities available to Gulf Power customers as part of this DSM Plan.

The awareness and educational components of this program are an essential part of Gulf’s overall strategy towards achieving the goals of this Plan.

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance on a continual basis. For energy audits, participating customer information will be recorded in the program reporting and tracking database, as will actual customer adoption of those measures included as part of Gulf Power’s overall DSM Plan. Also, customer satisfaction with the audit process and associated recommendations will be monitored as a means of evaluating overall program effectiveness. For other training and educational measures, customer participation and feedback will be monitored to gauge effectiveness.

Community Energy Saver Program

**Program Start Date:**  2010

**Program Description**

Since energy expenses are often a higher percentage of their household income, the Community Energy Saver Program will assist low-income families in addressing energy costs through increased awareness and installation of efficiency measures. Low-income customers present unique challenges for adoption of energy efficiency measures because of the greater burden posed to this customer segment by the initial cost of energy efficient equipment as well as a lack of awareness of energy efficiency opportunities.

The Community Energy Saver Program will implement a comprehensive package of short payback electric conservation measures at no cost to the customer. In addition to direct installation of the conservation measures, the program will educate families on energy efficiency techniques and behavioral changes to help these customers control their energy use and reduce their monthly energy bill.

Gulf Power and the program administrator will identify customer neighborhoods or geographical areas to employ a door-to-door implementation strategy with a coinciding informational and educational communications campaign. This program also will leverage relationships with local weatherization agencies and low-income housing providers to gain additional efficiency measure installations.

Program goals include:

* Increasing customer awareness of the amount of energy consumed and energy efficiency opportunities;
* Reducing energy use and costs on monthly utility bills;
* Installing energy efficiency items to improve comfort and reduce energy use; and
* Identifying customer needs that might be met by other programs and leveraging opportunities with other providers such as the Low Income Home Energy Assistance Program (LIHEAP) and Weatherization Assistance Program (WAP).

Gulf Power will administer this program through an independent, third party contractor, and will coordinate with community-based groups to target participants.

**Individual Program Measures:**

* Energy Audit/Assessment
* Compact fluorescent light bulbs (CFL) – up to 5 compact fluorescent light bulbs will be provided to each household to replace incandescent bulbs
* Hot water pipe wrap – up to 10 feet of insulating pipe wrap will be installed on water pipes adjacent to the water heater
* Water heater temperature check and adjustment – check water heater temperature setting and adjust to the recommended range upon request
* Low-flow faucet aerator – up to three low-flow aerators per household will be installed
* Low-flow shower head – up to two low-flow shower heads per household will be installed
* HVAC Filters: Up to a one-year’s supply (12) HVAC filters for central units with standard sized filter grilles. First month’s filter installed at the time of the initial assessment.
* Customer education regarding measures installed and efficient use of energy in the home will be provided, including other efficiency measures/programs for which customers may be eligible

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Program Benefits and Cost Effectiveness**

The following kW demand and kWh energy saving evaluations were developed using a variety of sources, including: measure savings data from the Itron study; computer-based engineering modeling software; and actual program performance data gathered by Gulf Power or its energy efficiency program contractors. Evaluation results are shown for the RIM, TRC, and PT test ratios.

The incentive cost per household is expected to average $55.00.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | |
| **Measure** | **Units** | **Energy**  **kWh** | **Summer Peak**  **kW** | **Winter Peak**  **kW** |
| Energy Audit, Home Assessment and Energy Education | 1.0 | 0 | 0 | 0 |
| Compact Fluorescent Light Bulbs | 5.0 | 428 | .019 | .026 |
| Water Heater Temperature Check and Adjustment | 1.0 | 16 | .0012 | .0036 |
| DWH Pipe Wrap – 10 ft. | 1.0 | 30 | .0025 | .0075 |
| Faucet Aerators | 2.0 | 100 | .009 | .025 |
| Low-flow Showerheads | 1.5 | 195 | .017 | .048 |

Based upon the unit counts indicated above, these installations will result in the following energy and demand reductions per household participating in this program:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | | **Cost effectiveness test** | | |
| **Measure** | **Units** | **Energy**  **kWh** | **Summer Peak**  **kW** | **Winter Peak**  **kW** | **RIM** | **TRC** | **PT** |
| Community Energy Saver | per home | 769 | .0483 | .1103 | 0.52 | 3.6 | 28.1 |

**Monitoring and Evaluation**

Gulf Power, or its designated program contractor, will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer information will be recorded in the program reporting and tracking database. In addition, all participants will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Verify that the measure installation meets program specifications

Gulf, or its designee, will randomly perform full field verification of installation on a minimum of 10% of installations to ensure compliance with program standards.

The following program performance indicators will be monitored and evaluated to determine the program’s effectiveness:

* Number of completed qualifying installations
* Number of disqualified installations, and the reason for disqualification

Gulf will complete a periodic evaluation of the results to ensure the average savings per residence and the number of participants is consistent with the program objectives and expectations, including customer satisfaction.



Residential Custom Incentive Program

Program Start Date: 2010

**Program Description**

The Residential Custom Incentive Program is a flexible program designed to increase energy efficiency in the residential rental property sector. The rental sector presents unique challenges for adoption of energy efficiency decisions due to split incentives associated with energy efficiency investments. These split incentives arise when the property owner making the capital investment in energy efficient equipment does not realize the benefits of such investment through bill savings. In most rental agreements, the tenant or renter has responsibility for utility bill payments and thus, realizes the benefits of the energy efficient equipment investment. This situation frequently presents a barrier to adoption of energy efficient decisions, both on the part of the owner and the tenant (renter). It is the objective of this program to offer customized solutions to overcome this barrier.

This program will promote the installation of various energy efficiency measures available through other programs including HVAC, windows, appliances, etc. Depending on the individual circumstances of the rental property, additional incentives may be necessary to overcome the split-incentive barrier. This program may also promote the installation of low cost measures associated with the Community Energy Saver Program by the landlord of multi-family properties. These measures, when provided to the landlord for installation, will benefit the renter and represent one solution to the split-incentive barrier possible with this program. The program may provide other technical assistance services such as project savings evaluation as another means of overcoming this barrier. All projects considered for additional incentives under this program will be evaluated under the Commission’s cost-effectiveness procedures. The maximum total incentive offered between this and any other program will be limited to an amount which would produce a customer payback of no less than one year.

The primary administration duties and outreach of the program will be done by Gulf Power resources. A program manager will recruit potential customers to participate in this program and develop customized solutions for each property being evaluated under this program.

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Individual Measures**

This program will include availability of all other applicable residential DSM program measures as well as any unique savings opportunities present in a rental property arrangement that may meet the objectives of the program.

**Program Benefits and Cost Effectiveness**

Due to the customized nature of this program, benefits are determined on a case by case basis. Each project will be evaluated to ensure cost effectiveness in accordance with Commission requirements.

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer information will be recorded in the program reporting and tracking database and will include project scope and date completed.

Any applicable incentives provided under this program will be subject to verification of measures installed and compliance with Program Standards.

**Participation Projections**

Participation projection of zero recognizes the unique nature and applicability of this program and is not intended to limit participation. HVAC Efficiency Improvement Program

Program Start Date: 2010

**Program Description**

The Heating, Ventilation and Air Conditioning (HVAC) Efficiency Improvement program is designed to increase energy efficiency and improve HVAC cooling and heating system performance for both new and existing single-family, multi-family and permanently anchored manufactured homes. Since as much as half of the energy used in a home goes to cooling and heating, customers can save energy and money by installing an efficient system.

**Individual Measures**

**HVAC Maintenance** – This measure offers basic re-commissioning at a reduced cost to the customer. This measure is designed to aid participating contractors in diagnosing the performance of the HVAC cooling system with the support of an independent computerized quality control process. These diagnoses include refrigerant level, evaporator airflow, refrigerant metering performance, and condenser performance. Based on the results, the best course of action to bring the system to its full efficiency will be attempted. Incentives up to 90 % of the cost to bring the system to its full efficiency will be realized by the customer through reduced pricing by participating contractors.

**HVAC Quality Installation** – This measure offers an incentive to encourage the proper refrigerant charge and airflow of HVAC systems by commissioning new system installations in new and existing homes with the support of an independent computerized quality control process. This process includes an analysis of the refrigerant level, evaporator airflow, refrigerant metering performance, and condenser performance to insure that the system is operating at its designed efficiency level.

**Duct Repair –** This measure offers an incentive to eliminate or reduce air distribution losses by sealing and repairing the air distribution system – air handler, air ducts, return plenums, supply plenums and any connecting structure. Incentives will be up to 50% of the cost of sealing the ductwork with a program-approved prescriptive approach.

To the extent it is more efficient, Gulf Power will utilize an independent third party to administer the HVAC Efficiency Improvement Program. Customers will realize the financial incentives associated with each qualifying measure through reduced pricing by the participating contractors.

Gulf Power will utilize the participating contractor network, the Residential Energy Audit Program, web-based resources, and other means to increase customer awareness of this program.

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Program Benefits and Cost Effectiveness**

The energy and demand savings associated with this program were developed using a variety of sources, including: measure savings data from the Itron study; computer-based engineering modeling software; and actual program performance data gathered by Gulf Power or its energy efficiency program contractors.

Cost-effectiveness results are shown for RIM, TRC, and PT, and are based on the maximum incentive levels identified below.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | | **Cost effectiveness test** | | |
| **Measure** | **Max**  **Incentive** | **Energy**  **kWh** | **Summer Peak**  **kW** | **Winter Peak**  **kW** | **RIM** | **TRC** | **PT** |
| HVAC Maintenance | $100 | 607 | .24 | .07 | .87 | 3.78 | 6.43 |
| HVAC Quality Installation | $75 | 451 | .18 | .08 | .84 | 4.02 | 9.54 |
| Duct Repair | $150 | 303 | .15 | 1.11 | 0.81 | 1.22 | 1.65 |

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer information will be recorded in the independent third party program reporting and tracking database, including customer data, details of participating measures, incentives paid, and energy and demand savings.

All participants will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Verify that the measure installation meets program specifications

Gulf, or its designee, will randomly perform full field verification of installation on a minimum of 10% of installations to ensure compliance with program standards.

The following program performance indicators will be monitored and evaluated to determine the program’s effectiveness:

* Number of completed qualifying installations;
* Total amount of incentive payments made;
* Number of disqualified installations;
* Number of contractors actively promoting each program measure

Gulf will complete a periodic evaluation of the results to ensure the average savings per residence and the number of participants is consistent with the program objectives and expectations, including customer satisfaction. 



Residential Building Efficiency Program

Program Start Date: 2015

**Program Description**

The Residential Building Efficiency Program is designed as an umbrella efficiency program for existing and new residential customers to encourage the installation of eligible equipment and materials as a means of reducing energy and demand. The goal of the program is to increase awareness and customer demand for energy saving measures; increase availability and market penetration; and contribute toward long-term energy savings and peak demand reductions.

**Individual Measures**

**High Performance Window**

The High Performance Window measure will provide residential customers with incentives to install high efficiency windows in existing or new residential applications. The objective of the measure is to reduce solar heat gain into a home which, in turn, leads to reduced HVAC loads and operating costs. In new home construction, reduced HVAC loads may also result in the installation of lower capacity HVAC equipment with the resulting potential for additional energy, demand and cost benefits.

* This program includes high efficiency replacement windows for use in existing homes when the customer is considering removing old, inefficient, or otherwise defective windows.
* This program includes the installation of new high efficiency windows in new residential construction.

As a means of increasing program adoption, an incentive of up to $.50 per square foot of total window assembly area will be offered directly to the customer. This incentive will be limited to no more than 50% of the estimated incremental cost of installing higher efficiency windows.

**Reflective Roof**

The Reflective Roof measure will provide Gulf’s residential customers with an incentive to install ENERGY STAR qualified cool/reflective roofing products when constructing a new home or replacing the roof on an existing residence. The objective of this measure is to significantly decrease the amount of heat that is transferred through roof assemblies and into vented attic spaces which, in turn, decreases the transfer of heat into the home’s conditioned living area. Reducing this heat transfer reduces the HVAC cooling load on the home and lowers HVAC operating costs. In new home construction, reduced HVAC loads may also result in the installation of lower capacity HVAC equipment and its subsequent potential for additional energy, demand and cost benefits. As a means of increasing the measure adoption, the incentive will be up to 50% of the estimated incremental cost of installing ENERGY STAR qualified roofing materials.

**ENERGY STAR Window A/C**

The Window A/C measure will provide Gulf Power residential customers incentive to purchase and install ENERGY STAR rated window A/C units. The objective of this measure is to increase the efficiency of window A/C units above the minimum available efficiency upon new installation or replacement. After-purchase rebates will be utilized for this measure. The maximum incentive planned for these appliances will be up to 50% of the estimated incremental cost above non-ENERGY STAR rated models.

Gulf Power will utilize the existing contractor network, the Residential Energy Audit Program, web-based resources, and other means to increase customer awareness for the measures included in this program.

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Program Benefits and Cost Effectiveness**

The energy and demand savings associated with this program were developed using a variety of sources, including: measure savings data from the Itron study; computer-based engineering modeling software; and actual program performance data gathered by Gulf Power or its energy efficiency program contractors.

Cost-effectiveness results are shown for RIM, TRC, and PT, and are based on the incentive levels identified below.

Maximum incentive cost per participant:

* $.50/sq ft for windows
* $400 for reflective roof
* $25 per Energy Star Window A/C

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | | **Cost effectiveness test** | | |
| **Measure** | **Units** | **Energy**  **kWh** | **Summer Peak**  **kW** | **Winter Peak**  **kW** | **RIM** | **TRC** | **PT** |
| High Performance Window | per home | 391 | .21 | .24 | 0.98 | 1.51 | 1.59 |
| Reflective Roof | per home | 1,029 | .41 | 0 | .87 | 3.82 | 4.54 |
| Energy Star Window A/C | per unit | 82 | .04 | 0 | .96 | 3.44 | 4.17 |

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer information will be recorded in the program reporting and tracking database. This will include, but is not limited to, the date the application was received and processed along with the issue date of rebate.

All rebate applications and accompanying proof of purchase documentation will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Review application for completeness
* Verify that the measure installation meets program specifications

Gulf, or its designee, will randomly perform a full field verification on a minimum of 10% of installations to ensure compliance with program standards.

The following program performance indicators will be monitored and evaluated to determine the program’s effectiveness:

* Number of completed qualifying installations;
* Total amount of incentive payments made;
* Number of disqualified installations;
* Number of contractors and/or retailers actively promoting each program measure;
* Manufacturer and model of the most commonly installed qualifying equipment or material for each measure.

Gulf will complete a periodic evaluation of the results to ensure the average savings per residence and the number of participants is consistent with the program objectives and expectations, including customer satisfaction.





Energy *Select*

Program Start Date: 1995

**Program Description**

The Energy *Select* Program is designed to increase the efficiency of energy consumption on Gulf Power’s system. The program is an interactive energy management system that allows residential customers to program their central heating and cooling system, electric water heater and pool pump, if applicable, to automatically respond to varying prices of electricity depending upon the time of day, day of week and season. These prices are in relation to the Company’s cost of producing or purchasing energy. Energy *Select* consists of four elements -- a price-responsive programmable thermostat and timers for a water heater and pool pump, a rate featuring four prices for electricity, a communications gateway and an online programming portal. These elements work together to enable customers to choose their own level of comfort and savings.

With this program, customers can save money by programming the largest portion of their energy purchases to occur in the lower price periods, while providing peak demand reduction benefits during the high and critical peak price periods.

**Individual Program Measures:**

The primary features of this program offering are the following:

Equipment

* Programmable Communicating Thermostat (PCT)
* Load Control Relays (Water Heater, Pool Pump)
* Communication Gateway

These premise-mounted devices allow the customer to program and control the temperature set points and equipment run times for the major energy using appliances in their home. This automated technology provides automatic response to pricing signals depending on the customer’s unique energy purchasing desires. These systems offer conservation of energy, as well as the ability to take advantage of lower cost periods when demand for electricity is not high.

Rate

* Residential Service Variable Price (RSVP). This rate is a Critical Peak Pricing (CPP) mechanism that encourages reduced usage during Gulf Power’s peak demand period by participating customers. The rate along with the equipment mentioned above, allows participants to program the majority of their energy purchases to avoid high demand/high price periods and to take advantage of off peak/lower priced electricity. The rate has four price tiers: the low and medium tiers offer cost savings over the standard RS rate and are in effect for 87% of the hours of the year, the high tier is in effect for 12% of the hours and the critical tier is capped at 1% of annual hours.

Communication

* Wide area network communication is facilitated via the customer’s broad band internet connection.

The program is administered by Gulf Power with equipment installation and service provided by a contractor.

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Program Benefits and Cost Effectiveness**

The energy and demand savings associated with this program were developed using actual program performance data gathered by Gulf Power or its energy efficiency program contractors.

Evaluation results are shown for RIM, TRC, and PT.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | | **Cost effectiveness test** | | |
| **Measure** | **Units** | **Energy**  **kWh** | **Summer Peak**  **KW** | **Winter Peak**  **KW** | **RIM** | **TRC** | **PT** |
| Energy *Select* | per customer | 735 | 1.80 | 1.07 | 1.27 | 2.67 | 99.9 |

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement and customer satisfaction on a continual basis. Participating customer information will be recorded in the program reporting and tracking database.

The following program performance indicators will be monitored and evaluated to determine the program’s effectiveness:

* Number of completed qualifying installations;
* Number of disqualified installations;
* Specific components included with each installation.

Gulf will complete a periodic evaluation of the results to ensure energy and demand savings as well as the number of participants is consistent with the program objectives and expectations, including customer satisfaction, perceived program value and barriers to program participation.



Commercial/Industrial Conservation Programs

Commercial/Industrial Audit

Program Start Date: 1981

**Program Description**

The commercial/industrial (C/I) audit provides an energy analysis of a commercial building or an industrial facility and its associated energy systems to identify for the customer those measures that may improve the building or facility energy efficiency.

This program is a prime tool for the Gulf Power Company C/I Energy Specialists to introduce customers personally to conservation measures including low or no-cost improvements or new electro-technologies to replace old or inefficient equipment. As part of Gulf’s overall DSM Plan, many of the recommendations associated with this audit program are complemented with incentive-based programs to increase the likelihood of customer adoption.

The Commercial/Industrial Audit offers two types of audit services for customers. A basic Energy Analysis Audit (EAA) is provided through either an on-site survey or an on-line analysis. Additionally, a more comprehensive analysis can be provided by conducting a Technical Assistance Audit (TAA). These methods are described below.

**Energy Analysis Audit**

The EAA process consists of an on-site review of the customer’s facility operation, equipment, and energy usage pattern by the C/I Energy Specialist. The specialist identifies all areas of potential reduction in kW demand and kWh consumption. Information is provided which includes an energy use summary and energy management options. This evaluation presents opportunities for reducing operating costs that were revealed by the on-site evaluation.

Recommendations encourage the customer to implement measures that, if cost-effective, move the customer beyond the efficiency level typically installed in the marketplace.

Gulf Power Company also offers an on-line energy analysis tool that allows C/I customers to estimate costs and savings of implementing various measures. The tool produces an Energy Analysis Report that contains recommendations and information about demand and how it affects a customer’s monthly bill. The tool also includes an Energy Systems Reference Library, where various C/I energy systems, building design, and energy technologies can be found.

**Technical Assistance Audit**

The TAA is an interactive program that provides C/I customers assistance in identifying advanced energy conservation opportunities. It is customized to meet the individual needs of large customers as required; therefore, it is an evolving program. The TAA process consists of an on-site review by the C/I Energy Specialist of the customer’s facility operation, equipment, and energy usage pattern. The specialist identifies all areas of potential reduction in kW demand and kWh consumption as well as identifying end-use technology opportunities. A technical evaluation is then performed which often includes providing an in-house energy simulation program model (EnerSim), in order to ascertain an economic payback or life-cycle cost analysis for various improvements to the facility. When necessary, Gulf Power Company will subcontract the evaluation process to an independent engineering firm and/or contracting consultant.



Commercial HVAC Retrocommissioning Program

Program Start Date: 2010

**Program Description**

The Commercial HVAC Retrocommissioning Program offers basic retrocommissioning at a reduced cost for qualifying installations of existing commercial and industrial customers. It is designed to diagnose the performance of the HVAC cooling unit(s) operating in commercial buildings with the support of an independent computerized quality control process. These diagnoses include refrigerant level, evaporator airflow, refrigerant metering performance, and condenser performance. Based on the results, the best course of action to bring the cooling system to its full efficiency will be attempted. Incentives up to 70% of the cost to bring the system to its full efficiency will be realized by the customer through reduced pricing by participating contractors. The program includes air cooled and water cooled equipment – identified as A/C, heat pump, direct expansion (DX) or geothermal cooling and heating.

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Program Benefits and Cost Effectiveness**

The following kW demand and kWh energy saving evaluations were developed using a variety of sources including: measure savings data from the Itron study; computer-based engineering modeling software; and actual program performance data gathered by Gulf Power or its energy efficiency program contractors. Evaluation results are shown for RIM, TRC, and PT, and are based on the incentive levels identified below.

Maximum incentive cost per participant: $100.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | | **Cost effectiveness test** | | |
| **Measure** | **Units** | **Energy**  **kWh** | **Summer Peak**  **kW** | **Winter Peak**  **kW** | **RIM** | **TRC** | **PT** |
| HVAC Retrocommissioning | per unit | 965 | .30 | 0 | .91 | 3.89 | 5.59 |

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer information will be recorded in the independent third party program reporting and tracking database, including customer data, details of participating measures, incentives paid, and energy and demand saving.

All participants will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Verify that the measure meets program specifications

Gulf, or its designee, will randomly perform full field verification of installation on a minimum of 10% of installations to ensure compliance with program standards.

The following program performance indicators will be monitored and evaluated to determine the program’s effectiveness:

* Number of completed qualifying installations;
* Total amount of incentive payments made;
* Number of disqualified installations;
* Number of contractors and/or retailers actively promoting the program measure;
* Number, make and model of the most common qualifying measure.

Gulf will complete a periodic evaluation of the results to ensure the average savings per business and the number of participants is consistent with the program objectives and expectations, including customer satisfaction.

Commercial Building Efficiency Program

Program Start Date: 2010

**Program Description**

The Commercial Building Efficiency Program is designed as an umbrella efficiency program for existing commercial and industrial customers to encourage the installation of eligible high-efficiency equipment as a means of reducing energy and demand. The goal of the program is to increase awareness and customer demand for high-efficiency, energy-saving equipment; increase availability and market penetration of energy efficient equipment; and contribute toward long-term energy savings and peak demand reductions.

The most common critical areas in commercial buildings that affect summer peak demand are the thermal efficiency of the building and HVAC equipment efficiency. The Commercial Building Efficiency Program provides requirements for these areas that exceed the Florida Model Energy code standards, and if adhered to, will help reduce energy consumption and peak kW demand.

To increase customer participation in this program, incentives will be provided to offset the incremental cost of high efficiency equipment. The program includes equipment with easily calculated savings and provides a straightforward and simple method for customers to participate.

**Individual Measures**

**Geothermal Heat Pump**

The Geothermal Heat Pump measure is designed to encourage commercial and industrial (C/I) customers to invest in more efficient HVAC equipment. Installing high efficiency HVAC systems reduces operating costs. The program includes water cooled equipment, identified as geothermal heat pumps, that provide cooling plus heating. Incentives will be provided for up to 33% of the incremental cost of installing geothermal heat pump systems.

**Ceiling/Roof Insulation**

The Ceiling/Roof Insulation measure offers an incentive designed to encourage C/I customers to increase existing ceiling or roof insulation above conditioned spaces in respective facilities. Increased insulation reduces heat loss and heat gain from both conductive and convective means, and as a result, lowers sizing requirements and operating costs of HVAC equipment. Incentives will be provided for up to 50% of the incremental cost of installing higher efficiency insulation.

**Reflective Roof**

The Reflective Roof measure encourages C/I customers to install ENERGY STAR qualified cool/reflective roofing products. A reflective roof decreases the heat transferred through roof assemblies and vented attic spaces. By decreasing heat transfer to the space, the air conditioning runtime is reduced resulting in lower operating costs. Incentives will be paid to customers for up to 50% of the incremental cost of installing ENERGY STAR qualified roofing materials.

Specific eligibility requirements for the program are provided in the Program Participation Standards.

**Program Benefits and Cost Effectiveness**

The following kW demand and kWh energy saving evaluations were developed using a variety of sources including measure savings data from the Itron study, computer-based engineering modeling software, and actual program performance data gathered by Gulf Power or its energy efficiency program contractors. Evaluation results are shown for RIM, TRC, and PT, and are based on the maximum incentives identified in the following table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Per Unit Reduction** | | | **Cost effectiveness test** | | |
| **Measure** | **Max Incentives** | **Energy**  **kWh** | **Summer Peak**  **kW** | **Winter Peak**  **kW** | **RIM** | **TRC** | **PT** |
| Geothermal Heat Pump | $250/ton | 685 | .29 | .27 | 0.81 | 1.43 | 1.64 |
| Insulation – ceiling / roof | 0.15/sq ft | .748 | .00046 | .00012 | 1.09 | 2.96 | 3.23 |
| Reflective Roof | $0.10/ sq ft | 1.72 | .00067 | 0 | 1.03 | 2.29 | 2.32 |

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer information will be recorded in the program reporting and tracking database. This will include, but is not limited to, the date the application was received and processed along with the issue date of rebate.

All rebate applications and accompanying proof of purchase documentation will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Review application for completeness
* Verify that the measure installation meets program specifications

Gulf, or its designee, will randomly perform a full field verification on a minimum of 10% of installations to ensure compliance with program standards.

The following program performance indicators will be monitored and evaluated to determine the program’s effectiveness:

* Number of completed qualifying installations;
* Total amount of incentive payments made;
* Number of disqualified installations;
* Number, make and model of the most commonly installed qualifying equipment and/or material for each measure.

Gulf will complete a periodic evaluation of the results to ensure the average savings per customer and the number of participants is consistent with the program objectives and expectations, including customer satisfaction.







Commercial/Industrial Custom IncentiveProgram Start Date: 2000

**Program Description**

The Commercial/Industrial Custom Incentive program is designed to establish the capability and process to offer advanced energy services and energy efficient end-use equipment to Commercial/Industrial customers. Specifically, the types of projects covered under this program would be demand reduction or efficiency improvement retrofits that are beyond the scope of other programs included in this Plan.

Examples of custom projects may include, but not be limited to, installation of Variable Frequency Drive (VFD) Controls, Energy Management Systems (EMS), chiller efficiency upgrades, desiccant and mechanical dehumidification systems, and more complex building retrocommissioning.

The Commercial/Industrial Custom Incentive program will be administered in three phases: (1) the audit; (2) the proposal; and (3) design/construction. The energy audit will be conducted under the existing FPSC approved audit program. Once the customer accepts audit recommendations, Gulf Power will develop a scope and incentive proposal for the project. Any incentive associated with this program will be provided upon successful installation and verification of the energy saving measures associated with the project.

The level of incentives contemplated under this program is limited to any combination of monetary or technical assistance that brings the project payback to no less than two years.

**Program Benefits and Cost Effectiveness**

The TAA provides specific recommendations on energy conservation opportunities for the customer. Due to the customized nature of this program, benefits are determined on a case by case basis. Each project will be evaluated to ensure cost effectiveness in accordance with Commission requirements.

Program participation and savings are based on Gulf’s recent experience with this program.

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Monitoring and evaluation will be administered on a case by case basis. Energy efficiency levels resulting in lower operating costs, improved customer perception, and kW and kWh reductions will be monitored in determining the effectiveness of this program.



Renewable Energy Pilot Programs

Program Start Date: 2011

**Program Description**

These programs are part of a five year pilot program approved by the Commission in Order No. PSC-10-0608-PAA-EG. The first four years of the five year pilot were completed under the 2010 DSM Plan. The programs described herein are offered only during 2015, the last year of the five year pilot.

These programs include providing capital to supplement deployment of PV systems up to 10 kW in public education facilities, offering PV rebates, solar thermal water heating (STWH) rebates and facilitating the installation of STWH systems in low-income housing units.

**Individual Measures**

**Solar for Schools:** Gulf Power’s Solar for Schools program will provide capital funding to supplement deployment of PV systems up to 10 kW in qualifying public education facilities served by Gulf Power. As partnership opportunities are made available, Gulf intends to leverage other program resources such as those provided under the Florida Solar Energy Center’s (FSEC) E-Shelter program to expand the reach of the program. Gulf’s program will also offer educational benefits by providing resources to enable the data collected from the installed systems to be used in the schools’ energy curriculum.

Specific eligibility requirements for this program will be provided in the Program Participation Standards.

**Solar Thermal Water Heating:** Gulf Power’s Solar Thermal Water Heating Program will provide Gulf Power residential customers up to a $1,000 incentive to install certified STWH systems. The STWH systems to be installed will offer customers an opportunity to reduce their hot water energy needs otherwise served by natural gas or electric resistance heating. The systems operate in conjunction with a back-up natural gas or electric resistance source of hot water to ensure an uninterrupted supply of hot water to the customer.

Specific eligibility requirements for this program will be provided in the Program Participation Standards.

**Solar PV:**  Gulf Power’s Solar PV Program will provide Gulf Power residential and commercial customers an incentive to encourage the installation of a solar energy system on their home or business. The incentive value will be up to $2/watt with a maximum incentive per customer of $10,000. Qualifying systems will be designed to offset part or all of a customer’s energy needs and will help customers save money on their energy bills.

Specific eligibility requirements for the program will be provided in the Program Participation Standards.

**Solar Thermal Water Heating for Low-Income Housing:** Under this program,Gulf Power will facilitate the installation of STWH systems in qualifying low-income housing. Gulf anticipates funding up to fifteen low-income installations per year.

Specific eligibility requirements for the program will be provided in the Program Participation Standards.

**Program Administration**

The Solar for Schools program will be administered by Gulf through an application and contractor bid process with consideration to modeling the process after the FSEC SunSmart E-Shelter program. Selection of schools and contractors will be based on various program criteria with consideration to utilizing FSEC’s program criteria. A minimum five-year system maintenance agreement will be included in the contractor bid process.

The STWH and solar PV rebate programs will be administered by Gulf through an on-line application and reservation process. Reservations for the incentive will be managed annually and will be awarded to customers on a first come – first serve basis. Reservations will be limited to the number of incentives supported by the renewable program spending cap allocated annually to each program.

The low-income STWH program will be administered by Gulf. Gulf will provide system installation criteria to interested low-income housing units to be used by the low-income managing agent to secure a qualified contractor to install a qualifying system. Gulf personnel will verify each selection prior to system installation.

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance on a continual basis. Participating customer information will be recorded in a program database, including all information listed on the customer application, date of application receipt and processing and issue date of rebate, if applicable. The incentive applications will require customer and system information useful in estimating energy savings for each program.

All rebate applications and required documentation will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Review application for completeness
* System size and orientation

Gulf will also perform field verifications on final installations to ensure compliance with program standards.

Systems installed under the Solar for Schools program will include a data acquisition system that will monitor system performance and output. This data along with other information regarding the participating schools’ energy education plans will be recorded in a program database.







Section 3: Conservation Demonstration and Development

**Program Description**

The primary purpose of the Conservation Demonstration and Development (CDD) program is to pursue research, development, and demonstration projects designed to promote energy efficiency and conservation. This program enhances and complements the residential, commercial, and industrial conservation programs currently implemented at Gulf Power Company.

The CDD program is designed to serve as an umbrella program for the identification, evaluation, demonstration, data collection and development of new or emerging end-use technologies. Unlike most of Gulf Power Company’s conservation programs, which focus on specific end-uses, the CDD program addresses a wide variety of energy applications. This program also includes on-going end-use research necessary to support energy and demand savings associated with new or emerging technologies.

**Monitoring and Evaluation**

A technology investigated under this program will be subject to comprehensive monitoring and evaluation. Prior to implementation, justification of projects funded through this program will be clearly documented. This includes project concept or description, research and design considerations, project potential, contributions to program goals, and anticipated costs. Any expenditure resulting from this program will also be properly accounted for and reported. Any projects not requiring field test will be fully documented with all methodology, modeling, or engineering estimates provided to justify all conclusions.

Specific deliverables provided, as a result of a technology investigation under this program will include project description, conservation achieved and projected, technical evaluation, economic considerations and customer acceptability. These findings will be reported and filed with the FPSC staff for consideration.

**Program Benefits and Cost**

The program will allow Gulf Power Company to “pursue research, development and demonstration projects designed to promote energy efficiency and conservation” as stated in Order No. 22176 issued November 14, 1989, Docket No. 890737-PU, and is consistent with meeting the goals in Rule 25-17.001, Florida Administrative Code.

This program allows for actual data to be derived from field tests, thus validating engineering estimates and modeling techniques. Cost benefit analysis from these emerging technology projects will be more reliable and allow for better assessment of the future impact of these demand and energy conservation measures.

Additionally, customer acceptance and satisfaction can be gauged by a better understanding of implementation barriers and potential disadvantages. This understanding is important because customer response will ultimately be the determining factor driving the pursuit of any new idea or product regardless of the demand or energy conservation.

**Participation Standards**

Programs investigated under this program cover a wide array of activities and are subject to specific screening criteria prior to study implementation. Such screening criteria include potential for energy and demand reduction, high technology maturity, and broad customer acceptability.

These activities can include short term, low cost literature searches, engineering and financial analyses of promising technologies, data collection to provide baseline information, or field testing programs with actual customers to verify operation and energy performance. Field-testing would be limited to demonstration of emerging end-use technologies that meet guidelines described in the program description. Funding for field tests would be bound by the proposed expenditure limitations. If any field test or pilot project requires warranted funding beyond the scope of the CDD program, Gulf Power Company will petition the FPSC for approval to conduct the project as an ECCR program.

Gulf Power Company proposes to limit expenditures to an annual maximum of $250,000 for all projects. Additionally, Gulf Power Company proposes to notify the FPSC of any project that exceeds $25,000. Funding for research and development meeting the minimum program criteria will be recovered through ECCR.

Since technologies investigated under this program are test projects, and the level of benefits that might be anticipated are unknown, Gulf Power Company will be limited in its ability to predict the demand or energy reductions that might result from these programs.

Residential Service Time of Use Rate Pilot

Program Start Date: 2015

**Program Description**

The proposed Residential Service Time of Use (RSTOU) rate pilot will provide residential customers the opportunity to use customer-owned equipment to automatically respond and take advantage of a variable pricing structure with a critical peak credit component. In order to control program expenses and facilitate monitoring and evaluation, the pilot will be offered to group of approximately 400 residential customers who meet the program standards. Gulf Power’s current offering, Energy *Select*, is a company-owned interactive energy management system that allows residential customers to program their central heating and cooling system, electric water heater, and pool pump to automatically respond to varying prices of electricity depending on the time of day, day of week and season. The Energy *Select* program is very successful in achieving demand response results through use of the critical peak price tier and the associated energy management equipment. With the increased availability of wi-fi enabled thermostats in the marketplace, Gulf believes that demand response results can be achieved utilizing customer-owned equipment with the capability of automatic response to a critical peak notification. In order to further encourage customers to utilize a qualifying wi-fi enabled thermostat, the RSTOU pilot will offer customers a per event credit for allowing their thermostat to automatically reduce the HVAC equipment load during a critical event period. This option puts the customer in complete control of their energy purchase without utility owned equipment. The objective of this pilot is to measure customers’ response to a variable price rate with customer owned equipment. Customers will have the ability to save money by shifting energy purchases to the lower priced periods, while providing peak demand reduction during the high and critical periods.

Based on Gulf Power’s prior experience with time of use rates and customer feedback the Company selected a simple two tiered solution. This rate will encompass a “High” tier and a “Low” tier option with a critical peak credit component. The rate is structured for the customer to have the opportunity to pay a lower price for electricity 85 percent of the time. This should improve the customer’s willingness to shift load due to the simplicity of the options.

The proposed pilot rate structure will be described in the Residential Service Time of Use (RSTOU) tariff sheet.

Gulf Power will manage this project utilizing a project schedule to ensure the major milestones are met. Project milestones:

* Customer acquisition and pilot setup -- 6 months
* Pilot monitoring phase -- at least 1 year
* Analyzing data and produce reports -- 3 months
* Finalize next steps for program extension or deletion. In the absence of a program extension, the pilot will end on the date referenced in RSTOU tariff sheet

This pilot program will provide the customer with a demand responsive programmable thermostat. Total costs of the pilot are expected to be no more than $408,000 and are proposed in addition to the currently approved $250,000 annual recovery for the CDD program.

* Monitoring and evaluation costs: $66,000
* Pilot Surveying costs: $36,000
* Marketing material costs: $15,000
* Thermostat costs: $80,000
* Program management costs: $150,000
* Gulf Power labor costs: $61,000

**Program Benefits and Cost Effectiveness**

Benefits, costs, energy impacts and demand impacts of this pilot program will be determined by the end of the pilot program. At that time cost effectiveness will be calculated and reported.

**Monitoring and Evaluation**

Gulf Power will monitor and evaluate program performance on a continual basis. Participating customer’s information will be recorded in the program reporting and tracking database. This will include, but is not limited to, the date the application was received and processed along with the issue date of the incentive.

Customers will be issued an approved demand response compatible programmable thermostat and will be subject to verification to validate information including, but not limited to:

* Verify that applicant is an existing Gulf Power customer
* Review application for completeness
* Verify that the measure installation meets program specifications
* Gulf, or its designee, will randomly perform full field verifications on a minimum of 10% of installations to ensure compliance with program standards.

The customer’s premise will have a time of use programmed meter installed that will capture usage in the correct price tiers. Critical Peak Credit events will be called based on weather and/or a system reliability need. The effectiveness of this pilot will be determined by several factors:

* Customer satisfaction impacts
* Call Center impacts
* Effect of supplying a programmable thermostat to program adoption
* Load shifting (reduction in peak time usage)
* Effectiveness of Critical Peak Credit Events
* Savings on power bill

The Company will determine the success of these factors by using the following methods:

* Surveying the customer at the beginning, mid and the end of the project
* Measuring the call volume in the Energy Efficiency Call Center
* Verification of customer participation
* Measurement and Verification of customer usage from AMI metering
* How many customers opt out of Critical Peak Credit Events

Gulf will complete an end-of-pilot evaluation of program results, which will determine the success of the pilot and future implementation of the time of use rate.