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MESSER CAPARELLO & SELF, P.A.

Attorneys At Law

www.lawfla.com

100158-EG

March 30, 2010

VIA HAND DELIVERY
Ms. Ann Cole, Director
Commission Clerk and Administrative Services
Room 110, Easley Building
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Dear Ms. Cole:

Enclosed for filing on behalf of Florida Public Utilities Company in this docket are an original and twenty copies of Florida Public Utilities Company's Petition for Approval of Demand Side Management Plan.

Please indicate receipt of this document by stamping the enclosed extra copy of this letter and returning same to me.

Thank you for your assistance.

Sincerely,

Norman H. Horton, Jr.

NHH/amb
Enclosure
cc: Mr. Marc Sneidermann
Parties of Record

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FPSC-COMMISSION CLERK

Regional Center Office Park / 2618 Centennial Place / Tallahassee, Florida 32308
Mailing Address: P.O. Box 15579 / Tallahassee, Florida 32317
Main Telephone: (850) 222-0720 / *Fax:* (850) 224-4359

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

Petition for approval of conservation programs by Florida Public Utilities Company	)))	Docket No.: 100158-EG Dated: March 30, 2010

PETITION FOR APPROVAL OF DEMAND SIDE MANAGEMENT PLAN

COMES NOW Florida Public Utilities Company ("FPUC") and requests the Commission to approve the conservation Programs filed pursuant to Order No. PSC-09-0855-FOF-EG and Rule 25-17.0021, Florida Administrative Code and as grounds, would show:

1. The names and addresses of persons authorized to receive notices and communications with respect to this docket are:

Norman H. Horton, Jr.
Messer, Caparello & Self, P.A.
2618 Centennial Place (32308)
P.O. Box 15579
Tallahassee, FL 32317-5579

Mr. Marc Schneidermann
Florida Public Utilities Company
P.O. Box 3395
West Palm Beach, FL 33402-3395

2. FPUC is an electric utility whose principal address is:

Florida Public Utilities Company
401 South Dixie Highway
West Palm Beach, Florida, 33401-5886.

3. FPUC provides electric service to customers in all or portions of Nassau, Jackson, Calhoun and Liberty counties and is subject to the jurisdiction of the Florida Public Services Commission ("Commission") and to the Florida Energy Efficiency and Conservation Act ("FEECA"). (Sections 366.80 – 366.85, Florida Statutes) which is administered by the Commission.

4. FPUC's current numeric conservation goals and plan were approved by the Commission in Order PSC-04-0766-PAA-EG issued August 9, 2004. The numeric conservation goals and programs were effective for 2005–2014.

5. Section 366.82(2), Florida Statutes, requires the Commission to adopt appropriate goals designed to increase the conservation of expensive resources such as petroleum fuels, to reduce and control the growth rates of electric consumption and weather sensitive peak demand. Further, the Commission is required to review the goals of each utility subject to FEECA at least every five (5) years. Pursuant to this requirement, the Commission opened a series of dockets for each of the seven (7) FEECA utilities; specifically Docket No. 080411-EG for FPUC; and hearings on the consolidated dockets were held in August 2009. As a result of these proceedings, the Commission entered Order No. PSC-09-0855-FOF-EG, on December 30, 2009, approving numeric conservation goals for each FEECA utility including FPUC (Exhibit "A"). The order establishing the goals also required that utilities file their demand side management plan designed to meet the approved goals within 90 days from the date of the Commission order.

6. As required by the Order and Rule 25-17.0021, Florida Administrative Code, FPUC has prepared and herewith files its 2010 Demand Side Management Plan ("DSM Plan"). Exhibit "B" is a list of the programs contained in the plan to be offered by FPUC. Some of these programs are currently offered by FPUC, but there have been revisions to some based on prior experience and new programs are also included in order to achieve the established goals. For each program, the plan contains a complete description as well as details as to participation eligibility, benefits and costs, monitoring and evaluation process and costs and benefits.

7. FPUC is the sole non-generating FEECA utility and is also the smallest of the seven (7) FEECA utilities. As a consequence FPUC is in a unique situation and does not have

available to it all of the resources and opportunities that might be available to larger, generating utilities. However, the Company has developed a plan with programs that will benefit consumers and enable the Company to achieve the goals established by the Commission.

8. FPUC requests that the Commission find the DSM Plan submitted with this petition to be compliant with the requirements of the Commission and approve the plan to be effective for the Company thirty (30) days after approval.

RESPECTFULLY SUBMITTED this 30th day of March, 2010.

NORMAN H. HORTON, JR.
MESSER, CAPARELLO & SELF, P.A.
2618 Centennial Place
Tallahassee, FL 32308
(850) 222-0720

Attorneys for Florida Public Utilities Company

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been served on the following parties by Hand Delivery (*) and/or U.S. Mail this 30th day of March, 2010.

Katherine Fleming, Esq.*
Office of the General Counsel
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Erik L. Sayler, Esq.
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Williams & Jacobs, LLC
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Tallahassee, FL 32301

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Executive Director
Florida Energy and Climate Commission
Governor's Energy Office
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Tallahassee, FL 32302

EXHIBIT "A"

NUMERIC CONSERVATION GOALS

Total Annual Savings Across All Programs and Classes						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.43	0.67	0.19	0.45	1.29	1.75
2011	0.43	0.67	0.19	0.45	1.29	1.75
2012	0.43	0.67	0.19	0.45	1.29	1.75
2013	0.43	0.67	0.19	0.45	1.29	1.75
2014	0.43	0.67	0.19	0.45	1.29	1.75
2015	0.43	0.67	0.19	0.45	1.29	1.75
2016	0.43	0.67	0.19	0.45	1.29	1.75
2017	0.43	0.67	0.19	0.45	1.29	1.75
2018	0.43	0.67	0.19	0.45	1.29	1.75
2019	0.43	0.67	0.19	0.45	1.29	1.75

Annual Savings Across Residential Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.20	0.43	0.13	0.29	0.51	0.96
2011	0.20	0.43	0.13	0.29	0.51	0.96
2012	0.20	0.43	0.13	0.29	0.51	0.96
2013	0.20	0.43	0.13	0.29	0.51	0.96
2014	0.20	0.43	0.13	0.29	0.51	0.96
2015	0.20	0.43	0.13	0.29	0.51	0.96
2016	0.20	0.43	0.13	0.29	0.51	0.96
2017	0.20	0.43	0.13	0.29	0.51	0.96
2018	0.20	0.43	0.13	0.29	0.51	0.96
2019	0.20	0.43	0.13	0.29	0.51	0.96

Annual Savings Across Commercial & Industrial Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.23	0.25	0.06	0.16	0.78	0.79
2011	0.23	0.25	0.06	0.16	0.78	0.79
2012	0.23	0.25	0.06	0.16	0.78	0.79
2013	0.23	0.25	0.06	0.16	0.78	0.79
2014	0.23	0.25	0.06	0.16	0.78	0.79
2015	0.23	0.25	0.06	0.16	0.78	0.79
2016	0.23	0.25	0.06	0.16	0.78	0.79
2017	0.23	0.25	0.06	0.16	0.78	0.79
2018	0.23	0.25	0.06	0.16	0.78	0.79
2019	0.23	0.25	0.06	0.16	0.78	0.79

EXHIBIT "B"

CONSERVATION PROGRAMS

Residential Programs

- Residential Energy Survey Program
- Residential Heating & Cooling Efficiency Upgrade Program
- Residential Ceiling Insulation Upgrade Program

Commercial Programs

- Commercial Energy Survey Program
- Commercial Indoor Efficient Lighting Rebate Program
- Commercial Heating & Cooling Efficiency Upgrade Program
- Commercial Ceiling Insulation Upgrade Program
- Commercial Window Film Installation Program
- Commercial Chiller Upgrade Program

Renewable Energy Programs

- Solar Water Heating
- Solar Photovoltaic

Energy Education Programs

- Conservation Demonstration and Development

2010 Demand-Side Management Plan

March 30, 2010

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Table of Contents (Continued)

1.0 Overview and Summary

1.1 Background

Sections 366.80 through 366.85, and 403.519, Florida Statutes (F.S.), are known collectively as the Florida Energy Efficiency and Conservation Act (FEECA). Section 366.82(2), F.S., requires the Florida Public Service Commission (PSC) to adopt appropriate goals designed to increase the conservation of expensive resources, such as petroleum fuels, and to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. Pursuant to Section 366.82(6), F.S., the PSC must review the conservation goals of each utility subject to FEECA at least every five years. The seven utilities subject to FEECA are Florida Power & Light Company (FPL), Progress Energy Florida, Inc. (PEF), Tampa Electric Company (TECO), Gulf Power Company (Gulf), Florida Public Utilities Company (FPUC), Orlando Utilities Commission (OUC), and JEA (referred to collectively as the FEECA utilities). Goals were last established for the FEECA utilities in August 2004 (Docket Nos. 040029-EG through 040035-EG). Therefore, new goals were required to be established by January 2010.

In preparation for the new goals proceeding, the PSC conducted a series of workshops exploring energy conservation initiatives and the requirements of the FEECA statutes. The first workshop, held on November 29, 2007, explored how additional energy conservation could be encouraged. A second workshop held on April 25, 2008, examined how the costs and benefits of utility-sponsored energy conservation or demand-side management (DSM) programs, that target end-use customers, should be evaluated.

In 2008, the Legislature amended Section 366.82, F.S., such that when goals are established, the PSC is required to: (1) evaluate the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, (2) establish goals to encourage the development of demand-side renewable energy systems, and (3) allow efficiency investments across generation, transmission, and distribution as well as efficiencies within the user base. The Legislature also authorized the PSC to allow an investor-owned electric utility (IOU) an additional return on equity of up to 50 basis points for exceeding 20 percent of their annual load-growth through energy efficiency and conservation measures and may authorize financial penalties for those utilities that fail to meet their goals. The additional return on equity shall be established by the PSC through a limited proceeding. Finally, the amendments to Section 366.82, F.S., provided funds for the PSC to obtain professional consulting services if needed. These statutes are implemented by Rules 25-17.001 through 25-17.0015, Florida Administrative Code (F.A.C.).

The remainder of this report summarizes Florida Public Utilities Company's DSM Plan and compares projected annual DSM peak demand and energy reductions (consistent with the programs outlined in the DSM Plan) to the annual DSM goals established by the PSC.

1.2 Commission Approved Numeric Conservation Goals

Florida Public Utilities Company's residential and commercial/industrial numeric conservation goals for the 2010 through 2019 period were established by the PSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009). These PSC-established annual goals, along with Florida Public Utilities Company's projected annual DSM peak demand and energy reductions (corresponding to the programs discussed in subsequent sections of this document) are presented below.

Total Annual Savings Across All Programs and Classes						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.43	0.67	0.19	0.45	1.29	1.75
2011	0.43	0.67	0.19	0.45	1.29	1.75
2012	0.43	0.67	0.19	0.45	1.29	1.75
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2016	0.43	0.67	0.19	0.45	1.29	1.75
2017	0.43	0.67	0.19	0.45	1.29	1.75
2018	0.43	0.67	0.19	0.45	1.29	1.75
2019	0.43	0.67	0.19	0.45	1.29	1.75
Note: Totals may not add due to rounding						

Annual Savings Across Residential Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.20	0.43	0.13	0.29	0.51	0.96
2011	0.20	0.43	0.13	0.29	0.51	0.96
2012	0.20	0.43	0.13	0.29	0.51	0.96
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2016	0.20	0.43	0.13	0.29	0.51	0.96
2017	0.20	0.43	0.13	0.29	0.51	0.96
2018	0.20	0.43	0.13	0.29	0.51	0.96
2019	0.20	0.43	0.13	0.29	0.51	0.96

Annual Savings Across Commercial & Industrial Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.23	0.25	0.06	0.16	0.78	0.79
2011	0.23	0.25	0.06	0.16	0.78	0.79
2012	0.23	0.25	0.06	0.16	0.78	0.79
2013	0.23	0.25	0.06	0.16	0.78	0.79
2014	0.23	0.25	0.06	0.16	0.78	0.79
2015	0.23	0.25	0.06	0.16	0.78	0.79
2016	0.23	0.25	0.06	0.16	0.78	0.79
2017	0.23	0.25	0.06	0.16	0.78	0.79
2018	0.23	0.25	0.06	0.16	0.78	0.79
2019	0.23	0.25	0.06	0.16	0.78	0.79

1.3 Discussion of Rate Impacts from Conservation Programs

The recently completed Itron Study confirmed none of the energy efficiency measures evaluated for Florida Public Utilities Company passed the Rate Impact Test, meaning such conservation measures will result in upward pressure on customers' rates. The Itron Study found only two demand response measures passed the Rate Impact Test. The Florida Public Service Commission staff has requested an estimate of the increase in monthly bills resulting from the proposed conservation programs. Florida Public Utilities Company has estimated the monthly bill impact of the residential programs as shown below. These estimated increases are over what rates would be with no conservation programs. They would include the current Energy Conservation Cost Recovery Clause which is approximately $0.80 per month.

Estimated Increase in Monthly Bills for Residential Sector from Proposed Residential Programs	
Year	Monthly Bill Increase[1]
2010	1.47
2011	1.38
2012	1.33
2013	1.28
2014	1.23
2015	1.18
2016	1.14
2017	1.09
2018	1.05
2019	1.01
[1]Based on 1,200 kWh.	

1.4 Overview of DSM Programs

Florida Public Utilities Company is by far the smallest of the FEECA utilities. As such Florida Public Utilities Company is unable to afford a lot of independent program development and as such Florida Public Utilities Company utilizes work developed by the other FEECA utilities. The conservation programs that Florida Public Utilities Company has included in this DSM Plan are divided into residential and commercial/industrial programs. Florida Public Utilities Company has revised our conservation programs based on our experience with our existing programs to increase the value to our customers. The residential programs are offered to Florida Public Utilities Company's customers to encourage them to improve the energy efficiency of their homes, thereby decreasing heating and cooling costs. Florida Public Utilities Company proposes three residential programs and six commercial/industrial programs. The programs provide opportunities for all customers to participate. Florida Public Utilities Company's conservation programs are listed below.

1.4.1 Residential Programs

- Residential Energy Survey Program
- Residential Heating & Cooling Efficiency Upgrade Program
- Residential Ceiling Insulation Upgrade Program

1.4.2 Commercial Programs

- Commercial Energy Survey Program
- Commercial Indoor Efficient Lighting Rebate Program
- Commercial Heating & Cooling Efficiency Upgrade Program
- Commercial Ceiling Insulation Upgrade Program
- Commercial Window Film Installation Program
- Commercial Chiller Upgrade Program

1.5 Renewable Energy Programs

Order PSC-09-0855-FOF-EG requires Florida Public Utilities Company to offer renewable energy programs for solar water heating and solar photovoltaic as pilot programs with an annual expenditure cap of $47,233. These pilot programs are described in Section 4.0.

1.6 Organization of Plan

Section 2.0 presents details of the residential programs. Section 3.0 presents details of the commercial/industrial programs. Details of the pilot renewable energy programs are presented in Section 4.0. Section 5.0 presents the Energy Education Program. Appendix A contains the cost effectiveness evaluations.

2.0 Residential Programs

2.1 Residential Energy Survey Program

2.1.1 Program Description

The objective of the Residential Energy Survey is to provide Florida Public Utilities Company's residential customers with energy conservation advice that encourages the implementation of efficiency measures resulting in energy savings for the customer. These measures, once implemented, also lower Florida Public Utilities Company's energy requirements and improve operating efficiencies. Florida Public Utilities Company views this program as a way of promoting the installation of cost-effective conservation features. During the survey process, the customer is provided with specific whole-house recommendations.

The survey process also checks for possible duct leakage. If a problem is identified, recommendations are made for further analysis and repairs. Blower-door testing is required to identify and quantify the duct leakage. Florida Public Utilities Company provides the customer a list of contractors that provide blower-door testing. After the blower-door test contractor identifies the leakage sites and quantities, the customer is given a written summary of the test findings and the potential for savings, along with a list of approved repair contractors.

During the survey, Florida Public Utilities Company will provide the customer with up to 10 screw-in compact fluorescent bulbs at the sole discretion of Florida Public Utilities Company, which will be installed by the Florida Public Utilities Company auditor in locations that have the highest probability of the light being in use at the time of Florida Public Utilities Company's peak demand.

Through follow-up survey work, Florida Public Utilities Company monitors and tracks the installation of cost-effective conservation features and/or duct leakage repairs. As a result, the increase in operating efficiencies provides for a reduction in weather-sensitive peak demand, as well as a reduction in energy consumption. As technology advances and the use of the Internet becomes a part of everyone's life, Florida Public Utilities Company may implement an on-line energy survey. This will allow us to reach customers that we would otherwise not reach and allow us to promote energy efficiency to more people. This is a revision of an existing program.

2.1.2 Participation Standards

The Residential Energy Survey Program is available to all residential customers served by Florida Public Utilities Company. The program provides participating customers with information they need to determine which energy saving measures are better suited to their individual needs and requirements. Customers are only entitled to receive the compact

fluorescent bulbs once. Customers are notified of this cost-free service every six months as specified in Rule 25-17.003 of the Florida Administrative Code.

2.1.3 Benefits and Costs

Estimates for benefits were adopted from Progress Energy Florida's (PEF) Home Energy Check program. In addition to the estimated savings of PEF's Residential Audit program, the savings include the savings resulting from the installation of the 10 compact fluorescent bulbs. This program estimates a reduction in demand of 0.451 kW per customer during the summer and winter, with a 1,229 kWh energy reduction annually.

2.1.4 Monitoring and Evaluation

The availability of the audit program is communicated to residential customers using bill inserts, newspaper advertisements, and other media. Each participating customer is presented with an assessment of his or her current energy situation and recommendations for improvement. Florida Public Utilities Company can assist customers in locating qualified contractors to properly install the recommended changes.

Florida Public Utilities Company conducts follow-up surveys after customers have implemented the specific recommendations. Data concerning these changes are accumulated so the impact of the energy surveys can be more accurately measured.

2.1.5 Cost-Effectiveness

The main purpose of the energy audit is to discover energy efficiency options and changes that customers can choose to implement. Customers, on average, will choose to implement the most cost-effective options. Audit programs like this one serve energy customers by providing them with reliable information on which to base their energy efficiency decisions.

Florida Public Utilities Company
Residential Energy Survey Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,229	0.45	0.45	307,250	113	113
2011	1,229	0.45	0.45	307,250	113	113
2012	1,229	0.45	0.45	307,250	113	113
2013	1,229	0.45	0.45	307,250	113	113
2014	1,229	0.45	0.45	307,250	113	113
2015	1,229	0.45	0.45	307,250	113	113
2016	1,229	0.45	0.45	307,250	113	113
2017	1,229	0.45	0.45	307,250	113	113
2018	1,229	0.45	0.45	307,250	113	113
2019	1,229	0.45	0.45	307,250	113	113

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,287	0.47	0.47	321,816	118	118
2011	1,287	0.47	0.47	321,816	118	118
2012	1,287	0.47	0.47	321,816	118	118
2013	1,287	0.47	0.47	321,816	118	118
2014	1,287	0.47	0.47	321,816	118	118
2015	1,287	0.47	0.47	321,816	118	118
2016	1,287	0.47	0.47	321,816	118	118
2017	1,287	0.47	0.47	321,816	118	118
2018	1,287	0.47	0.47	321,816	118	118
2019	1,287	0.47	0.47	321,816	118	118

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Residential Customers	Total Number of Eligible Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants*
2010	24,088	24,088	250	1.04%	250
2011	24,285	24,285	250	2.06%	500
2012	24,485	24,485	250	3.06%	750
2013	24,685	24,685	250	4.05%	1,000
2014	24,888	24,888	250	5.02%	1,250
2015	25,092	25,092	250	5.98%	1,500
2016	25,298	25,298	250	6.92%	1,750
2017	25,505	25,505	250	7.84%	2,000
2018	25,714	25,714	250	8.75%	2,250
2019	25,925	25,925	250	9.64%	2,500

*FPUC's 2005 DSM Plan resulted in 1,214 cumulative participants in 2009

2.2 Residential Heating & Cooling Efficiency Upgrade Program

2.2.1 *Program Description*

This program is directed at reducing the rate of growth in peak demand and energy throughout Florida Public Utilities Company's electricity service territories. The program will do this by increasing the saturation of high-efficiency heat pumps and central air conditioning system. The program requires that customer install a high-efficiency central air conditioning system or heat pump with a minimum 14 SEER. This is an existing program.

2.2.2 *Participation Standards*

- The program applies to straight air conditioners or heat pumps.
- The program applies to replacements as well as new installations.
- The residential dwelling must be an existing single-family detached structure (no mobile homes or multifamily units) in Florida Public Utilities Company's service territory.
- The HVAC system must be ducted.
- The minimum qualifying efficiency rating for the replacement heat pump (ARI rating only) or central air conditioning system is 14.0 SEER.
- For a new heat pump installed or a heat pump being replaced, the maximum supplemental strip heating physically contained in the system shall not exceed 2 kW per nominal ton. On a system of less than 2.5 tons, a 5 kW heat strip will be allowed.
- For a heat pump using supplemental strip heating, a two-stage indoor thermostat is required.
- If replacing a straight cooling system, the residence cannot have oil or electric resistance as the primary heat source.
- In the situation where a replacement heating and cooling system will qualify for two rebates (Florida Public Utilities Company's and a gas company's), Florida Public Utilities Company will not pay its rebate so that a double payment is avoided.
- HVAC contractors will submit rebate request forms to Florida Public Utilities Company. The contractor, certifying that the equipment installed accords with the program standards, will sign the form. The customer will sign the form verifying that the equipment was installed and that the incentive recipient's name and mailing address are correct.
- The Heating and Cooling Rebate request form must be received within 30 days of the installation date of the unit to assure the payment of the dealer incentive.

M|C
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MESSER CAPARELLO & SELF, P.A.

Attorneys At Law

www.lawfla.com

100158-EG

March 30, 2010

VIA HAND DELIVERY
Ms. Ann Cole, Director
Commission Clerk and Administrative Services
Room 110, Easley Building
Florida Public Service Commission
2540 Shumard Oak Blvd.
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Dear Ms. Cole:

Enclosed for filing on behalf of Florida Public Utilities Company in this docket are an original and twenty copies of Florida Public Utilities Company's Petition for Approval of Demand Side Management Plan.

Please indicate receipt of this document by stamping the enclosed extra copy of this letter and returning same to me.

Thank you for your assistance.

Sincerely,

Norman H. Horton, Jr.

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cc: Mr. Marc Sneidermann
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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

Petition for approval of conservation programs by Florida Public Utilities Company	Docket No.: 100158-EG Dated: March 30, 2010

PETITION FOR APPROVAL OF DEMAND SIDE MANAGEMENT PLAN

COMES NOW Florida Public Utilities Company ("FPUC") and requests the Commission to approve the conservation Programs filed pursuant to Order No. PSC-09-0855-FOF-EG and Rule 25-17.0021, Florida Administrative Code and as grounds, would show:

1. The names and addresses of persons authorized to receive notices and communications with respect to this docket are:

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2618 Centennial Place (32308)
P.O. Box 15579
Tallahassee, FL 32317-5579

Mr. Marc Schneidermann
Florida Public Utilities Company
P.O. Box 3395
West Palm Beach, FL 33402-3395

2. FPUC is an electric utility whose principal address is:

Florida Public Utilities Company
401 South Dixie Highway
West Palm Beach, Florida, 33401-5886.

3. FPUC provides electric service to customers in all or portions of Nassau, Jackson, Calhoun and Liberty counties and is subject to the jurisdiction of the Florida Public Services Commission ("Commission") and to the Florida Energy Efficiency and Conservation Act ("FEECA"). (Sections 366.80 – 366.85, Florida Statutes) which is administered by the Commission.

4. FPUC's current numeric conservation goals and plan were approved by the Commission in Order PSC-04-0766-PAA-EG issued August 9, 2004. The numeric conservation goals and programs were effective for 2005–2014.

5. Section 366.82(2), Florida Statutes, requires the Commission to adopt appropriate goals designed to increase the conservation of expensive resources such as petroleum fuels, to reduce and control the growth rates of electric consumption and weather sensitive peak demand. Further, the Commission is required to review the goals of each utility subject to FEECA at least every five (5) years. Pursuant to this requirement, the Commission opened a series of dockets for each of the seven (7) FEECA utilities; specifically Docket No. 080411-EG for FPUC; and hearings on the consolidated dockets were held in August 2009. As a result of these proceedings, the Commission entered Order No. PSC-09-0855-FOF-EG, on December 30, 2009, approving numeric conservation goals for each FEECA utility including FPUC (Exhibit "A"). The order establishing the goals also required that utilities file their demand side management plan designed to meet the approved goals within 90 days from the date of the Commission order.

6. As required by the Order and Rule 25-17.0021, Florida Administrative Code, FPUC has prepared and herewith files its 2010 Demand Side Management Plan ("DSM Plan"). Exhibit "B" is a list of the programs contained in the plan to be offered by FPUC. Some of these programs are currently offered by FPUC, but there have been revisions to some based on prior experience and new programs are also included in order to achieve the established goals. For each program, the plan contains a complete description as well as details as to participation eligibility, benefits and costs, monitoring and evaluation process and costs and benefits.

7. FPUC is the sole non-generating FEECA utility and is also the smallest of the seven (7) FEECA utilities. As a consequence FPUC is in a unique situation and does not have

available to it all of the resources and opportunities that might be available to larger, generating utilities. However, the Company has developed a plan with programs that will benefit consumers and enable the Company to achieve the goals established by the Commission.

8. FPUC requests that the Commission find the DSM Plan submitted with this petition to be compliant with the requirements of the Commission and approve the plan to be effective for the Company thirty (30) days after approval.

RESPECTFULLY SUBMITTED this 30th day of March, 2010.

NORMAN H. HORTON, JR.
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2618 Centennial Place
Tallahassee, FL 32308
(850) 222-0720

Attorneys for Florida Public Utilities Company

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been served on the following parties by Hand Delivery (*) and/or U.S. Mail this 30th day of March, 2010.

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Norman H. Horton, Jr.

EXHIBIT "A"

NUMERIC CONSERVATION GOALS

Total Annual Savings Across All Programs and Classes						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.43	0.67	0.19	0.45	1.29	1.75
2011	0.43	0.67	0.19	0.45	1.29	1.75
2012	0.43	0.67	0.19	0.45	1.29	1.75
2013	0.43	0.67	0.19	0.45	1.29	1.75
2014	0.43	0.67	0.19	0.45	1.29	1.75
2015	0.43	0.67	0.19	0.45	1.29	1.75
2016	0.43	0.67	0.19	0.45	1.29	1.75
2017	0.43	0.67	0.19	0.45	1.29	1.75
2018	0.43	0.67	0.19	0.45	1.29	1.75
2019	0.43	0.67	0.19	0.45	1.29	1.75

Annual Savings Across Residential Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.20	0.43	0.13	0.29	0.51	0.96
2011	0.20	0.43	0.13	0.29	0.51	0.96
2012	0.20	0.43	0.13	0.29	0.51	0.96
2013	0.20	0.43	0.13	0.29	0.51	0.96
2014	0.20	0.43	0.13	0.29	0.51	0.96
2015	0.20	0.43	0.13	0.29	0.51	0.96
2016	0.20	0.43	0.13	0.29	0.51	0.96
2017	0.20	0.43	0.13	0.29	0.51	0.96
2018	0.20	0.43	0.13	0.29	0.51	0.96
2019	0.20	0.43	0.13	0.29	0.51	0.96

Annual Savings Across Commercial & Industrial Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.23	0.25	0.06	0.16	0.78	0.79
2011	0.23	0.25	0.06	0.16	0.78	0.79
2012	0.23	0.25	0.06	0.16	0.78	0.79
2013	0.23	0.25	0.06	0.16	0.78	0.79
2014	0.23	0.25	0.06	0.16	0.78	0.79
2015	0.23	0.25	0.06	0.16	0.78	0.79
2016	0.23	0.25	0.06	0.16	0.78	0.79
2017	0.23	0.25	0.06	0.16	0.78	0.79
2018	0.23	0.25	0.06	0.16	0.78	0.79
2019	0.23	0.25	0.06	0.16	0.78	0.79

EXHIBIT "B"

CONSERVATION PROGRAMS

Residential Programs

- Residential Energy Survey Program
- Residential Heating & Cooling Efficiency Upgrade Program
- Residential Ceiling Insulation Upgrade Program

Commercial Programs

- Commercial Energy Survey Program
- Commercial Indoor Efficient Lighting Rebate Program
- Commercial Heating & Cooling Efficiency Upgrade Program
- Commercial Ceiling Insulation Upgrade Program
- Commercial Window Film Installation Program
- Commercial Chiller Upgrade Program

Renewable Energy Programs

- Solar Water Heating
- Solar Photovoltaic

Energy Education Programs

- Conservation Demonstration and Development

2010 Demand-Side Management Plan

March 30, 2010

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1.0 Overview and Summary

1.1 Background

Sections 366.80 through 366.85, and 403.519, Florida Statutes (F.S.), are known collectively as the Florida Energy Efficiency and Conservation Act (FEECA). Section 366.82(2), F.S., requires the Florida Public Service Commission (PSC) to adopt appropriate goals designed to increase the conservation of expensive resources, such as petroleum fuels, and to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. Pursuant to Section 366.82(6), F.S., the PSC must review the conservation goals of each utility subject to FEECA at least every five years. The seven utilities subject to FEECA are Florida Power & Light Company (FPL), Progress Energy Florida, Inc. (PEF), Tampa Electric Company (TECO), Gulf Power Company (Gulf), Florida Public Utilities Company (FPUC), Orlando Utilities Commission (OUC), and JEA (referred to collectively as the FEECA utilities). Goals were last established for the FEECA utilities in August 2004 (Docket Nos. 040029-EG through 040035-EG). Therefore, new goals were required to be established by January 2010.

In preparation for the new goals proceeding, the PSC conducted a series of workshops exploring energy conservation initiatives and the requirements of the FEECA statutes. The first workshop, held on November 29, 2007, explored how additional energy conservation could be encouraged. A second workshop held on April 25, 2008, examined how the costs and benefits of utility-sponsored energy conservation or demand-side management (DSM) programs, that target end-use customers, should be evaluated.

In 2008, the Legislature amended Section 366.82, F.S., such that when goals are established, the PSC is required to: (1) evaluate the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, (2) establish goals to encourage the development of demand-side renewable energy systems, and (3) allow efficiency investments across generation, transmission, and distribution as well as efficiencies within the user base. The Legislature also authorized the PSC to allow an investor-owned electric utility (IOU) an additional return on equity of up to 50 basis points for exceeding 20 percent of their annual load-growth through energy efficiency and conservation measures and may authorize financial penalties for those utilities that fail to meet their goals. The additional return on equity shall be established by the PSC through a limited proceeding. Finally, the amendments to Section 366.82, F.S., provided funds for the PSC to obtain professional consulting services if needed. These statutes are implemented by Rules 25-17.001 through 25-17.0015, Florida Administrative Code (F.A.C.).

The remainder of this report summarizes Florida Public Utilities Company's DSM Plan and compares projected annual DSM peak demand and energy reductions (consistent with the programs outlined in the DSM Plan) to the annual DSM goals established by the PSC.

1.2 Commission Approved Numeric Conservation Goals

Florida Public Utilities Company's residential and commercial/industrial numeric conservation goals for the 2010 through 2019 period were established by the PSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009). These PSC-established annual goals, along with Florida Public Utilities Company's projected annual DSM peak demand and energy reductions (corresponding to the programs discussed in subsequent sections of this document) are presented below.

Total Annual Savings Across All Programs and Classes						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.43	0.67	0.19	0.45	1.29	1.75
2011	0.43	0.67	0.19	0.45	1.29	1.75
2012	0.43	0.67	0.19	0.45	1.29	1.75
2013	0.43	0.67	0.19	0.45	1.29	1.75
2014	0.43	0.67	0.19	0.45	1.29	1.75
2015	0.43	0.67	0.19	0.45	1.29	1.75
2016	0.43	0.67	0.19	0.45	1.29	1.75
2017	0.43	0.67	0.19	0.45	1.29	1.75
2018	0.43	0.67	0.19	0.45	1.29	1.75
2019	0.43	0.67	0.19	0.45	1.29	1.75
Note: Totals may not add due to rounding						

Annual Savings Across Residential Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.20	0.43	0.13	0.29	0.51	0.96
2011	0.20	0.43	0.13	0.29	0.51	0.96
2012	0.20	0.43	0.13	0.29	0.51	0.96
2013	0.20	0.43	0.13	0.29	0.51	0.96
2014	0.20	0.43	0.13	0.29	0.51	0.96
2015	0.20	0.43	0.13	0.29	0.51	0.96
2016	0.20	0.43	0.13	0.29	0.51	0.96
2017	0.20	0.43	0.13	0.29	0.51	0.96
2018	0.20	0.43	0.13	0.29	0.51	0.96
2019	0.20	0.43	0.13	0.29	0.51	0.96

Annual Savings Across Commercial & Industrial Class Programs						
	Summer Peak MW Demand Reduction		Winter Peak MW Demand Reduction		Annual Energy Reduction (gWh)	
Year	Goals	Program	Goals	Program	Goals	Program
2010	0.23	0.25	0.06	0.16	0.78	0.79
2011	0.23	0.25	0.06	0.16	0.78	0.79
2012	0.23	0.25	0.06	0.16	0.78	0.79
2013	0.23	0.25	0.06	0.16	0.78	0.79
2014	0.23	0.25	0.06	0.16	0.78	0.79
2015	0.23	0.25	0.06	0.16	0.78	0.79
2016	0.23	0.25	0.06	0.16	0.78	0.79
2017	0.23	0.25	0.06	0.16	0.78	0.79
2018	0.23	0.25	0.06	0.16	0.78	0.79
2019	0.23	0.25	0.06	0.16	0.78	0.79

1.3 Discussion of Rate Impacts from Conservation Programs

The recently completed Itron Study confirmed none of the energy efficiency measures evaluated for Florida Public Utilities Company passed the Rate Impact Test, meaning such conservation measures will result in upward pressure on customers' rates. The Itron Study found only two demand response measures passed the Rate Impact Test. The Florida Public Service Commission staff has requested an estimate of the increase in monthly bills resulting from the proposed conservation programs. Florida Public Utilities Company has estimated the monthly bill impact of the residential programs as shown below. These estimated increases are over what rates would be with no conservation programs. They would include the current Energy Conservation Cost Recovery Clause which is approximately $0.80 per month.

Estimated Increase in Monthly Bills for Residential Sector from Proposed Residential Programs	
Year	Monthly Bill Increase[1]
2010	1.47
2011	1.38
2012	1.33
2013	1.28
2014	1.23
2015	1.18
2016	1.14
2017	1.09
2018	1.05
2019	1.01
[1]Based on 1,200 kWh.	

1.4 Overview of DSM Programs

Florida Public Utilities Company is by far the smallest of the FEECA utilities. As such Florida Public Utilities Company is unable to afford a lot of independent program development and as such Florida Public Utilities Company utilizes work developed by the other FEECA utilities. The conservation programs that Florida Public Utilities Company has included in this DSM Plan are divided into residential and commercial/industrial programs. Florida Public Utilities Company has revised our conservation programs based on our experience with our existing programs to increase the value to our customers. The residential programs are offered to Florida Public Utilities Company's customers to encourage them to improve the energy efficiency of their homes, thereby decreasing heating and cooling costs. Florida Public Utilities Company proposes three residential programs and six commercial/industrial programs. The programs provide opportunities for all customers to participate. Florida Public Utilities Company's conservation programs are listed below.

1.4.1 Residential Programs

- Residential Energy Survey Program
- Residential Heating & Cooling Efficiency Upgrade Program
- Residential Ceiling Insulation Upgrade Program

1.4.2 Commercial Programs

- Commercial Energy Survey Program
- Commercial Indoor Efficient Lighting Rebate Program
- Commercial Heating & Cooling Efficiency Upgrade Program
- Commercial Ceiling Insulation Upgrade Program
- Commercial Window Film Installation Program
- Commercial Chiller Upgrade Program

1.5 Renewable Energy Programs

Order PSC-09-0855-FOF-EG requires Florida Public Utilities Company to offer renewable energy programs for solar water heating and solar photovoltaic as pilot programs with an annual expenditure cap of $47,233. These pilot programs are described in Section 4.0.

1.6 Organization of Plan

Section 2.0 presents details of the residential programs. Section 3.0 presents details of the commercial/industrial programs. Details of the pilot renewable energy programs are presented in Section 4.0. Section 5.0 presents the Energy Education Program. Appendix A contains the cost effectiveness evaluations.

2.0 Residential Programs

2.1 Residential Energy Survey Program

2.1.1 Program Description

The objective of the Residential Energy Survey is to provide Florida Public Utilities Company's residential customers with energy conservation advice that encourages the implementation of efficiency measures resulting in energy savings for the customer. These measures, once implemented, also lower Florida Public Utilities Company's energy requirements and improve operating efficiencies. Florida Public Utilities Company views this program as a way of promoting the installation of cost-effective conservation features. During the survey process, the customer is provided with specific whole-house recommendations.

The survey process also checks for possible duct leakage. If a problem is identified, recommendations are made for further analysis and repairs. Blower-door testing is required to identify and quantify the duct leakage. Florida Public Utilities Company provides the customer a list of contractors that provide blower-door testing. After the blower-door test contractor identifies the leakage sites and quantities, the customer is given a written summary of the test findings and the potential for savings, along with a list of approved repair contractors.

During the survey, Florida Public Utilities Company will provide the customer with up to 10 screw-in compact fluorescent bulbs at the sole discretion of Florida Public Utilities Company, which will be installed by the Florida Public Utilities Company auditor in locations that have the highest probability of the light being in use at the time of Florida Public Utilities Company's peak demand.

Through follow-up survey work, Florida Public Utilities Company monitors and tracks the installation of cost-effective conservation features and/or duct leakage repairs. As a result, the increase in operating efficiencies provides for a reduction in weather-sensitive peak demand, as well as a reduction in energy consumption. As technology advances and the use of the Internet becomes a part of everyone's life, Florida Public Utilities Company may implement an on-line energy survey. This will allow us to reach customers that we would otherwise not reach and allow us to promote energy efficiency to more people. This is a revision of an existing program.

2.1.2 Participation Standards

The Residential Energy Survey Program is available to all residential customers served by Florida Public Utilities Company. The program provides participating customers with information they need to determine which energy saving measures are better suited to their individual needs and requirements. Customers are only entitled to receive the compact

fluorescent bulbs once. Customers are notified of this cost-free service every six months as specified in Rule 25-17.003 of the Florida Administrative Code.

2.1.3 Benefits and Costs

Estimates for benefits were adopted from Progress Energy Florida's (PEF) Home Energy Check program. In addition to the estimated savings of PEF's Residential Audit program, the savings include the savings resulting from the installation of the 10 compact fluorescent bulbs. This program estimates a reduction in demand of 0.451 kW per customer during the summer and winter, with a 1,229 kWh energy reduction annually.

2.1.4 Monitoring and Evaluation

The availability of the audit program is communicated to residential customers using bill inserts, newspaper advertisements, and other media. Each participating customer is presented with an assessment of his or her current energy situation and recommendations for improvement. Florida Public Utilities Company can assist customers in locating qualified contractors to properly install the recommended changes.

Florida Public Utilities Company conducts follow-up surveys after customers have implemented the specific recommendations. Data concerning these changes are accumulated so the impact of the energy surveys can be more accurately measured.

2.1.5 Cost-Effectiveness

The main purpose of the energy audit is to discover energy efficiency options and changes that customers can choose to implement. Customers, on average, will choose to implement the most cost-effective options. Audit programs like this one serve energy customers by providing them with reliable information on which to base their energy efficiency decisions.

Florida Public Utilities Company
Residential Energy Survey Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,229	0.45	0.45	307,250	113	113
2011	1,229	0.45	0.45	307,250	113	113
2012	1,229	0.45	0.45	307,250	113	113
2013	1,229	0.45	0.45	307,250	113	113
2014	1,229	0.45	0.45	307,250	113	113
2015	1,229	0.45	0.45	307,250	113	113
2016	1,229	0.45	0.45	307,250	113	113
2017	1,229	0.45	0.45	307,250	113	113
2018	1,229	0.45	0.45	307,250	113	113
2019	1,229	0.45	0.45	307,250	113	113

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,287	0.47	0.47	321,816	118	118
2011	1,287	0.47	0.47	321,816	118	118
2012	1,287	0.47	0.47	321,816	118	118
2013	1,287	0.47	0.47	321,816	118	118
2014	1,287	0.47	0.47	321,816	118	118
2015	1,287	0.47	0.47	321,816	118	118
2016	1,287	0.47	0.47	321,816	118	118
2017	1,287	0.47	0.47	321,816	118	118
2018	1,287	0.47	0.47	321,816	118	118
2019	1,287	0.47	0.47	321,816	118	118

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Residential Customers	Total Number of Eligible Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants*
2010	24,088	24,088	250	1.04%	250
2011	24,285	24,285	250	2.06%	500
2012	24,485	24,485	250	3.06%	750
2013	24,685	24,685	250	4.05%	1,000
2014	24,888	24,888	250	5.02%	1,250
2015	25,092	25,092	250	5.98%	1,500
2016	25,298	25,298	250	6.92%	1,750
2017	25,505	25,505	250	7.84%	2,000
2018	25,714	25,714	250	8.75%	2,250
2019	25,925	25,925	250	9.64%	2,500

*FPUC's 2005 DSM Plan resulted in 1,214 cumulative participants in 2009

2.2 Residential Heating & Cooling Efficiency Upgrade Program

2.2.1 Program Description

This program is directed at reducing the rate of growth in peak demand and energy throughout Florida Public Utilities Company's electricity service territories. The program will do this by increasing the saturation of high-efficiency heat pumps and central air conditioning system. The program requires that customer install a high-efficiency central air conditioning system or heat pump with a minimum 14 SEER. This is an existing program.

2.2.2 Participation Standards

- The program applies to straight air conditioners or heat pumps.
- The program applies to replacements as well as new installations.
- The residential dwelling must be an existing single-family detached structure (no mobile homes or multifamily units) in Florida Public Utilities Company's service territory.
- The HVAC system must be ducted.
- The minimum qualifying efficiency rating for the replacement heat pump (ARI rating only) or central air conditioning system is 14.0 SEER.
- For a new heat pump installed or a heat pump being replaced, the maximum supplemental strip heating physically contained in the system shall not exceed 2 kW per nominal ton. On a system of less than 2.5 tons, a 5 kW heat strip will be allowed.
- For a heat pump using supplemental strip heating, a two-stage indoor thermostat is required.
- If replacing a straight cooling system, the residence cannot have oil or electric resistance as the primary heat source.
- In the situation where a replacement heating and cooling system will qualify for two rebates (Florida Public Utilities Company's and a gas company's), Florida Public Utilities Company will not pay its rebate so that a double payment is avoided.
- HVAC contractors will submit rebate request forms to Florida Public Utilities Company. The contractor, certifying that the equipment installed accords with the program standards, will sign the form. The customer will sign the form verifying that the equipment was installed and that the incentive recipient's name and mailing address are correct.
- The Heating and Cooling Rebate request form must be received within 30 days of the installation date of the unit to assure the payment of the dealer incentive.

- Florida Public Utilities Company will randomly perform full field verifications on a minimum of 10 percent of the participating homes. Homes not selected for the field review will have a telephone or written verification to validate the rebate information.
- No payments will be made until Florida Public Utilities Company verifies or validates rebate requests.

2.2.2.1 Rebates and Incentives.

Residential Heating & Cooling Efficiency Rebates		
	Customer Rebate	**Dealer Incentive**
Type 1	$100.00	$75.00
Type 2	$100.00	$25.00
Type 3	$100.00	$25.00
Type 4	$100.00	$25.00

Type 1 rebates and incentives are for a heat pump replacing resistance heat. Type 2 rebates and incentives are for a heat pump replacing a heat pump. Type 3 rebates and incentives are for an air conditioner replacement. Type 4 rebates and incentives are for a new heat pump or air conditioner installation.

The reporting requirements for this program will follow Rule 25-17.0021 (5), Florida Administrative Code. Additionally, program expenses will be identified in the ECCR True-up and Projection filings.

2.2.3 Benefits and Costs

Estimates for average benefits were developed from Energy Star data and Orlando Utilities Commission Residential Efficient Electric Heat Pump Rebate program. This program estimates a reduction in demand of 1.86 kW per customer during the summer, 1.02 kW per customer during the winter, and a 3,778 kWh energy reduction annually.

2.2.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants, non-participants and dealers. Depending upon the level of participation, surveys may be conducted among customers having upgraded their systems to determine customer satisfaction with the upgrades.

2.2.5 Cost-Effectiveness

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Residential Heating & Cooling Efficiency Upgrade Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	3,778	1.02	1.86	566,700	153	279
2011	3,778	1.02	1.86	566,700	153	279
2012	3,778	1.02	1.86	566,700	153	279
2013	3,778	1.02	1.86	566,700	153	279
2014	3,778	1.02	1.86	566,700	153	279
2015	3,778	1.02	1.86	566,700	153	279
2016	3,778	1.02	1.86	566,700	153	279
2017	3,778	1.02	1.86	566,700	153	279
2018	3,778	1.02	1.86	566,700	153	279
2019	3,778	1.02	1.86	566,700	153	279

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	3,957	1.07	1.95	593,566	160	292
2011	3,957	1.07	1.95	593,566	160	292
2012	3,957	1.07	1.95	593,566	160	292
2013	3,957	1.07	1.95	593,566	160	292
2014	3,957	1.07	1.95	593,566	160	292
2015	3,957	1.07	1.95	593,566	160	292
2016	3,957	1.07	1.95	593,566	160	292
2017	3,957	1.07	1.95	593,566	160	292
2018	3,957	1.07	1.95	593,566	160	292
2019	3,957	1.07	1.95	593,566	160	292

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Residential Customers	Total Number of Eligible Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants*
2010	24,088	23,938	150	0.63%	150
2011	24,285	23,985	150	1.25%	300
2012	24,485	24,035	150	1.87%	450
2013	24,685	24,085	150	2.49%	600
2014	24,888	24,138	150	3.11%	750
2015	25,092	24,192	150	3.72%	900
2016	25,298	24,248	150	4.33%	1,050
2017	25,505	24,305	150	4.94%	1,200
2018	25,714	24,364	150	5.54%	1,350
2019	25,925	24,425	150	6.14%	1,500

*FPUC's 2005 DSM Plan resulted in 638 cumulative participants in 2009

2.3.3 Benefits and Costs

Estimates for benefits were adopted from Gainesville Regional Utility's (GRU) Residential Insulation program. This program estimates a reduction in demand of 0.50 kW per customer during the summer and winter, and estimates a 1,497 kWh energy reduction annually per customer.

2.3.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants and non-participants. Depending upon the level of participation, surveys may be conducted among customers having upgraded their insulation levels to determine customer satisfaction.

2.3.5 Cost-Effectiveness

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Residential Ceiling Insulation Upgrade Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,497	0.50	0.50	44,910	15	15
2011	1,497	0.50	0.50	44,910	15	15
2012	1,497	0.50	0.50	44,910	15	15
2013	1,497	0.50	0.50	44,910	15	15
2014	1,497	0.50	0.50	44,910	15	15
2015	1,497	0.50	0.50	44,910	15	15
2016	1,497	0.50	0.50	44,910	15	15
2017	1,497	0.50	0.50	44,910	15	15
2018	1,497	0.50	0.50	44,910	15	15
2019	1,497	0.50	0.50	44,910	15	15

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,568	0.52	0.52	47,039	16	16
2011	1,568	0.52	0.52	47,039	16	16
2012	1,568	0.52	0.52	47,039	16	16
2013	1,568	0.52	0.52	47,039	16	16
2014	1,568	0.52	0.52	47,039	16	16
2015	1,568	0.52	0.52	47,039	16	16
2016	1,568	0.52	0.52	47,039	16	16
2017	1,568	0.52	0.52	47,039	16	16
2018	1,568	0.52	0.52	47,039	16	16
2019	1,568	0.52	0.52	47,039	16	16

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Residential Customers	Total Number of Eligible Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants*
2010	24,088	24,058	30	0.12%	30
2011	24,285	24,225	30	0.25%	60
2012	24,485	24,395	30	0.37%	90
2013	24,685	24,565	30	0.49%	120
2014	24,888	24,738	30	0.61%	150
2015	25,092	24,912	30	0.72%	180
2016	25,298	25,088	30	0.84%	210
2017	25,505	25,265	30	0.95%	240
2018	25,714	25,444	30	1.06%	270
2019	25,925	25,625	30	1.17%	300

*FPUC's 2005 DSM Plan resulted in 97 cumulative participants in 2009

3.0 Commercial/Industrial Programs

3.1 Commercial Energy Survey Program

3.1.1 Program Description

The Commercial Energy Survey Program is an interactive program that assists commercial customers 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 Commercial Energy Survey process consists of an on-site review of the customer's facility operation, equipment, and energy usage pattern by a Florida Public Utilities Company Conservation Specialist. The specialist identifies areas of potential reduction in kW demand and kWh consumption as well as identifying end-use technology opportunities. A technical evaluation is then performed to determine the economic payback or life cycle cost for various improvements to the facility. Florida Public Utilities Company will subcontract the evaluation process to an independent engineering firm and/or contracting consultant, if necessary.

During the survey, Florida Public Utilities Company will provide the customer with up to 10 screw-in compact fluorescent bulbs at the sole discretion of Florida Public Utilities Company, which will be installed by the Florida Public Utilities Company auditor in locations that have the highest probability of the light being in use at the time of Florida Public Utilities company's peak demand. This is a revision of an existing program.

3.1.2 Participation Standards

The Commercial Energy Survey Program is available to all commercial and industrial customers.

3.1.3 Benefits and Costs

The Commercial Energy Survey provides specific recommendations of energy conservation opportunities for the customer. The cost to the customer will be based on the recommendations regarding equipment, operational options, or other suggestions. The age of the customer's existing stock of end-use technologies and appliances and the building's envelope are key determinates of the customer's cost. While the program provides specific and unique options to the customer which can result in varying savings, for purposes of evaluating performance against the PSC's goals, demand savings estimates are based on Orlando Utilities Commission's Commercial Energy Survey program. In addition to the estimated savings of OUC's Commercial Energy Survey, the savings include the savings resulting from the installation of the 10 compact fluorescent bulbs.

Estimated program savings are 0.534 kW of reduction in summer and winter, with an annual energy savings of 1,861 kWh per customer. The benefits to Florida Public Utilities Company come from the resulting energy conservation as well as improved customer satisfaction. In recent research of commercial/industrial customers, providing these customers with individualized attention to help them lower operating costs and increase efficiency is consistently mentioned as an area of needed improvement.

3.1.4 Monitoring and Evaluation

Monitoring and evaluation of the Commercial Energy Surveys will be administered on a case-by-case basis. Energy efficiency levels resulting in lower operating costs, improved customer satisfaction, and kW and kWh reductions will be monitored to help determine the program's effectiveness. The program has been successful thus far with greater than expected participation. The Company will continue to monitor this successful program.

3.1.5 Cost-Effectiveness

The main purpose of the energy audit is to discover energy efficiency options and changes that customers can choose to implement. Customers, on average, will choose to implement the most cost-effective options. Audit programs like this one serve energy customers by providing them with reliable information upon which to base their energy efficiency decisions.

Florida Public Utilities Company
Commercial Energy Survey Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,861	0.53	0.53	93,050	27	27
2011	1,861	0.53	0.53	93,050	27	27
2012	1,861	0.53	0.53	93,050	27	27
2013	1,861	0.53	0.53	93,050	27	27
2014	1,861	0.53	0.53	93,050	27	27
2015	1,861	0.53	0.53	93,050	27	27
2016	1,861	0.53	0.53	93,050	27	27
2017	1,861	0.53	0.53	93,050	27	27
2018	1,861	0.53	0.53	93,050	27	27
2019	1,861	0.53	0.53	93,050	27	27

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,949	0.56	0.56	97,461	28	28
2011	1,949	0.56	0.56	97,461	28	28
2012	1,949	0.56	0.56	97,461	28	28
2013	1,949	0.56	0.56	97,461	28	28
2014	1,949	0.56	0.56	97,461	28	28
2015	1,949	0.56	0.56	97,461	28	28
2016	1,949	0.56	0.56	97,461	28	28
2017	1,949	0.56	0.56	97,461	28	28
2018	1,949	0.56	0.56	97,461	28	28
2019	1,949	0.56	0.56	97,461	28	28

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Non-Residential Customers	Total Number of Eligible Non-Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants*
2010	7,459	7,459	50	0.67%	50
2011	7,528	7,528	50	1.35%	100
2012	7,597	7,597	50	2.01%	150
2013	7,667	7,667	50	2.68%	200
2014	7,737	7,737	50	3.34%	250
2015	7,808	7,808	50	4.00%	300
2016	7,880	7,880	50	4.65%	350
2017	7,953	7,953	50	5.30%	400
2018	8,026	8,026	50	5.94%	450
2019	8,100	8,100	50	6.58%	500

*FPUC's 2005 DSM Plan resulted in 213 cumulative participants in 2009

3.2 Commercial Indoor Efficient Lighting Rebate Program

3.2.1 Program Description

The purpose of this program is to reduce peak demand and energy consumption by decreasing the load presented by commercial lighting equipment. In addition to reducing lighting loads, the reduced lighting loads also reduces cooling loads. To serve this purpose, this program implements a two-tier rebate system that applies to the replacements of either ballasts and lamps or lamps only. Tier 1 requires that commercial customers achieve at least 1,000 watts of lighting reduction by replacing ballasts and lamps, while Tier 2 requires that commercial customers achieve at least 1,000 watts of reduction by replacing lamps only, thereby creating a more efficient fluorescent lighting system. By doing so, they will qualify for an incentive of 10¢ per watt reduced for Tier 1 or a 2.5¢ per watt rebate for Tier 2 participation.

Interested commercial customers or contractor must contact Florida Public Utilities Company before starting a lighting retrofit project. The Company will then dispatch a qualified lighting engineer to perform an inspection and determine what lighting changes should be made to enhance efficiency. The inspection will also determine the customer/contractor's eligibility for the reduced-watt incentives. If the customer desires it, Florida Public Utilities Company will also help them find a qualified contractor to do the needed upgrade. This is a revision of an existing program.

3.2.2 Participation Standards

- Any commercial/industrial customer on firm rates meeting the Company's requirements for participation is eligible.
- Tier 1: A minimum of 1,000 watts reduction by replacing ballasts and lamps.
- Tier 2: A minimum of 1,000 watts reduction by replacing lamps alone.
- Reductions in lighting energy caused only by fixture/lamp removal, operational changes, or by "add-on" energy saving devices are not eligible.
- Delamping installations will require that reflectors be incorporated unless high-output ballasts are used in the installations.
- Only dedicated ballast and lamp systems will be eligible for rebates (i.e., ballasts will be designed to operate one specific type and wattage lamp). Ballasts designed to operate multiple wattage lamp types are not eligible.
- All indoor lighting retrofits that are energy efficient and reduce overall wattage will qualify.
- Ballasts must have total harmonic distortion levels of less than 20 percent as tested by ETL Testing Laboratory.
- Customers/Contractor must submit rebate request forms to Florida Public Utilities Company with the invoices of their purchases of lighting systems.

- Florida Public Utilities Company will randomly perform full field verifications on a minimum of 10 percent of the participating businesses. Participants not selected for the field review will have a telephone verification to validate the rebate information.
- No payments will be made until Florida Public Utilities Company verifies or validates rebate requests.
- For Tier 2, customer must sign agreement to maintain efficient lamps for a minimum of two years. Florida Public Utilities Company will re-inspect each facility receiving a Tier 2 rebate after two years. Facilities that have not maintained the efficient lamps will be back charged the Tier 2 rebate.
- Only Tier 2 lamps that are deemed likely to be in use at the time of Florida Public Utilities Company system peak will be eligible for the Tier 2 rebate.
- The customer/Contractor rebate is $0.10 per watt reduction for Tier 1 and $0.025 per watt reduction for Tier 2 for replacing the current lighting system with a more efficient lighting system within conditioned space.
- The Tier 2 rebate is limited to $100 maximum.
- The reporting requirements for this program will follow Rule 25-17.0021 (5), Florida Administrative Code. Additionally, program expenses will be identified in the Energy Conservation Cost Recovery (ECCR) True Up and Projection filings.

3.2.3 Benefits and Costs

Commercial lighting load represents a significant fraction of commercial customers' electric bills. That load is usually on during Florida Public Utilities Company's peak period. By encouraging commercial customers to upgrade and enhance their interior lighting to benefit their business and reduce the lighting load, commercial customers, Florida Public Utilities Company, and other ratepayers are benefited. Estimated annual savings are 16,259 kWh, 3.20 kW summer demand, and 2.08 kW winter demand based on Florida Public Utilities Company actual demand savings and Florida Power & Light's estimated winter peak demand and load factor savings.

3.2.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants and non-participants. Depending upon the level of participation, surveys may be conducted among customers having upgraded their lighting systems to determine customer satisfaction with the upgrades.

3.2.5 Cost-Effectiveness

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Commercial Indoor Efficient Lighting Rebate Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	16,259	2.08	3.20	195,108	25	38
2011	16,259	2.08	3.20	195,108	25	38
2012	16,259	2.08	3.20	195,108	25	38
2013	16,259	2.08	3.20	195,108	25	38
2014	16,259	2.08	3.20	195,108	25	38
2015	16,259	2.08	3.20	195,108	25	38
2016	16,259	2.08	3.20	195,108	25	38
2017	16,259	2.08	3.20	195,108	25	38
2018	16,259	2.08	3.20	195,108	25	38
2019	16,259	2.08	3.20	195,108	25	38

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	17,030	2.18	3.35	204,358	26	40
2011	17,030	2.18	3.35	204,358	26	40
2012	17,030	2.18	3.35	204,358	26	40
2013	17,030	2.18	3.35	204,358	26	40
2014	17,030	2.18	3.35	204,358	26	40
2015	17,030	2.18	3.35	204,358	26	40
2016	17,030	2.18	3.35	204,358	26	40
2017	17,030	2.18	3.35	204,358	26	40
2018	17,030	2.18	3.35	204,358	26	40
2019	17,030	2.18	3.35	204,358	26	40

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Non-Residential Customers	Total Number of Eligible Non-Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants
2010	7,459	7,459	12	0.16%	12
2011	7,528	7,528	12	0.32%	24
2012	7,597	7,597	12	0.48%	36
2013	7,667	7,667	12	0.63%	48
2014	7,737	7,737	12	0.78%	60
2015	7,808	7,808	12	0.93%	72
2016	7,880	7,880	12	1.08%	84
2017	7,953	7,953	12	1.22%	96
2018	8,026	8,026	12	1.36%	108
2019	8,100	8,100	12	1.50%	120

*FPUC's 2005 DSM Plan resulted in 4 cumulative participants

3.3 Commercial Heating & Cooling Efficiency Upgrade Program

3.3.1 Program Description

Based on the success of the Residential Heating & Cooling Efficiency Upgrade Programs, Florida Public Utilities Company is expanding its rebate to include small commercial customers (commercial establishments with a maximum of 5 ton units). This program is directed at reducing the rate of growth in peak demand and energy throughout Florida Public Utilities Company's commercial sector. The program will do this by increasing the saturation of high-efficiency heat pumps and air conditioners. The program requires that customer install a high-efficiency central air conditioning system or heat pump with a minimum 14 SEER unit. This is a new program and the start date will be 30 dys after approval by the Public Service Commission.

3.3.2 Participation Standards

- The program applies to all non-residential customers.
- The program does not apply to units greater than 5 tons.
- The participation standards of the Residential Heating and Cooling Efficiency Upgrade program apply.

3.3.2.1 Rebates and Incentives.

Residential Heating & Cooling Efficiency Rebates		
	Customer Rebate	**Dealer Incentive**
Type 1	$100.00	$75.00
Type 2	$100.00	$25.00
Type 3	$100.00	$25.00
Type 4	$100.00	$25.00

Type 1 rebates and incentives are for a heat pump replacing resistance heat. Type 2 rebates and incentives are for a heat pump replacing a heat pump. Type 3 rebates and incentives are for an air conditioner replacement. Type 4 rebates and incentives are for a new heat pump or air conditioner installation.

The reporting requirements for this program will follow Rule 25-17.0021 (5), Florida Administrative Code. Additionally, program expenses will be identified in the ECCR True-up and Projection filings.

3.3.3 Benefits and Costs

Estimates for average benefits were adopted from Florida Power and Light's (FPL) HVAC Upgrade program. This program estimates a reduction in demand of 1.86 kW per

customer during the summer, 1.02 kW per customer during the winter, and a 3,778 kWh energy reduction annually.

3.3.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants, non-participants and dealers. Depending upon the level of participation, surveys may be conducted among customers having upgraded their systems to determine customer satisfaction with the upgrades.

3.3.5 Cost-Effectiveness

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Commercial Heating & Cooling Efficiency Upgrade Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	3,778	1.02	1.86	188,900	51	93
2011	3,778	1.02	1.86	188,900	51	93
2012	3,778	1.02	1.86	188,900	51	93
2013	3,778	1.02	1.86	188,900	51	93
2014	3,778	1.02	1.86	188,900	51	93
2015	3,778	1.02	1.86	188,900	51	93
2016	3,778	1.02	1.86	188,900	51	93
2017	3,778	1.02	1.86	188,900	51	93
2018	3,778	1.02	1.86	188,900	51	93
2019	3,778	1.02	1.86	188,900	51	93

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	3,957	1.07	1.95	197,855	53	97
2011	3,957	1.07	1.95	197,855	53	97
2012	3,957	1.07	1.95	197,855	53	97
2013	3,957	1.07	1.95	197,855	53	97
2014	3,957	1.07	1.95	197,855	53	97
2015	3,957	1.07	1.95	197,855	53	97
2016	3,957	1.07	1.95	197,855	53	97
2017	3,957	1.07	1.95	197,855	53	97
2018	3,957	1.07	1.95	197,855	53	97
2019	3,957	1.07	1.95	197,855	53	97

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Non-Residential Customers	Total Number of Eligible Non-Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants
2010	7,459	3,729	50	1.34%	50
2011	7,528	3,764	50	2.66%	100
2012	7,597	3,798	50	3.95%	150
2013	7,667	3,833	50	5.22%	200
2014	7,737	3,869	50	6.46%	250
2015	7,808	3,904	50	7.68%	300
2016	7,880	3,940	50	8.88%	350
2017	7,953	3,976	50	10.06%	400
2018	8,026	4,013	50	11.21%	450
2019	8,100	4,050	50	12.35%	500

3.4 Commercial Ceiling Insulation Upgrade Program

3.4.1 Program Description

Based on the success of the Residential Ceiling Insulation Upgrade Program, Florida Public Utilities Company is extending the program's reach to its commercial customers. The purpose of this program is to reduce peak demand and energy consumption by decreasing the load presented on commercial air-conditioning and heating equipment. To serve this purpose, this program requires that commercial customers increase insulation levels to at least R-30. By doing so, they will qualify for an incentive of $0.125 per square foot up to $375 in the form of a rebate.

Interested commercial customers must request a Commercial Energy Survey. Florida Public Utilities Company will then dispatch an energy efficiency expert to perform the Commercial Energy Survey. The inspection will also determine the customer's eligibility for the rebate. If the customer desires it, Florida Public Utilities Company will also help them find a qualified contractor to do the needed upgrade. This is a new program and the start date will be 30 days after approval by the Public Service Commission.

3.4.2 Participation Standards

- The program applies to all Florida Public Utilities Company non-residential customers.
- All participation standards of the Residential Ceiling Insulation Upgrade program apply.

3.4.3 Benefits and Costs

Estimates for benefits were adopted from Gainesville Regional Utility's (GRU) Residential Insulation program. This program estimates a reduction in demand of 0.50 kW per customer during the summer and winter, and estimates a 1,497 kWh energy reduction annually per customer.

3.4.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants and non-participants. Depending upon the level of participation, surveys may be conducted among customers having upgraded their insulation levels to determine customer satisfaction.

3.4.5 Cost-Effectiveness

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Commercial Ceiling Insulation Upgrade Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,497	0.50	0.50	17,964	6	6
2011	1,497	0.50	0.50	17,964	6	6
2012	1,497	0.50	0.50	17,964	6	6
2013	1,497	0.50	0.50	17,964	6	6
2014	1,497	0.50	0.50	17,964	6	6
2015	1,497	0.50	0.50	17,964	6	6
2016	1,497	0.50	0.50	17,964	6	6
2017	1,497	0.50	0.50	17,964	6	6
2018	1,497	0.50	0.50	17,964	6	6
2019	1,497	0.50	0.50	17,964	6	6

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	1,568	0.52	0.52	18,816	6	6
2011	1,568	0.52	0.52	18,816	6	6
2012	1,568	0.52	0.52	18,816	6	6
2013	1,568	0.52	0.52	18,816	6	6
2014	1,568	0.52	0.52	18,816	6	6
2015	1,568	0.52	0.52	18,816	6	6
2016	1,568	0.52	0.52	18,816	6	6
2017	1,568	0.52	0.52	18,816	6	6
2018	1,568	0.52	0.52	18,816	6	6
2019	1,568	0.52	0.52	18,816	6	6

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Non-Residential Customers	Total Number of Eligible Non-Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants
2010	7,459	7,459	12	0.16%	12
2011	7,528	7,528	12	0.32%	24
2012	7,597	7,597	12	0.48%	36
2013	7,667	7,667	12	0.63%	48
2014	7,737	7,737	12	0.78%	60
2015	7,808	7,808	12	0.93%	72
2016	7,880	7,880	12	1.08%	84
2017	7,953	7,953	12	1.22%	96
2018	8,026	8,026	12	1.36%	108
2019	8,100	8,100	12	1.50%	120

3.5 Commercial Window Film Installation Program

3.5.1 Program Description

The purpose of this program is to reduce peak demand and energy consumption by decreasing the load presented on commercial air-conditioning and heating equipment. To serve this purpose, this program requires that commercial customers install solar window film on eastern facing or western facing windows. Solar window film must have a shading coefficient of 0.45 or less. Windows with greater than 50% direct solar exposure are exempt from the incentive.

Interested customers will send project proposals to Florida Public Utilities Company and a representative will schedule an on-site visit for inspection prior to window film installation. After the project is completed, a Florida Utilities Company representative will conduct an on-site post inspection. By following the guidelines, the customer will qualify for a rebate of $0.50 per square foot of covered area at $100 maximum per customer. This is a new program and the start date will be 30 days after approval by the Public Service Commission.

3.5.2 Participation Standards

- The program applies to all Florida Public Utilities Company non-residential customers.
- Solar window film must have a shading coefficient of 0.45 or less.
- Windows must face the east or the west and cannot have greater than 50 percent direct solar exposure.
- The customer must schedule an on-site inspection prior to installing the window film.

3.5.3 Benefits and Costs

Estimates for benefits were adopted from Tampa Electric Company's (TECO) Solar Window Film program contained within the Commercial Building Envelope Improvement program. The program estimates a reduction of demand of 0.84 kW per customer during the summer and estimates a 3,670 kWh energy reduction annually per customer.

3.5.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants and non-participants. Depending upon the level of participation, surveys may be conducted among customers having installed window film to determine customer satisfaction.

3.5.5 *Cost-Effectiveness*

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Commercial Window Film Installation Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	3,670	0.00	0.84	44,040	0	10
2011	3,670	0.00	0.84	44,040	0	10
2012	3,670	0.00	0.84	44,040	0	10
2013	3,670	0.00	0.84	44,040	0	10
2014	3,670	0.00	0.84	44,040	0	10
2015	3,670	0.00	0.84	44,040	0	10
2016	3,670	0.00	0.84	44,040	0	10
2017	3,670	0.00	0.84	44,040	0	10
2018	3,670	0.00	0.84	44,040	0	10
2019	3,670	0.00	0.84	44,040	0	10

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	3,844	0.00	0.88	46,128	0	11
2011	3,844	0.00	0.88	46,128	0	11
2012	3,844	0.00	0.88	46,128	0	11
2013	3,844	0.00	0.88	46,128	0	11
2014	3,844	0.00	0.88	46,128	0	11
2015	3,844	0.00	0.88	46,128	0	11
2016	3,844	0.00	0.88	46,128	0	11
2017	3,844	0.00	0.88	46,128	0	11
2018	3,844	0.00	0.88	46,128	0	11
2019	3,844	0.00	0.88	46,128	0	11

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Non-Residential Customers	Total Number of Eligible Non-Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants
2010	7,459	7,459	12	0.16%	12
2011	7,528	7,528	12	0.32%	24
2012	7,597	7,597	12	0.48%	36
2013	7,667	7,667	12	0.63%	48
2014	7,737	7,737	12	0.78%	60
2015	7,808	7,808	12	0.93%	72
2016	7,880	7,880	12	1.08%	84
2017	7,953	7,953	12	1.22%	96
2018	8,026	8,026	12	1.36%	108
2019	8,100	8,100	12	1.50%	120

3.6 Commercial Chiller Upgrade Program

3.6.1 Program Description

This program is directed at reducing the rate of growth in peak demand and energy throughout Florida Public Utilities Company's commercial sector. To serve this purpose, this program requires that commercial customers replace existing chillers with a more efficient system. By doing so, they will qualify for an incentive of up to $100 per kW of additional savings above the minimum efficiency levels.

The program covers water-cooled centrifugal chillers, water-cooled scroll or screw chillers, and air-cooled electric chillers. Minimum qualifications for efficiency exist for each of the chiller types based on size and are presented in the participation standards section of this program description. Interested customers will send project proposals to Florida Public Utilities Company and a representative will schedule an on-site visit for inspection prior installation. After the project is completed, a Florida Utilities Company representative will conduct an on-site inspection. By following the guidelines, the customer will qualify for the rebate. This is a new program and the start date will be 30 days after approval by the Public Service Commission.

3.6.2 Participation Standards

- The program applies to all Florida Public Utilities Company non-residential customers.
- Minimum qualifications for new chillers are as follows:
  - Water-Cooled Centrifugal Chillers:
    1. Under 150 tons = 0.65 kW/ton with a 5.4 COP
    2. 150 - 300 tons = 0.60 kW/ton with a 5.9 COP
    3. Over 300 tons = 0.56 kW/ton with a 6.3 COP
  - Water-Cooled Scroll or Screw Chillers:
    1. Under 150 tons = 0.72 kW/ton with a 4.9 COP
    2. 150 - 300 tons = 0.66 kW/ton with a 5.3 COP
    3. Over 300 tons = 0.59 kW/ton with a 5.9 COP
  - Air-Cooled Electric Chillers (any size):
    1. Any size = 1.17 kW/ton with a 3.0 COP

3.6.3 Benefits and Costs

Estimates for benefits were adopted from TECO's Commercial Chiller Upgrade program. This program estimates a 63.17 kW and 39.94 kW reduction per customer during the summer and winter, respectively. The program estimates a 216,545 kWh energy reduction annually per customer.

3.6.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants and non-participants. Depending upon the level of participation, surveys may be conducted among customers having upgraded chillers to determine customer satisfaction.

3.6.5 Cost-Effectiveness

The cost-effectiveness FIRE model results are included in Appendix A.

Florida Public Utilities Company
Commercial Chiller Upgrade Program

AT THE METER						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	216,545	39.94	63.17	216,545	40	63
2011	216,545	39.94	63.17	216,545	40	63
2012	216,545	39.94	63.17	216,545	40	63
2013	216,545	39.94	63.17	216,545	40	63
2014	216,545	39.94	63.17	216,545	40	63
2015	216,545	39.94	63.17	216,545	40	63
2016	216,545	39.94	63.17	216,545	40	63
2017	216,545	39.94	63.17	216,545	40	63
2018	216,545	39.94	63.17	216,545	40	63
2019	216,545	39.94	63.17	216,545	40	63

AT THE GENERATOR						
YEAR	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2010	226,811	41.83	66.16	226,811	42	66
2011	226,811	41.83	66.16	226,811	42	66
2012	226,811	41.83	66.16	226,811	42	66
2013	226,811	41.83	66.16	226,811	42	66
2014	226,811	41.83	66.16	226,811	42	66
2015	226,811	41.83	66.16	226,811	42	66
2016	226,811	41.83	66.16	226,811	42	66
2017	226,811	41.83	66.16	226,811	42	66
2018	226,811	41.83	66.16	226,811	42	66
2019	226,811	41.83	66.16	226,811	42	66

CUSTOMERS AND PARTICIPATION RATES					
YEAR	Total Number of Non-Residential Customers	Total Number of Eligible Non-Residential Customers	Annual Number of Program Participants	Total Penetration Level %	Cumulative Number of Program Participants
2010	7,459	7,459	1	0.01%	1
2011	7,528	7,528	1	0.03%	2
2012	7,597	7,597	1	0.04%	3
2013	7,667	7,667	1	0.05%	4
2014	7,737	7,737	1	0.06%	5
2015	7,808	7,808	1	0.08%	6
2016	7,880	7,880	1	0.09%	7
2017	7,953	7,953	1	0.10%	8
2018	8,026	8,026	1	0.11%	9
2019	8,100	8,100	1	0.12%	10

4.0 Renewable Energy Programs

4.1 Solar Water Heating

4.1.1 Program Description

The primary purpose of the Solar Water Heating program is to encourage the installation of solar water heaters and thereby reduce the consumption of fossil fuels. Florida Public Service Company provides an incentive payment for the installation of a solar water heater. The incentive payments are subject to the cap of $47,233 for renewable energy programs. This is a new program and the start date will be 30 days after approval by the Public Service Commission.

4.1.2 Participation Standards

The program is open to all Florida Public Utilities Company customers; however, each customer is entitled to only one incentive for installation of solar water heating. Eligible customers will receive an incentive payment of $200 for the installation of a solar water heating system. Customers must not have a natural gas or electric water heater after the installation of the solar water heater. Customers must contact Florida Public Utilities Company who will send an inspector to verify the installation prior to the customer receiving the incentive. Once the renewable energy cap is reached, there will be no more incentives paid.

Only solar water heating systems are eligible for this program. A qualified solar water heating system is one that is IAPMO (International Association of Plumbing and Mechanical Officials) approved, has a UL approved controller, be installed in accordance wit the NEC and the manufacturer's instructions as well as be approved by the local building department, to the extent required by code and/or ordinance or any substitute certifying laboratory, agency or similar at the sole discretion of Florida Public Utilities Company.

4.1.3 Benefits and Costs

Florida Public Utilities Company has not developed expected savings from this program.

4.1.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants, non-participants, and contractors.

4.1.5 Cost-Effectiveness

Cost-effectiveness analysis has not been conducted for the solar hot water program.

4.2 Solar Photovoltaic

4.2.1 Program Description

The primary purpose of the Solar Photovoltaic program is to encourage the installation of solar photovoltaic systems by customers. Florida Public Service Company provides an incentive payment for the installation of a solar photovoltaic system. The incentive payments are subject to the cap of $47,233 for renewable energy programs. This is a new program and the start date is 30 days after approval by the Public Service Commission.

4.2.2 Participation Standards

The program is open to all Florida Public Utilities Company customers; however, each customer is entitled to only one incentive for installation of a solar photovoltaic system. Any excess generation from the solar photovoltaic system will be purchased by Florida Public Utilities Company under the terms of Northwest Florida Division Rate Schedule REN-1 or Northeast Florida Division Rate Schedule REN-1. Florida Public Utilities Company will provide an incentive payment of $0.25 per watt of ac solar photovoltaic installed with a maximum incentive of $500. Customers must contact Florida Public Utilities Company who will send an inspector to verify the installation prior to the customer receiving the incentive. Once the renewable energy cap is reached, there will be no more incentives paid.

Only qualified photovoltaic systems are eligible for this program. A qualified photovoltaic system is one that is UL approved, be installed in accordance with the NEC and the manufacturer's instructions as well as be approved by the local building department, to the extent required by code and/or ordinance or any substitute certifying laboratory, agency or similar at the sole discretion of Florida Public Utilities Company.

4.2.3 Benefits and Costs

Florida Public Utilities Company has not developed expected savings from this program.

4.2.4 Monitoring and Evaluation

Reasons for program participation and non-participation will be assessed through interviews conducted with program participants, non-participants, and contractors.

4.2.5 Cost-Effectiveness

Cost-effectiveness analysis has not been conducted for the solar hot water program.

5.0 Energy Education Programs

5.1 Conservation Demonstration and Development (CDD) Program

5.1.1 Program Description

The primary purpose of the Conservation Demonstration and Development (CDD) program is to pursue research, development, and demonstration projects that are designed to promote energy efficiency and conservation. This program will supplement and complement the other demand-side management programs offered by Florida Public Utilities Company.

The CDD program is meant to be an umbrella program for the identification, development, demonstration, and evaluation of promising new end-use technologies. The CDD program does not focus on any specific end-use technology but, instead, will address a wide variety of energy applications.

5.1.2 Participation Standards

The projects that may be studied within this program will vary greatly and, therefore, will need careful screening. The screening criteria will include the potential for peak demand and energy reductions, the technology's state-of-development, and an evaluation of the degree of potential customer acceptance and marketability.

The activities that may take place under the auspices of this program include:

- Literature searches and reviews.
- Engineering appraisals.
- Financial analyses of promising programs, projects or technologies.
- Baseline data collection.
- Field-testing with customers.
- Technology demonstrations.
- Pilot programs.

Field-testing will be limited to the demonstration of emerging end-use technologies that meet the guidelines described in the Program Description section above. Funding for the field-testing will be constrained by this program's expenditure limitations. If any field-testing or pilot projects require funding beyond these limitations and if Florida Public Utilities Company believes them necessary, the Florida Public Service Commission will be asked to specifically approve them for Energy Conservation Cost Recovery.

Florida Public Utilities Company will limit the total CDD expenditures to a maximum of $75,000 per year. The Company will also notify the Florida Public Service Commission of any CDD project that exceeds $15,000. Costs for CDD projects that meet the program's criteria for acceptance will be charged to Energy Conservation Cost Recovery account.

The projects undertaken by this program are research and development projects. The levels of costs and benefits and the potential peak demand and energy reductions are not known with sufficient certainty. The major thrust of the activities performed under the CDD program will be to develop better estimates of these economic drivers.

5.1.3 Benefits and Costs

This program will enable Florida Public Utilities Company to "pursue research, development, and demonstration projects designed to promote energy efficiency and conservation" as stated in the FPSC Order No. 22176 issued November 14, 1989, in Docket No. 890737-PU and is consistent with meeting the goals in Rule 25-17.001 of the Florida Administrative Code.

CDD projects will enable the collection of actual data from field tests. Engineering estimates and modeling techniques can be tested and validated. Future cost-benefit analyses for the subject CDD projects will be more reliable, thereby enabling better assessments of the expected future peak demand and energy conservation potential.

CDD projects will uncover implementation barriers and potential disadvantages thereby enabling customer acceptance and satisfaction to be better gauged. These are important things to learn. Customer response will ultimately determine the success of new ideas and products.

5.1.4 Monitoring and Evaluation

Any technology investigated as a CDD project will be investigated using well-accepted methods of measurement and evaluation. Before any project is approved for study, the project's justification will be clearly documented. The justification will include:

- Detailed project description (a-priori).
- Research design plan.
- Project potential.
- Project alignment with CDD program goals.
- Project costs.

All expenditures allocated to this program will be properly accounted for and reported.

All approved CDD projects that do not require field-testing will be fully documented. The documentation will include descriptions of the methodology, modeling, and engineering estimation procedures used to justify the study's results and conclusions.

Specific deliverables that will be provided from all CDD projects include:

- Detailed project description (a-posteriori).
- Conservation potential.
- Achieved.
- Projected.

- Technical evaluation.
- Cost-benefit considerations.
- Customer acceptance.
- Achieved with test subjects.
- Projected.

These findings will be reported and filed with the Florida Public Service Commission's staff for their review and consideration.

5.1.5 Cost-Effectiveness

Standard cost-effectiveness analysis is not applicable for research and development activities. The purpose of these activities is to discover promising energy efficiency options and changes that customers may someday choose to implement. Customers, on average, will choose to implement the most cost-effective options. Programs like this one serves Florida Public Utilities Company and its energy customers by garnering new, reliable information upon which to base future demand-side management programs and services.

5.2 Low Income

Florida Public Utilities Company presently has energy education programs that identify low-cost and no-cost energy conservation measures. To better assist low-income customers in managing their energy purchases, the presentations and formats of these energy education programs are tailored to the audience. These programs provide basic energy education, as well as inform the customers of other specific services, such as the free energy surveys that Florida Public Utilities Company currently offers.

5.3 Affordable Housing Builders and Providers

Florida Public Utilities Company will identify the affordable housing builders within the service area and will encourage them to attend educational seminars and workshops related to energy efficient construction, retrofit programs, and financing programs. Florida Public Utilities Company will work with the Florida Energy Extension Service and other seminar sponsors to offer a minimum of two seminars and/or workshops per year. Florida Public Utilities Company will work with all sponsors to reduce or eliminate attendance fees for affordable housing providers.

Appendix A
Cost Effectiveness Evaluation

Appendix A
Cost Effectiveness Evaluation

This appendix presents the results of the cost-effectiveness tests performed on the Demand-Side Management (DSM) programs described in Florida Public Utilities Company's 2010 DSM Plan. The cost-effectiveness tests were performed using the Florida Integrated Resource Evaluator (FIRE) model, which has been previously relied upon by the Florida Public Service Commission (PSC) in evaluating DSM measures. The FIRE model was selected for use in evaluating the cost-effectiveness of OUC's DSM programs as it considers the cost-effectiveness tests required pursuant to Rule 27-17.008, Florida Administrative Code (F.A.C). The FIRE model provides output in a format that is consistent with the requirements of the *Florida Public Service Commission Cost Effectiveness Manual For Demand Side Management Programs and Self-Service Wheeling Proposals*, which is incorporated by reference into Rule 27-17.008.

The remainder of this appendix presents a description of the FIRE model, a qualitative, general discussion of the cost-effectiveness evaluations, a summary of the cost-effectiveness results, and the FIRE model output reports for each of Florida Public Utilities Company's DSM programs presented in Florida Public Utilities Company's DSM Plan.

A.1 Overview of the FIRE Model

The FIRE model is a computer-based program originally developed by Florida Power Corporation (now Progress Energy Florida, or PEF) in 1992 in order to evaluate the cost-effectiveness of DSM. The output format of the model was originally developed to be consistent with the specifications of the Florida Public Service Commission and amended Rule 25-17.008 F.A.C. issued on July 2, 1991. The FIRE model has been used to evaluate the cost-effectiveness of DSM in numerous Need for Power Applications approved by the PSC, including Orlando Utilities Commission's Stanton Energy Center Unit A (Final Order PSC-01-1103-FOF-EM) and Stanton Energy Center Unit B (Final Order PSC-06-0457-FOF-EM).

The FIRE model presents cost-effectiveness evaluations of three different tests - the Total Resources Cost (TRC) test, the Participant Test, and the Rate Impact (RIM) Test. The cost-effectiveness of each measure is developed with respect to a so-called "avoided unit."[1] The utility avoids construction of this unit through the implementation of a DSM program to slow the

[1] For purposes of Florida Public Utilities Company's DSM Plan, the avoided unit costs are consistent with those utilized throughout Docket No. 080411-EG, which was the basis for the DSM goals set for Florida Public Utilities Company by the PSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009).

growth of energy demand. The cost of each DSM program is compared with the equivalent costs associated with the construction and operation of the avoided unit. Depending on the demand-side program under analysis, this avoided unit may be avoided completely, may be deferred to a date further in the future, or may be supplanted by a different unit type due to changes in the utility's need profile. For Florida Public Utilities Company, this avoided unit is replaced by purchase power since Florida Public Utilities Company purchases all of its power.

The FIRE model requires two different types of input files: an input file containing data specific to the avoided unit and an input file containing data specific to the DSM program to be evaluated. The FIRE model provides various output sheets, including the three cost-effectiveness tests (RIM, Participant, and TRC tests).

A.2 FIRE Model Cost-Effectiveness Test

The three FIRE model cost effectiveness tests are explained as follows:

- RIM Test--The Rate Impact Test is used to best approximate the effect that the implementation of a particular measure would have upon a utility's rate payers. Costs and benefits related to the cash flow of a utility are incorporated into this test.
- Participant Test--The Participant Test measures the effect of the DSM measure on the participating customers. Only costs and benefits directly related to these customers are included in the analysis. Rebates or incentives available for participation in the demand-side program are included while their associated costs to the utility are ignored.
- TRC Test--The purpose of the TRC test is to measure the overall benefit-to-cost ratio of the demand-side program. This test incorporates the cost to both the utility and the participant. Additional externalities are also included if they can be quantified. These values include anything not otherwise included in the cost or benefit values, such as the environmental effects. Only external costs and benefits are included in this analysis. Costs to the utility and to the participating customer are included, while any transfer payments between the utility and its customers are not. These internal transfers are a cost to one party and a direct benefit to another and cancel out in the overall analysis.

A.3 General Discussion of the Cost-Effectiveness Results

As discussed previously, the FIRE model was used to evaluate the cost-effectiveness of the DSM programs included in Florida Public Utilities Company's 2010 DSM Plan. The FIRE model was selected as it is a model which has been used in numerous PSC proceedings and also because it provides output in a format consistent with PSC requirements for reporting the cost-

effectiveness of DSM. For purposes of Florida Public Utilities Company's DSM Plan, the avoided unit costs are the purchase power costs and consistent with those utilized throughout Docket No. 080411-EG, which was the basis for the DSM goals set for Florida Public Utilities Company by the PSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009). Given that that PSC approved numeric conservation goals for the 2010 through 2019 period, the FIRE model evaluation was performed for the same 10 year period. It should be noted that several of Florida Public Utilities Company's DSM programs involve conservation measures with expected lives that exceed 10 years (i.e., heat pump rebates, insulation, chiller upgrade, etc). As such, utilizing a 10 year evaluation period does not capture the entire life cycle benefits of those types of measures.

Another factor to consider when viewing the results of the cost-effectiveness analyses presented herein is that the program-specific assumptions were intended to be representative of Florida Public Utilities Company's average customer base. That is, energy savings corresponding to a given program were based on what may be achieved for a typical customer. For example, when evaluating the cost-effectiveness of Florida Public Utilities Company's Residential Ceiling Insulation Upgrade Program reductions in energy loss achieved through increased attic insulation were based on average energy usage per residential. These energy reductions influence the cost-effectiveness results. However, it may not be correct to assume that the types of customers that participate in a given program are representative of an average customer profile. Stated otherwise, those customers that may choose to participate in a given DSM program will do so based on consideration of their own personal energy usage, their discretionary income, and other, non-quantifiable factors (such as the non-monetary value they place on energy efficiency).

When reviewing the results of the cost-effectiveness evaluations, all of the aforementioned factors should be considered. Taking such factors into consideration, the results of the cost-effectiveness evaluations should be viewed as useful for informational purposes, but not a definitive determinant of the overall benefits associated with Florida Public Utilities Company's DSM programs.

A.4 Summary of Cost-Effectiveness Results

The following table presents the cost-effectiveness of each of Florida Public Utilities Company's programs for the RIM, Participant, and TRC test.

Summary of Cost-Effectiveness Results			
Program	Rate Impact Test	Participants Test	Total Resource Cost Test
Residential			
Energy Survey	0.441	1.000	0.880
Heating and Cooling Efficiency	0.733	1.406	0.980
Ceiling Insulation Upgrade	0.410	1.163	0.376
Commercial			
Energy Survey	0.559	1.000	1.577
Indoor Efficient Lighting Program	0.634	11.166	2.221
Heating and Cooling Efficiency	0.733	2.630	0.980
Ceiling Insulation Upgrade	0.410	1.163	0.376
Window Film Installation	0.663	4.249	1.804
Chiller Upgrade	0.715	3.204	1.818

A.5 FIRE Model Output Reports

Residential Energy Survey

PSC Form CE 1.1

PROGRAM: Residential - Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.45	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.47	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,287.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,229.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	470.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	0.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	0.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV. AVOIDED GENERATOR, TRANS AND DIST COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	78.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Residential - Energy Survey

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1) YEAR	(2) CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) AVOIDED MARGINAL FUEL COST (C/KWH)	(6) INCREASED MARGINAL FUEL COST (C/KWH)	(7) REPLACEMENT FUEL COST (C/KWH)	(8) PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	250	250	6.94	6.94	6.94	0.00	1	1
2011	500	500	7.02	7.02	7.02	0.00	1	1
2012	750	750	7.20	7.20	7.20	0.00	1	1
2013	1000	1000	7.15	7.15	7.15	0.00	1	1
2014	1250	1250	7.23	7.23	7.23	0.00	1	1
2015	1500	1500	7.41	7.41	7.41	0.00	1	1
2016	1750	1750	7.24	7.24	7.24	0.00	1	1
2017	2000	2000	7.19	7.19	7.19	0.00	1	1
2018	2250	2250	7.35	7.35	7.35	0.00	1	1
2019	2500	2500	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Residential - Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 118 kW
* INSERVICE COSTS OF AVOIDED GEN UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	10.35	0.00	0.00	0.72	0.00	9.26	9.98
2011	0.00	0.00	10.35	0.00	0.00	0.73	0.00	9.49	10.22
2012	0.00	0.00	10.35	0.00	0.00	0.74	0.00	9.73	10.47
2013	0.00	0.00	10.35	0.00	0.00	0.74	0.00	9.97	10.71
2014	0.00	0.00	10.35	0.00	0.00	0.75	0.00	10.22	10.97
2015	0.00	0.00	10.35	0.00	0.00	0.77	0.00	10.47	11.24
2016	0.00	0.00	10.35	0.00	0.00	0.75	0.00	10.74	11.48
2017	0.00	0.00	10.35	0.00	0.00	0.74	0.00	11.00	11.75
2018	0.00	0.00	10.35	0.00	0.00	0.76	0.00	11.28	12.04
2019	0.00	0.00	10.35	0.00	0.00	0.78	0.00	11.56	12.34
NOMINAL		0.00	103.46	0.00	0.00	7.48	0.00	103.72	111.20
NPV		0.00		0.00	0.00	5.47	0.00	75.02	80.48

PSC Form CE 1.2

PROGRAM: Residential - Heating and Cooling Efficiency

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1) YEAR	(2) CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) AVOIDED MARGINAL FUEL COST (C/KWH)	(6) INCREASED MARGINAL FUEL COST (C/KWH)	(7) REPLACEMENT FUEL COST (C/KWH)	(8) PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	150	150	6.94	6.94	6.94	0.00	1	1
2011	300	300	7.02	7.02	7.02	0.00	1	1
2012	450	450	7.20	7.20	7.20	0.00	1	1
2013	600	600	7.15	7.15	7.15	0.00	1	1
2014	750	750	7.23	7.23	7.23	0.00	1	1
2015	900	900	7.41	7.41	7.41	0.00	1	1
2016	1050	1050	7.24	7.24	7.24	0.00	1	1
2017	1200	1200	7.19	7.19	7.19	0.00	1	1
2018	1350	1350	7.35	7.35	7.35	0.00	1	1
2019	1500	1500	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Residential - Heating and Cooling Efficiency

* UNIT SIZE OF AVOIDED GENERATION UNIT = 292 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	25.60	0.00	0.00	1.78	0.00	22.91	24.69
2011	0.00	0.00	25.60	0.00	0.00	1.80	0.00	23.48	25.28
2012	0.00	0.00	25.60	0.00	0.00	1.84	0.00	24.07	25.91
2013	0.00	0.00	25.60	0.00	0.00	1.83	0.00	24.67	26.50
2014	0.00	0.00	25.60	0.00	0.00	1.85	0.00	25.29	27.14
2015	0.00	0.00	25.60	0.00	0.00	1.90	0.00	25.92	27.81
2016	0.00	0.00	25.60	0.00	0.00	1.85	0.00	26.57	28.42
2017	0.00	0.00	25.60	0.00	0.00	1.84	0.00	27.23	29.07
2018	0.00	0.00	25.60	0.00	0.00	1.88	0.00	27.91	29.79
2019	0.00	0.00	25.60	0.00	0.00	1.93	0.00	28.61	30.54
NOMINAL		0.00	256.00	0.00	0.00	18.50	0.00	256.65	275.15
NPV		0.00		0.00	0.00	13.53	0.00	185.63	199.16

AVOIDED T & D AND PROGRAM FUEL BENEFITS **PSC FORM CE 2.2**

PROGRAM: Residential - Energy Survey

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
* INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	11.17
2011	0.00	0.00	0.00	0.00	0.00	0.00	33.89
2012	0.00	0.00	0.00	0.00	0.00	0.00	57.90
2013	0.00	0.00	0.00	0.00	0.00	0.00	80.53
2014	0.00	0.00	0.00	0.00	0.00	0.00	104.72
2015	0.00	0.00	0.00	0.00	0.00	0.00	131.09
2016	0.00	0.00	0.00	0.00	0.00	0.00	151.39
2017	0.00	0.00	0.00	0.00	0.00	0.00	173.55
2018	0.00	0.00	0.00	0.00	0.00	0.00	200.98
2019	0.00	0.00	0.00	0.00	0.00	0.00	230.98
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	1,176.19
NPV	0.00	0.00	0.00	0.00	0.00	0.00	757.50

TOTAL RESOURCE COST TESTS
PROGRAM: Residential - Energy Survey

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	117.50	0.00	0.00	117.50	9.98	0.00	11.17	0.00	21.14	(96.36)	(96.36)
2011	0.00	120.44	0.00	0.00	120.44	10.22	0.00	33.89	0.00	44.10	(76.33)	(167.27)
2012	0.00	123.45	0.00	0.00	123.45	10.47	0.00	57.90	0.00	68.37	(55.08)	(214.81)
2013	0.00	126.53	0.00	0.00	126.53	10.71	0.00	80.53	0.00	91.24	(35.30)	(243.11)
2014	0.00	129.70	0.00	0.00	129.70	10.97	0.00	104.72	0.00	115.69	(14.01)	(253.55)
2015	0.00	132.94	0.00	0.00	132.94	11.24	0.00	131.09	0.00	142.33	9.39	(247.05)
2016	0.00	136.26	0.00	0.00	136.26	11.48	0.00	151.39	0.00	162.87	26.61	(229.94)
2017	0.00	139.67	0.00	0.00	139.67	11.75	0.00	173.55	0.00	185.29	45.62	(202.69)
2018	0.00	143.16	0.00	0.00	143.16	12.04	0.00	200.98	0.00	213.02	69.86	(163.93)
2019	0.00	146.74	0.00	0.00	146.74	12.34	0.00	230.98	0.00	243.33	96.59	(114.14)
NOMINAL	0.00	1,316.40	0.00	0.00	1,316.40	111.20	0.00	1,176.19	0.00	1,287.39	(29.01)	
NPV	0.00	952.13	0.00	0.00	952.13	80.48	0.00	757.50	0.00	837.99	(114.14)	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential - Energy Survey

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	13.67	0.00	0.00	0.00	13.67	0.00	0.00	0.00	0.00	13.67	13.67
2011	41.60	0.00	0.00	0.00	41.60	0.00	0.00	0.00	0.00	41.60	52.32
2012	71.08	0.00	0.00	0.00	71.08	0.00	0.00	0.00	0.00	71.08	113.66
2013	99.55	0.00	0.00	0.00	99.55	0.00	0.00	0.00	0.00	99.55	193.49
2014	129.86	0.00	0.00	0.00	129.86	0.00	0.00	0.00	0.00	129.86	290.22
2015	162.59	0.00	0.00	0.00	162.59	0.00	0.00	0.00	0.00	162.59	402.74
2016	189.88	0.00	0.00	0.00	189.88	0.00	0.00	0.00	0.00	189.88	524.82
2017	219.32	0.00	0.00	0.00	219.32	0.00	0.00	0.00	0.00	219.32	655.81
2018	254.18	0.00	0.00	0.00	254.18	0.00	0.00	0.00	0.00	254.18	796.86
2019	291.90	0.00	0.00	0.00	291.90	0.00	0.00	0.00	0.00	291.90	947.33
NOMINAL	1,473.62	0.00	0.00	0.00	1,473.62	0.00	0.00	0.00	0.00	1,473.62	
NPV	947.33	0.00	0.00	0.00	947.33	0.00	0.00	0.00	0.00	947.33	

RATE IMPACT TEST
PROGRAM: Residential - Energy Survey

PSC FORM CE 2.5

(1) YEAR	(2) INCREASED SUPPLY COSTS $(000)	(3) UTILITY PROGRAM COSTS $(000)	(4) INCENTIVES $(000)	(5) REVENUE LOSSES $(000)	(6) OTHER COSTS $(000)	(7) TOTAL COSTS $(000)	(8) PURCHASED POWER BENEFITS $(000)	(9) T & D BENEFITS $(000)	(10) REVENUE GAINS $(000)	(11) OTHER BENEFITS $(000)	(12) TOTAL BENEFITS $(000)	(13) NET BENEFITS TO ALL CUSTOMERS $(000)	(14) CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	117.50	0.00	13.67	0.00	131.17	21.14	0.00	0.00	0.00	21.14	(110.03)	(110.03)
2011	0.00	120.44	0.00	41.60	0.00	162.04	44.10	0.00	0.00	0.00	44.10	(117.94)	(219.59)
2012	0.00	123.45	0.00	71.08	0.00	194.52	68.37	0.00	0.00	0.00	68.37	(126.16)	(328.47)
2013	0.00	126.53	0.00	99.55	0.00	226.09	91.24	0.00	0.00	0.00	91.24	(134.85)	(436.60)
2014	0.00	129.70	0.00	129.86	0.00	259.56	115.69	0.00	0.00	0.00	115.69	(143.87)	(543.77)
2015	0.00	132.94	0.00	162.59	0.00	295.53	142.33	0.00	0.00	0.00	142.33	(153.20)	(649.79)
2016	0.00	136.26	0.00	189.88	0.00	326.14	162.87	0.00	0.00	0.00	162.87	(163.27)	(754.76)
2017	0.00	139.67	0.00	219.32	0.00	358.99	185.29	0.00	0.00	0.00	185.29	(173.69)	(858.51)
2018	0.00	143.16	0.00	254.18	0.00	397.34	213.02	0.00	0.00	0.00	213.02	(184.32)	(960.79)
2019	0.00	146.74	0.00	291.90	0.00	438.64	243.33	0.00	0.00	0.00	243.33	(195.31)	(1,061.47)
NOMINAL	0.00	1,316.40	0.00	1,473.62	0.00	2,790.02	1,287.39	0.00	0.00	0.00	1,287.39	(1,502.63)	
NPV	0.00	952.13	0.00	947.33	0.00	1,899.46	837.99	0.00	0.00	0.00	837.99	(1,061.47)	

A.6 Residential Heating and Cooling Efficiency Upgrade

PSC Form CE 1.1

PROGRAM: Residential - Heating and Cooling Efficiency

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.86	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.95	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	3,957.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,778.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	229.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,110.80	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	0.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	137.50	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV. AVOIDED GENERATOR, TRANS AND DIST COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	78.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

AVOIDED T & D AND PROGRAM FUEL BENEFITS **PSC FORM CE 2.2**

PROGRAM: Residential - Heating and Cooling Efficiency

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
* INSERVICE COSTS OF AVOIDED DIST (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	20.60
2011	0.00	0.00	0.00	0.00	0.00	0.00	62.50
2012	0.00	0.00	0.00	0.00	0.00	0.00	106.79
2013	0.00	0.00	0.00	0.00	0.00	0.00	148.53
2014	0.00	0.00	0.00	0.00	0.00	0.00	193.15
2015	0.00	0.00	0.00	0.00	0.00	0.00	241.79
2016	0.00	0.00	0.00	0.00	0.00	0.00	279.23
2017	0.00	0.00	0.00	0.00	0.00	0.00	320.09
2018	0.00	0.00	0.00	0.00	0.00	0.00	370.69
2019	0.00	0.00	0.00	0.00	0.00	0.00	426.03
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	2,169.40
NPV	0.00	0.00	0.00	0.00	0.00	0.00	1,397.16

TOTAL RESOURCE COST TESTS
PROGRAM: Residential - Heating and Cooling Efficiency

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	34.35	166.62	0.00	200.97	24.69	0.00	20.60	0.00	45.28	(155.69)	(155.69)
2011	0.00	35.21	170.79	0.00	205.99	25.28	0.00	62.50	0.00	87.78	(118.21)	(265.51)
2012	0.00	36.09	175.06	0.00	211.14	25.91	0.00	106.79	0.00	132.70	(78.45)	(333.21)
2013	0.00	36.99	179.43	0.00	216.42	26.50	0.00	148.53	0.00	175.03	(41.40)	(366.41)
2014	0.00	37.92	183.92	0.00	221.83	27.14	0.00	193.15	0.00	220.29	(1.54)	(367.56)
2015	0.00	38.86	188.52	0.00	227.38	27.81	0.00	241.79	0.00	269.60	42.22	(338.34)
2016	0.00	39.84	193.23	0.00	233.06	28.42	0.00	279.23	0.00	307.65	74.58	(290.39)
2017	0.00	40.83	198.06	0.00	238.89	29.07	0.00	320.09	0.00	349.16	110.27	(224.52)
2018	0.00	41.85	203.01	0.00	244.86	29.79	0.00	370.69	0.00	400.49	155.62	(138.17)
2019	0.00	42.90	208.09	0.00	250.98	30.54	0.00	426.03	0.00	456.58	205.59	(32.18)
NOMINAL	0.00	384.84	1,866.71	0.00	2,251.54	275.15	0.00	2,169.40	0.00	2,444.56	193.01	
NPV	0.00	278.34	1,350.15	0.00	1,628.50	199.16	0.00	1,397.16	0.00	1,596.32	(32.18)	

RATE IMPACT TEST
PROGRAM: Residential - Heating and Cooling Efficiency

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	34.35	20.63	25.21	0.00	80.19	45.28	0.00	0.00	0.00	45.28	(34.90)	(34.90)
2011	0.00	35.21	20.63	76.73	0.00	132.57	87.78	0.00	0.00	0.00	87.78	(44.78)	(76.51)
2012	0.00	36.09	20.63	131.09	0.00	187.81	132.70	0.00	0.00	0.00	132.70	(55.11)	(124.07)
2013	0.00	36.99	20.63	183.62	0.00	241.24	175.03	0.00	0.00	0.00	175.03	(66.21)	(177.16)
2014	0.00	37.92	20.63	239.52	0.00	298.06	220.29	0.00	0.00	0.00	220.29	(77.77)	(235.09)
2015	0.00	38.86	20.63	299.88	0.00	359.37	269.60	0.00	0.00	0.00	269.60	(89.77)	(297.22)
2016	0.00	39.84	20.63	350.22	0.00	410.68	307.65	0.00	0.00	0.00	307.65	(103.03)	(363.46)
2017	0.00	40.83	20.63	404.52	0.00	465.97	349.16	0.00	0.00	0.00	349.16	(116.81)	(433.23)
2018	0.00	41.85	20.63	468.82	0.00	531.29	400.49	0.00	0.00	0.00	400.49	(130.81)	(505.81)
2019	0.00	42.90	20.63	538.38	0.00	601.90	456.58	0.00	0.00	0.00	456.58	(145.33)	(580.73)
NOMINAL	0.00	384.84	206.25	2,717.99	0.00	3,309.07	2,444.56	0.00	0.00	0.00	2,444.56	(864.52)	
NPV	0.00	278.34	151.42	1,747.28	0.00	2,177.05	1,596.32	0.00	0.00	0.00	1,596.32	(580.73)	

A.7 Residential Ceiling Insulation Upgrade

PSC Form CE 1.1

PROGRAM: Residential - Ceiling Insulation Upgrade

I PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.50	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.52	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,568.0	KWH/CUST/YP
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,497.0	KWH/CUST/YR

II ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VALOF-DEF (1)	1	

III UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	310.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,020.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	306.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	375.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	78.38	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Residential - Ceiling Insulation Upgrade

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	30	30	6.94	6.94	6.94	0.00	1	1
2011	60	60	7.02	7.02	7.02	0.00	1	1
2012	90	90	7.20	7.20	7.20	0.00	1	1
2013	120	120	7.15	7.15	7.15	0.00	1	1
2014	150	150	7.23	7.23	7.23	0.00	1	1
2015	180	180	7.41	7.41	7.41	0.00	1	1
2016	210	210	7.24	7.24	7.24	0.00	1	1
2017	240	240	7.19	7.19	7.19	0.00	1	1
2018	270	270	7.35	7.35	7.35	0.00	1	1
2019	300	300	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Residential - Ceiling Insulation Upgrade

* UNIT SIZE OF AVOIDED GENERATION UNIT = 16 kW
* INSERVICE COSTS OF AVOIDED GEN UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.23	1.33
2011	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.26	1.36
2012	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.29	1.39
2013	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.33	1.42
2014	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.36	1.46
2015	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.39	1.50
2016	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.43	1.53
2017	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.46	1.56
2018	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.50	1.60
2019	0.00	0.00	1.38	0.00	0.00	0.10	0.00	1.54	1.64
NOMINAL		0.00	13.76	0.00	0.00	0.99	0.00	13.80	14.79
NPV		0.00		0.00	0.00	0.73	0.00	9.98	10.71

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PSC FORM CE 2.2

PROGRAM: Residential - Ceiling Insulation Upgrade

* INSERVICE COSTS OF AVOIDED TRANS (000) = $0
* INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	1.63
2011	0.00	0.00	0.00	0.00	0.00	0.00	4.95
2012	0.00	0.00	0.00	0.00	0.00	0.00	8.46
2013	0.00	0.00	0.00	0.00	0.00	0.00	11.77
2014	0.00	0.00	0.00	0.00	0.00	0.00	15.31
2015	0.00	0.00	0.00	0.00	0.00	0.00	19.16
2016	0.00	0.00	0.00	0.00	0.00	0.00	22.13
2017	0.00	0.00	0.00	0.00	0.00	0.00	25.37
2018	0.00	0.00	0.00	0.00	0.00	0.00	29.38
2019	0.00	0.00	0.00	0.00	0.00	0.00	33.76
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	171.92
NPV	0.00	0.00	0.00	0.00	0.00	0.00	110.72

TOTAL RESOURCE COST TESTS **PSC FORM CE 2.3**
PROGRAM: Residential - Ceiling Insulation Upgrade

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	9.30	30.60	0.00	39.90	1.33	0.00	1.63	0.00	2.96	(36.94)	(36.94)
2011	0.00	9.53	31.37	0.00	40.90	1.36	0.00	4.95	0.00	6.31	(34.59)	(69.07)
2012	0.00	9.77	32.15	0.00	41.92	1.39	0.00	8.46	0.00	9.86	(32.06)	(96.74)
2013	0.00	10.02	32.95	0.00	42.97	1.42	0.00	11.77	0.00	13.20	(29.77)	(120.62)
2014	0.00	10.27	33.78	0.00	44.04	1.46	0.00	15.31	0.00	16.77	(27.28)	(140.94)
2015	0.00	10.52	34.62	0.00	45.14	1.50	0.00	19.16	0.00	20.66	(24.49)	(157.88)
2016	0.00	10.79	35.49	0.00	46.27	1.53	0.00	22.13	0.00	23.66	(22.62)	(172.42)
2017	0.00	11.05	36.37	0.00	47.43	1.56	0.00	25.37	0.00	26.93	(20.50)	(184.67)
2018	0.00	11.33	37.28	0.00	48.61	1.60	0.00	29.38	0.00	30.98	(17.64)	(194.45)
2019	0.00	11.61	38.22	0.00	49.83	1.64	0.00	33.76	0.00	35.40	(14.43)	(201.89)
NOMINAL	0.00	104.19	342.82	0.00	447.01	14.79	0.00	171.92	0.00	186.71	(260.30)	
NPV	0.00	75.36	247.96	0.00	323.32	10.71	0.00	110.72	0.00	121.43	(201.89)	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential - Ceiling Insulation Upgrade

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	2.00	9.18	11.25	0.00	22.43	30.60	0.00	0.00	30.60	(8.17)	(8.17)
2011	6.08	9.18	11.25	0.00	26.51	31.37	0.00	0.00	31.37	(4.85)	(12.68)
2012	10.39	9.18	11.25	0.00	30.82	32.15	0.00	0.00	32.15	(1.33)	(13.83)
2013	14.55	9.18	11.25	0.00	34.98	32.95	0.00	0.00	32.95	2.03	(12.20)
2014	18.98	9.18	11.25	0.00	39.41	33.78	0.00	0.00	33.78	5.63	(8.01)
2015	23.77	9.18	11.25	0.00	44.20	34.62	0.00	0.00	34.62	9.57	(1.38)
2016	27.75	9.18	11.25	0.00	48.18	35.49	0.00	0.00	35.49	12.70	6.78
2017	32.06	9.18	11.25	0.00	52.49	36.37	0.00	0.00	36.37	16.11	16.41
2018	37.15	9.18	11.25	0.00	57.58	37.28	0.00	0.00	37.28	20.30	27.67
2019	42.67	9.18	11.25	0.00	63.10	38.22	0.00	0.00	38.22	24.88	40.50
NOMINAL	215.40	91.80	112.50	0.00	419.70	342.82	0.00	0.00	342.82	76.87	
NPV	138.47	67.39	82.59	0.00	288.46	247.96	0.00	0.00	247.96	40.50	

RATE IMPACT TEST
PROGRAM: Residential - Ceiling Insulation Upgrade

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	9.30	11.25	2.00	0.00	22.55	2.96	0.00	0.00	0.00	2.96	(19.59)	(19.59)
2011	0.00	9.53	11.25	6.08	0.00	26.86	6.31	0.00	0.00	0.00	6.31	(20.55)	(38.68)
2012	0.00	9.77	11.25	10.39	0.00	31.41	9.86	0.00	0.00	0.00	9.86	(21.55)	(57.28)
2013	0.00	10.02	11.25	14.55	0.00	35.82	13.20	0.00	0.00	0.00	13.20	(22.62)	(75.42)
2014	0.00	10.27	11.25	18.98	0.00	40.50	16.77	0.00	0.00	0.00	16.77	(23.73)	(93.10)
2015	0.00	10.52	11.25	23.77	0.00	45.54	20.66	0.00	0.00	0.00	20.66	(24.88)	(110.32)
2016	0.00	10.79	11.25	27.75	0.00	49.79	23.66	0.00	0.00	0.00	23.66	(26.13)	(127.12)
2017	0.00	11.05	11.25	32.06	0.00	54.36	26.93	0.00	0.00	0.00	26.93	(27.43)	(143.50)
2018	0.00	11.33	11.25	37.15	0.00	59.73	30.98	0.00	0.00	0.00	30.98	(28.76)	(159.46)
2019	0.00	11.61	11.25	42.67	0.00	65.53	35.40	0.00	0.00	0.00	35.40	(30.13)	(174.99)
NOMINAL	0.00	104.19	112.50	215.40	0.00	432.09	186.71	0.00	0.00	0.00	186.71	(245.37)	
NPV	0.00	75.36	82.59	138.47	0.00	296.42	121.43	0.00	0.00	0.00	121.43	(174.99)	

A.8 Commercial Energy Survey

PROGRAM: Commercial - Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.53	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.56	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,949.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,861.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(I) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	389.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	0.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	0.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

PSC Form CE 1.1

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	70.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Commercial - Energy Survey

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1) YEAR	(2) CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) AVOIDED MARGINAL FUEL COST (C/KWH)	(6) INCREASED MARGINAL FUEL COST (C/KWH)	(7) REPLACEMENT FUEL COST (C/KWH)	(8) PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	50	50	6.94	6.94	6.94	0.00	1	1
2011	100	100	7.02	7.02	7.02	0.00	1	1
2012	150	150	7.20	7.20	7.20	0.00	1	1
2013	200	200	7.15	7.15	7.15	0.00	1	1
2014	250	250	7.23	7.23	7.23	0.00	1	1
2015	300	300	7.41	7.41	7.41	0.00	1	1
2016	350	350	7.24	7.24	7.24	0.00	1	1
2017	400	400	7.19	7.19	7.19	0.00	1	1
2018	450	450	7.35	7.35	7.35	0.00	1	1
2019	500	500	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Commercial - Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 28 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	2.45	0.00	0.00	0.17	0.00	2.19	2.36
2011	0.00	0.00	2.45	0.00	0.00	0.17	0.00	2.25	2.42
2012	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.30	2.48
2013	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.36	2.54
2014	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.42	2.60
2015	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.48	2.66
2016	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.54	2.72
2017	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.61	2.78
2018	0.00	0.00	2.45	0.00	0.00	0.18	0.00	2.67	2.85
2019	0.00	0.00	2.45	0.00	0.00	0.19	0.00	2.74	2.92
NOMINAL		0.00	24.50	0.00	0.00	1.77	0.00	24.56	26.33
NPV		0.00		0.00	0.00	1.29	0.00	17.76	19.06

AVOIDED T & D AND PROGRAM FUEL BENEFITS PSC FORM CE 2.2

PROGRAM: Commercial - Energy Survey

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
* INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	3.38
2011	0.00	0.00	0.00	0.00	0.00	0.00	10.26
2012	0.00	0.00	0.00	0.00	0.00	0.00	17.53
2013	0.00	0.00	0.00	0.00	0.00	0.00	24.39
2014	0.00	0.00	0.00	0.00	0.00	0.00	31.71
2015	0.00	0.00	0.00	0.00	0.00	0.00	39.70
2016	0.00	0.00	0.00	0.00	0.00	0.00	45.85
2017	0.00	0.00	0.00	0.00	0.00	0.00	52.56
2018	0.00	0.00	0.00	0.00	0.00	0.00	60.87
2019	0.00	0.00	0.00	0.00	0.00	0.00	69.95
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	356.21
NPV	0.00	0.00	0.00	0.00	0.00	0.00	229.41

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial - Energy Survey

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	19.45	0.00	0.00	19.45	2.36	0.00	3.38	0.00	5.74	(13.71)	(13.71)
2011	0.00	19.94	0.00	0.00	19.94	2.42	0.00	10.26	0.00	12.68	(7.25)	(20.44)
2012	0.00	20.43	0.00	0.00	20.43	2.48	0.00	17.53	0.00	20.01	(0.42)	(20.81)
2013	0.00	20.95	0.00	0.00	20.95	2.54	0.00	24.39	0.00	26.92	5.98	(16.02)
2014	0.00	21.47	0.00	0.00	21.47	2.60	0.00	31.71	0.00	34.31	12.84	(6.45)
2015	0.00	22.01	0.00	0.00	22.01	2.66	0.00	39.70	0.00	42.36	20.36	7.64
2016	0.00	22.56	0.00	0.00	22.56	2.72	0.00	45.85	0.00	48.57	26.01	24.36
2017	0.00	23.12	0.00	0.00	23.12	2.78	0.00	52.56	0.00	55.34	32.22	43.61
2018	0.00	23.70	0.00	0.00	23.70	2.85	0.00	60.87	0.00	63.72	40.02	65.81
2019	0.00	24.29	0.00	0.00	24.29	2.92	0.00	69.95	0.00	72.88	48.59	90.86
NOMINAL	0.00	217.91	0.00	0.00	217.91	26.33	0.00	356.21	0.00	382.54	164.63	
NPV	0.00	157.61	0.00	0.00	157.61	19.06	0.00	229.41	0.00	248.47	90.86	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial - Energy Survey

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	4.14	0.00	0.00	0.00	4.14	0.00	0.00	0.00	0.00	4.14	4.14
2011	12.60	0.00	0.00	0.00	12.60	0.00	0.00	0.00	0.00	12.60	15.84
2012	21.53	0.00	0.00	0.00	21.53	0.00	0.00	0.00	0.00	21.53	34.42
2013	30.15	0.00	0.00	0.00	30.15	0.00	0.00	0.00	0.00	30.15	58.60
2014	39.33	0.00	0.00	0.00	39.33	0.00	0.00	0.00	0.00	39.33	87.89
2015	49.24	0.00	0.00	0.00	49.24	0.00	0.00	0.00	0.00	49.24	121.97
2016	57.50	0.00	0.00	0.00	57.50	0.00	0.00	0.00	0.00	57.50	158.94
2017	66.42	0.00	0.00	0.00	66.42	0.00	0.00	0.00	0.00	66.42	198.61
2018	76.98	0.00	0.00	0.00	76.98	0.00	0.00	0.00	0.00	76.98	241.33
2019	88.40	0.00	0.00	0.00	88.40	0.00	0.00	0.00	0.00	88.40	286.90
NOMINAL	446.28	0.00	0.00	0.00	446.28	0.00	0.00	0.00	0.00	446.28	
NPV	286.90	0.00	0.00	0.00	286.90	0.00	0.00	0.00	0.00	286.90	

RATE IMPACT TEST
PROGRAM: Commercial - Energy Survey

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	19.45	0.00	4.14	0.00	23.59	5.74	0.00	0.00	0.00	5.74	(17.85)	(17.85)
2011	0.00	19.94	0.00	12.60	0.00	32.54	12.68	0.00	0.00	0.00	12.68	(19.85)	(36.29)
2012	0.00	20.43	0.00	21.53	0.00	41.96	20.01	0.00	0.00	0.00	20.01	(21.95)	(55.23)
2013	0.00	20.95	0.00	30.15	0.00	51.10	26.92	0.00	0.00	0.00	26.92	(24.17)	(74.61)
2014	0.00	21.47	0.00	39.33	0.00	60.80	34.31	0.00	0.00	0.00	34.31	(26.49)	(94.34)
2015	0.00	22.01	0.00	49.24	0.00	71.25	42.36	0.00	0.00	0.00	42.36	(28.88)	(114.33)
2016	0.00	22.56	0.00	57.50	0.00	80.06	48.57	0.00	0.00	0.00	48.57	(31.49)	(134.58)
2017	0.00	23.12	0.00	66.42	0.00	89.54	55.34	0.00	0.00	0.00	55.34	(34.20)	(155.00)
2018	0.00	23.70	0.00	76.98	0.00	100.68	63.72	0.00	0.00	0.00	63.72	(36.96)	(175.51)
2019	0.00	24.29	0.00	88.40	0.00	112.69	72.88	0.00	0.00	0.00	72.88	(39.81)	(196.04)
NOMINAL	0.00	217.91	0.00	446.28	0.00	664.19	382.54	0.00	0.00	0.00	382.54	(281.65)	
NPV	0.00	157.61	0.00	286.90	0.00	444.50	248.47	0.00	0.00	0.00	248.47	(196.04)	

A.9 Commercial Indoor Efficient Lighting Upgrade

PSC Form CE 1.1

PROGRAM: Commercial - Indoor Efficient Lighting Program

PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	3.20	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	3.33	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	17,030.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	16,259.0	KWH/CUST/YR

ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.150	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL OF DEF (1)	1	

UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	1,774.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	580.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	0.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	220.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	76.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.938	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Commercial - Indoor Efficient Lighting Program

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1) * YEAR	(2) * CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) * ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) * UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) * AVOIDED MARGINAL FUEL COST (C/KWH)	(6) * INCREASED MARGINAL FUEL COST (C/KWH)	(7) * REPLACEMENT FUEL COST (C/KWH)	(8) * PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	12	12	6.94	6.94	6.94	0.00	1	1
2011	24	24	7.02	7.02	7.02	0.00	1	1
2012	36	36	7.20	7.20	7.20	0.00	1	1
2013	48	48	7.15	7.15	7.15	0.00	1	1
2014	60	60	7.23	7.23	7.23	0.00	1	1
2015	72	72	7.41	7.41	7.41	0.00	1	1
2016	84	84	7.24	7.24	7.24	0.00	1	1
2017	96	96	7.19	7.19	7.19	0.00	1	1
2018	108	108	7.35	7.35	7.35	0.00	1	1
2019	120	120	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Commercial - Indoor Efficient Lighting Program

* UNIT SIZE OF AVOIDED GENERATION UNIT = 40 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	3.52	0.00	0.00	0.24	0.00	3.15	3.40
2011	0.00	0.00	3.52	0.00	0.00	0.25	0.00	3.23	3.48
2012	0.00	0.00	3.52	0.00	0.00	0.25	0.00	3.31	3.57
2013	0.00	0.00	3.52	0.00	0.00	0.25	0.00	3.40	3.65
2014	0.00	0.00	3.52	0.00	0.00	0.25	0.00	3.48	3.74
2015	0.00	0.00	3.52	0.00	0.00	0.26	0.00	3.57	3.83
2016	0.00	0.00	3.52	0.00	0.00	0.25	0.00	3.66	3.91
2017	0.00	0.00	3.52	0.00	0.00	0.25	0.00	3.75	4.00
2018	0.00	0.00	3.52	0.00	0.00	0.26	0.00	3.84	4.10
2019	0.00	0.00	3.52	0.00	0.00	0.27	0.00	3.94	4.20
NOMINAL		0.00	35.23	0.00	0.00	2.55	0.00	35.32	37.87
NPV		0.00		0.00	0.00	1.86	0.00	25.55	27.41

AVOIDED T & D AND PROGRAM FUEL BENEFITS PSC FORM CE 2.2

PROGRAM: Commercial - Indoor Efficient Lighting Program

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
* INSERVICE COSTS OF AVOIDED DIST (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	7.09
2011	0.00	0.00	0.00	0.00	0.00	0.00	21.52
2012	0.00	0.00	0.00	0.00	0.00	0.00	36.77
2013	0.00	0.00	0.00	0.00	0.00	0.00	51.14
2014	0.00	0.00	0.00	0.00	0.00	0.00	66.50
2015	0.00	0.00	0.00	0.00	0.00	0.00	83.24
2016	0.00	0.00	0.00	0.00	0.00	0.00	96.13
2017	0.00	0.00	0.00	0.00	0.00	0.00	110.20
2018	0.00	0.00	0.00	0.00	0.00	0.00	127.63
2019	0.00	0.00	0.00	0.00	0.00	0.00	146.68
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	746.90
NPV	0.00	0.00	0.00	0.00	0.00	0.00	481.03

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial - Indoor Efficient Lighting Program

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	21.29	6.96	0.00	28.25	3.40	0.00	7.09	0.00	10.49	(17.76)	(17.76)
2011	0.00	21.82	7.13	0.00	28.95	3.48	0.00	21.52	0.00	25.00	(3.96)	(21.43)
2012	0.00	22.37	7.31	0.00	29.68	3.57	0.00	36.77	0.00	40.33	10.65	(12.24)
2013	0.00	22.92	7.50	0.00	30.42	3.65	0.00	51.14	0.00	54.78	24.36	7.30
2014	0.00	23.50	7.68	0.00	31.18	3.74	0.00	66.50	0.00	70.23	39.05	36.39
2015	0.00	24.09	7.87	0.00	31.96	3.83	0.00	83.24	0.00	87.07	55.11	74.53
2016	0.00	24.69	8.07	0.00	32.76	3.91	0.00	96.13	0.00	100.05	67.29	117.79
2017	0.00	25.30	8.27	0.00	33.58	4.00	0.00	110.20	0.00	114.21	80.63	165.95
2018	0.00	25.94	8.48	0.00	34.42	4.10	0.00	127.63	0.00	131.73	97.31	219.94
2019	0.00	26.59	8.69	0.00	35.28	4.20	0.00	146.68	0.00	150.88	115.60	279.54
NOMINAL	0.00	238.50	77.98	0.00	316.47	37.87	0.00	746.90	0.00	784.77	468.30	
NPV	0.00	172.50	56.40	0.00	228.90	27.41	0.00	481.03	0.00	508.44	279.54	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial - Indoor Efficient Lighting Program

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	8.68	0.00	3.84	0.00	12.52	6.96	0.00	0.00	6.96	5.56	5.56
2011	26.42	0.00	3.84	0.00	30.26	7.13	0.00	0.00	7.13	23.12	27.04
2012	45.13	0.00	3.84	0.00	48.97	7.31	0.00	0.00	7.31	41.66	63.00
2013	63.22	0.00	3.84	0.00	67.06	7.50	0.00	0.00	7.50	59.56	110.76
2014	82.46	0.00	3.84	0.00	86.30	7.68	0.00	0.00	7.68	78.62	169.32
2015	103.25	0.00	3.84	0.00	107.09	7.87	0.00	0.00	7.87	99.21	237.98
2016	120.58	0.00	3.84	0.00	124.42	8.07	0.00	0.00	8.07	116.35	312.78
2017	139.27	0.00	3.84	0.00	143.11	8.27	0.00	0.00	8.27	134.84	393.32
2018	161.41	0.00	3.84	0.00	165.25	8.48	0.00	0.00	8.48	156.77	480.31
2019	185.36	0.00	3.84	0.00	189.20	8.69	0.00	0.00	8.69	180.51	573.36
NOMINAL	935.77	0.00	38.40	0.00	974.17	77.98	0.00	0.00	77.98	896.20	
NPV	601.57	0.00	28.19	0.00	629.76	56.40	0.00	0.00	56.40	573.36	

RATE IMPACT TEST
PROGRAM: Commercial - Indoor Efficient Lighting Program

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	21.29	3.84	8.68	0.00	33.81	10.49	0.00	0.00	0.00	10.49	(23.32)	(23.32)
2011	0.00	21.82	3.84	26.42	0.00	52.08	25.00	0.00	0.00	0.00	25.00	(27.08)	(48.40)
2012	0.00	22.37	3.84	45.13	0.00	71.34	40.33	0.00	0.00	0.00	40.33	(31.01)	(75.24)
2013	0.00	22.92	3.84	63.22	0.00	89.98	54.78	0.00	0.00	0.00	54.78	(35.20)	(103.46)
2014	0.00	23.50	3.84	82.46	0.00	109.80	70.23	0.00	0.00	0.00	70.23	(39.57)	(132.94)
2015	0.00	24.09	3.84	103.25	0.00	131.17	87.07	0.00	0.00	0.00	87.07	(44.10)	(163.45)
2016	0.00	24.69	3.84	120.58	0.00	149.10	100.05	0.00	0.00	0.00	100.05	(49.06)	(195.00)
2017	0.00	25.30	3.84	139.27	0.00	168.41	114.21	0.00	0.00	0.00	114.21	(54.21)	(227.37)
2018	0.00	25.94	3.84	161.41	0.00	191.19	131.73	0.00	0.00	0.00	131.73	(59.46)	(260.37)
2019	0.00	26.59	3.84	185.36	0.00	215.78	150.88	0.00	0.00	0.00	150.88	(64.90)	(293.82)
NOMINAL	0.00	238.50	38.40	935.77	0.00	1,212.67	784.77	0.00	0.00	0.00	784.77	(427.90)	
NPV	0.00	172.50	28.19	601.57	0.00	802.26	508.44	0.00	0.00	0.00	508.44	(293.82)	

A.10 Commercial Heating and Cooling Efficiency Upgrade

PSC Form CE 1.1

PROGRAM: Commercial Heating and Cooling Efficiency

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.86	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.95	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	3,957.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8) * CUSTOMER KWH REDUCTION AT METER	3,778.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	10 YEARS
(3) T & D ECONOMIC LIFE	10 YEARS
(4) K FACTOR FOR GENERATION	0.00
(5) K FACTOR FOR T & D	0.00
(6) * SWITCH REV REQD OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	229.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,110.80	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	137.50	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV. AVOIDED GENERATOR, TRANS AND DIST COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	78.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Commercial - Heating and Cooling Efficiency

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor 1.00

(1) * YEAR	(2) * CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) * ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) * UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) * AVOIDED MARGINAL FUEL COST (C/KWH)	(6) * INCREASED MARGINAL FUEL COST (C/KWH)	(7) * REPLACEMENT FUEL COST (C/KWH)	(8) * PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	50	50	6.94	6.94	6.94	0.00	1	1
2011	100	100	7.02	7.02	7.02	0.00	1	1
2012	150	150	7.20	7.20	7.20	0.00	1	1
2013	200	200	7.15	7.15	7.15	0.00	1	1
2014	250	250	7.23	7.23	7.23	0.00	1	1
2015	300	300	7.41	7.41	7.41	0.00	1	1
2016	350	350	7.24	7.24	7.24	0.00	1	1
2017	400	400	7.19	7.19	7.19	0.00	1	1
2018	450	450	7.35	7.35	7.35	0.00	1	1
2019	500	500	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Commercial - Heating and Cooling Efficiency

* UNIT SIZE OF AVOIDED GENERATION UNIT = 97 kW
* INSERVICE COSTS OF AVOIDED GEN UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	8.53	0.00	0.00	0.59	0.00	7.64	8.23
2011	0.00	0.00	8.53	0.00	0.00	0.60	0.00	7.83	8.43
2012	0.00	0.00	8.53	0.00	0.00	0.61	0.00	8.02	8.64
2013	0.00	0.00	8.53	0.00	0.00	0.61	0.00	8.22	8.83
2014	0.00	0.00	8.53	0.00	0.00	0.62	0.00	8.43	9.05
2015	0.00	0.00	8.53	0.00	0.00	0.63	0.00	8.64	9.27
2016	0.00	0.00	8.53	0.00	0.00	0.62	0.00	8.86	9.47
2017	0.00	0.00	8.53	0.00	0.00	0.61	0.00	9.08	9.69
2018	0.00	0.00	8.53	0.00	0.00	0.63	0.00	9.30	9.93
2019	0.00	0.00	8.53	0.00	0.00	0.64	0.00	9.54	10.18
NOMINAL		0.00	85.33	0.00	0.00	6.17	0.00	85.55	91.72
NPV		0.00		0.00	0.00	4.51	0.00	61.88	66.39

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PSC FORM CE 2.2

PROGRAM: Commercial - Heating and Cooling Efficiency

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
* INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	6.87
2011	0.00	0.00	0.00	0.00	0.00	0.00	20.83
2012	0.00	0.00	0.00	0.00	0.00	0.00	35.60
2013	0.00	0.00	0.00	0.00	0.00	0.00	49.51
2014	0.00	0.00	0.00	0.00	0.00	0.00	64.38
2015	0.00	0.00	0.00	0.00	0.00	0.00	80.60
2016	0.00	0.00	0.00	0.00	0.00	0.00	93.08
2017	0.00	0.00	0.00	0.00	0.00	0.00	106.70
2018	0.00	0.00	0.00	0.00	0.00	0.00	123.56
2019	0.00	0.00	0.00	0.00	0.00	0.00	142.01
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	723.13
NPV	0.00	0.00	0.00	0.00	0.00	0.00	465.72

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial - Heating and Cooling Efficiency

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	11.45	55.54	0.00	66.99	8.23	0.00	6.87	0.00	15.09	(51.90)	(51.90)
2011	0.00	11.74	56.93	0.00	68.66	8.43	0.00	20.83	0.00	29.26	(39.40)	(88.50)
2012	0.00	12.03	58.35	0.00	70.38	8.64	0.00	35.60	0.00	44.23	(26.15)	(111.07)
2013	0.00	12.33	59.81	0.00	72.14	8.83	0.00	49.51	0.00	58.34	(13.80)	(122.14)
2014	0.00	12.64	61.31	0.00	73.94	9.05	0.00	64.38	0.00	73.43	(0.51)	(122.52)
2015	0.00	12.95	62.84	0.00	75.79	9.27	0.00	80.60	0.00	89.87	14.07	(112.78)
2016	0.00	13.28	64.41	0.00	77.69	9.47	0.00	93.08	0.00	102.55	24.86	(96.80)
2017	0.00	13.61	66.02	0.00	79.63	9.69	0.00	106.70	0.00	116.39	36.76	(74.84)
2018	0.00	13.95	67.67	0.00	81.62	9.93	0.00	123.56	0.00	133.50	51.87	(46.06)
2019	0.00	14.30	69.36	0.00	83.66	10.18	0.00	142.01	0.00	152.19	68.53	(10.73)
NOMINAL	0.00	128.28	622.24	0.00	750.51	91.72	0.00	723.13	0.00	814.85	64.34	
NPV	0.00	92.78	450.05	0.00	542.83	66.39	0.00	465.72	0.00	532.11	(10.73)	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial - Heating and Cooling Efficiency

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	8.40	75.00	6.88	0.00	90.28	55.54	0.00	0.00	55.54	34.74	34.74
2011	25.58	75.00	6.88	0.00	107.45	56.93	0.00	0.00	56.93	50.52	81.68
2012	43.70	75.00	6.88	0.00	125.57	58.35	0.00	0.00	58.35	67.22	139.69
2013	61.21	75.00	6.88	0.00	143.08	59.81	0.00	0.00	59.81	83.27	206.46
2014	79.84	75.00	6.88	0.00	161.71	61.31	0.00	0.00	61.31	100.41	281.26
2015	99.96	75.00	6.88	0.00	181.84	62.84	0.00	0.00	62.84	119.00	363.61
2016	116.74	75.00	6.88	0.00	198.62	64.41	0.00	0.00	64.41	134.21	449.89
2017	134.84	75.00	6.88	0.00	216.71	66.02	0.00	0.00	66.02	150.69	539.90
2018	156.27	75.00	6.88	0.00	238.15	67.67	0.00	0.00	67.67	170.48	634.50
2019	179.46	75.00	6.88	0.00	261.33	69.36	0.00	0.00	69.36	191.97	733.46
NOMINAL	906.00	750.00	68.75	0.00	1,724.75	622.24	0.00	0.00	622.24	1,102.51	
NPV	582.43	550.61	50.47	0.00	1,183.51	450.05	0.00	0.00	450.05	733.46	

RATE IMPACT TEST
PROGRAM: Commercial - Heating and Cooling Efficiency

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	11.45	6.88	8.40	0.00	26.73	15.09	0.00	0.00	0.00	15.09	(11.63)	(11.63)
2011	0.00	11.74	6.88	25.58	0.00	44.19	29.26	0.00	0.00	0.00	29.26	(14.93)	(25.50)
2012	0.00	12.03	6.88	43.70	0.00	62.60	44.23	0.00	0.00	0.00	44.23	(18.37)	(41.36)
2013	0.00	12.33	6.88	61.21	0.00	80.41	58.34	0.00	0.00	0.00	58.34	(22.07)	(59.05)
2014	0.00	12.64	6.88	79.84	0.00	99.35	73.43	0.00	0.00	0.00	73.43	(25.92)	(78.36)
2015	0.00	12.95	6.88	99.96	0.00	119.79	89.87	0.00	0.00	0.00	89.87	(29.92)	(99.07)
2016	0.00	13.28	6.88	116.74	0.00	136.89	102.55	0.00	0.00	0.00	102.55	(34.34)	(121.15)
2017	0.00	13.61	6.88	134.84	0.00	155.32	116.39	0.00	0.00	0.00	116.39	(38.94)	(144.41)
2018	0.00	13.95	6.88	156.27	0.00	177.10	133.50	0.00	0.00	0.00	133.50	(43.60)	(168.60)
2019	0.00	14.30	6.88	179.46	0.00	200.63	152.19	0.00	0.00	0.00	152.19	(48.44)	(193.58)
NOMINAL	0.00	128.28	68.75	906.00	0.00	1,103.02	814.85	0.00	0.00	0.00	814.85	(288.17)	
NPV	0.00	92.78	50.47	582.43	0.00	725.68	532.11	0.00	0.00	0.00	532.11	(193.58)	

A.11 Commercial Ceiling Insulation

PSC Form CE 1.1

PROGRAM: Commercial - Ceiling Insulation Upgrade

I PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.50	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.52	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,568.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,497.0	KWH/CUST/YR

II ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	310.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,020.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	306.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	375.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	78.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Commercial - Ceiling Insulation Upgrade

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1) * YEAR	(2) * CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) * ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) * UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) * AVOIDED MARGINAL FUEL COST (C/KWH)	(6) * INCREASED MARGINAL FUEL COST (C/KWH)	(7) * REPLACEMENT FUEL COST (C/KWH)	(8) * PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	12	12	6.94	6.94	6.94	0.00	1	1
2011	24	24	7.02	7.02	7.02	0.00	1	1
2012	36	36	7.20	7.20	7.20	0.00	1	1
2013	48	48	7.15	7.15	7.15	0.00	1	1
2014	60	60	7.23	7.23	7.23	0.00	1	1
2015	72	72	7.41	7.41	7.41	0.00	1	1
2016	84	84	7.24	7.24	7.24	0.00	1	1
2017	96	96	7.19	7.19	7.19	0.00	1	1
2018	108	108	7.35	7.35	7.35	0.00	1	1
2019	120	120	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Commercial - Ceiling Insulation Upgrade

* UNIT SIZE OF AVOIDED GENERATION UNIT = 6 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.49	0.53
2011	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.50	0.54
2012	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.52	0.56
2013	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.53	0.57
2014	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.54	0.58
2015	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.56	0.60
2016	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.57	0.61
2017	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.59	0.63
2018	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.60	0.64
2019	0.00	0.00	0.55	0.00	0.00	0.04	0.00	0.62	0.66
NOMINAL		0.00	5.51	0.00	0.00	0.40	0.00	5.52	5.92
NPV		0.00		0.00	0.00	0.29	0.00	3.99	4.28

AVOIDED T & D AND PROGRAM FUEL BENEFITS **PSC FORM CE 2.2**

PROGRAM: Commercial - Ceiling Insulation Upgrade

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
** INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.65
2011	0.00	0.00	0.00	0.00	0.00	0.00	1.98
2012	0.00	0.00	0.00	0.00	0.00	0.00	3.39
2013	0.00	0.00	0.00	0.00	0.00	0.00	4.71
2014	0.00	0.00	0.00	0.00	0.00	0.00	6.12
2015	0.00	0.00	0.00	0.00	0.00	0.00	7.66
2016	0.00	0.00	0.00	0.00	0.00	0.00	8.85
2017	0.00	0.00	0.00	0.00	0.00	0.00	10.15
2018	0.00	0.00	0.00	0.00	0.00	0.00	11.75
2019	0.00	0.00	0.00	0.00	0.00	0.00	13.50
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	68.77
NPV	0.00	0.00	0.00	0.00	0.00	0.00	44.29

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial - Ceiling Insulation Upgrade

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	3.72	12.24	0.00	15.96	0.53	0.00	0.65	0.00	1.18	(14.78)	(14.78)
2011	0.00	3.81	12.55	0.00	16.36	0.54	0.00	1.98	0.00	2.52	(13.83)	(27.63)
2012	0.00	3.91	12.86	0.00	16.77	0.56	0.00	3.39	0.00	3.94	(12.83)	(38.70)
2013	0.00	4.01	13.18	0.00	17.19	0.57	0.00	4.71	0.00	5.28	(11.91)	(48.25)
2014	0.00	4.11	13.51	0.00	17.62	0.58	0.00	6.12	0.00	6.71	(10.91)	(56.37)
2015	0.00	4.21	13.85	0.00	18.06	0.60	0.00	7.66	0.00	8.26	(9.79)	(63.15)
2016	0.00	4.31	14.19	0.00	18.51	0.61	0.00	8.85	0.00	9.46	(9.05)	(68.97)
2017	0.00	4.42	14.55	0.00	18.97	0.63	0.00	10.15	0.00	10.77	(8.20)	(73.87)
2018	0.00	4.53	14.91	0.00	19.45	0.64	0.00	11.75	0.00	12.39	(7.05)	(77.78)
2019	0.00	4.65	15.29	0.00	19.93	0.66	0.00	13.50	0.00	14.16	(5.77)	(80.75)
NOMINAL	0.00	41.68	137.13	0.00	178.81	5.92	0.00	68.77	0.00	74.69	(104.12)	
NPV	0.00	30.14	99.18	0.00	129.33	4.28	0.00	44.29	0.00	48.57	(80.75)	

PARTICIPANT COSTS AND BENEFITS **PSC FORM CE 2.4**
PROGRAM: Commercial - Ceiling Insulation Upgrade

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.80	3.67	4.50	0.00	8.97	12.24	0.00	0.00	12.24	(3.27)	(3.27)
2011	2.43	3.67	4.50	0.00	10.60	12.55	0.00	0.00	12.55	(1.94)	(5.07)
2012	4.16	3.67	4.50	0.00	12.33	12.86	0.00	0.00	12.86	(0.53)	(5.53)
2013	5.82	3.67	4.50	0.00	13.99	13.18	0.00	0.00	13.18	0.81	(4.88)
2014	7.59	3.67	4.50	0.00	15.76	13.51	0.00	0.00	13.51	2.25	(3.20)
2015	9.51	3.67	4.50	0.00	17.68	13.85	0.00	0.00	13.85	3.83	(0.55)
2016	11.10	3.67	4.50	0.00	19.27	14.19	0.00	0.00	14.19	5.08	2.71
2017	12.82	3.67	4.50	0.00	20.99	14.55	0.00	0.00	14.55	6.45	6.56
2018	14.86	3.67	4.50	0.00	23.03	14.91	0.00	0.00	14.91	8.12	11.07
2019	17.07	3.67	4.50	0.00	25.24	15.29	0.00	0.00	15.29	9.95	16.20
NOMINAL	86.16	36.72	45.00	0.00	167.88	137.13	0.00	0.00	137.13	30.75	
NPV	55.39	26.96	33.04	0.00	115.38	99.18	0.00	0.00	99.18	16.20	

RATE IMPACT TEST
PROGRAM: Commercial - Ceiling Insulation Upgrade

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	3.72	4.50	0.80	0.00	9.02	1.18	0.00	0.00	0.00	1.18	(7.84)	(7.84)
2011	0.00	3.81	4.50	2.43	0.00	10.75	2.52	0.00	0.00	0.00	2.52	(8.22)	(15.47)
2012	0.00	3.91	4.50	4.16	0.00	12.56	3.94	0.00	0.00	0.00	3.94	(8.62)	(22.91)
2013	0.00	4.01	4.50	5.82	0.00	14.33	5.28	0.00	0.00	0.00	5.28	(9.05)	(30.17)
2014	0.00	4.11	4.50	7.59	0.00	16.20	6.71	0.00	0.00	0.00	6.71	(9.49)	(37.24)
2015	0.00	4.21	4.50	9.51	0.00	18.21	8.26	0.00	0.00	0.00	8.26	(9.95)	(44.13)
2016	0.00	4.31	4.50	11.10	0.00	19.92	9.46	0.00	0.00	0.00	9.46	(10.45)	(50.85)
2017	0.00	4.42	4.50	12.82	0.00	21.74	10.77	0.00	0.00	0.00	10.77	(10.97)	(57.40)
2018	0.00	4.53	4.50	14.86	0.00	23.89	12.39	0.00	0.00	0.00	12.39	(11.50)	(63.78)
2019	0.00	4.65	4.50	17.07	0.00	26.21	14.16	0.00	0.00	0.00	14.16	(12.05)	(70.00)
NOMINAL	0.00	41.68	45.00	86.16	0.00	172.83	74.69	0.00	0.00	0.00	74.69	(98.15)	
NPV	0.00	30.14	33.04	55.39	0.00	118.57	48.57	0.00	0.00	0.00	48.57	(70.00)	

A.12 Commercial Window Film Installation

PSC Form CE 1.1

PROGRAM: Commercial Window Film Installation

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.84	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.88	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	3,844.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,670.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(I) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	310.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	350.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	0.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	100.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	70.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Commercial - Window Film Installation

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor 1.00

(1) YEAR	(2) CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	(3) ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	(4) UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	(5) AVOIDED MARGINAL FUEL COST (C/KWH)	(6) INCREASED MARGINAL FUEL COST (C/KWH)	(7) REPLACEMENT FUEL COST (C/KWH)	(8) PROGRAM KW EFFECTIVENESS FACTOR	(9) PROGRAM KWH EFFECTIVENESS FACTOR
2010	12	12	6.94	6.94	6.94	0.00	1	1
2011	24	24	7.02	7.02	7.02	0.00	1	1
2012	36	36	7.20	7.20	7.20	0.00	1	1
2013	48	48	7.15	7.15	7.15	0.00	1	1
2014	60	60	7.23	7.23	7.23	0.00	1	1
2015	72	72	7.41	7.41	7.41	0.00	1	1
2016	84	84	7.24	7.24	7.24	0.00	1	1
2017	96	96	7.19	7.19	7.19	0.00	1	1
2018	108	108	7.35	7.35	7.35	0.00	1	1
2019	120	120	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Commercial - Window Film Installation

* UNIT SIZE OF AVOIDED GENERATION UNIT = 11 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	0.92	0.00	0.00	0.06	0.00	0.83	0.89
2011	0.00	0.00	0.92	0.00	0.00	0.06	0.00	0.85	0.91
2012	0.00	0.00	0.92	0.00	0.00	0.07	0.00	0.87	0.94
2013	0.00	0.00	0.92	0.00	0.00	0.07	0.00	0.89	0.96
2014	0.00	0.00	0.92	0.00	0.00	0.07	0.00	0.91	0.98
2015	0.00	0.00	0.92	0.00	0.00	0.07	0.00	0.94	1.00
2016	0.00	0.00	0.92	0.00	0.00	0.07	0.00	0.96	1.03
2017	0.00	0.00	0.92	0.00	0.00	0.07	0.00	0.98	1.05
2018	0.00	0.00	0.92	0.00	0.00	0.07	0.00	1.01	1.08
2019	0.00	0.00	0.92	0.00	0.00	0.07	0.00	1.03	1.10
NOMINAL		0.00	9.25	0.00	0.00	0.67	0.00	9.27	9.94
NPV		0.00		0.00	0.00	0.49	0.00	6.71	7.20

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PSC FORM CE 2.2

PROGRAM: Commercial - Window Film Installation

* INSERVICE COSTS OF AVOIDED TRANS (000) = $0
* INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	1.60
2011	0.00	0.00	0.00	0.00	0.00	0.00	4.86
2012	0.00	0.00	0.00	0.00	0.00	0.00	8.30
2013	0.00	0.00	0.00	0.00	0.00	0.00	11.54
2014	0.00	0.00	0.00	0.00	0.00	0.00	15.01
2015	0.00	0.00	0.00	0.00	0.00	0.00	18.79
2016	0.00	0.00	0.00	0.00	0.00	0.00	21.70
2017	0.00	0.00	0.00	0.00	0.00	0.00	24.88
2018	0.00	0.00	0.00	0.00	0.00	0.00	28.81
2019	0.00	0.00	0.00	0.00	0.00	0.00	33.11
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	168.59
NPV	0.00	0.00	0.00	0.00	0.00	0.00	108.58

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial - Window Film Installation

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	3.72	4.20	0.00	7.92	0.89	0.00	1.60	0.00	2.49	(5.43)	(5.43)
2011	0.00	3.81	4.31	0.00	8.12	0.91	0.00	4.86	0.00	5.77	(2.35)	(7.61)
2012	0.00	3.91	4.41	0.00	8.32	0.94	0.00	8.30	0.00	9.23	0.91	(6.82)
2013	0.00	4.01	4.52	0.00	8.53	0.96	0.00	11.54	0.00	12.50	3.97	(3.64)
2014	0.00	4.11	4.64	0.00	8.74	0.98	0.00	15.01	0.00	15.99	7.25	1.76
2015	0.00	4.21	4.75	0.00	8.96	1.00	0.00	18.79	0.00	19.79	10.83	9.26
2016	0.00	4.31	4.87	0.00	9.18	1.03	0.00	21.70	0.00	22.73	13.54	17.97
2017	0.00	4.42	4.99	0.00	9.41	1.05	0.00	24.88	0.00	25.93	16.51	27.83
2018	0.00	4.53	5.12	0.00	9.65	1.08	0.00	28.81	0.00	29.88	20.23	39.06
2019	0.00	4.65	5.25	0.00	9.89	1.10	0.00	33.11	0.00	34.21	24.32	51.60
NOMINAL	0.00	41.68	47.05	0.00	88.73	9.94	0.00	168.59	0.00	178.53	89.80	
NPV	0.00	30.14	34.03	0.00	64.18	7.20	0.00	108.58	0.00	115.77	51.60	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial - Window Film Installation

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	1.96	0.00	1.20	0.00	3.16	4.20	0.00	0.00	4.20	(1.04)	(1.04)
2011	5.96	0.00	1.20	0.00	7.16	4.31	0.00	0.00	4.31	2.86	1.61
2012	10.19	0.00	1.20	0.00	11.39	4.41	0.00	0.00	4.41	6.98	7.63
2013	14.27	0.00	1.20	0.00	15.47	4.52	0.00	0.00	4.52	10.95	16.41
2014	18.61	0.00	1.20	0.00	19.81	4.64	0.00	0.00	4.64	15.18	27.72
2015	23.30	0.00	1.20	0.00	24.50	4.75	0.00	0.00	4.75	19.75	41.39
2016	27.22	0.00	1.20	0.00	28.42	4.87	0.00	0.00	4.87	23.55	56.53
2017	31.44	0.00	1.20	0.00	32.64	4.99	0.00	0.00	4.99	27.64	73.04
2018	36.43	0.00	1.20	0.00	37.63	5.12	0.00	0.00	5.12	32.52	91.08
2019	41.84	0.00	1.20	0.00	43.04	5.25	0.00	0.00	5.25	37.79	110.56
NOMINAL	211.22	0.00	12.00	0.00	223.22	47.05	0.00	0.00	47.05	176.17	
NPV	135.79	0.00	8.81	0.00	144.60	34.03	0.00	0.00	34.03	110.56	

RATE IMPACT TEST
PROGRAM: Commercial - Window Film Installation

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	3.72	1.20	1.96	0.00	6.88	2.49	0.00	0.00	0.00	2.49	(4.39)	(4.39)
2011	0.00	3.81	1.20	5.96	0.00	10.98	5.77	0.00	0.00	0.00	5.77	(5.21)	(9.22)
2012	0.00	3.91	1.20	10.19	0.00	15.30	9.23	0.00	0.00	0.00	9.23	(6.06)	(14.45)
2013	0.00	4.01	1.20	14.27	0.00	19.48	12.50	0.00	0.00	0.00	12.50	(6.98)	(20.05)
2014	0.00	4.11	1.20	18.61	0.00	23.92	15.99	0.00	0.00	0.00	15.99	(7.93)	(25.95)
2015	0.00	4.21	1.20	23.30	0.00	28.71	19.79	0.00	0.00	0.00	19.79	(8.92)	(32.13)
2016	0.00	4.31	1.20	27.22	0.00	32.73	22.73	0.00	0.00	0.00	22.73	(10.00)	(38.56)
2017	0.00	4.42	1.20	31.44	0.00	37.06	25.93	0.00	0.00	0.00	25.93	(11.13)	(45.21)
2018	0.00	4.53	1.20	36.43	0.00	42.17	29.88	0.00	0.00	0.00	29.88	(12.28)	(52.02)
2019	0.00	4.65	1.20	41.84	0.00	47.68	34.21	0.00	0.00	0.00	34.21	(13.47)	(58.97)
NOMINAL	0.00	41.68	12.00	211.22	0.00	264.90	178.53	0.00	0.00	0.00	178.53	(86.37)	
NPV	0.00	30.14	8.81	135.79	0.00	174.74	115.77	0.00	0.00	0.00	115.77	(58.97)	

A.13 Commercial Chiller Upgrade

PROGRAM: Commercial - Chiller Upgrade

I PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	63.17	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	66.17	KW/GEN/CUST
(3) KW LINE LOSS PERCENTAGE	4.5	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	226,319.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	4.5	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	216,245.0	KWH/CUST/YR

II ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	10	YEARS
(3) T & D ECONOMIC LIFE	10	YEARS
(4) K FACTOR FOR GENERATION	0.00	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQD OR VALUE DEF (1)	1	

III UTILITY AND CUSTOMER COSTS

(1) UTILITY NONRECURRING COST PER CUSTOMER	11,795.00	$/CUST
(2) UTILITY RECURRING COST PER CUSTOMER	0.00	$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	27,500.00	$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8) CUSTOMER TAX CREDIT PER INSTALLATION	0.00	$/CUST
(9) CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10) INCREASED SUPPLY COSTS	0.00	$/CUST/YR
(11) SUPPLY COSTS ESCALATION RATE	2.5	%
(12) UTILITY DISCOUNT RATE	7.64	%
(13) UTILITY AFUDC RATE	0.00	%
(14) UTILITY NON RECURRING REBATE/INCENTIVE	6,317.00	$/CUST
(15) UTILITY RECURRING REBATE/INCENTIVE	0.00	$/CUST/YR
(16) UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

PSC Form CE 1.1

IV AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2010	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0	$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	$/KW
(6) BASE YEAR DISTRIBUTION COST	0	$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	0	$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	0	%
(10) TRANSMISSION FIXED O & M COST	0	$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) INCREMENTAL GEN VARIABLE O & M COSTS	0	CENTS/KWH
(14) INCREMENTAL GEN VARIABLE O&M COST ESC RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	0	%
(16) INCREMENTAL PURCHASED ENERGY COST	6.94	CENTS/KWH
(17) INCREMENTAL PURCHASED ENERGY COST ESC RATE	2.5	%
(18) INCREMENTAL PURCHASE CAPACITY COST PER KW	78.39	$/KW/YR
(19) INCREMENTAL PURCHASE CAPACITY COST ESC RATE	2.5	%

V NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	1.958	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.5	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5) DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

PSC Form CE 1.2

PROGRAM: Commercial - Chiller Upgrade

* Avoided Generation Unit: PPA
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1	1	6.94	6.94	6.94	0.00	1	1
2011	2	2	7.02	7.02	7.02	0.00	1	1
2012	3	3	7.20	7.20	7.20	0.00	1	1
2013	4	4	7.15	7.15	7.15	0.00	1	1
2014	5	5	7.23	7.23	7.23	0.00	1	1
2015	6	6	7.41	7.41	7.41	0.00	1	1
2016	7	7	7.24	7.24	7.24	0.00	1	1
2017	8	8	7.19	7.19	7.19	0.00	1	1
2018	9	9	7.35	7.35	7.35	0.00	1	1
2019	10	10	7.56	7.56	7.56	0.00	1	1

AVOIDED GENERATION UNIT BENEFITS

PSC FORM CE 2.1

PROGRAM: Commercial - Chiller Upgrade

* UNIT SIZE OF AVOIDED GENERATION UNIT = 66 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = $0

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST $(000)	(2A)* INCREMENTAL ANNUAL PURCHASED KWH (000)	(3) INCREMENTAL PURCHASED POWER FIXED O&M COST $(000)	(4) INCREMENTAL PURCHASED POWER VARIABLE O&M COST $(000)	(5) INCREMENTAL PURCHASED POWER ENERGY COST $(000)	(6) REPLACEMENT ENERGY COST $(000)	(6A) INCREMENTAL PURCHASED CAPACITY COSTS $(000)	(7) INCREMENTAL PURCHASED POWER BENEFITS $(000)
2010	0.00	0.00	5.80	0.00	0.00	0.40	0.00	5.19	5.59
2011	0.00	0.00	5.80	0.00	0.00	0.41	0.00	5.32	5.72
2012	0.00	0.00	5.80	0.00	0.00	0.42	0.00	5.45	5.87
2013	0.00	0.00	5.80	0.00	0.00	0.41	0.00	5.59	6.00
2014	0.00	0.00	5.80	0.00	0.00	0.42	0.00	5.73	6.14
2015	0.00	0.00	5.80	0.00	0.00	0.43	0.00	5.87	6.30
2016	0.00	0.00	5.80	0.00	0.00	0.42	0.00	6.02	6.43
2017	0.00	0.00	5.80	0.00	0.00	0.42	0.00	6.17	6.58
2018	0.00	0.00	5.80	0.00	0.00	0.43	0.00	6.32	6.75
2019	0.00	0.00	5.80	0.00	0.00	0.44	0.00	6.48	6.92
NOMINAL		0.00	57.96	0.00	0.00	4.19	0.00	58.11	62.30
NPV		0.00		0.00	0.00	3.06	0.00	42.03	45.09

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PSC FORM CE 2.2

PROGRAM: Commercial - Chiller Upgrade

* INSERVICE COSTS OF AVOIDED TRANS. (000) = $0
* INSERVICE COSTS OF AVOIDED DIST. (000) = $0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST $(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST $(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST $(000)	(6) AVOIDED DISTRIBUTION O&M COST $(000)	(7) TOTAL AVOIDED DISTRIBUTION COST $(000)	(8) PROGRAM FUEL SAVINGS $(000)
2010	0.00	0.00	0.00	0.00	0.00	0.00	7.87
2011	0.00	0.00	0.00	0.00	0.00	0.00	23.88
2012	0.00	0.00	0.00	0.00	0.00	0.00	40.80
2013	0.00	0.00	0.00	0.00	0.00	0.00	56.75
2014	0.00	0.00	0.00	0.00	0.00	0.00	73.81
2015	0.00	0.00	0.00	0.00	0.00	0.00	92.39
2016	0.00	0.00	0.00	0.00	0.00	0.00	106.70
2017	0.00	0.00	0.00	0.00	0.00	0.00	122.31
2018	0.00	0.00	0.00	0.00	0.00	0.00	141.65
2019	0.00	0.00	0.00	0.00	0.00	0.00	162.79
NOMINAL	0.00	0.00	0.00	0.00	0.00	0.00	828.96
NPV	0.00	0.00	0.00	0.00	0.00	0.00	533.88

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial - Chiller Upgrade

PSC FORM CE 2.3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	PARTICIPANT PROGRAM COSTS $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	INCREMENTAL PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	PROGRAM FUEL SAVINGS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS $(000)	CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	0.00	11.80	27.50	0.00	39.30	5.59	0.00	7.87	0.00	13.46	(25.84)	(25.84)
2011	0.00	12.69	28.19	0.00	40.28	5.72	0.00	23.88	0.00	29.61	(10.67)	(35.75)
2012	0.00	12.39	28.89	0.00	41.28	5.87	0.00	40.80	0.00	46.67	5.39	(31.10)
2013	0.00	12.70	29.61	0.00	42.32	6.00	0.00	56.75	0.00	62.75	20.44	(14.71)
2014	0.00	13.02	30.35	0.00	43.37	6.14	0.00	73.81	0.00	79.95	36.58	12.54
2015	0.00	13.34	31.11	0.00	44.46	6.30	0.00	92.39	0.00	98.69	54.23	50.06
2016	0.00	13.68	31.89	0.00	45.57	6.43	0.00	106.70	0.00	113.13	67.56	93.50
2017	0.00	14.02	32.69	0.00	46.71	6.58	0.00	122.31	0.00	128.89	82.19	142.59
2018	0.00	14.37	33.51	0.00	47.88	6.75	0.00	141.65	0.00	148.39	100.52	198.37
2019	0.00	14.73	34.34	0.00	49.07	6.92	0.00	162.79	0.00	169.71	120.64	260.55
NOMINAL	0.00	132.14	308.09	0.00	440.24	62.30	0.00	828.96	0.00	891.26	451.02	
NPV	0.00	95.58	222.84	0.00	318.41	45.09	0.00	533.88	0.00	578.97	260.55	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial - Chiller Upgrade

FSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	9.63	0.00	6.32	0.00	15.95	27.50	0.00	0.00	27.50	(11.55)	(11.55)
2011	29.32	0.00	6.32	0.00	35.64	28.19	0.00	0.00	28.19	7.45	(4.63)
2012	50.09	0.00	6.32	0.00	56.41	28.89	0.00	0.00	28.89	27.52	19.12
2013	70.16	0.00	6.32	0.00	76.48	29.61	0.00	0.00	29.61	46.87	56.70
2014	91.52	0.00	6.32	0.00	97.84	30.35	0.00	0.00	30.35	67.49	106.97
2015	114.59	0.00	6.32	0.00	120.91	31.11	0.00	0.00	31.11	89.79	169.11
2016	133.82	0.00	6.32	0.00	140.14	31.89	0.00	0.00	31.89	108.25	238.71
2017	154.57	0.00	6.32	0.00	160.89	32.69	0.00	0.00	32.69	128.20	315.28
2018	179.14	0.00	6.32	0.00	185.46	33.51	0.00	0.00	33.51	151.95	399.60
2019	205.72	0.00	6.32	0.00	212.04	34.34	0.00	0.00	34.34	177.70	491.20
NOMINAL	1,038.59	0.00	63.17	0.00	1,101.76	308.09	0.00	0.00	308.09	793.66	
NPV	667.66	0.00	46.38	0.00	714.04	222.84	0.00	0.00	222.84	491.20	

RATE IMPACT TEST
PROGRAM: Commercial - Chiller Upgrade

PSC FORM CE 2.5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS $(000)	UTILITY PROGRAM COSTS $(000)	INCENTIVES $(000)	REVENUE LOSSES $(000)	OTHER COSTS $(000)	TOTAL COSTS $(000)	PURCHASED POWER BENEFITS $(000)	T & D BENEFITS $(000)	REVENUE GAINS $(000)	OTHER BENEFITS $(000)	TOTAL BENEFITS $(000)	NET BENEFITS TO ALL CUSTOMERS $(000)	CUMULATIVE DISCOUNTED NET BENEFIT $(000)
2010	0.00	11.80	6.32	9.63	0.00	27.75	13.46	0.00	0.00	0.00	13.46	(14.29)	(14.29)
2011	0.00	12.09	6.32	29.32	0.00	47.73	29.61	0.00	0.00	0.00	29.61	(18.12)	(31.12)
2012	0.00	12.39	6.32	50.09	0.00	68.80	46.67	0.00	0.00	0.00	46.67	(22.13)	(50.22)
2013	0.00	12.70	6.32	70.16	0.00	89.18	62.75	0.00	0.00	0.00	62.75	(26.43)	(71.41)
2014	0.00	13.02	6.32	91.52	0.00	110.86	79.95	0.00	0.00	0.00	79.95	(30.91)	(94.44)
2015	0.00	13.34	6.32	114.59	0.00	134.25	98.69	0.00	0.00	0.00	98.69	(35.56)	(119.05)
2016	0.00	13.68	6.32	133.82	0.00	153.82	113.13	0.00	0.00	0.00	113.13	(40.69)	(145.21)
2017	0.00	14.02	6.32	154.57	0.00	174.91	128.89	0.00	0.00	0.00	128.89	(46.01)	(172.69)
2018	0.00	14.37	6.32	179.14	0.00	199.83	148.39	0.00	0.00	0.00	148.39	(51.44)	(201.23)
2019	0.00	14.73	6.32	205.72	0.00	226.77	169.71	0.00	0.00	0.00	169.71	(57.06)	(230.65)
NOMINAL	0.00	132.14	63.17	1,038.59	0.00	1,233.90	891.26	0.00	0.00	0.00	891.26	(342.64)	
NPV	0.00	95.58	46.38	667.66	0.00	809.62	578.97	0.00	0.00	0.00	578.97	(230.65)	

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential - Heating and Cooling Efficiency

PSC FORM CE 2.4

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL $(000)	(3) TAX CREDITS $(000)	(4) UTILITY REBATES $(000)	(5) OTHER BENEFITS $(000)	(6) TOTAL BENEFITS $(000)	(7) CUSTOMER EQUIPMENT COSTS $(000)	(8) CUSTOMER O & M COSTS $(000)	(9) OTHER COSTS $(000)	(10) TOTAL COSTS $(000)	(11) NET BENEFITS $(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS $(000)
2010	25.21	0.00	20.63	0.00	45.84	166.62	0.00	0.00	166.62	(120.78)	(120.78)
2011	76.73	0.00	20.63	0.00	97.36	170.79	0.00	0.00	170.79	(73.43)	(189.00)
2012	131.09	0.00	20.63	0.00	151.72	175.06	0.00	0.00	175.06	(23.34)	(209.14)
2013	183.62	0.00	20.63	0.00	204.24	179.43	0.00	0.00	179.43	24.81	(189.24)
2014	239.52	0.00	20.63	0.00	260.14	183.92	0.00	0.00	183.92	76.22	(132.46)
2015	299.88	0.00	20.63	0.00	320.51	188.52	0.00	0.00	188.52	131.99	(41.12)
2016	350.22	0.00	20.63	0.00	370.85	193.23	0.00	0.00	193.23	177.62	73.07
2017	404.52	0.00	20.63	0.00	425.14	198.06	0.00	0.00	198.06	227.08	208.71
2018	468.82	0.00	20.63	0.00	489.44	203.01	0.00	0.00	203.01	286.43	367.65
2019	538.38	0.00	20.63	0.00	559.00	208.09	0.00	0.00	208.09	350.92	548.55
NOMINAL	2,717.99	0.00	206.25	0.00	2,924.24	1,866.71	0.00	0.00	1,866.71	1,057.53	
NPV	1,747.28	0.00	151.42	0.00	1,898.70	1,350.15	0.00	0.00	1,350.15	548.55	