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MEMORANDUM

TO:

Ms. Ann Cole

Commission Clerk

Florida Public Service Commission

FROM:

Roy C. Young

DATE:

March 30, 2010

SUBJECT:

2010 Demand-Side Management Plan - Orlando Utilities Commission

Enclosed for filing on behalf of Orlando Utilities Commission is Notice of Filing OUC's 2010 Demand-Side Management Plan and an original and 15 copies of the Plan.

Thank you for your assistance with this filing.

RCY:swp Enclosures

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FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Commission review of 2010 Demand-Side Management Plan (Orlando Utilities Commission)		Docket #
	/	

ORLANDO UTILITIES COMMISSION'S NOTICE OF FILING 2010 DEMAND-SITE MANAGEMENT

Orlando Utilities Commission ("OUC"), by and through its undersigned attorney, pursuant to Commission Order No. PSC-09-0855-FOF-EG, issued December 30, 2009, hereby files its 2010 Demand-Side Management Plan.

Roy C. Young

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FPSC-COMMISSION CLERK



Orlando Utilities Commission 2010 Demand-Side Management Plan

March 30, 2010

0000MENT NUMBER-DATE 02308 MAR 30 ≥

FPSC-COMMISSION CLERK

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1.0 Introduction

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, 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 this Commission 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 OUC'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

OUC'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 OUC's projected annual DSM peak demand and energy reductions (corresponding to the programs discussed in subsequent sections of this document) are presented in Tables 1-1, 1-2 and 1-3.

Table 1-1 – PSC-Established Goals and Projected OUC Reductions for Residential							
	Summ	er (MW)	Winte	er (MW)	Annua	l (GWh)	
Calendar	PSC	OUC	PSC	OUC	PSC	OUC	
Year	Goal	Projected	Goal	Projected	Goal	Projected	
2010	0.50	0.56	0.20	0.45	1.80	2.38	
2011	0.50	0.56	0.20	0.45	1.80	2.38	
2012	0.50	0.56	0.20	0.45	1.80	2.38	
2013	0.50	0.56	0.20	0.45	1.80	2.38	
2014	0.50	0.56	0.20	0.45	1.80	2.38	
2015	0.50	0.56	0.20	0.45	1.80	2.38	
2016	0.50	0.56	0.20	0.45	1.80	2.38	
2017	0.50	0.56	0.20	0.45	1.80	2.38	
2018	0.50	0.56	0.20	0.45	1.80	2.38	
2019	0.50	0.56	0.20	0.45	1.80	2.38	
Total	5.00	5.65	2.00	4.49	18.00	23.76	

Table 1-2 – PSC-Established Goals and Projected OUC Reductions for Commercial/Industrial								
	Summe	er (MW)	Winter	r (MW)	Annua	l (GWh)		
Calendar	PSC	OUC	PSC	OUC	PSC	OUC		
Year	Goal	Projected	Goal	Projected	Goal	Projected		
2010	0.70	0.72	0.70	0.72	1.80	3.27		
2011	0.70	0.72	0.70	0.72	1.80	3.27		
2012	0.70	0.72	0.70	0.72	1.80	3.27		
2013	0.70	0.72	0.70	0.72	1.80	3.27		
2014	0.70	0.72	0.70	0.72	1.80	3.27		
2015	0.70	0.72	0.70	0.72	1.80	3.27		
2016	0.70	0.72	0.70	0.72	1.80	3.27		
2017	0.70	0.72	0.70	0.72	1.80	3.27		
2018	0.70	0.72	0.70	0.72	1.80	3.27		
2019	0.70	0.72	0.70	0.72	1.80	3.27		
Total	7.00	7.25	7.00	7.22	18.00	32.71		

Note: In the initial offering of the commercial cool/reflective roof program in 2009, OUC had 7 customers participate. One of the participants accounted for more than two thirds of the total square footage of the cool roof/reflective program. Due to uncertainty regarding the likelihood of similar participation in future years, peak demand and energy reductions associated with commercial cool/reflective roof program have not been included in OUC's projected reductions.

Table 1-3 – PSC-Established Goals and Projected OUC Reductions for										
	Total Residential and Commercial/Industrial									
	Summe	er (MW)	Winte	er (MW)	Annua	l (GWh)				
Calendar	PSC	OUC	PSC	OUC	PSC	OUC				
Year	Goal	Projected	Goal	Projected	Goal	Projected				
2010	1.20	1.29	0.90	1.17	3.60	5.65				
2011	1.20	1.29	0.90	1.17	3.60	5.65				
2012	1.20	1.29	0.90	1.17	3.60	5.65				
2013	1.20	1.29	0.90	1.17	3.60	5.65				
2014	1.20	1.29	0.90	1.17	3.60	5.65				
2015	1.20	1.29	0.90	1.17	3.60	5.65				
2016	1.20	1.29	0.90	1.17	3.60	5.65				
2017	1.20	1.29	0.90	1.17	3.60	5.65				
2018	1.20	1.29	0.90	1.17	3.60	5.65				
2019	1.20	1.29	0.90	1.17	3.60	5.65				
Total	12.00	12.89	9.00	11.71	36.00	56.47				

Note: In the initial offering of the commercial cool/reflective roof program in 2009, OUC had 7 customers participate. One of the participants accounted for more than two thirds of the total square footage of the cool roof/reflective program. Due to uncertainty regarding the likelihood of similar participation in future years, peak demand and energy reductions associated with commercial cool/reflective roof program have not been included in OUC's projected reductions.

1.3 Discussion of Rate Impacts from Conservation Programs

The recently completed Itron Study (the analysis completed by Itron in the most recent PSC numeric goal setting process discussed previously, which for OUC is Docket No. 080412-EG) confirmed none of the DSM measures evaluated for OUC passed the Rate Impact Test, meaning such conservation measures will result in upward pressure on customers' rates. The extent to which rates increase is difficult to evaluate, but a simple reference point can get within a reasonable range. For example, OUC rates are affected roughly 1 percent for every \$5 million in additional revenue requirement. Itron's evaluation of DSM measures indicated that DSM measures failed the Rate Impact Test (referred to as RIM) but some passed the Total Resources Cost Test (referred to as TRC). By definition, if a DSM measure fails RIM, it will put upward pressure on rates. If a DSM measure passes TRC, it may provide benefits to the participating customer in the form of lower overall bills. Consequently, a DSM measure that fails RIM but passes TRC may lower the bills of participating customers, but would lead to an overall increase in utility rates such that those customers that don't participate in OUC DSM programs will experience an increase in their utility bills.

OUC's implementation of the DSM programs listed in this report is estimated to cause an annual increase of \$1.75 million in revenue requirements, or roughly a 0.35 percent of OUC's current rates. Administrative costs, incentive costs and lost base revenues comprise the majority of this additional revenue requirement. It is important to note that these costs do not include any educational and marketing costs. Inclusion of the educational and marketing costs of an additional \$700,000 would bring the total impact to approximately 0.49 percent of OUC's current rates. Based on today's electric rates, taxes and consumption of 1,200 kWh/month, the average residential customer experiences an increase in their electric bills of approximately \$0.68/month or \$8.23/year due to DSM activities.

1.4 OUC's Marketing Efforts to Promote DSM Participation

OUC's conservation efforts will be enhanced by an integrated approach of marketing, communications and community outreach that will lead to higher levels of program participation and behavioral changes. Customer education will be provided, through a variety of media outlets, online and in person at home, business' and community meetings and other events.

1.4.1 Online Education Initiatives

The recently launched ReliablyGreen.ouc.com website provides energy and water conservation tips and efficiency and conservation rebate information. It also showcases OUC's sustainable programs.

Going forward, the second phase of ReliablyGreen.OUC.com will feature an Energy Consumption Map and Interactive Simulator. After customers enter their address to see an average of their energy consumption, a simple interface will allow them to view how modest

improvements to their home can reduce their consumption and save them money. The simulator also will include applicable OUC rebates for the suggested improvements.

OUC also is planning to develop a Handheld Home Energy and Water Audit Application (App) that will engage customers by putting useful conservation information right at their fingertips through a smartphone. The App will enable customers to move through their residence room by room learning ways to conserve energy and water. Customers also will be able to set up maintenance reminders, such as changing an air filter, and create shopping lists as they go through the audit process.

1.4.2 Marketing Media Overview

The marketing campaign features a mix of print advertising, online advertising, social media, broadcast television, radio, digital outdoor advertising, direct mail and other promotions that will drive people to ReliablyGreen.OUC.com and educate customers on ways to save energy, water and money. A goal of the campaign also will be to promote the right rebate to the right customer. The campaign will include:

- Traditional print media, business journals and residential publications that were selected for their target audience, market share and advertising rates.
- A broad range of sites and geo-targeted messaging based on zip codes to allows OUC to customize its message to various segments of OUC's customer base.
- Five television commercial spots, delivered in English and Spanish, to reinforce the idea that "becoming green is easy and saves you money." The spots associate being green to lowering your utility bill or making small changes to improve energy efficiency and conserve water.
- A new conservation video that shows how to conduct a home audit, money saving tips and rebate information. Beginning in May, customers can watch the new conservation video on Channel 24's Saturday Morning line-up. The video also will be available on ReliablyGreen.ouc.com.
- OUC radio campaigns that will promote online initiatives, rebate programs and the new conservation video while breaking green myths.
- Digital Outdoor Billboard messages promoting Reliably Green that will run from March through May on I-4 near Fairbanks Avenue. The technology allows OUC to change the message to promote various programs without the cost of vinyl production. OUC will also run four traditional billboards located throughout OUC's service territory. These vinyl boards ultimately will be recycled into various promotional giveaways like bags and notebook covers.
- Direct mail that invites customers to community meetings and can be used in targeted areas to promote specific rebates.

1.4.3 Communications Overview

The key messages for any corporate communications related to conservation education will be that OUC is launching ReliablyGreen.OUC.com and hosting community meetings to show that:

- OUC is going green while ensuring reliability and affordability
- Customers can go green while lowering their utility bills

The messages will be delivered via traditional and social media such as:

- Print: local newspapers and magazines
- TV & Radio: WESH-2, WKMG-6, WFTV-9, NEWS-13, FOX-35, WDBO, NPR, etc.
- Online: Sentinel community blogs, renewable energy and other green industry websites and forums
- Social Media: Twitter and Facebook

1.4.4 Community Outreach Overview

OUC will engage customers through a series of events and outreach to community and business partners.

Taking place from March through May 2010 will be a series of 13 open houses to teach customers how to save energy, water and money. On the heels of the Open Houses will be a series of kick-off meetings to mark the beginning of OUC's Community Energy Efficiency Outreach Program. These open houses will:

- Create awareness of the average level of energy consumption in each neighborhood.
- Help customers identify what may be causing high levels of consumption.
- Promote online and home energy audits.
- Provide opportunities for OUC representatives to listen and learn about the issues affecting OUC's customers.

To engage community and business organizations:

- OUC sponsors and supports more than 100 community organizations and events
- OUC tailors sponsorship agreements to build awareness of OUC-related products, projects, programs and services available for customer participation
- OUC creates hyperlinks on community organization websites to ReliablyGreen.OUC.com and provides information about specific OUC programs and services to targeted groups

1.4.5 Educational Outreach

OUC is partnering with the Orlando Science Center to deliver an interactive curriculum to Orange County public school classrooms within OUC's service territory. The Orlando Science Center, using content approved by OUC, has developed an electric and water

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conservation and renewable energy curriculum and designed activities that meet Sunshine State Standards and target fifth graders, who are preparing for their first Science FCAT test. The program includes two 90-minute classroom workshops for students as well as hands-on labs and pre- and post-classroom activities.

1.5 Potential Program Enhancements

In keeping with OUC's continuous efforts in making improvements to its current DSM programs discussed hereinafter and its desire to include some of the more promising opportunities identified during the recent goal setting process, OUC plans to explore the inclusion of the following enhancements:

- OUC is currently evaluating plans to double the rebates to \$200, \$400, and \$600 respectively in order to increase participation in both the Residential and Commercial Heat Pump rebate programs.
- To encourage proper sizing of heat pumps, OUC is also evaluating a plan to offer an incentive to the contractor of \$50 for a Manual J calculation based on R-30 or higher attic insulation. Future evaluation will be conducted to determine the effectiveness of this offering and possible inclusion as a requirement of the program. This enhancement would directly address the issue relating to including provisions that help avoid "lost opportunities" and achieve a combined savings that is greater than the separate individual measures.
- OUC is considering a process that would promote a working relationship with the HVAC contractors to gain their buy-in and cooperation to better communicate the benefits of higher efficiency heat pumps to its customers.
- Maximizing and leveraging the above working relationship with contractors participating in OUC's Preferred Contractor Network should expand customer participation within the heat pump program.
- In order to promote additional lighting retrofits within the marketplace, OUC is considering offering a rebate of \$250/KW for those customers that elect not to choose OUC's Commercial Indoor Lighting program's funding solution.

1.6 OUC Program Monitoring and Verification

Program monitoring and evaluation are important components of DSM implementation. They serve the purpose of ensuring that all DSM resources are acquired in an efficient manner. Specifically, program monitoring includes tracking program data and ensuring quality control. Program impact evaluation results document the energy and demand impacts. Process evaluation and market assessment measures the delivery efficiency of the program, as well as

suggest ways that the program can be improved by increasing savings, reducing costs, or increasing participation.

While there is a great need to regularly evaluate programs to ensure their effectiveness, there is an equally great need to utilize the evaluation method that is most appropriate. Imprudent expenditures on evaluation can significantly affect the program to its detriment. The level of evaluation effort must be balanced with the need. For example, the programs that provide the largest portion of the total DSM impact should be given the greatest evaluation emphasis. Programs (or measures) that provide small per unit impacts or which have had relatively low levels of participation should be evaluated using approaches that can be justified given their relative contribution to the benefits. Therefore, while there are many methods available to evaluate the impacts of these programs, OUC will determine, on a program-by-program basis, the most efficient evaluation method based on factors such as participation levels, program performance, dollars invested, the level of uncertainty of measure performance, and other appropriate metrics.

OUC will validate energy and demand savings through the most appropriate methodology for the given program, including but not limited to: engineering calculations, pre and post billing data analysis, simulation modeling, free rider spillover surveys, onsite inspection/data collection and/or metering/load research. Market assessments will be conducted through mail, telephone or internet surveys, customer focus groups, trade ally surveys and/or sales data analysis. Process evaluations will also examine how to improve the delivery of DSM programs through interviews with the design and delivery staff, customer and contractor interviews or surveys, and customer/contractor focus groups.

1.7 Overview of DSM Programs

The DSM programs that OUC has included in this DSM Plan are divided into residential and commercial/industrial programs. The residential programs are offered to OUC's customers to encourage them to improve the energy efficiency of their homes, thereby decreasing heating and cooling costs. OUC offers thirteen (13) DSM programs to its residential customers whether they live in single family or multiple family homes, and has a specific program to provide assistance to encourage low income customers to improve the energy efficiency of their homes. OUC offers seven (7) programs to encourage its commercial and industrial customers to improve the energy efficiency of their buildings. OUC's residential and commercial/industrial DSM programs are summarized below, and discussed in more detail in subsequent sections of this document.

1.7.1 Residential Programs

- Home Energy Surveys Walk-Through, DVD, and On-Line
- Duct Repair Rebates

- Ceiling Insulation Rebates
- Window Film/Solar Screen Rebates
- High Performance Windows Rebates
- Caulking and Weather Stripping Rebates
- Wall Insulation Rebates
- Cool/Reflective Roof Rebates
- Home Energy Fix-Up Program
- Billed Solution Insulation Program
- Efficient Electric Heat Pump Rebates
- Gold Ring Home Program
- Residential Compact Fluorescent Lighting

1.7.2 Commercial Programs

- Energy Audits
- Indoor Lighting Retrofit Program
- Efficient Electric Heat Pump Rebates
- Duct Repair Rebates
- Window Film/Solar Screen Rebates
- Ceiling Insulation Rebates
- Cool/Reflective Roofs Rebates

1.8 Structure of the DSM Plan Document

The following sections present descriptions of the residential (Section 2.0) and commercial/industrial (Section 3.0) DSM programs that comprise OUC's DSM Plan. The sections have been structured to be consistent with the requirements of Chapter 25-17.0021, Section (4), F.A.C.

2.0 Residential Programs

2.1 Residential Program Overview

OUC offers residential DSM programs to encourage customers to improve the energy efficiency of their homes, thereby decreasing heating and cooling costs. OUC's offers DSM programs to its residential customers whether they live in single family or multiple family homes, and has a specific program to provide assistance to encourage low income customers to improve the energy efficiency of their homes.

- Home Energy Surveys Walk-Through, DVD, and On-Line
- Duct Repair Rebates
- Ceiling Insulation Rebates
- Window Film/Solar Screen Rebates
- High Performance Windows Rebates
- Caulking and Weather Stripping Rebates
- Wall Insulation Rebates
- Cool/Reflective Roof Rebates
- Home Energy Fix-Up Program
- Billed Solution Insulation Program
- Efficient Electric Heat Pump Rebates
- Gold Ring Home Program
- Residential Compact Fluorescent Lighting

2.2 Residential Program Descriptions

The remainder of this section presents information related to OUC's residential DSM programs in a format consistent with the requirements of Chapter 25-17.0021, Section (4), F.A.C. Please refer to Section 1.4 for a discussion of the measurement and verification process.

2.2.1 Home Energy Surveys

2.2.1.1 Program Description

OUC has been offering home energy surveys dating back to the late 1970's. The home energy walk-through surveys were designed to provide residential customers with recommended energy efficiency measures and practices customers can implement. The Residential Energy Survey Program consists of three measures, including the Residential Energy Walk-Through Survey, the Residential Energy Survey DVD, and an interactive On-Line Energy Survey. These measures are available to both single family and multi-family residential customers. Since the year 2000, OUC has completed more than 17,000 walk-through surveys, and more than 25,000

customers have taken part in either the DVD (previously offered as a video) or the on-line survey.

The Residential Energy Walk-Through Survey includes a complete examination of the attic; heating, ventilation, and air conditioning (HVAC) system; air duct and air returns; window caulking; weather stripping around doors; faucets and toilets; and lawn sprinkler systems. OUC provides participating customers specific tips on conserving electricity and water as well as details on customer rebate programs. OUC Conservation Specialists are presently using this walk-through type audit as a means of motivating OUC customers to participate in other conservation programs and qualify for appropriate rebates.

A Residential Energy Survey Video was first offered in 2000 by OUC and is now available to OUC customers in an interactive DVD format. The DVD is free and is distributed either in the English or Spanish version to OUC customers by request. The DVD was developed to further assist OUC customers in surveying their homes for potential energy saving opportunities. The DVD walks the customer through a complete visual assessment of energy and water efficiency in his or her home. A checklist brochure to guide the customer through the audit accompanies the DVD. The DVD has several benefits over the walk-through survey, including the convenience of viewing the DVD at any time without a scheduled appointment and the ability to watch the DVD numerous times. In addition to the Energy Walk-Through and the DVD Surveys, OUC offers customers an interactive Online Home Energy Audit. The interactive Online Home Energy Audit is available on OUC's Web site, www.OUC.com.

One of the primary benefits of the Residential Energy Survey Program is the education it provides to customers on energy conservation measures and ways their lifestyle can directly affect their energy use. Customers participating in the Energy Survey Program are informed about conservation measures that they can implement. Customers will benefit from the increased efficiency in their homes, which will decrease their electric and water bills.

Participation in the Walk-Through Energy Survey has been consistently strong over the past several years and interest in the Energy Survey DVD, as well as the interactive Online Home Energy Audit, has been high since the measures were first introduced. Feedback from customers that have taken advantage of the surveys has been very positive.

2.2.1.2 Description of Program Operation and Administration

OUC customers can participate in this program by requesting an appointment for a Walk-Through Energy Survey that is scheduled by calling the OUC Customer Service Call Center or requesting an Energy Survey DVD be mailed to them. OUC customers can also use the Online Home Energy Audit at any time by going to OUC's website¹. Participation is tracked through service orders that are produced when appointments are scheduled and completed or DVD

¹ http://www.ouc.com/en/residential/ways to save/home audit free survey.aspx

mailed. Online Surveys are tracked through the service provider (ACLARA), who produces monthly activity reports.

2.2.1.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the home energy surveys are shown in the following tables. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

Table 2-1 – Single Family Home Energy Walk-Through Survey Participation							
			Projected				
			Annual	Projected	Projected		
	Total	Total	Average	Cumulative	Cumulative		
	Number	Number of	Number of	Number of	Penetration		
Calendar	of	Eligible	Program	Program	Level %		
Year	Customers	Customers	Participants	Participants	(e/c* 100)		
2010	80,547	80,547	2,013	2,013	2.50%		
2011	82,183	82,183	2,013	4,026	4.90%		
2012	84,036	84,036	2,013	6,039	7.19%		
2013	86,028	86,028	2,013	8,052	9.36%		
2014	88,256	88,256	2,013	10,065	11.40%		
2015	90,548	90,548	2,013	12,078	13.34%		
2016	92,941	92,941	2,013	14,091	15.16%		
2017	95,417	95,417	2,013	16,104	16.88%		
2018	97,937	97,937	2,013	18,117	18.50%		
2019	100,504	100,504	2,013	20,130	20.03%		

Table 2-2 – Single Family Home Energy Walk-Through Survey kW and kWh Reductions (at the Meter)								
Per Per Total Total								
	Per	Customer	Customer	Total	Annual	Annual		
İ	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	263	0	0	529,419	0	0		
2011	263	0	0	529,419	0	0		
2012	263	0	0	529,419	0	0		
2013	263	0	0	529,419	0	0		
2014	263	0	0	529,419	0	0		
2015	263	0	0	529,419	0	0		
2016	263	0	0	529,419	0	0		
2017	263	0	0	529,419	0	0		
2018	263	0	0	529,419	0	0		
2019	263	0	0	529,419	0	0		

Table 2-2 – Single Family Home Energy Walk-Through Survey Reductions kW and kWh Reductions (at the Generator)								
	Per Per Total Total							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	273	0	0	550,066	0	0		
2011	273	0	0	550,066	0	0		
2012	273	0	0	550,066	0	0		
2013	273	0	0	550,066	0	0		
2014	273	0	0	550,066	0	0		
2015	273	0	0	550,066	0	0		
2016	273	0	0	550,066	0	0		
2017	273	0	0	550,066	0	0		
2018	273	0	0	550,066	0	0		
2019	273	0	0	550,066	0	0		

Table	Table 2-4 – Multi Family Home Energy Walk-Through Survey Participation							
			Projected					
		,	Annual	Projected	Projected			
	Total	Total	Average	Cumulative	Cumulative			
	Number	Number of	Number of	Number of	Penetration			
Calendar	of	Eligible	Program	Program	Level % (e/c*			
Year	Customers	Customers	Participants	Participants	100)			
2010	98,446	98,446	863	863	0.88%			
2011	100,446	100,446	863	1,726	1.72%			
2012	102,711	102,711	863	2,589	2.52%			
2013	105,145	105,145	863	3,452	3.28%			
2014	107,868	107,868	863	4,315	4.00%			
2015	110,669	110,669	863	5,178	4.68%			
2016	113,595	113,595	863	6,041	5.32%			
2017	116,621	116,621	863	6,904	5.92%			
2018	119,701	119,701	863	7,767	6.49%			
2019	122,838	122,838	863	8,630	7.03%			

Table 2-5 – Multi Family Home Energy Walk-Through Survey									
	kW and kWh Reductions (at the Meter)								
		Per	Per	_	Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	200	0	0	172,600	0	0			
2011	200	0	0	172,600	0	0			
2012	200	0	0	172,600	0	0			
2013	200	0	0	172,600	0	0			
2014	200	0	0	172,600	0	0			
2015	200	0	0	172,600	0	0			
2016	200	0	0	172,600	0	0			
2017	200	0	0	172,600	0	0			
2018	200	0	0	172,600	0	0			
2019	200	0	0	172,600	0	0			

	Table 2-6 – Multi Family Home Energy Walk-Through Survey kW and kWh Reductions (at the Generator)								
	Per Per Total Total Annual Annual Annual								
Calendar	kWh	kW	kW	kWh	kW	Summer kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	208	0	0	179,331	0	0			
2011	208	0	0	179,331	0	0			
2012	208	0	0	179,331	0	0			
2013	208	0	0	179,331	0	0			
2014	208	0	0	179,331	0	0			
2015	208	0	0	179,331	0	0			
2016	208	0	0	179,331	0	0			
2017	208	0	0	179,331	0	0			
2018	208	0	0	179,331	0	0			
2019	208	0	0	179,331	0	0			

Table 2	2-7 – Single F	amily – Home	Energy Survey V	/ideo and DVD	Participation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level % (e/c*
Year	Customers	Customers	Participants	Participants	100)
2010	80,547	80,547	1,816	1,816	2.25%
2011	82,183	82,183	1,816	3,632	4.42%
2012	84,036	84,036	1,816	5,448	6.48%
2013	86,028	86,028	1,816	7,264	8.44%
2014	88,256	88,256	1,816	9,080	10.29%
2015	90,548	90,548	1,816	10,896	12.03%
2016	92,941	92,941	1,816	12,712	13.68%
2017	95,417	95,417	1,816	14,528	15.23%
2018	97,937	97,937	1,816	16,344	16.69%
2019	100,504	100,504	1,816	18,160	18.07%

	Table 2-8 – Single Family Home Energy Survey Video and DVD kW and kWh Reductions (at the Meter)								
Colondon	Per Customer kWh	Per Customer Winter	Per Customer Summer	Total Annual	Total Annual Winter	Total Annual Summer			
Calendar Year	Reduction	kW Reduction	kW Reduction	kWh Reduction	kW Reduction	kW Reduction			
2010	131	0	0	237,896	0	0			
2011	131	0	0	237,896	0	0			
2012	131	0	0	237,896	0	0			
2013	131	0	0	237,896	0	0			
2014	131	0	0	237,896	0	0			
2015	131	0	0	237,896	0	0			
2016	131	0	0	237,896	0	0			
2017	131	0	0	237,896	0	0			
2018	131	0	0	237,896	0	0			
2019	131	0	0	237,896	0	0			

Table 2-9 – Single Family Home Energy Survey Video and DVD kW and kWh Reductions (at the Generator)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	136	0	0	247,174	0	0		
2011	136	0	0	247,174	0	0		
2012	136	0	0	247,174	0	0		
2013	136	0	0	247,174	0	0		
2014	136	0	0	247,174	0	0		
2015	136	0	0	247,174	0	0		
2016	136	0	0	247,174	0	0		
2017	136	0	0	247,174	0	0		
2018	136	0	0	247,174	0	0		
2019	136	0	0	247,174	0	0		

Table 2	-10 – Multi F	amily Home E	nergy Survey Vio	deo and DVD P	articipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	98,446	98,446	778	778	0.79%
2011	100,446	100,446	778	1,556	1.55%
2012	102,711	102,711	778	2,334	2.27%
2013	105,145	105,145	778	3,112	2.96%
2014	107,868	107,868	778	3,890	3.61%
2015	110,669	110,669	778	4,668	4.22%
2016	113,595	113,595	778	5,446	4.79%
2017	116,621	116,621	778	6,224	5.34%
2018	119,701	119,701	778	7,002	5.85%
2019	122,838	122,838	778	7,780	6.33%

	Table 2-11 – Multi Family Home Energy Survey Video and DVD							
kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	100	0	0	77,800	0	0		
2011	100	0	0	77,800	0	0		
2012	100	0	0	77,800	0	0		
2013	100	0	0	77,800	0	0		
2014	100	0	0	77,800	0	0		
2015	100	0	0	77,800	0	0		
2016	100	0	0	77,800	0	0		
2017	100	0	0	77,800	0	0		
2018	100	0	0	77,800	0	0		
2019	100	0	0	77,800	0	0		

	Table 2-12 – Multi Family Home Energy Survey Video and DVD								
kW and kWh Reductions (at the Generator)									
	Per	Per	Per	m . 1	Total	Total			
		Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	104	0	0	80,834	0	0			
2011	104	0	0	80,834	0	0			
2012	104	0	0	80,834	0	0			
2013	104	0	0	80,834	0	0			
2014	104	0	0	80,834	0	0			
2015	104	0	0	80,834	0	0			
2016	104	0	0	80,834	0	0			
2017	104	0	0	80,834	0	0			
2018	104	0	0	80,834	0	0			
2019	104	0	0	80,834	0	0			

Ta	ble 2-13 – Sir	ngle Family Ho	me Energy Surv	ey On-Line Par	ticipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level % (e/c*
Year	Customers	Customers	Participants	Participants	100)
2010	80,547	80,547	1,320	1,320	1.64%
2011	82,183	82,183	1,320	2,640	3.21%
2012	84,036	84,036	1,320	3,960	4.71%
2013	86,028	86,028	1,320	5,280	6.14%
2014	88,256	88,256	1,320	6,600	7.48%
2015	90,548	90,548	1,320	7,920	8.75%
2016	92,941	92,941	1,320	9,240	9.94%
2017	95,417	95,417	1,320	10,560	11.07%
2018	97,937	97,937	1,320	11,880	12.13%
2019	100,504	100,504	1,320	13,200	13.13%

	Table 2-14 – Single Family Home Energy Survey On-Line								
kW and kWh Reductions (at the Meter)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
ľ	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	131	0	0	172,920	0	0			
2011	131	0	0	172,920	0	0			
2012	131	0	0	172,920	0	0			
2013	131	0	0	172,920	0	0			
2014	131	0	0	172,920	0	0			
2015	131	0	0	172,920	0	0			
2016	131	0	0	172,920	0	0			
2017	131	0	0	172,920	0	0			
2018	131	0	0	172,920	0	0			
2019	131	0	0	172,920	0	0			

	Table 2-15 – Single Family Home Energy Survey On-Line							
kW and kWh Reductions (at the Generator)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	136	0	0	179,664	0	0		
2011	136	0	0	179,664	0	0		
2012	136	0	0	179,664	0	0		
2013	136	0	0	179,664	0	0		
2014	136	0	0	179,664	0	0		
2015	136	0	0	179,664	0	0		
2016	136	0	0	179,664	0	0		
2017	136	0	0	179,664	0	0		
2018	136	0	0	179,664	0	0		
2019	136	0	0	179,664	0	0		

Tab	le 2-16 – Mu	lti Family Hom	e Energy Survey	On-Line Parti	cipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	98,446	98,446	566	566	0.57%
2011	100,446	100,446	566	1,132	1.13%
2012	102,711	102,711	566	1,698	1.65%
2013	105,145	105,145	566	2,264	2.15%
2014	107,868	107,868	566	2,830	2.62%
2015	110,669	110,669	566	3,396	3.07%
2016	113,595	113,595	566	3,962	3.49%
2017	116,621	116,621	566	4,528	3.88%
2018	119,701	119,701	566	5,094	4.26%
2019	122,838	122,838	566	5,660	4.61%

	Table 2-17 – Multi Family Home Energy Survey On-Line								
kW and kWh Reductions (at the Meter)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	100	0	0	56,600	0	0			
2011	100	0	0	56,600	0	0			
2012	100	0	0	56,600	0	0			
2013	100	0	0	56,600	0	0			
2014	100	0	0	56,600	0	0			
2015	100	0	0	56,600	0	0			
2016	100	0	0	56,600	0	0			
2017	100	0	0	56,600	0	0			
2018	100	0	0	56,600	0	0			
2019	100	0	0	56,600	0	0			

	Table 2-18 – Multi Family Home Energy Survey On-Line kW and kWh Reductions (at the Generator)									
		Per	Per		Total	Total				
	Per	Customer	Customer	Total	Annual	Annual				
	Customer	Winter	Summer	Annual	Winter	Summer				
Calendar	kWh	kW	kW	kWh	kW	kW				
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction				
2010	104	0	0	58,807	0	0				
2011	104	0	0	58,807	0	0				
2012	104	0	0	58,807	0	0				
2013	104	0	0	58,807	0	0				
2014	104	0 -	0	58,807	0	0				
2015	104	0	0	58,807	0	0				
2016	104	0	0	58,807	0	0				
2017	104	0	0	58,807	0	0				
2018	104	0	0	58,807	0	0				
2019	104	0	0	58,807	0	0				

2.2.1.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.2 Duct Repair Rebates

2.2.2.1 Program Description

The Duct Repair Rebate Program originated in 2000 and is designed to encourage customers to repair leaking ducts on existing systems. Customers will receive up to a \$150 rebate for duct repairs on their home. Since the year 2000, more than 1,600 customers have participated in this program.

2.2.2.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.2.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the duct repair rebates are shown in Tables 2-19, 2-20 and 2-21. The projected number of customers and

program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

	Table 2-19	– Residential	Duct Repair Reb	ates Participation	on
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level % (e/c*
Year	Customers	Customers	Participants	Participants	100)
2010	178,993	89,497	135	135	0.15%
2011	182,629	91,314	135	270	0.30%
2012	186,747	93,373	135	405	0.43%
2013	191,173	95,587	135	540	0.56%
2014	196,124	98,062	135	675	0.69%
2015	201,217	100,609	135	810	0.81%
2016	206,537	103,268	135	945	0.92%
2017	212,038	106,019	135	1,080	1.02%
2018	217,639	108,819	135	1,215	1.12%
2019	223,342	111,671	135	1,350	1.21%

	Table 2-20 – Residential Duct Repair Rebates kW and kWh Reductions (at the Meter)								
Per Per Total Total									
K-MARAMITACID	Per	Customer	Customer	Total	Annual	Annual			
			_	l					
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	306	0.29	0.22	41,324	40	30			
2011	306	0.29	0.22	41,324	40	30			
2012	306	0.29	0.22	41,324	40	30			
2013	306	0.29	0.22	41,324	40	30			
2014	306	0.29	0.22	41,324	40	30			
2015	306	0.29	0.22	41,324	40	30			
2016	306	0.29	0.22	41,324	40	30			
2017	306	0.29	0.22	41,324	40	30			
2018	306	0.29	0.22	41,324	40	30			
2019	306	0.29	0.22	41,324	40	30			

	Table 2-21 — Residential Duct Repair Rebates kW and kWh Reductions (at the Generator)								
Per Per Total Total									
	Per	Customer	Customer	Total	Annual				
]			}	Annual			
~	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	318	0.3	0.23	42,935	41	31			
2011	318	0.3	0.23	42,935	41	31			
2012	318	0.3	0.23	42,935	41	31			
2013	318	0.3	0.23	42,935	41	31			
2014	318	0.3	0.23	42,935	41	31			
2015	318	0.3	0.23	42,935	41	31			
2016	318	0.3	0.23	42,935	41	31			
2017	318	0.3	0.23	42,935	41	31			
2018	318	0.3	0.23	42,935	41	31			
2019	318	0.3	0.23	42,935	41	31			

2.2.2.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.3 Ceiling Insulation Rebates

2.2.3.1 Program Description

The attic is the easiest place to add insulation and lower total energy costs throughout the seasons. The ceiling insulation rebate program has been offered for several years and is designed to encourage customers to upgrade their attic insulation. Customers will receive a \$100 rebate for upgrading their attic insulation to R-19 or higher. Since the year 2000, more than 2,400 customers have participated in this program.

2.2.3.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.3.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the ceiling insulation rebates are shown in Tables 2-22, 2-23 and 2-24. The projected number of customers

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and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

7	Table 2-22 – 1	Residential Cei	ling Insulation R	ebates Participa	ation
			Projected	70000	
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	43,903	225	225	0.51%
2011	182,629	43,678	225	450	1.03%
2012	186,747	43,453	225	675	1.55%
2013	191,173	43,228	225	900	2.08%
2014	196,124	43,003	225	1,125	2.62%
2015	201,217	42,778	225	1,350	3.16%
2016	206,537	42,553	225	1,575	3.70%
2017	212,038	42,328	225	1,800	4.25%
2018	217,639	42,103	225	2,025	4.81%
2019	223,342	41,878	225	2,250	5.37%

	Table 2-23 – Residential Ceiling Insulation Rebates								
kW and kWh Reductions (at the Meter)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	459	0.32	0.17	103,309	72	39			
2011	459	0.32	0.17	103,309	72	39			
2012	459	0.32	0.17	103,309	72	39			
2013	459	0.32	0.17	103,309	72	39			
2014	459	0.32	0.17	103,309	72	39			
2015	459	0.32	0.17	103,309	72	39			
2016	459	0.32	0.17	103,309	72	39			
2017	459	0.32	0.17	103,309	72	39			
2018	459	0.32	0.17	103,309	72	39			
2019	459	0.32	0.17	103,309	72	39			

	Table 2-24 – Residential Ceiling Insulation Rebates								
kW and kWh Reductions (at the Generator)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	477	0.33	0.18	107,338	75	41			
2011	477	0.33	0.18	107,338	75	41			
2012	477	0.33	0.18	107,338	75	41			
2013	477	0.33	0.18	107,338	75	41			
2014	477	0.33	0.18	107,338	75	41			
2015	477	0.33	0.18	107,338	75	41			
2016	477	0.33	0.18	107,338	75	41			
2017	477	0.33	0.18	107,338	75	41			
2018	477	0.33	0.18	107,338	75	41			
2019	477	0.33	0.18	107,338	75	41			

2.2.3.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

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2.2.4 Window Film / Solar Screen Rebates

2.2.4.1 Program Description

Installing solar window film on pre-existing homes can help reflect the heat during hot summer days and help the efficiency of home cooling units. The window film/solar screen rebate program has been offered for several years and is designed to encourage customers to install solar shading on their windows. Customers will receive up to a \$100 rebate for installation of solar shading film with a shading coefficient of 0.5 or less.

2.2.4.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.4.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the window film/solar screen rebates are shown in Tables 2-25, 2-26 and 2-27. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

Table	2-25 - Resid	ential Window	Film / Solar Scre	een Rebates Par	rticipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	89,497	90	90	0.10%
2011	182,629	91,314	90	180	0.20%
2012	186,747	93,373	90	270	0.29%
2013	191,173	95,587	90	360	0.38%
2014	196,124	98,062	90	450	0.46%
2015	201,217	100,609	90	540	0.54%
2016	206,537	103,268	90	630	0.61%
2017	212,038	106,019	90	720	0.68%
2018	217,639	108,819	90	810	0.74%
2019	223,342	111,671	90	900	0.81%

	Table 2-26 – Residential Window Film / Solar Screen Rebates							
kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	107	-0.01	0.03	9,597	-1.04	3.11		
2011	107	-0.01	0.03	9,597	-1.04	3.11		
2012	107	-0.01	0.03	9,597	-1.04	3.11		
2013	107	-0.01	0.03	9,597	-1.04	3.11		
2014	107	-0.01	0.03	9,597	-1.04	3.11		
2015	107	-0.01	0.03	9,597	-1.04	3.11		
2016	107	-0.01	0.03	9,597	-1.04	3.11		
2017	107	-0.01	0.03	9,597	-1.04	3.11		
2018	107	-0.01	0.03	9,597	-1.04	3.11		
2019	107	-0.01	0.03	9,597	-1.04	3.11		

	Table 2-27 – Residential Window Film / Solar Screen Rebates kW and kWh Reductions (at the Generator)								
	, R	Per	Per Per	li die Genera	Total	Total			
	Dam			70-4-1	_				
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	111	-0.01	0.04	9,972	-1.08	3.24			
2011	111	-0.01	0.04	9,972	-1.08	3.24			
2012	111	-0.01	0.04	9,972	-1.08	3.24			
2013	111	-0.01	0.04	9,972	-1.08	3.24			
2014	111	-0.01	0.04	9,972	-1.08	3.24			
2015	111	-0.01	0.04	9,972	-1.08	3.24			
2016	111	-0.01	0.04	9,972	-1.08	3.24			
2017	111	-0.01	0.04	9,972	-1.08	3.24			
2018	111	-0.01	0.04	9,972	-1.08	3.24			
2019	111	-0.01	0.04	9,972	-1.08	3.24			

2.2.4.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.5 High Performance Windows Rebates

2.2.5.1 Program Description

Energy-efficient windows can help minimize heating, cooling, and lighting costs. The high performance windows rebate program has been offered for several years and is designed to encourage customers to install windows that improve energy efficiency in their homes. Customers will receive a \$1 rebate per square foot (up to \$250) for the purchase of ENERGY STAR® rated energy efficient windows.

2.2.5.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.5.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the high performance windows rebates are shown in Tables 2-28, 2-29 and 2-30. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

Table 2-28 – Residential High Performance Windows Rebates Participation						
			Projected			
			Annual	Projected	Projected	
	Total	Total	Average	Cumulative	Cumulative	
	Number	Number of	Number of	Number of	Penetration	
Calendar	of	Eligible	Program	Program	Level %	
Year	Customers	Customers	Participants	Participants	(e/c* 100)	
2010	178,993	89,497	105	105	0.12%	
2011	182,629	91,314	105	210	0.23%	
2012	186,747	93,373	105	315	0.34%	
2013	191,173	95,587	105	420	0.44%	
2014	196,124	98,062	105	525	0.54%	
2015	201,217	100,609	105	630	0.63%	
2016	206,537	103,268	105	735	0.71%	
2017	212,038	106,019	105	840	0.79%	
2018	217,639	108,819	105	945	0.87%	
2019	223,342	111,671	105	1,050	0.94%	

	Table 2-29 - Residential High Performance Windows Rebates								
kW and kWh Reductions (at the Meter)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	780	0.22	0.37	81,906	24	39			
2011	780	0.22	0.37	81,906	24	39			
2012	780	0.22	0.37	81,906	24	39			
2013	780	0.22	0.37	81,906	24	39			
2014	780	0.22	0.37	81,906	24	39			
2015	780	0.22	0.37	81,906	24	39			
2016	780	0.22	0.37	81,906	24	39			
2017	780	0.22	0.37	81,906	24	39			
2018	780	0.22	0.37	81,906	24	39			
2019	780	0.22	0.37	81,906	24	39			

Table 2-30 – Residential High Performance Windows Rebates						
kW and kWh Reductions (at the Generator)						
		Per	Per		Total	Total
	Per	Customer	Customer	Total	Annual	Annual
	Customer	Winter	Summer	Annual	Winter	Summer
Calendar	kWh	kW	kW	kWh	kW	kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2010	810	0.23	0.38	85,100	24	40
2011	810	0.23	0.38	85,100	24	40
2012	810	0.23	0.38	85,100	24	40
2013	810	0.23	0.38	85,100	24	40
2014	810	0.23	0.38	85,100	24	40
2015	810	0.23	0.38	85,100	24	40
2016	810	0.23	0.38	85,100	24	40
2017	810	0.23	0.38	85,100	24	40
2018	810	0.23	0.38	85,100	24	40
2019	810	0.23	0.38	85,100	24	40

2.2.5.6 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

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2.2.6 Caulking and Weather Stripping Rebates

2.2.6.1 Program Description

Properly air sealing cracks and openings in houses can significantly reduce heating and cooling costs, improve building durability, and create a healthier indoor environment. The caulking and weather stripping rebate program has been offered for several years and is designed to encourage customers to caulk and weather strip their homes. Customers will receive a rebate of 50 percent of the cost (up to \$50) for the caulking and weather stripping of their homes.

2.2.6.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.6.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the caulking and weather stripping rebates are shown in Tables 2-31, 2-32 and 2-33. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

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Table 2-	-31 – Residen	tial Caulking a	nd Weather Strip	ping Rebates F	Participation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	89,497	34	34	0.04%
2011	182,629	91,314	34	68	0.07%
2012	186,747	93,373	34	102	0.11%
2013	191,173	95,587	34	136	0.14%
2014	196,124	98,062	34	170	0.17%
2015	201,217	100,609	34	204	0.20%
2016	206,537	103,268	34	238	0.23%
2017	212,038	106,019	34	272	0.26%
2018	217,639	108,819	34	306	0.28%
2019	223,342	111,671	34	340	0.30%

	Table 2-32 – Residential Caulking and Weather Stripping Rebates kW and kWh Reductions (at the Meter)							
	Per Per Total Total							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	25	0	0	850	0	0		
2011	25	0	0	850	0	0		
2012	25	0	0	850	0	0		
2013	25	0	0	850	0	0		
2014	25	0	0	850	0	0		
2015	25	0	0	850	0	0		
2016	25	0	0	850	0	0		
2017	25	0	0	850	0	0		
2018	25	0	0	850	0	0		
2019	25	0	0	850	0	0		

	Table 2-33 – Residential Caulking and Weather Stripping Rebates kW and kWh Reductions (at the Generator)							
	Per Per Total Total							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	26	0	0	883	0	0		
2011	26	0	0	883	0	0		
2012	26	0	0	883	0	0		
2013	26	0	0	883	0	0		
2014	26	0	0	883	0	0		
2015	26	0	0	883	0	0		
2016	26	0	0	883	0	0		
2017	26	0	0	883	0	0		
2018	26	0	0	883	0	0		
2019	26	0	0	883	0	0		

2.2.6.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.7 Wall Insulation Rebates

2.2.7.1 Program Description

Air leakage and improperly installed insulation can waste 20 percent or more of the energy used to heat and cool a house. In order to be eligible to participate, the exterior walls of the customer's home must be all block construction. The wall insulation rebate program has only been offered in the last couple of years and is designed to encourage customers to insulate the walls of their homes. Customers will receive a rebate of \$300 for wall insulation.

2.2.7.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.7.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the wall insulation rebates are shown in Tables 2-34, 2-35 and 2-36. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

	Table 2-34 – Residential Wall Insulation Rebates Participation							
			Projected					
			Annual	Projected	Projected			
	Total	Total	Average	Cumulative	Cumulative			
	Number	Number of	Number of	Number of	Penetration			
Calendar	of	Eligible	Program	Program	Level %			
Year	Customers	Customers	Participants	Participants	(e/c* 100)			
2010	178,993	88,574	7	7	0.01%			
2011	182,629	88,567	7	14	0.02%			
2012	186,747	88,560	7	21	0.02%			
2013	191,173	88,553	7	28	0.03%			
2014	196,124	88,546	7	35	0.04%			
2015	201,217	88,539	7	42	0.05%			
2016	206,537	88,532	7	49	0.06%			
2017	212,038	88,525	7	56	0.06%			
2018	217,639	88,518	7	63	0.07%			
2019	223,342	88,511	7	70	0.08%			

	Table 2-35 – Residential Wall Insulation Rebates							
	kW and kWh Reductions (at the Meter)							
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	51	0.1	0.02	360	0.67	0.15		
2011	51	0.1	0.02	360	0.67	0.15		
2012	51	0.1	0.02	360	0.67	0.15		
2013	51	0.1	0.02	360	0.67	0.15		
2014	51	0.1	0.02	360	0.67	0.15		
2015	51	0.1	0.02	360	0.67	0.15		
2016	51	0.1	0.02	360	0.67	0.15		
2017	51	0.1	0.02	360	0.67	0.15		
2018	51	0.1	0.02	360	0.67	0.15		
2019	51	0.1	0.02	360	0.67	0.15		

	Table 2-36 – Residential Wall Insulation Rebates							
	kW and kWh Reductions (at the Generator)							
	Per Per Total Tot							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	53	0.1	0.02	374	0.69	0.15		
2011	53	0.1	0.02	374	0.69	0.15		
2012	53	0.1	0.02	374	0.69	0.15		
2013	53	0.1	0.02	374	0.69	0.15		
2014	53	0.1	0.02	374	0.69	0.15		
2015	53	0.1	0.02	374	0.69	0.15		
2016	53	0.1	0.02	374	0.69	0.15		
2017	53	0.1	0.02	374	0.69	0.15		
2018	53	0.1	0.02	374	0.69	0.15		
2019	53	0.1	0.02	374	0.69	0.15		

2.2.7.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

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2.2.8 Cool/Reflective Roof Rebates

2.2.8.1 Program Description

A cool/reflective roof reflects the sun's rays to help lower roof surface temperature and increase roof life. It helps lower energy bills during the summer by preventing heat absorption. The cool/reflective roof rebate program has been offered in the last couple of years and is designed to encourage customers to install new roofing to help insulate their homes. Customers will receive a rebate of \$150 for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.

2.2.8.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.8.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the caulking and weather stripping rebates are shown in Tables 2-37, 2-38 and 2-39. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

Tal	ble 2-37 – Re	sidential Cool	Reflective Roof	Rebates Partic	ipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	5,370	13	13	0.24%
2011	182,629	5,479	13	26	0.47%
2012	186,747	5,602	13	39	0.70%
2013	191,173	5,735	13	52	0.91%
2014	196,124	5,884	13	65	1.10%
2015	201,217	6,037	13	78	1.29%
2016	206,537	6,196	13	91	1.47%
2017	212,038	6,361	13	104	1.63%
2018	217,639	6,529	13	117	1.79%
2019	223,342	6,700	13	130	1.94%

	Table 2-38 – Residential Cool / Reflective Roof Rebates							
	kW and kWh Reductions (at the Meter)							
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	687	0	0.31	8,933	0	4.04		
2011	687	0	0.31	8,933	0	4.04		
2012	687	0	0.31	8,933	0	4.04		
2013	687	0	0.31	8,933	0	4.04		
2014	687	0	0.31	8,933	0	4.04		
2015	687	0	0.31	8,933	0	4.04		
2016	687	0	0.31	8,933	0	4.04		
2017	687	0	0.31	8,933	0	4.04		
2018	687	0	0.31	8,933	0	4.04		
2019	687	0	0.31	8,933	0	4.04		

	Table 2-39 – Residential Cool / Reflective Roof Rebates							
	kW and kWh Reductions (at the Generator)							
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	714	0	0.32	9,281	0	4.19		
2011	714	0	0.32	9,281	0	4.19		
2012	714	0	0.32	9,281	0	4.19		
2013	714	0	0.32	9,281	0	4.19		
2014	714	0	0.32	9,281	0	4.19		
2015	714	0	0.32	9,281	0	4.19		
2016	714	0	0.32	9,281	0	4.19		
2017	714	0	0.32	9,281	0	4.19		
2018	714	0	0.32	9,281	0	4.19		
2019	714	0	0.32	9,281	0	4.19		

2.2.8.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.9 Home Energy Fix-Up Program

2.2.9.1 Program Description

The home energy fix-up program has been offered for several years and is available to residential customers with a total annual family income of \$35,000 or less. Each customer must request and complete a free Residential Energy Survey. Ordinarily, Energy Survey recommendations require a customer to spend money replacing or adding energy conservation measures, which low-income customers may not have the discretionary income to implement. Under this program, OUC will arrange for a licensed, approved contractor to perform the necessary repairs and will pay 85 percent of the total cost, not to exceed \$2,000. The remaining 15 percent can be paid directly or over an interest-free 12-month period on the participant's monthly electric bill. To be eligible for this program, the customer's account must be in good credit standing. Some of the improvements covered under this program include ceiling insulation, duct system repair, pipe insulation, window caulk, door caulk, door weather stripping, door sweep, threshold plate, and minor plumbing repairs. Since the year 2000, more than 800 customers have participated in this program.

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The purpose of the program is to reduce the energy cost for low-income households, particularly those households with elderly persons, disabled persons, and children, by improving the energy efficiency of their homes and reduce their living expenses. Through this program, OUC helps to lower the bills of low-income customers who may have difficulty paying their bills. Reducing the bill of the low-income customer may improve the customer's ability to pay the bill, thereby decreasing costly service disconnect fees and late charges. OUC believes that this program will help customers afford other important living expenses.

2.2.9.2 Description of Program Operation and Administration

Contractor(s) are selected through an RFP process on a routine basis. Eligible customers are referred to the Fix-Up contractor. The Fix-Up contractor inspects the home and creates a proposal to install eligible measures. Once the customer accepts the proposal and signs the Agreement the contractor calls the customer and schedules the work. Typically the work is completed within 45 days. Upon receipt of notice of completion and customer acceptance, payment to the contractor is processed and customer's billing portion is billed. Participation is tracked based on completed installations.

2.2.9.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for this program are shown in Tables 2-40, 2-41 and 2-42. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

	Table	2-40 – Home	Energy Fix-Up P	articipation	
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	50,118	52	52	0.10%
2011	182,629	51,136	52	104	0.20%
2012	186,747	52,289	52	156	0.30%
2013	191,173	53,528	52	208	0.39%
2014	196,124	54,915	52	260	0.47%
2015	201,217	56,341	52	312	0.55%
2016	206,537	57,830	52	364	0.63%
2017	212,038	59,371	52	416	0.70%
2018	217,639	60,939	52	468	0.77%
2019	223,342	62,536	52	520	0.83%

	Table 2-41 – Home Energy Fix-Up							
kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	250	0.06	0.27	13,000	3.12	14.04		
2011	250	0.06	0.27	13,000	3.12	14.04		
2012	250	0.06	0.27	13,000	3.12	14.04		
2013	250	0.06	0.27	13,000	3.12	14.04		
2014	250	0.06	0.27	13,000	3.12	14.04		
2015	250	0.06	0.27	13,000	3.12	14.04		
2016	250	0.06	0.27	13,000	3.12	14.04		
2017	250	0.06	0.27	13,000	3.12	14.04		
2018	250	0.06	0.27	13,000	3.12	14.04		
2019	250	0.06	0.27	13,000	3.12	14.04		

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	Table 2-42 – Home Energy Fix-Up							
	kW and kWh Reductions (at the Generator)							
	Per Per Total Tot							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	260	0.06	0.28	13,507	3.24	14.6		
2011	260	0.06	0.28	13,507	3.24	14.6		
2012	260	0.06	0.28	13,507	3.24	14.6		
2013	260	0.06	0.28	13,507	3.24	14.6		
2014	260	0.06	0.28	13,507	3.24	14.6		
2015	260	0.06	0.28	13,507	3.24	14.6		
2016	260	0.06	0.28	13,507	3.24	14.6		
2017	260	0.06	0.28	13,507	3.24	14.6		
2018	260	0.06	0.28	13,507	3.24	14.6		
2019	260	0.06	0.28	13,507	3.24	14.6		

2.2.9.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.10 Billed Solution Insulation Program

2.2.10.1 Program Description

The billed solution insulation program has been offered for several years and is available to OUC residential customers who utilize some type of electric heat and/or air conditioning. To qualify, customers must request and complete a free Residential Energy Survey. To qualify for financing, customers must have a satisfactory credit rating with OUC. The program allows customers who insulate their attics to a minimum R-19 level to pay for the insulation on their monthly utility bills for up to 1 year (for amounts less than \$500) or up to 2 years (for any amount above \$500) interest-free with no money down. In addition, the customer will receive a \$100 rebate to be deducted from the financed amount. OUC directly pays the total cost for installation when the customer makes payments to OUC as part of their monthly utility bill. The maximum amount that can be financed is \$1,000. Feedback from customers that have taken advantage of the program has been very positive. Since the year 2000, more than 300 customers have participated in this program.

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2.2.10.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of applications processed.

2.2.10.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for this program are shown in Tables 2-43, 2-44 and 2-45. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

,	Table 2-43 – Residential Billed Solution Insulation Participation							
			Projected					
			Annual	Projected	Projected			
	Total	Total	Average	Cumulative	Cumulative			
	Number	Number of	Number of	Number of	Penetration			
Calendar	of	Eligible	Program	Program	Level %			
Year	Customers	Customers	Participants	Participants	(e/c* 100)			
2010	178,993	41,234	43	43	0.10%			
2011	182,629	41,191	43	86	0.21%			
2012	186,747	41,148	43	129	0.31%			
2013	191,173	41,105	43	172	0.42%			
2014	196,124	41,062	43	215	0.52%			
2015	201,217	41,019	43	258	0.63%			
2016	206,537	40,976	43	301	0.73%			
2017	212,038	40,933	43	344	0.84%			
2018	217,639	40,890	43	387	0.95%			
2019	223,342	40,847	43	430	1.05%			

	Table 2-44 – Residential Billed Solution								
kW and kWh Reductions (at the Meter)									
	Per Per Total Total								
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	459	0.32	0.17	19,743	13.8	7.5			
2011	459	0.32	0.17	19,743	13.8	7.5			
2012	459	0.32	0.17	19,743	13.8	7.5			
2013	459	0.32	0.17	19,743	13.8	7.5			
2014	459	0.32	0.17	19,743	13.8	7.5			
2015	459	0.32	0.17	19,743	13.8	7.5			
2016	459	0.32	0.17	19,743	13.8	7.5			
2017	459	0.32	0.17	19,743	13.8	7.5			
2018	459	0.32	0.17	19,743	13.8	7.5			
2019	459	0.32	0.17	19,743	13.8	7.5			

	Table 2-45 – Residential Billed Solution								
kW and kWh Reductions (at the Generator)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	477	0.33	0.18	20,513	14.3	7.8			
2011	477	0.33	0.18	20,513	14.3	7.8			
2012	477	0.33	0.18	20,513	14.3	7.8			
2013	477	0.33	0.18	20,513	14.3	7.8			
2014	477	0.33	0.18	20,513	14.3	7.8			
2015	477	0.33	0.18	20,513	14.3	7.8			
2016	477	0.33	0.18	20,513	14.3	7.8			
2017	477	0.33	0.18	20,513	14.3	7.8			
2018	477	0.33	0.18	20,513	14.3	7.8			
2019	477	0.33	0.18	20,513	14.3	7.8			

2.2.10.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.11 Efficient Electric Heat Pump Rebates

2.2.11.1 Program Description

The efficient electric heat pump rebate program has been offered for several years and provides rebates to qualifying customers in existing homes who install heat pumps having a seasonal energy efficiency ratio (SEER) of 14.0 or higher. Currently, Customers will obtain a rebate in the form of a credit on their bill of \$100, \$200 or \$300, if they install heat pumps with a SEER rating of 14, 15, or 16 and above, respectively.

2.2.11.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and work is performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill or a check can be processed and sent to the owner of the property who may have paid for the improvement.

2.2.11.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the efficient electric heat pump rebates are shown in Tables 2-46, 2-47 and 2-48. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

Table	e 2-46 - Resid	lential Efficient	t Electric Heat Pu	ump Rebates Pa	articipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
OCCUPATION OF THE PROPERTY OF	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level % (e/c*
Year	Customers	Customers	Participants	Participants	100)
2010	80,547	80,547	685	685	0.85%
2011	82,183	82,183	685	1,370	1.67%
2012	84,036	84,036	685	2,055	2.45%
2013	86,028	86,028	685	2,740	3.19%
2014	88,256	88,256	685	3,425	3.88%
2015	90,548	90,548	685	4,110	4.54%
2016	92,941	92,941	685	4,795	5.16%
2017	95,417	95,417	685	5,480	5.74%
2018	97,937	97,937	685	6,165	6.29%
2019	100,504	100,504	685	6,850	6.82%

	Table 2-47 – Residential Efficient Electric Heat Pump Rebates							
kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	854	0.23	0.42	584,687	159	286		
2011	854	0.23	0.42	584,687	159	286		
2012	854	0.23	0.42	584,687	159	286		
2013	854	0.23	0.42	584,687	159	286		
2014	854	0.23	0.42	584,687	159	286		
2015	854	0.23	0.42	584,687	159	286		
2016	854	0.23	0.42	584,687	159	286		
2017	854	0.23	0.42	584,687	159	286		
2018	854	0.23	0.42	584,687	159	286		
2019	854	0.23	0.42	584,687	159	286		

	Table 2-48 – Residential Efficient Electric Heat Pump Rebates								
	kW and kWh Reductions (at the Generator)								
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	887	0.24	0.43	607,490	166	298			
2011	887	0.24	0.43	607,490	166	298			
2012	887	0.24	0.43	607,490	166	298			
2013	887	0.24	0.43	607,490	166	298			
2014	887	0.24	0.43	607,490	166	298			
2015	887	0.24	0.43	607,490	166	298			
2016	887	0.24	0.43	607,490	166	298			
2017	887	0.24	0.43	607,490	166	298			
2018	887	0.24	0.43	607,490	166	298			
2019	887	0.24	0.43	607,490	166	298			

2.2.11.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.12 Gold Ring Home Program

2.2.12.1 Program Description

The Residential Gold Ring Home Program has been offered for several years and is closely aligned with Energy Star Ratings. In developing the program, OUC partnered with local home builders to construct new homes according to Energy Star standards. Features may include high efficiency heat pumps, solar water heaters, R-30 attic insulation, interior air ducts, double pane windows, window shading, etc. Since the year 2000, more than 1,000 homes have been constructed under this program.

The home builder is required to qualify its homes to Energy Star standards by having the homes rated by a certified rater. In return for each Energy Star home certification, the builder receives a rebate of \$700.

Gold Ring Homes use less energy than other homes, allowing Gold Ring homeowners to benefit from lower energy bills and qualification for all FHA, VA, and Energy Efficient Mortgage Programs. This allows the homeowner to increase his or her income-to-debt ratio by 2 percent and makes it easier to qualify for a mortgage. However, due to the past years' housing crisis, local builder and customer demand for this program has significantly diminished.

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2.2.12.2 Description of Program Operation and Administration

The home builder supplies OUC with proof their homes have been Energy Star rated, rebate checks are processed and mailed to the home builder. Participation is tracked based on the number of rebates processed.

2.2.12.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for this program are shown in Tables 2-49, 2-50 and 2-51. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

	Tal	ole 2-49 - Gold	Ring Home Part	icipation	
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	1,636	6	6	0.37%
2011	182,629	1,853	6	12	0.65%
2012	186,747	1,992	6	18	0.90%
2013	191,173	2,228	6	24	1.08%
2014	196,124	2,292	6	30	1.31%
2015	201,217	2,394	6	36	1.50%
2016	206,537	2,475	6	42	1.70%
2017	212,038	2,520	6	48	1.90%
2018	217,639	2,567	6	54	2.10%
2019	223,342	2,597	6	60	2.31%

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	Table 2-50 – Gold Ring Home								
	kW and kWh Reductions (at the Meter)								
	_	Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	1,314	1.01	0.89	7,881	6.1	5.3			
2011	1,314	1.01	0.89	7,881	6.1	5.3			
2012	1,314	1.01	0.89	7,881	6.1	5.3			
2013	1,314	1.01	0.89	7,881	6.1	5.3			
2014	1,314	1.01	0.89	7,881	6.1	5.3			
2015	1,314	1.01	0.89	7,881	6.1	5.3			
2016	1,314	1.01	0.89	7,881	6.1	5.3			
2017	1,314	1.01	0.89	7,881	6.1	5.3			
2018	1,314	1.01	0.89	7,881	6.1	5.3			
2019	1,314	1.01	0.89	7,881	6.1	5.3			

	Table 2-51 – Gold Ring Home							
kW and kWh Reductions (at the Generator)								
	Per Per Total Total							
	Per	Customer	Customer	Total	Annual	Annual		
ĺ	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	1,365	1.05	0.92	8,188	6.3	5.6		
2011	1,365	1.05	0.92	8,188	6.3	5.6		
2012	1,365	1.05	0.92	8,188	6.3	5.6		
2013	1,365	1.05	0.92	8,188	6.3	5.6		
2014	1,365	1.05	0.92	8,188	6.3	5.6		
2015	1,365	1.05	0.92	8,188	6.3	5.6		
2016	1,365	1.05	0.92	8,188	6.3	5.6		
2017	1,365	1.05	0.92	8,188	6.3	5.6		
2018	1,365	1.05	0.92	8,188	6.3	5.6		
2019	1,365	1.05	0.92	8,188	6.3	5.6		

2.2.12.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

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2.2.13 Residential Compact Fluorescent Lighting

2.2.13.1 Program Description

OUC will give away at least one compact fluorescent lamp to customers who have a walk-through Energy Survey. OUC will encourage their installation in fixtures that they use the most or at least 4 hours per day. This practice may be eliminated as incandescent lamps are curtailed from the market place due to legislation over the next few years. The loss of the energy savings will be made up through increases from other OUC programs.

2.2.13.2 Description of Program Operation and Administration

Customers can participate by requesting a walk through Energy Survey by calling OUC's Customer Service Center. Participation is tracked based on the number of walk-though surveys performed.

2.2.13.3 Projected Participation and Savings

The projected participation and resulting kW and kWh reductions for the residential compact fluorescent program are shown in Tables 2-52, 2-53 and 2-54. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on the projected number of residential walk-through energy savings. The percustomer kW and kWh reductions for these years are based on estimates developed by OUC.

2.2.13.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

Ta	ble 2-52 – Re	sidential Comp	oact Fluorescent	Lighting Partic	ipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	178,993	178,993	2,876	2,876	1.61%
2011	182,629	182,629	2,876	5,752	3.15%
2012	186,747	186,747	2,876	8,628	4.62%
2013	191,173	191,173	2,876	11,504	6.02%
2014	196,124	196,124	2,876	14,380	7.33%
2015	201,217	201,217	2,876	17,256	8.58%
2016	206,537	206,537	2,876	20,132	9.75%
2017	212,038	212,038	2,876	23,008	10.85%
2018	217,639	217,639	2,876	25,884	11.89%
2019	223,342	223,342	2,876	28,760	12.88%

	Table 2-44 – Residential Compact Fluorescent Lighting							
kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	58	0.04	0.04	167,958	115	115		
2011	58	0.04	0.04	167,958	115	115		
2012	58	0.04	0.04	167,958	115	115		
2013	58	0.04	0.04	167,958	115	115		
2014	58	0.04	0.04	167,958	115	115		
2015	58	0.04	0.04	167,958	115	115		
2016	58	0.04	0.04	167,958	115	115		
2017	58	0.04	0.04	167,958	115	115		
2018	58	0.04	0.04	167,958	115	115		
2019	58	0.04	0.04	167,958	115	115		

	Table 2-45 – Residential Compact Fluorescent Lighting								
	kW and kWh Reductions (at the Generator)								
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	61	0.04	0.04	174,509	120	120			
2011	61	0.04	0.04	174,509	120	120			
2012	61	0.04	0.04	174,509	120	120			
2013	61	0.04	0.04	174,509	120	120			
2014	61	0.04	0.04	174,509	120	120			
2015	61	0.04	0.04	174,509	120	120			
2016	61	0.04	0.04	174,509	120	120			
2017	61	0.04	0.04	174,509	120	120			
2018	61	0.04	0.04	174,509	120	120			
2019	61	0.04	0.04	174,509	120	120			

3.0 Commercial/Industrial Programs

3.1 Commercial/Industrial Program Overview

The commercial/industrial DSM programs are offered to large scale OUC customers. These programs help reduce heating and cooling costs by improving the energy efficiency of buildings that are larger than a standard home. The commercial/industrial programs offered by OUC are:

- Energy Audits
- Indoor Lighting Retrofit Program
- Efficient Electric Heat Pump Rebates
- Duct Repair Rebates
- Window Film/Solar Screen Rebates
- Ceiling Insulation Rebates
- Cool/Reflective Roofs Rebates

3.2 Commercial/Industrial Program Descriptions

The remainder of this section presents information related to OUC's commercial/industrial DSM programs in a format consistent with the requirements of Chapter 25-17.0021, Section (4), F.A.C. Please refer to Section 1.4 for a discussion of the measurement and verification process.

3.2.1 Energy Audits

3.2.1.1 Program Description

The commercial/industrial energy audit program has been offered for several years and is focused on increasing the energy efficiency and energy conservation of commercial buildings and includes a free survey comprised of a physical walk-through inspection of the commercial facility performed by highly trained and experienced energy experts. The survey will examine heating and air conditioning systems including duct work, refrigeration equipment, lighting, water heating, motors, process equipments, and the thermal characteristics of the building including insulation. Following the inspection the customer receives a written report detailing cost-effective recommendations to make the facility more energy and water efficient. Participating customers are encouraged to participate in other OUC commercial programs and directly benefit from energy conservation, which decreases their electric and water bills. Since the year 2000, more than 1,500 customers have participated in this program.

3.2.1.2 Description of Program Operation and Administration

OUC customers can participate by requesting an appointment for a Walk-Through Energy Survey that is scheduled by calling the OUC Customer Service Call Center. Participation is tracked through service orders that are produced when appointments are scheduled and completed.

3.2.1.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the energy audits are shown in Tables 3-1, 3-2 and 3-3. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

	Table 3-1 – (Commercial/Inc	lustrial Energy A	udits Participa	tion
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	28,390	28,390	248	248	0.87%
2011	29,172	29,172	248	496	1.70%
2012	30,284	30,284	248	744	2.46%
2013	31,363	31,363	248	992	3.16%
2014	32,298	32,298	248	1,240	3.84%
2015	33,159	33,159	248	1,488	4.49%
2016	34,068	34,068	248	1,736	5.10%
2017	35,021	35,021	248	1,984	5.67%
2018	35,998	35,998	248	2,232	6.20%
2019	37,005	37,005	248	2,480	6.70%

	Table 3-2 – Commercial/Industrial Energy Audits								
	kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	849	0.15	0.15	210,453	37	37			
2011	849	0.15	0.15	210,453	37	37			
2012	849	0.15	0.15	210,453	37	37			
2013	849	0.15	0.15	210,453	37	37			
2014	849	0.15	0.15	210,453	37	37			
2015	849	0.15	0.15	210,453	37	37			
2016	849	0.15	0.15	210,453	37	37			
2017	849	0.15	0.15	210,453	37	37			
2018	849	0.15	0.15	210,453	37	37			
2019	849	0.15	0.15	210,453	37	37			

	Table 3-3 – Commercial/Industrial Energy Audits kW and kWh Reductions (at the Meter)								
Per Per Total Total									
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	882	0.15	0.15	218,660	38.4	38.4			
2011	882	0.15	0.15	218,660	38.4	38.4			
2012	882	0.15	0.15	218,660	38.4	38.4			
2013	882	0.15	0.15	218,660	38.4	38.4			
2014	882	0.15	0.15	218,660	38.4	38.4			
2015	882	0.15	0.15	218,660	38.4	38.4			
2016	882	0.15	0.15	218,660	38.4	38.4			
2017	882	0.15	0.15	218,660	38.4	38.4			
2018	882	0.15	0.15	218,660	38.4	38.4			
2019	882	0.15	0.15	218,660	38.4	38.4			

3.2.1.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.2 Indoor Lighting Retrofit Program

3.2.2.1 Program Description

The indoor lighting retrofit program has been offered for several years and reduces energy consumption for the commercial customer through the replacement of older fluorescent and incandescent lighting with newer, more efficient lighting technologies. A special alliance between OUC and the lighting contractor enables OUC to offer the customer a discounted project cost. An additional feature of the program allows the customer to pay for the retrofit through the monthly savings that the project generates. Upfront capital funding is not required to participate in this program. The project payment appears on the participating customer's utility bill as a line-item. After the project has been completely paid, the participating customer's annual energy bill will decrease by the approximate amount of projected energy cost savings. Since the year 2000, more than 50 customers have participated in this program.

3.2.2.2 Description of Program Operation and Administration

Lighting Contractor(s) are selected through an RFP process. Eligible customers are referred to the Lighting contractor typically after an energy survey or through other contacts generated by OUC's Commercial Services. The Lighting contractor inspects the facility and creates a proposal to install eligible measures. Once the customer accepts the proposal and signs the payment agreement, the work is scheduled and completed. Upon receipt of notice of completion, customer acceptance and an OUC inspection, payment to the contractor is processed and the customer is billed through their OUC bill based on the terms of the payment agreement. Participation is tracked based on completed installations.

In cases where customers choose the rebate and their own contractor, the customer will submit a rebate application along with proof of purchase that itemizes the work completed. After an OUC inspection, payment of the rebate in the form of a credit on the bill or a check will be processed.

3.2.2.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the indoor lighting retrofit program are shown in Tables 3-4, 3-5 and 3-6. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on historical program participation.

Tab	le 3-4 – Com	mercial/Industr	rial Indoor Lighti	ng Retrofit Par	ticipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level % (e/c*
Year	Customers	Customers	Participants	Participants	100)
2010	28,390	14,195	8	8	0.06%
2011	29,172	14,586	8	16	0.11%
2012	30,284	15,142	8	24	0.16%
2013	31,363	15,681	8	32	0.20%
2014	32,298	16,149	8	40	0.25%
2015	33,159	16,579	8	48	0.29%
2016	34,068	17,034	8	56	0.33%
2017	35,021	17,511	8	64	0.37%
2018	35,998	17,999	8	72	0.40%
2019	37,005	18,502	8	80	0.43%

	Table 3-5 – Commercial/Industrial Indoor Lighting Retrofit								
kW and kWh Reductions (at the Meter)									
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	363,863	81	81	2,910,905	648	648			
2011	363,863	81	81	2,910,905	648	648			
2012	363,863	81	81	2,910,905	648	648			
2013	363,863	81	81	2,910,905	648	648			
2014	363,863	81	81	2,910,905	648	648			
2015	363,863	81	81	2,910,905	648	648			
2016	363,863	81	81	2,910,905	648	648			
2017	363,863	81	81	2,910,905	648	648			
2018	363,863	81	81	2,910,905	648	648			
2019	363,863	81	81	2,910,905	648	648			

	Table 3-6 – Commercial/Industrial Indoor Lighting Retrofit kW and kWh Reductions (at the Generator)								
	Per Per Total Total								
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	378,054	84.16	84.16	3,024,430	673.2	673.2			
2011	378,054	84.16	84.16	3,024,430	673.2	673.2			
2012	378,054	84.16	84.16	3,024,430	673.2	673.2			
2013	378,054	84.16	84.16	3,024,430	673.2	673.2			
2014	378,054	84.16	84.16	3,024,430	673.2	673.2			
2015	378,054	84.16	84.16	3,024,430	673.2	673.2			
2016	378,054	84.16	84.16	3,024,430	673.2	673.2			
2017	378,054	84.16	84.16	3,024,430	673.2	673.2			
2018	378,054	84.16	84.16	3,024,430	673.2	673.2			
2019	378,054	84.16	84.16	3,024,430	673.2	673.2			

3.2.2.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.3 Efficient Electric Heat Pump Rebates

3.2.3.1 Program Description

The efficient electric heat pump rebate program started in 2009. OUC will rebate \$100 for SEER 14, \$200 for SEER 15, and \$300 for SEER 16 and above for customers' purchase of an energy-efficient heat pump.

3.2.3.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

3.2.3.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the efficient electric heat pump rebates are shown in Tables 3-7, 3-8 and 3-9. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation

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projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

Table 3	-7 – Commer	cial/Industrial I	Efficient Electric	Heat Pump Re	bates Participation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration Level %
Calendar	of	Eligible	Program	Program	(e/c* 100)
Year	Customers	Customers	Participants	Participants	
2010	28,390	1,325	19	19	1.43%
2011	29,172	1,361	19	38	2.79%
2012	30,284	1,413	19	57	4.03%
2013	31,363	1,464	19	76	5.19%
2014	32,298	1,507	19	95	6.30%
2015	33,159	1,547	19	114	7.37%
2016	34,068	1,590	19	133	8.37%
2017	35,021	1,634	19	152	9.30%
2018	35,998	1,680	19	171	10.18%
2019	37,005	1,727	19	190	11.00%

	Table 3-8 – Commercial/Industrial Efficient Electric Heat Pump Rebates kW and kWh Reductions (at the Meter)									
Calendar	Per Customer Customer Customer Customer Annual Winter Reduction									
Year	Reduction	Reduction	Reduction	Reduction	Reduction					
2010	981	0.28	0.48	18,644	5.2	9.1				
2011	981	0.28	0.48	18,644	5.2	9.1				
2012	981	0.28	0.48	18,644	5.2	9.1				
2013	981	0.28	0.48	18,644	5.2	9.1				
2014	981	0.28	0.48	18,644	5.2	9.1				
2015	981	0.28	0.48	18,644	5.2	9.1				
2016	981	0.28	0.48	18,644	5.2	9.1				
2017	981	0.28	0.48	18,644	5.2	9.1				
2018	981	0.28	0.48	18,644	5.2	9.1				
2019	981	0.28	0.48	18,644	5.2	9.1				

Tal	Table 3-9 – Commercial/Industrial Efficient Electric Heat Pump Rebates kW and kWh Reductions (at the Generator)							
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	1,020	0.29	0.5	19,371	5.5	9.5		
2011	1,020	0.29	0.5	19,371	5.5	9.5		
2012	1,020	0.29	0.5	19,371	5.5	9.5		
2013	1,020	0.29	0.5	19,371	5.5	9.5		
2014	1,020	0.29	0.5	19,371	5.5	9.5		
2015	1,020	0.29	0.5	19,371	5.5	9.5		
2016	1,020	0.29	0.5	19,371	5.5	9.5		
2017	1,020	0.29	0.5	19,371	5.5	9.5		
2018	1,020	0.29	0.5	19,371	5.5	9.5		
2019	1,020	0.29	0.5	19,371	5.5	9.5		

3.2.3.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.4 Duct Repair Rebates

3.2.4.1 Program Description

The duct repair rebate program started in 2009. OUC will rebate up to \$150 on repairs made to leaking ducts on existing systems that are 5.5 tons (66,000 BTUs) or less

3.2.4.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

3.2.4.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the duct repair rebates are shown in Tables 3-10, 3-11 and 3-12. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on OUC's expectation of annual participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

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Tab	le 3-10 – Con	nmercial/Indust	rial Duct Repair	Rebates Partic	ipation
			Projected		
			Annual	Projected	Projected
	Total	Total	Average	Cumulative	Cumulative
	Number	Number of	Number of	Number of	Penetration
Calendar	of	Eligible	Program	Program	Level %
Year	Customers	Customers	Participants	Participants	(e/c* 100)
2010	28,390	14,195	10	10	0.07%
2011	29,172	14,586	10	20	0.14%
2012	30,284	15,142	10	30	0.20%
2013	31,363	15,681	10	40	0.26%
2014	32,298	16,149	10	50	0.31%
2015	33,159	16,579	10	60	0.36%
2016	34,068	17,034	10	70	0.41%
2017	35,021	17,511	10	80	0.46%
2018	35,998	17,999	10	90	0.50%
2019	37,005	18,502	10	100	0.54%

	Table 3-11 – Commercial/Industrial Duct Repair Rebates							
kW and kWh Reductions (at the Meter)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	376	0.29	0.22	3,758	2.9	2.2		
2011	376	0.29	0.22	3,758	2.9	2.2		
2012	376	0.29	0.22	3,758	2.9	2.2		
2013	376	0.29	0.22	3,758	2.9	2.2		
2014	376	0.29	0.22	3,758	2.9	2.2		
2015	376	0.29	0.22	3,758	2.9	2.2		
2016	376	0.29	0.22	3,758	2.9	2.2		
2017	376	0.29	0.22	3,758	2.9	2.2		
2018	376	0.29	0.22	3,758	2.9	2.2		
2019	376	0.29	0.22	3,758	2.9	2.2		

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	Table 3-12 – Commercial/Industrial Duct Repair Rebates								
	kW and kWh Reductions (at the Generator)								
		Per	Per		Total	Total			
	Per	Customer	Customer	Total	Annual	Annual			
	Customer	Winter	Summer	Annual	Winter	Summer			
Calendar	kWh	kW	kW	kWh	kW	kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2010	390	0.3	0.23	3,904	3.1	2.3			
2011	390	0.3	0.23	3,904	3.1	2.3			
2012	390	0.3	0.23	3,904	3.1	2.3			
2013	390	0.3	0.23	3,904	3.1	2.3			
2014	390	0.3	0.23	3,904	3.1	2.3			
2015	390	0.3	0.23	3,904	3.1	2.3			
2016	390	0.3	0.23	3,904	3.1	2.3			
2017	390	0.3	0.23	3,904	3.1	2.3			
2018	390	0.3	0.23	3,904	3.1	2.3			
2019	390	0.3	0.23	3,904	3.1	2.3			

3.2.4.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.5 Window Film/Solar Screen Rebates

3.2.5.1. Program Description

The window film/solar screen rebate program started in 2009 and is designed to help reflect the heat during hot summer days and retain heat on cool winter days. OUC will rebate customers \$0.75 per square foot, up to \$55 per room for window tinting and solar screening with a shading coefficient of 0.5 or less

3.2.5.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

3.2.5.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the window film/solar screen rebates are shown in Tables 3-13, 3-14 and 3-15. The projected number of customers and program participants are forecasted from 2010 to 2019, with projections based on

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historical program participation. The per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

Table	Table 3-13 - Commercial/Industrial Window Film/Solar Screen Rebates Participation							
			Projected					
			Annual	Projected				
	Total	Total	Average	Cumulative				
	Number	Number of	Number of	Number of	Projected Cumulative			
Calendar	of	Eligible	Program	Program	Penetration Level %			
Year	Customers	Customers	Participants	Participants	(e/c* 100)			
2010	28,390	26,970	7	7	0.03%			
2011	29,172	27,713	7	14	0.05%			
2012	30,284	28,770	7	21	0.07%			
2013	31,363	29,794	7	28	0.09%			
2014	32,298	30,683	7	35	0.11%			
2015	33,159	31,501	7	42	0.13%			
2016	34,068	32,364	7	49	0.15%			
2017	35,021	33,270	7	56	0.17%			
2018	35,998	34,198	7	63	0.18%			
2019	37,005	35,155	7	70	0.20%			

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Table 3-14 – Commercial/Industrial Window Film/Solar Screen Rebates kW and kWh Reductions (at the Meter)								
	Per Per Total Total							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	75	0	0.02	522	-0.03	0.11		
2011	75	0	0.02	522	-0.03	0.11		
2012	75	0	0.02	522	-0.03	0.11		
2013	75	0	0.02	522	-0.03	0.11		
2014	75	0	0.02	522	-0.03	0.11		
2015	75	0	0.02	522	-0.03	0.11		
2016	75	0	0.02	522	-0.03	0.11		
2017	75	0	0.02	522	-0.03	0.11		
2018	75	0	0.02	522	-0.03	0.11		
2019	75	0	0.02	522	-0.03	0.11		

Table 3-15 – Commercial/Industrial Window Film/Solar Screen Rebates kW and kWh Reductions (at the Generator)								
	Per Per Total Total							
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	77	0	0.02	542	-0.03	0.11		
2011	77	0	0.02	542	-0.03	0.11		
2012	77	0	0.02	542	-0.03	0.11		
2013	77	0	0.02	542	-0.03	0.11		
2014	77	0	0.02	542	-0.03	0.11		
2015	77	0	0.02	542	-0.03	0.11		
2016	77	0	0.02	542	-0.03	0.11		
2017	77	0	0.02	542	-0.03	0.11		
2018	77	0	0.02	542	-0.03	0.11		
2019	77	0	0.02	542	-0.03	0.11		

3.2.5.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

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3.2.6 Ceiling Insulation Rebates

3.2.6.1 Program Description

The ceiling insulation rebate program started in 2009 and was designed to increase a building's resistance to heat loss and gain. OUC will rebate customers up to \$100 plus \$0.07 per square foot above 1,500 square feet for ceiling insulation of R-19 or higher.

3.2.6.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

3.2.6.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the ceiling insulation rebates are shown in Tables 3-16, 3-17 and 3-18. The projected number of customers and program participants are forecasted from 2010 to 2019, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC and benchmarked against other Florida utilities.

3.2.6.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

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Table 3-16 – Commercial/Industrial Ceiling Insulation Rebates Participation							
			Projected				
			Annual	Projected	Projected		
	Total	Total	Average	Cumulative	Cumulative		
	Number	Number of	Number of	Number of	Penetration		
Calendar	of	Eligible	Program	Program	Level % (e/c*		
Year	Customers	Customers	Participants	Participants	100)		
2010	28,390	13,737	7	7	0.05%		
2011	29,172	13,730	7	14	0.10%		
2012	30,284	13,723	7	21	0.15%		
2013	31,363	13,716	7	28	0.20%		
2014	32,298	13,709	7	35	0.26%		
2015	33,159	13,702	7	42	0.31%		
2016	34,068	13,695	7	49	0.36%		
2017	35,021	13,688	7	56	0.41%		
2018	35,998	13,681	7	63	0.46%		
2019	37,005	13,674	7	70	0.51%		

Table 3-17 – Commercial/Industrial Ceiling Insulation Rebates kW and kWh Reductions (at the Meter)								
		Per	Per	(40 4110 111400	Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	564	0.32	0.17	3,945	2.2	1.2		
2011	564	0.32	0.17	3,945	2.2	1.2		
2012	564	0.32	0.17	3,945	2.2	1.2		
2013	564	0.32	0.17	3,945	2.2	1.2		
2014	564	0.32	0.17	3,945	2.2	1.2		
2015	564	0.32	0.17	3,945	2.2	1.2		
2016	564	0.32	0.17	3,945	2.2	1.2		
2017	564	0.32	0.17	3,945	2.2	1.2		
2018	564	0.32	0.17	3,945	2.2	1.2		
2019	564	0.32	0.17	3,945	2.2	1.2		

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Table 3-18 – Commercial/Industrial Ceiling Insulation Rebates								
kW and kWh Reductions (at the Generator)								
		Per	Per		Total	Total		
	Per	Customer	Customer	Total	Annual	Annual		
	Customer	Winter	Summer	Annual	Winter	Summer		
Calendar	kWh	kW	kW	kWh	kW	kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2010	586	0.33	0.18	4,099	2.33	1.27		
2011	586	0.33	0.18	4,099	2.33	1.27		
2012	586	0.33	0.18	4,099	2.33	1,27		
2013	586	0.33	0.18	4,099	2.33	1.27		
2014	586	0.33	0.18	4,099	2.33	1.27		
2015	586	0.33	0.18	4,099	2.33	1.27		
2016	586	0.33	0.18	4,099	2.33	1.27		
2017	586	0.33	0.18	4,099	2.33	1.27		
2018	586	0.33	0.18	4,099	2.33	1.27		
2019	586	0.33	0.18	4,099	2.33	1.27		

3.2.7 Cool/Reflective Roofs Rebates

3.2.7.1 Program Description

The cool/reflective roofs rebate program started in 2009 and was designed to reflect the sun's rays and lower roof surface temperature while increasing the lifespan of the roof. OUC will rebate customers at \$0.10 per square foot up to \$15,000 for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70

3.2.7.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at www.OUC.com. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the owner of the property who may have paid for the improvement.

3.2.7.3 Projected Participation and Savings

In the initial offering of the commercial cool/reflective roof program in 2009, OUC had 7 customers participate. One of the participants accounted for more than two thirds of the total square footage of the cool roof/reflective program. Due to uncertainty regarding the likelihood of similar participation in future years, peak demand and energy reductions associated with commercial cool/reflective roof program have not been included in OUC's projected reductions, and therefore projected participation and corresponding kW and kWh reductions for the

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cool/reflective roofs rebates are not presented in this DSM Plan. For purposes of the cost-effectiveness evaluations presented in Appendix A, the per-customer kW and kWh reductions for these years are based on information provided by Itron during the numeric conservation goals setting process (Docket No. 080412).

3.2.7.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

Appendix A

This appendix presents the results of the cost-effectiveness test performed on the Demand-Side Management (DSM) programs described in OUC'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 provides the cost-effectiveness tests required pursuant to Rule 27-17.008, Florida Administrative Code (F.A.C). The FIRE model output is 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 OUC's DSM programs presented in OUC'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 OUC'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." The utility avoids construction of this unit through the implementation of a DSM program to slow the growth of energy demand. The cost of each DSM program is compared with the equivalent costs associated with the construction and

For purposes of OUC's DSM Plan, the avoided unit costs are consistent with those utilized throughout Docket No. 080412-EG, which was the basis for the DSM goals set for OUC by the PSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009).

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.

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.1.1 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.2 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 OUC'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 OUC's DSM Plan, the avoided unit costs are consistent with those utilized throughout Docket No. 080412-EG, which

was the basis for the DSM goals set for OUC by the PSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009). Given that the 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 OUC's DSM programs involve conservation measures with expected lives that exceed 10 years (i.e. heat pump rebates, insulation, window replacement, etc). As such, utilizing a 10 year evaluation period does not capture the entire life cycle benefits of those types of measures.

Avoided unit costs were based on the expected need for additional capacity over the 2010 through 2019 timeframe. As discussed throughout the filings associated with Docket No. 080412-EG, OUC's only avoided units during the 2010 through 2019 timeframe were simple cycle combustion turbines in summer 2018 and summer 2019. These unit additions are peaking units that would only operate during times of peak demand (i.e. they do not provide large quantities of energy in a given year). The timing of these units (only appearing in the last 2 years of the evaluation period) and their limited annual generation influence the results of the FIRE model evaluations presented in this Appendix in that associated avoided costs are relatively minimal.

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 OUC'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 OUC's residential insulation rebate 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 OUC's DSM programs.

A.3 Summary of Cost-Effectiveness Results

Table A-1 summarizes the results of the cost-effectiveness evaluations of OUC's residential DSM programs. Table A-2 summarizes the results of the cost-effectiveness evaluations of OUC's commercial/industrial DSM programs. Analysis of Tables A-1 and A-2 indicate that there are programs for which Participant Test results are indicated as "1.0 (Infinite)." Such results indicate that there are either no costs for the participating customer (i.e. residential energy surveys, commercial energy audits, residential Gold Ring, and residential compact fluorescent lighting), or all costs are carried on the participating customers' utility bills such that benefits from participating in the program are used to offset the upfront costs that OUC pays, resulting in no out-of-pocket costs to the participating customer (i.e. commercial indoor lighting retrofits).

Table A-1											
Summary of Cost-Effectiveness Evaluations for OUC's Residential DSM Programs											
DSM Program	RIM	PT	TRC								
Energy Survey - SF - Walk-Through	0.15	1.0 (Infinite)	0.25								
Energy Survey - MF - Walk-Through	0.13	1.0 (Infinite)	0.21								
Energy Survey - SF - DVD	0.23	1.0 (Infinite)	0.63								
Energy Survey - MF - DVD	0.23	1.0 (Infinite)	0.62								
Energy Survey - SF - On-Line	0.21	1.0 (Infinite)	0.47								
Energy Survey - MF - On-Line	0.20	1.0 (Infinite)	0.44								
Duct Repairs	0.24	0.68	0.18								
Ceiling Insulation Rebates	0.25	1.07	0.17								
Window Film/Solar Screen Rebates	0.15	1.02	0.12								
High Performance Windows Rebates	0.24	1.29	0.12								
Caulk/Weather Stripping Rebates	0.08	0.95	0.05								
Wall Insulation Rebates	0.04	0.44	0.01								
Cool / Reflective Roof Rebates	0.26	2.89	0.22								
Home Energy Fix-Up	0.12	7.06	0.54								
Billed Solution Ceiling Insulation	0.25	1.07	0.17								
Efficient Electric Heat Pump Rebates - 14 SEER	0.20	0.20	0.06								
Efficient Electric Heat Pump Rebates - 15 SEER	0.25	0.74	0.07								
Efficient Electric Heat Pump Rebates - 16 SEER	0.26	0.58	0.07								
Efficient Electric Heat Pump Rebates - 17 SEER	0.29	0.47	0.07								
Efficient Electric Heat Pump Rebates - 18 SEER	0.30	0.40	0.06								
Gold Ring Home	0.23	1.0 (Infinite)	1.01								
Compact Fluorescent Lighting	0.29	1.0 (Infinite)	2.28								

Table A-2 Summary of Cost-Effectiveness Evaluations for OUC's Commercial/Industrial DSM Programs											
DSM Program	RIM	PT	TRC								
Energy Audits	0.22	1.0 (Infinite)	0.35								
Indoor Lighting Retrofits	0.63	1.0 (Infinite)	1.84								
Efficient Electric Heat Pump Rebates - 14 SEER	0.26	1.05	0.07								
Efficient Electric Heat Pump Rebates - 15 SEER	0.29	0.74	0.08								
Efficient Electric Heat Pump Rebates - 16 SEER	0.29	0.58	0.07								
Efficient Electric Heat Pump Rebates - 17 SEER	0.32	0.47	0.07								
Efficient Electric Heat Pump Rebates - 18 SEER	0.34	0.39	0.06								
Duct Repair Rebates	0.28	0.80	0.23								
Window Film / Solar Screen Rebates	0.11	0.71	0.05								
Ceiling Insulation Rebates	0.34	1.09	0.23								
Cool / Reflective Roof Rebates	0.40	1.25	0.47								

A.4 FIRE Model Output Reports

The following tables present the results of the cost-effectiveness evaluations for OUC's DSM programs 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. Please note that there are no results for the residential Billed Solution Ceiling Insulation program, as the cost-effectiveness results for this program are the same as for the residential Ceiling Insulation Rebates program.

Residential Home Energy Surveys – Single Family Walk-Through

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PROGRAM: Residential Single Family Survey Walk Through

I. PROGRAM DEMAND SAYINGS AND LINE LOSSES		IV AVOIDED GENERATOR, TRANS, AND DIST, COSTS	***************************************
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.00 KW/CUST 0.00 KW GEN/CUST 3.9 % 273.7 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 263.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS KWH 2.5 % 15 % 3.363149 CENTS KWH 2.5 % 0 \$*KW:YR
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS	219.63 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	2.0 % 0.00 \$-KW/MO 2.5 %
(11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE (16)* UTILITY REBATE/INCENTIVE ESCAL RATE	2.5 % 8.00 % 0.00 % 0.00 \$/CUST 0.00 \$/CUST/YR 0.0 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM: Residential Single Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1) (2) (3) (4) (5) (6) (7) (8) (9) UTILITY AVERAGE CUMULATIVE ADJUSTED SYSTEM AVOIDED INCREASED PROGRAM PROGRAM CUMULATIVE **FUEL** MARGINAL MARGINAL REPLACEMENT KW TOTAL KWH PARTICIPATING PARTICIPATING COSTS FUEL COST FUEL COST FUEL COST EFFECTIVENESS EFFECTIVENESS YEAR CUSTOMERS CUSTOMERS (C/KWH) (C/KWH) (C/KWH) (C/KWH) **FACTOR FACTOR** 2013 3.36 3.73 3.87 3.36 2010 2013 4026 3.65 3.92 3.99 3.65 2011 4026 6039 6039 3.93 4.21 4.24 3.93 2012 8052 4.05 4.40 4.47 2013 8052 4.05 2014 10065 10065 4.14 4.59 4.65 4.14 12078 2015 12078 4.34 4.83 4.96 4.34 14091 4.48 5.04 5.20 4.48 2016 14091 5.34 5.60 2017 16104 16104 4.67 4,67 2018 18117 18117 4.86 5.53 5.91 4.85 1 2019 20130 20130 5.14 5.91 5.58 5.06

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1) (2)		(3)	(4)	(5)	(6)		
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>		
	Total Reso	urce Test	Participar	nts Test	Rate Impact Test			
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER		
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS		
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)		
2010	0.0	0.0	0.0	0.0	0.0	0.0		
2011	0.0	0.0	0.0	0.0	0.0	0.0		
2012	0.0	0.0	0.0	0.0	0.0	0.0		
2013	0.0	0.0	0.0	0.0	0.0	0.0		
2014	0.0	0.0	0.0	0.0	0.0	0.0		
2015	0.0	0.0	0.0	0.0	0.0	0.0		
2016	0.0	0.0	0.0	0.0	0.0	0.0		
2017	0.0	0.0	0.0	0.0	0.0	0.0		
2018	0.0	0.0	0.0	0.0	0.0	0.0		
2019	0.0	0.0	0.0	0.0	0.0	0.0		

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
									*******	h
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	5.00
				***	****			*******	****	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Single Family Survey Walk Through

* UNIT SIZE OF AVOIDED GENERATION UNIT = 0 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	•
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		مُ مممة	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Single Family Survey Walk Through

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.268856
2011	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	32.417962
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	58.010219
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	84.819975
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	113.665323
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	146.287119
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	180.512046
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	220.678477
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	259.046204
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	309.148193
	and the second of the second	and the second s	agas sada da a mada mada mada	AMERICAN STREET	the statement of the st	N# 1	
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1,414.854373
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	877.583339

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	275.4521	10.2689	0.0000	0.0000	10.2689	10.2689
2011	826.3564	32.4180	0.0000	0.0000	32.4180	32.4180
2012	1,377.2607	58.0102	0.0000	0.0000	58.0102	58.0102
2013	1,928.1649	84.8200	0.0000	0.0000	84.8200	84.8200
2014	2,479.0692	113,6653	0.0000	0.0000	113.6653	113.6653
2015	3,029.9735	146.2871	0.0000	0.0000	146.2871	146.2871
2016	3,580.8777	180.5120	0.0000	0.0000	180.5120	180.5120
2017	4,131.7820	220.6785	0.0000	0.0000	220.6785	220,6785
2018	4,682.6863	259.0462	0.0000	0.0000	259.0462	259.0462
2019	5,233.5905	309.1482	0.0000	0.0000	309.1482	309.1482
NOMINAL	27,545.2133	1,414.8544	0.0000	0.0000	1,414.8544	1.414.8544
NPV		877.5833	0.0000	0.0000	877.5833	877.5833

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) CUSTOMER	(12)	(13)	(14)	(15)	(16)	- /	(18)
·	~ UIIL	II T FROO:	KAMI COST	S & KEDAI	E.3			PARI	IC TENT INC	I COSTOME!	COSISAC	DENETI13				~~~~	***************************************
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL.	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.		
	UTIL.	UTIL	UTIL	UTIL	UTIL	REBATE	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.		REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	442.1086	0.0000	442.1086	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	264.7095	8.9026	22.5956	31.4982	0.0000	0.0000	0.0000	0.0000
2011	453.1614	0.0000	453,1614	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	794.1285	28.9643	69.1425	98,1069	0.0000	0.0000	0.0000	0.0000
2012	464.4904	0.0000	464,4904	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,323.5475	52.0415	117.5423	169.5839	0.0000	0.0000	0.0000	0.0000
2013	476.1027	0.0000	476,1027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,852.9665	75.1261	167.8504	242.9765	0.0000	0.0000	0.0000	0.0000
2014	488.0052	0.0000	488.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,382,3855	98.7447	220.1239	318.8685	0.0000	0.0000	0.0000	0.0000
2015	500.2054	0.0000	500,2054	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,911.8045	126.2952	274.4211	400.7162	0.0000	0.0000	0.0000	0.0000
2016	512,7105	0.0000	512.7105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,441.2235	154.2270	330.8021	485.0292	0.0000	0.0000	0.0000	0.0000
2017	525.5283	0.0000	525,5283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,970.6425	185.5095	389.3287	574.8381	0.0000	0.0000	0.0000	0.0000
2018	538.6665	0.0000	538.6665	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4,500.0615	218.6753	450,0640	668,7393	0.0000	0.0000	0.0000	0.0000
2019	552.1331	0.0000	552.1331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.029,4805	258.3676	513.0729	771,4405	0.0000	0.0000	0.0000	0.0000
NOMINAL 4	4,953.T120	0.0000	4,953.1120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	26,470.9500	1,206,8537	2.554.9435	3.761.7973	0.0000	0.0000	0.0000	0.0000
			•														
NPV :	3,533.9676	0.0000	3,533,9676	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		751.3345	1,604.6499	2,355.9844		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	NICRE LOED	r varia arms z	0.071010.117			MOIDED	MAINER	BB OCB 111				CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	442.109	000,0	0.000	442.109	0.000	0.000	10.269	0.000	10.269	(431.840)	(431.840)
2011	0.000	453.161	0.000	0.000	453.161	0.000	0.000	32.418	0.000	32.418	(420.743)	(821.417)
2012	0.000	464.490	0.000	0.000	464,490	0.000	0.000	58.010	0.000	58.010	(406.480)	(1,169.908)
2013	0.000	476.103	0.000	0.000	476.103	0.000	0.000	84.820	0.000	84.820	(391.283)	(1,480.521)
2014	0.000	488.005	0.000	0.000	488.005	0.000	0.000	113.665	0.000	113.665	(374.340)	(1,755.672)
2015	0.000	500.205	0.000	0.000	500.205	0.000	0.000	146.287	0.000	146.287	(353.918)	(1,996.543)
2016	0.000	512.710	0.000	0.000	512.710	0.000	0.000	180.512	0.000	180.512	(332.198)	(2,205.884)
2017	0.000	525,528	0.000	0.000	525.528	0.000	0.000	220.678	0.000	220.678	(304.850)	(2,383.761)
2018	0.000	538.666	0.000	0.000	538.666	0.000	0.000	259.046	0.000	259,046	(279.620)	(2,534.831)
2019	0.000	552.133	0.000	0.000	552.133	0.000	0.000	309.148	0.000	309.148	(242,985)	(2,656.384)
NOMINAL	0.000	4,953.112	0,000	0.000	4,953.112	0.000	0.000	1,414.854	0.000	1,414.854	(3,538.258)	 for right (c) palaphanetres iii v/r
NPV	0.000	3,533.968	0.000	0.000	3,533.968	0.000	0.000	877.583	0.000	877.583	(2,656.384)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.25

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
		-												
2010	31.498	0.000	0.000	0.000	31.498	0.000	0.000	0.000	0.000	31.498	31.498	31	0	1.00
2011	98.107	0.000	0.000	0.000	98.107	0.000	0.000	0.000	0.000	98.107	122.338	122	0	1.00
2012	169.584	0.000	0.000	0.000	169.584	0.000	0.000	0.000	0.000	169.584	267.729	268	0	1.00
2013	242.976	0.000	0.000	0.000	242.976	0.000	0.000	0.000	0.000	242.976	460.611	461	0	1.00
2014	318.869	0.000	0.000	0.000	318.869	0.000	0.000	0.000	0.000	318.869	694.989	695	0	1.00
2015	400.716	0.000	0.000	0.000	400.716	0.000	0.000	0.000	0.000	400.716	967.710	968	0	1.00
2016	485.029	0.000	0.000	0.000	485.029	0.000	0.000	0.000	0.000	485.029	1,273.361	1,273	0	1.00
2017	574.838	0.000	0.000	0.000	574,838	0.000	0.000	0.000	0.000	574.838	1,608.773	1,609	0	1.00
2018	668.739	0.000	0.000	0.000	668.739	0.000	0.000	0.000	0.000	668.739	1,970.072	1.970	0	1.00
2019	771.440	0.000	0.000	0.000	771.440	0.000	0.000	0.000	0.000	771.440	2,355.984	2,356	0	1.00
	n	s and 5 and						man to being a see						
NOMINAL	3,761.797	0.000	0.000	0.000	3,761.797	0.000	0.000	0.000	0.000	3,761.797				
NPV	2,355.984	0.000	0.000	0.000	2,355.984	0.000	0.000	0.000	0.000	2,355.984				

In-service year of generation unit: Discount rate:

2018 8.00%

Benefit/Cost Ratio:

1.00

RATE IMPACT TEST
PROGRAM; Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET ((14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	442.109	0.000	31.498	0.000	473.607	10.269	0.000	0.000	0.000	10.269	(463.338)	(463.338)
2011	0.000	453,161	0.000	98.107	0.000	551.268	32.418	0.000	0.000	0.000	32,418	(518.850)	(943.755)
2012	0.000	464,490	0.000	169.584	0.000	634.074	58.010	0.000	0.000	0.000	58.010	(576.064)	(1,437.637)
2013	0.000	476.103	0.000	242.976	0.000	719.079	84.820	0.000	0.000	0.000	84.820	(634.259)	(1,941.132)
2014	0.000	488.005	0.000	318.869	0.000	806.874	113.665	0.000	0.000	0.000	113.665	(693.208)	(2,450.661)
2015	0.000	500.205	0.000	400.716	0.000	900.922	146.287	0.000	0.000	0.000	146.287	(754.634)	(2,964.253)
2016	0.000	512.710	0.000	485.029	0.000	997.740	180.512	0.000	0.000	0.000	180.512	(817.228)	(3,479.245)
2017	0.000	525.528	0.000	574.838	0.000	########	220.678	0.000	0.000	0.000	220.678	(879.688)	(3.992.534)
2018	0.000	538.666	0.000	668.739	0.000	######################################	259.046	0.000	0.000	0.000	259.046	(948.360)	(4,504.903)
2019	0.000	5 52.133	0.000	771.440	0.000	##########	309.148	0.000	0.000	0.000	309.148	(1,014.425)	(5,012.369)
NOMINAL	0.000	4,953.112	0.000	3,761.797	0.000	########	1,414.854	0.000	0.000	0.000	1,414.854	(7,300.055)	gramming gramming
NPV	0.000	3, 5 33.968	0.000	2,355.984	0.000	######################################	877.583	0.000	0.000	0.000	877.583	(5.012.369)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.15

Residential Home Energy Surveys – Multi Family Walk-Through

PROGRAM: Residential Multi Family Survey Walk Through

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0,00 KW CUST	(1) BASE YEAR	
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00 KW GEN:CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	208.1 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120,0557 \$/KW
(5) KWII LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN. TRAN. & DIST COST ESCALATION RATE	
(8)* CUSTOMER KWH REDUCTION AT METER	200.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	
		(9) GENERATOR FIXED O&M ESCALATION RATE	
		(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
		(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
II. ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	0 %
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(19)* CAPACITY COST ESCALATION RATE	2.5 %
III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER	199.89 \$-CUST 0.00 \$-CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE	2.5 %		
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %	(2) NON-FUEL ESCALATION RATE	2.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR	(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	(4) DEMAND CHARGE ESCALATION RATE	. 2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 S/CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %	FACTOR FOR CUSTOMER BILL	1.0
(10)* INCREASED SUPPLY COSTS	0.00 S/CUST/YR		
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %		
(12)* UTILITY DISCOUNT RATE	8.00 %		
(13)* UTILITY AFUDC RATE	0.00 %		
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 S:CUST		
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 5/CUST/YR		
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 9:05 AM

PROGRAM: Residential Multi Family Survey Walk Through

			-						
			ided Generation Unit:	7FA CT					
		* Program Generation	on Equivilency Factor:	1.00					
		•							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(1)	(-)	(2)	UTILITY	(-)	(0)	(,,	(9)	1
				AVERAGE					
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
_	YEAR	CUSTOMERS	CUSTOMERS	(C'KWH)	(C/KWH)	(C/KWH)	(C·KWH)	FACTOR	FACTOR
	2010	863	863	3.36	3,73	3.87	3.36	Ĭ	1
	2011	1726	1726	3.65	3.92	3.99	3.65	ł	1
	2012	2589	2589	3,93	4.21	4.24	3.93	1	l
	2013	3452	3452	4.05	4.40	4.47	4.05	ì	1
	2014	4315	4315	4.14	4.59	4.65	4.14	t	1
	2015	5178	5178	4.34	4.83	4.96	4.34	1	1
	2016	6041	6041	4.48	5.04	5.20	4.48	i	l.
	2017	6904	6904	4.67	5.34	5.60	4.67	1	1
	2018	7767	7767	4,86	5.53	5.91	4.85	1	1
	2019	8630	8630	5.14	5.91	5.58	5.06	i	l

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOF	VM 2.5>
	Total Resor	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
		200.004	4.0000	0.00/						
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				4					-	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06

AFUDC RATE:

0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Multi Family Survey Walk Through

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
					,				
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
•			e i a managamanan menangan		and the same of th		The supplied of the contract of the same o	* 1000000000000000000000000000000000000	
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Multi Family Survey Walk Through

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.347829
2011	0.00000	0.000000	0.000000	0.000000	0.00000	0.000000	10.568831
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.912362
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	27.652819
2014	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	37.056915
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	47.692200
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	58.850134
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	71.945104
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	84.453665
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.787803
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	461.267663
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	286.107760

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Multi Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR_	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	89.8023	3.3478	0.0000	0.0000	3.3478	3.3478
2011	269.4069	10.5688	0.0000	0.0000	10.5688	10.5688
2012	449.0114	18.9124	0.0000	0.0000	18.9124	18.9124
2013	628.6160	27.6528	0.0000	0.0000	27.6528	27.6528
2014	808.2206	37.0569	0.0000	0.0000	37.0569	37.0569
2015	987.8252	47.6922	0.0000	0.0000	47.6922	47.6922
2016	1,167.4298	58.8501	0.0000	0.0000	58.8501	58.8501
2017	1,347.0343	71.9451	0.0000	0.0000	71.9451	71.9451
2018	1,526.6389	84.4537	0.0000	0.0000	84.4537	84.4537
2019	1,706.2435	100.7878	0.0000	0.0000	100.7878	100.7878
NOMINAL	8,980.2289	461.2677	0.0000	0.0000	461,2677	461.2677
NPV		286.1078	0.0000	0.0000	286.1078	286.1078

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Multi Family Survey Walk Through

€	l) <	(2)	(3) ITV PROGI	(4) RAM COST	(5) Særerat	(6)	(7)	(8)	(9)	(10)	(11) CUSTOMER	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		0112			S & REBIT	1												
				TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
		UTIL.	UTIL	UTIL	UTIL	UTIL		CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NO	NREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	1	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEA	R	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
20	0 17	2.5010	0.0000	172.5010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	86.3000	2.9024	7.3666	10.2690	0.0000	0.0000	0.0000	0.0000
20	11 17	6.8135	0 0000	176.8135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	258.9000	9.4429	22.5417	31.9846	0.0000	0.0000	0.0000	0.0000
20	12 18	1.2338	0.0000	181.2338	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	431.5000	16.9665	38.3209	55.2874	0.0000	0.0000	0.0000	0.0000
20	13 18	5.7647	0.0000	185.7647	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	604.1000	24.4924	54.7222	79,2147	0.0000	0.0000	0.0000	0.0000
20	14 19	0.4088	0.0000	190.4088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	776,7000	32,1925	71.7643	103,9568	0.0000	0.0000	0.0000	0.0000
20	15 19	5.1690	0.0000	195.1690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	949.3000	41.1745	89.4661	130.6406	0.0000	0.0000	0.0000	0.0000
20	16 20	0.0482	0.0000	200.0482	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	1.121.9000	50.2808	107.8474	158,1281	0.0000	0.0000	0.0000	0.0000
20	17 20	5.0494	0.0000	205.0494	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,294,5000	60.4794	126,9281	187,4074	0.0000	0.0000	0.0000	0.0000
20	8 21	0.1757	0.0000	210.1757	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,467,1000	71.2920	146,7288	218.0209	0.0000	0.0000	0.0000	0.0000
20	9 21	5.4301	0.0000	215.4301	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,639,7000	84.2324	167.2709	251.5033	0.0000	0.0000	0.0000	0.000.0
											,			_,,		0.000	0.0000	5.0000
NOMINA	L 1,93	2.5942	0.0000	1,932.5942	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8,630.0000	393.4557	832.9570	1,226,4127	0.0000	0.0000	0.0000	0.0000
											-						2.2500	0.000
NP	V 1.37	8.8756	0.0000	1,378.8756	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		244.9484	523.1444	768.0928		0.0000	0.0000	0.0000
																0,0000	0.0000	5.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Multi Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	172.501	0.000	0.000	172.501	0.000	0.000	3,348	0.000	3.348	(169.153)	(169.153)
2011	0.000	176.813	0.000	0.000	176.813	0.000	0.000	10.569	0.000	10.569	(166.245)	(323,083)
2012	0.000	181.234	0.000	0.000	181.234	0.000	0.000	18.912	0.000	18.912	(162.321)	(462.248)
2013	0.000	185.765	0.000	0.000	185.765	0.000	0.000	27.653	0.000	27,653	(158.112)	(587.762)
2014	0.000	190.409	0.000	0.000	190.409	0.000	0.000	37.057	0.000	37.057	(153.352)	(700.480)
2015	0.000	195.169	0.000	0.000	195.169	0.000	0.000	47.692	0.000	47,692	(147.477)	(800.851)
2016	0.000	200.048	0.000	0.000	200.048	0.000	0.000	58.850	0.000	58.850	(141.198)	(889.829)
2017	0.000	205.049	0.000	0.000	205.049	0.000	0.000	71.945	0,000	71.945	(133.104)	(967.494)
2018	0.000	210.176	0.000	0.000	210.176	0.000	0.000	84.454	0.000	84.454	(125.722)	(1,035,418)
2019	0.000	215.430	0.000	0.000	215.430	0.000	0.000	100.788	0.000	100.788	(114.642)	(1,092.768)
NOMINAL	0.000	1,932.594	0.000	0.000	1,932.594	0.000	0.000	461.268	0.000	461.268	(1,471.327)	
NPV	0.000	1,378.876	0.000	0.000	1,378.876	0.000	0.000	286.108	0.000	286.108	(1,092.768)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.21

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Multi Family Survey Walk Through

(t)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	10.269	0.000	0.000	0.000	10.269	0.000	0.000	0.000	0.000	10.269	10.269	10	0	1.00
2011	31.985	0.000	0.000	0.000	31.985	0.000	0.000	0.000	0.000	31.985	39.884	40	0	1.00
2012	55.287	0.000	0.000	0.000	55.287	0.000	0.000	0.000	0.000	55.287	87.284	87	0	1.00
2013	79.215	0.000	0.000	0.000	79.215	0.000	0.000	0.000	0.000	79.215	150.167	150	0	1.00
2014	103.957	000,0	0.000	0.000	103.957	0.000	0.000	0.000	0.000	103.957	226.579	227	0	1.00
2015	130.641	0.000	0.000	0.000	130.641	0.000	0.000	0.000	0.000	130.641	315.491	315	0	1.00
2016	158.128	0.000	0.000	0.000	158.128	0.000	0.000	0.000	0.000	158.128	415.138	415	0	1.00
2017	187.407	0.000	0.000	0.000	187.407	0.000	0.000	0.000	0.000	187.407	524.489	524	0	1.00
2018	218.021	0.000	0.000	0.000	218.021	000.0	0.000	0.000	0.000	218.021	642.279	642	0	1.00
2019	251.503	0.000	0.000	0.000	251.503	0.000	0.000	0.000	0.000	251.503	768.093	768	0	1.00
***************************************		,					/							
NOMINAL	1,226.413	0.000	0.000	0.000	1,226.413	0.000	0.000	0.000	0.000	1,226.413				
NPV	768.093	0.000	0.000	0.000	768.093	0.000	0.000	0.000	0.000	768.093				

In-service year of generation unit. 2018 Discount rate:

Benefit/Cost Ratio:

8.00% 1.00

RATE IMPACT TEST PROGRAM: Residential Multi Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	172.501	0.000	10.269	0.000	182.770	3.348	0.000	0.000	0.000	3,348	(179.422)	(179.422)
2011	0.000	176.813	0.000	31.985	0.000	208.798	10.569	0.000	0.000	0,000	10.569	(198.229)	(362.968)
2012	0.000	181.234	0.000	55.287	0.000	236,521	18.912	0.000	0.000	0.000	18.912	(217.609)	(549.532)
2013	0.000	185.765	0.000	79.215	0.000	264.979	27.653	0.000	0.000	0.000	27.653	(237.327)	(737.930)
2014	0.000	190.409	0.000	103.957	0.000	294,366	37.057	0.000	0.000	0.000	37.057	(257,309)	(927.059)
2015	0.000	195.169	0.000	130.641	0.000	325.810	47.692	0.000	0.000	0.000	47.692	(278.117)	(1,116.341)
2016	0.000	200.048	0.000	158.128	0.000	358.176	58.850	0.000	0.000	0.000	58.850	(299.326)	(1.304.968)
2017	0.000	205.049	0.000	187.407	0.000	392.457	71.945	0.000	0.000	0.000	71.945	(320.512)	(1,491.983)
2018	0.000	210.176	0.000	218.021	0.000	428.197	84.454	0.000	0.000	0.000	84.454	(343.743)	(1,677.697)
2019	0.000	215.430	0.000	251.503	0.000	466.933	100.788	0.000	0.000	0.000	100.788	(366.146)	(1,860.861)
NOMINAL	0.000	1,932.594	0.000	1,226.413	0.000	***************************************	461.268	0.000	0.000	0.000	461,268	(2,697.739)	Periodicina (April 1995) - San American
NPV	0.000	1.378.876	0.000	768.093	0.000	4########	286.108	0.000	0.000	0.000	286,108	(1.860.861)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]: 0.13

Residential Home Energy Surveys – Single Family Video & DVD

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PROGRAM: Residential Single Family Survey Video & DVDs

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV AVOIDED GENERATOR, TRANS AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.00 KW CUST	(I) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	. 2018
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3 KWH/CUST-YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 S/KW
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	. 0 \$/KW
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	0 \$ KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8)* CUSTOMER KWH REDUCTION AT METER	131.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	. 10.74022 \$/KW/YR
		(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
		(10) TRANSMISSION FIXED O & M COST	. 0 \$'KW/YR
		(11) DISTRIBUTION FIXED O & M COST	. 0 \$/KW/YR
II. ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	. 0 %
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	. 0 CENTS/KWH
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	. 3.363149 CENTS/KWH
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	. 2.5 %
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF(1)	1	(19)* CAPACITY COST ESCALATION RATE	2.5 %
III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST	43.12 \$/CUST 6.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW	. 2.0 % . 0.00 \$'KW/MO
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION			
(a) COSTOMER TAX CREDIT FER INSTALLATION	0.00 \$·CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	. 1.0
(9)* CUSTOMER TAX CREDIT ESCALATION RATE(10)* INCREASED SUPPLY COSTS	2.5 % 0.00 \$/CUST/YR		1.0
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 % 0.00 \$/CUST/YR 2.5 %		. 1.0
(9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE	2.5 % 0.00 \$/CUST-YR 2.5 % 8.00 %		. 1.0
(9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	2.5 % 0.00 \$CUST YR 2.5 % 8.00 % 0.00 %		1.0
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 % 0.00 \$/CUST-YR 2.5 % 8.00 % 0.00 % 0.00 \$/CUST		1.0
(9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	2.5 % 0.00 \$CUST YR 2.5 % 8.00 % 0.00 %		. 1.0

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM: Residential Single Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

	(1)	(2)	(3)	(4) UTILITY	(5)	(6)	(7)	(8)	(9)
				AVERAGE					
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
, Y	EAR	CUSTOMERS	CUSTOMERS	(C'KWH)	(C/KWH)	(C/KWH)	(C'KWH)	FACTOR	FACTOR
3	2010	1816	1816	3.36	3.73	3.87	3.36	1	ŧ
	2011	3632	3632	3,65	3.92	3.99	3.65	i i	1
- 1	2012	5448	5448	3.93	4.21	4.24	3.93	1	1
1	2013	7264	7264	4.05	4.40	4.47	4.05	ŧ	1
	2014	9080	9080	4.14	4.59	4.65	4.14	1	1
	2015	10896	10896	4.34	4.83	4.96	4.34	i	l
	2016	12712	12712	4.48	5.04	5.20	4.48	1	1
	2017	14528	14528	4.67	5.34	5.60	4.67	1	1
2	2018	16344	16344	4.86	5.53	5.91	4.85	i	1
	2019	18160	18160	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM 2.3>		< FOR	M 2.4>	<> FORM 2.5>		
	Total Resor	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
				-			
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	2000 AT 01	****	managen, ap	S.Amb		Partes			-	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
					****			-		
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR =

2018

PLANT COSTS (2010 \$)
AFUDC RATE:

\$120.06 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Single Family Survey Video & DVDs

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NONEDIAL		A A000	0.0000						· · · · · · · · · · · · · · · · · · ·
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Single Family Survey Video & DVDs

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.614341
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.567107
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	26.067064
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	38.114108
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	51.075850
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	65.734551
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	81,113624
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	99.162529
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	116.403181
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	138.916659
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	635.769015
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	394.344680

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	123.7752	4.6143	0.0000	0.0000	4.6143	4.6143
2011	371.3257	14.5671	0.0000	0.0000	14.5671	14.5671
2012	618.8762	26.0671	0.0000	0.0000	26.0671	26.0671
2013	866.4266	38.1141	0.0000	0.0000	38.1141	38.1141
2014	1,113.9771	51.0759	0.0000	0.0000	51.0759	51.0759
2015	1,361.5276	65.7346	0.0000	0.0000	65.7346	65.7346
2016	1,609.0780	81.1136	0.0000	0.0000	81.1136	81.1136
2017	1,856,6285	99.1625	0.0000	0.0000	99.1625	99.1625
2018	2,104.1790	116.4032	0.0000	0.0000	116.4032	116.4032
2019	2,351.7294	138.9167	0.0000	0.0000	138.9167	138.9167
NOMINAL	12,377,5234	635.7690	0.0000	0.0000	635.7690	635.7690
NPV		394.3447	0.0000	0.0000	394.3447	394.3447

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
	CIIL	iii akodi	KAM COST	3 & KLDAT	L()		~	FAKI	ich Aline	COSTONIEN	COSISA	DENEITI 3			************************			
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.	
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE	
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	O & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.	
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL	
YEAR	\$(000)	<u>\$(</u> 000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)	
2010	78. 309 1	0.0000	78.3091	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	118.9480	4.0004	10.1534	14.1538	0.0000	0.0000	0.0000	0.0000	
2011	80.2668	0.0000	80.2668	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	356.8440	13.0152	31.0694	44.0846	0.0000	0.0000	0.0000	0.0000	
2012	82.2735	0.0000	82,2735	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	594.7400	23.3850	52.8180	76.2030	0.0000	0.0000	0.0000	0.0000	
2013	84.3303	0.0000	84,3303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	832.6360	33.7581	75.4241	109.1822	0.0000	0.0000	0.0000	0.0000	
2014	86.4386	0.0000	86,4386	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,070,5320	44.3712	98.9133	143.2845	0.0000	0.0000	0.0000	0.0000	
2015	88.5996	0.0000	88,5 9 96	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,308.4280	56.7511	123.3119	180.0630	0.0000	0.0000	0.0000	0.0000	
2016	90.8145	0.0000	90,8145	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,546.3240	69.3024	148.6469	217.9493	0.0000	0.0000	0.0000	0.0000	
2017	93.0849	0.0000	93,0849	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,784.2200	83,3592	174.9460	258.3052	0.0000	0.0000	0.0000	0.0000	
2018	95.4120	0.0000	95.4120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,022,1160	98.2624	202,2376	300,5000	0.0000	0.0000	0.0000	0.0000	
2019	97.7973	0.0000	97.7973	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,260.0120	116.0982	230.5508	346.6491	0.0000	0.0000	0.0000	0.0000	
					-1													
NOMINAL	877.3267	0.0000	877.3267	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	11,894.8000	542.3033	1,148.0715	1,690.3748	0.0000	0.0000	0.0000	0.0000	
NPV	625.9588	0.0000	625,9588	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		337.6144	721.0542	1,058.6686		0.0000	0.0000	0.0000	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)_	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	000,0	78.309	0.000	0.000	78.309	0.000	0.000	4.614	0.000	4.614	(73.695)	(73.695)
2011	0.000	80,267	0.000	0.000	80.267	0.000	0.000	14.567	0.000	14.567	(65.700)	(134.528)
2012	0.000	82.273	0.000	0.000	82.273	0.000	0.000	26.067	0.000	26.067	(56.206)	(182.716)
2013	0.000	84.330	0.000	0.000	84.330	0.000	0.000	38.114	0.000	38.114	(46.216)	(219.404)
2014	0.000	86.439	0.000	0.000	86.439	0.000	0.000	51.076	0.000	51.076	(35.363)	(245.396)
2015	0.000	88.600	0.000	0.000	88.600	0.000	0.000	65.735	0.000	65.735	(22.865)	(260.958)
2016	0.000	90.815	0.000	0.000	90.815	0.000	0.000	81.114	0.000	81.114	(9.701)	(267.071)
2017	0.000	93.085	0.000	0.000	93.085	0.000	0.000	99.163	0.000	99.163	6.078	(263.525)
2018	0.000	95.412	0.000	0.000	95.412	0.000	0.000	116.403	0.000	116.403	20.991	(252.184)
2019	0.000	97.797	0.000	0.000	97.797	0.000	0.000	138.917	0.000	138.917	41.119	(231.614)
NOMBLAT	0.000	977 227	0.000	0.000	077.107	0.000	0.000	/25 7/0				* * * * * * * * * * * * * * * * * * * *
NOMINAL	0.000	877.327	0.000	0.000	877.327	0.000	0.000	635.769	0.000	635.769	(241.558)	
NPV	0.000	625.959	0.000	0.000	625.959	0.000	0.000	394.345	0.000	394.345	(231.614)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.63

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Single Family, Survey Video & DVDs

(t)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	14.154	0.000	0.000	0.000	14.154	0.000	0.000	0.000	0.000	14.154	14.154	14	0	1.00
2011	44.085	0.000	0.000	0.000	44,085	0.000	0.000	0.000	0.000	44.085	54.973	55	0	1.00
2012	76,203	0.000	0.000	0.000	76.203	0.000	0.000	0.000	0.000	76.203	120.305	120	0	1.00
2013	109.182	0.000	0.000	0.000	109.182	0.000	0.000	0.000	0.000	109.182	206.977	207	0	1.00
2014	143.285	0.000	0.000	0.000	143.285	0.000	0.000	0.000	0.000	143.285	312.295	312	0	1.00
2015	180.063	0.000	0.000	0.000	180.063	0.000	0.000	0.000	0.000	180.063	434.843	435	0	1.00
2016	217.949	0.000	0.000	0.000	217.949	000.0	0.000	0.000	0.000	217.949	572.188	572	0	1.00
2017	258.305	0.000	0.000	0.000	258.305	0.000	0.000	0.000	0.000	258.305	722. 9 07	723	0	1.00
2018	300.500	0.000	0.000	0.000	300,500	0.000	0.000	0.000	0.000	300.500	885.258	885	0	1.00
2019	346.649	0.000	0.000	0.000	346.649	0.000	0.000	0.000	0.000	346.649	1,058.669	1,059	0	1.00
5.4.54														
NOMINAL	1,690.375	0.000	0.000	0.000	1,690.375	0.000	0.000	0.000	0.000	1,690.375				
NPV	1,058.669	0.000	0.000	0.000	1,058.669	0.000	0.000	0.000	0.000	1,058.669				

In-service year of generation unit: 2018
Discount rate: 8.00%

Benefit/Cost Ratio: 1.00

RATE IMPACT TEST PROGRAM; Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET ((14) UMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)
2010	0.000	78.309	0.000	14.154	0.000	92.463	4.614	0.000	0.000	0.000	4.614	(87.849)	(87.849)
2011	0.000	80.267	0.000	44.085	0.000	124.351	14.567	0.000	0.000	0.000	14.567	(109.784)	(189.501)
2012	0.000	82.273	0.000	76.203	0.000	158.477	26.067	0.000	0.000	0.000	26.067	(132.409)	(303.020)
2013	0.000	84,330	0.000	109.182	0.000	193.513	38.114	0.000	0.000	0.000	38.114	(155.398)	(426.381)
2014	0.000	86.439	0.000	143.285	0.000	229.723	51.076	0.000	0.000	0.000	51.076	(178.647)	(557.692)
2015	0.000	88.600	0.000	180.063	0.000	268.663	65.735	0.000	0.000	0.000	65,735	(202.928)	(695.801)
2016	0.000	90.815	0.000	217.949	0.000	308.764	81.114	0.000	0.000	0.000	81.114	(227.650)	(839.259)
2017	0.000	93.085	0.000	258.305	0.000	351,390	99.163	0.000	0.000	0.000	99.163	(252.228)	(986.432)
2018	0.000	95.412	0.000	300.500	0.000	395.912	116.403	0.000	0.000	0.000	116.403	(279.509)	(1.137.442)
2019	0.000	97.797	0.000	346.649	0.000	444.446	138.917	0.000	0.000	0.000	138.917	(305.530)	(1,290.283)
NOMINAL	0.000	877.327	0.000	1,690.375	0.000	######################################	635.769	0.000	0.000	0.000	635.769	(1,931.932)	2 (0.) 2000
NPV	0.000	625.959	0.000	1,058.669	0.000	########	394.345	0.000	0.000	0.000	394.345	(1,290.283)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.23

Residential Home Energy Surveys – Multi Family Video & DVD

INPUT DATA -- PART I

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:02 AM

PROGRAM: Residential Multi Family Survey Video & DVDs

(t) Diervein	
(5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O&M ESCALATION RATE (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	2.5 % 0 \$/KW/YR 0 \$/KW/YR
(12) 1AO FIRED GAM ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 % 0 CENTS.KWH 2.5 % 15 % 3.363149 CENTS.KWH 2.5 % 0 \$.KW/YR 2.5 %
V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH 2.0 % 0.00 \$/KW/MO 2.5 %
	(3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR AVOIDED TRANSMISSION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS (IL(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 9:02 AM

PROGRAM: Residential Multi Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED	DEDI ACCEACIO	PROGRAM	PROGRAM
	TOTAL PARTICIPATING	CUMULATIVE PARTICIPATING	FUEL	MARGINAL FUEL COST	MARGINAL FUEL COST	REPLACEMENT FUEL COST	KW EFFECTIVENESS	KWH EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	778	778	3.36	3.73	3.87	3 36	1	1
2011	1556	1556	3.65	3.92	3.99	3.65	1	1
2012	2334	2334	3.93	4.21	4.24	3.93	1	1
2013	3112	3112	4.05	4.40	4.47	4.05	1	1
2014	3890	3890	4.14	4.59	4.65	4,14	Į	I
2015	4668	4668	4.34	4.83	4.96	4.34	1	1
2016	5446	5446	4.48	5.04	5.20	4,48	1	1
2017	6224	6224	4.67	5.34	5.60	4.67	1	1
2018	7002	7002	4.86	5.53	5.91	4.85	1	I
2019	7780	7780	5.14	5.91	5.58	5.06	l	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Resor	urce Test	Participar	nts Test	Rate Impa	ict Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
		200 000	4.0000						****	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0	200.070	000,.000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
				****					and a systematic	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR =

2018

PLANT COSTS (2010 \$)

\$120.06

AFUDC RATE:

0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Multi Family Survey Video & DVDs

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
•		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMBLAI		0.0000	0.0000	0.0000	0.0000	0.0000	0,000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0,0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Multi Family Survey Video & DVDs

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

(1)	(2) AVOIDED	(3) AVOIDED	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.509045
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.763934
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.524807
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.464596
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.703522
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21,497411
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	26.526886
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	32.429485
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	38.067759
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	45.430424
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	207.917869
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	128.963985

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Multi Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
				······································		
2010	40.4787	1.5090	0.0000	0.0000	1.5090	1.5090
2011	121.4360	4.7639	0.0000	0.0000	4.7639	4.7639
2012	202.3933	8.5248	0.0000	0.0000	8.5248	8.5248
2013	283.3507	12.4646	0.0000	0.0000	12.4646	12.4646
2014	364.3080	16.7035	0.0000	0.0000	16.7035	16.7035
2015	445.2653	21.4974	0.0000	0.0000	21.4974	21,4974
2016	526.2227	26.5269	0.0000	0.0000	26.5269	26.5269
2017	607.1800	32.4295	0.0000	0.0000	32,4295	32.4295
2018	688.1374	38.0678	0.0000	0.0000	38,0678	38.0678
2019	769.0947	45.4304	0.0000	0.0000	45.4304	45.4304
NOMINAL	4,047.8668	207.9179	0.0000	0.0000	207.9179	207.9179
NPV		128.9640	0.0000	0.0000	128.9640	128.9640

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Multi Family Survey, Video & DVDs

COSIS COSTS COSTS REBATES PARTIC PARTIC CUSTOMER COSTS & BENEFITS PARTIC. FUEL NONFUEL COSTS & BENEFITS PARTIC. FOR RED. FEECT. INC. INC. INC. INC. INC. INC. INC. INC	FFECT. /ENUE INC. N BILL
UTIL UTIL UTIL UTIL REBATE/ CUST CUST PARTIC. IN REV. REV. REV. IN REV. REV. REV. REV. REV. REV. REV. REV.	/ENUE INC. N BILL
NONREC. RECUR PGM NONREC. RECUR. INCENT. EQUIP O&M CUST CUSTFUEL NONFUEL REDUCT. CUSTFUELNONFUEL	INC. N BILL
	NBILL
COSTS COSTS COSTS REBATES REBATES COSTS COSTS COSTS COSTS KWH PORTION PORTION INBILL KWH PORTION PORTION	
	ernos.
YEAR \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000) \$(000)	S(000)
2010 25.9969 0.0000 25.9969 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 38.9000 1.3083 3.3205 4.6288 0.0000 0.0000 0.0000	0.0000
2011 26.6468 0.0000 26.6468 0.0000 0.0000 0.0000 0.0000 0.0000 116.7000 4.2564 10.1607 14.4172 0.0000 0.0000 0.0000	0000.0
2012 27.3130 0.0000 27.3130 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000 194.5000 7.6477 17.2733 24.9210 0.0000 0.0000 0.0000	0.0000
2013 27,9958 0.0000 27,9958 0.0000 0.0000 0.0000 0.0000 0.0000 272,3000 11,0400 24,6662 35,7063 0.0000 0.0000 0.0000	0.0000
2014 28.6957 0.0000 28.6957 0.0000 0.0000 0.0000 0.0000 0.0000 350.1000 14.5109 32.3480 46.8589 0.0000 0.0000 0.0000	0.0000
2015 29.4131 0.0000 29.4131 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 427.9000 18.5595 40.3272 58.8867 0.0000 0.0000 0.0000	0.0000
2016 30.1484 0.0000 30.1484 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 505.7000 22.6642 48.6125 71.2768 0.0000 0.0000 0.0000	0.0000
2017 30 9021 0.0000 30.9021 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 583.5000 27.2613 57.2132 84.4745 0.0000 0.0000 0.0000	0.0000
2018 31.6747 0.0000 31.6747 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 661.3000 32.1351 66.1385 98.2736 0.0000 0.0000 0.0000	0.000.0
2019 32.4665 0.0000 32.4665 0.0000 0.0000 0.0000 0.0000 0.0000 739.1000 37.9680 75.3979 113.3659 0.0000 0.0000 0.0000	0.0000
NOMINAL 291 2529 0.0000 291 2529 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 177 3514 375 4580 552 8094 0.0000 0.0000 0.0000	0.0000
NPV 207.8043 0.0000 207.8043 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 110.4113 235.8090 346.2203 0.0000 0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Multi Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	25.997	0.000	0.000	25.997	0.000	0.000	1.509	0.000	1.509	(24.488)	(24.488)
2011	0.000	26.647	0.000	0.000	26.647	0.000	0.000	4.764	0.000	4.764	(21.883)	(44.750)
2012	0.000	27.313	0.000	0.000	27.313	0.000	0.000	8.525	0.000	8.525	(18.788)	(60.858)
2013	0.000	27.996	0.000	0.000	27.996	0.000	0.000	12.465	0.000	12.465	(15.531)	(73.187)
2014	0.000	28.696	0.000	0.000	28.696	0.000	0.000	16.704	0.000	16.704	(11.992)	(82.001)
2015	0.000	29.413	0.000	0.000	29.413	0.000	0.000	21.497	0.000	21.497	(7.916)	(87.389)
2016	0.000	30.148	0.000	0.000	30.148	0.000	0.000	26.527	0.000	26.527	(3.622)	(89.671)
2017	0.000	30.902	0.000	0.000	30.902	0.000	0.000	32.429	0.000	32.429	1.527	(88.780)
2018	0.000	31.675	0.000	0.000	31.675	0.000	0.000	38.068	0.000	38.068	6.393	(85.326)
2019	0.000	32,467	0.000	0.000	32.467	0.000	0.000	45.430	0.000	45.430	12.964	(78.840)
		-	more or approximately									700 NW NW N N N N N N N N N N N N N N N N
NOMINAL	000,0	291.253	0.000	0.000	291.253	0.000	0.000	207.918	0.000	207.918	(83.335)	
NPV	0.000	207.804	0.000	0.000	207.804	0.000	0.000	128.964	0.000	128.964	/70 040	
NEV	0.000	207.004	0.000	0.000	407.004	0.000	0.000	120,904	0.000	120.904	(78.840)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.62

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Multi Family Survey Video & DVDs

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	COSTS		(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2010	4.629	0.000	0.000	0.000	4.629	0.000	0.000	0.000	0.000	4.629	4.630	,	0	1.00
											4.629	3	0	1.00
2011	14.417	0.000	0.000	0.000	14.417	0.000	0.000	0.000	0.000	14.417	17.978	18	0	1.00
2012	24.921	0.000	0.000	0.000	24.921	0.000	0.000	0,000	0.000	24.921	39.344	39	0	1.00
2013	35.706	0.000	0.000	0.000	35.706	0.000	0.000	0.000	0.000	35.706	67.688	68	0	1.00
2014	46.859	0.000	0.000	0.000	46.859	0.000	0.000	0.000	0.000	46.859	102.131	102	0	1.00
2015	58.887	0.000	0.000	0.000	58,887	0.000	0.000	0,000	0.000	58.887	142.208	142	0	1.00
2016	71.277	0.000	0.000	0.000	71,277	0.000	0.000	0.000	0.000	71.277	187.125	187	0	1.00
2017	84.475	0.000	0.000	0.000	84.475	0.000	0.000	0.000	0.000	84,475	236.415	236	0	1.00
2018	98.274	0.000	0.000	0.000	98,274	0.000	0.000	0.000	0.000	98.274	289,509	290	0	1.00
2019	113.366	0.000	0.000	0.000	113.366	0.000	0.000	0.000	0.000	113.366	346.220	346	0	1.00
NOMINAL	552.809	0.000	0.000	0.000	552.809	0.000	0.000	0.000	0.000	552.809				
NPV	346.220	0.000	0.000	0.000	346 220	0.000	0.000	0.000	0.000	346 220				

In-service year of generation unit:

Discount rate: Benefit/Cost Ratio:

2018 8.00% 1.00

RATE IMPACT TEST PROGRAM: Residential Multi Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
							AVOIDED					NET	CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	25.997	0.000	4.629	0.000	30.626	1,509	0.000	0.000	0.000	1.509	(29.117)	(29.117)
2011	0.000	26.647	0.000	14.417	0.000	41.064	4.764	0.000	0.000	0.000	4.764	(36.300)	(62.728)
2012	0.000	27.313	0.000	24.921	0.000	52.234	8.525	0.000	0.000	0.000	8.525	(43.709)	(100.201)
2013	0.000	27.996	0.000	35.706	0.000	63.702	12.465	0.000	0.000	0.000	12.465	(51.237)	(140.875)
2014	0.000	28.696	0.000	46.859	0.000	75.555	16.704	0.000	0.000	0.000	16.704	(58.851)	(184.132)
2015	0.000	29.413	0.000	58.887	0.000	88.300	21.497	0.000	0.000	0.000	21.497	(66.802)	(229.597)
2016	0.000	30.148	0.000	71.277	0.000	101.425	26.527	0.000	0.000	0.000	26.527	(74.898)	(276.796)
2017	0.000	30.902	0.000	84.475	0.000	115,377	32.429	0.000	0.000	0.000	32.429	(82.947)	(325.194)
2018	0.000	31.675	0.000	98,274	0.000	129.948	38.068	0.000	0.000	0.000	38.068	(91.881)	(374.835)
2019	0.000	32.467	0.000	113.366	0.000	145.832	45.430	0.000	0.000	0.000	45,430	(100.402)	(425.061)
NOMINAL	0.000	291.253	0.000	552.809	0.000	844.062	207.918	0.000	0.000	0.000	207.918	(636,144)	
NPV	0.000	207.804	0.000	346.220	0.000	554.025	128,964	0.000	0.000	0.000	128.964	(425.061)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.23

Residential Home Energy Surveys – Single Family On-Line

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 8:27 AM

PROGRAM: Residential Single Family Survey On Line

1, PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV AVOIDED GENERATOR, TRANS, AND DIST, COSTS	h
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.00 KW/CUST 0.00 KW GEN/CUST 3.9 % 136.3 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 131.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	2018 2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00 1	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 S/KW'YR
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY DISCOUNT RATE (14)* UTILITY NON RECURRING REBATE INCENTIVE (15)* UTILITY RECURRING REBATE INCENTIVE (16)* UTILITY REBATE INCENTIVE ESCAL RATE	57.34 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 \$/CUST/YR 0.00 \$/CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL * FIRE Program Version Number: 1.03	2.0 % 0.00 \$:KW/MO 2.5 %

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010

8:27 AM

PROGRAM: Residential Single Family Survey On Line

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	1320	1320	3.36	3.73	3.87	3.36	1	1
2011	2640	2640	3.65	3.92	3.99	3.65	i	1
2012	3960	. 3960	3.93	4.21	4.24	3,93	i	1
2013	5280	5280	4.05	4.40	4.47	4.05	Ī	ı
2014	6600	6600	4.14	4.59	4.65	4.14	1	1
2015	7920	7920	4.34	4.83	4,96	4.34	1	1
2016	9240	9240	4.48	5.04	5.20	4.48	1	1
2017	10560	10560	4.67	5.34	5.60	4.67	1	1
2018	11880	11880	4.86	5.53	5.91	4.85	1	1
2019	13200	13200	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
	,			,	·	
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
			#++···		10.000000000	***		*****	*****	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Single Family Survey On Line

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
(1)	(.,,)	AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED	(0)	AVOIDED	(1)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Single Family Survey On Line

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.354036
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.588426
2012	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	18.947426
2013	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	27.704087
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	37.125618
2015	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	47.780621
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	58.959242
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	72.078490
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	84.610242
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.974664
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	462.122852
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	286.638203

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
						· · · · · ·
2010	89.9688	3.3540	0.0000	0.0000	3.3540	3.3540
2011	269.9063	10.5884	0.0000	0.0000	10.5884	10.5884
2012	449.8439	18.9474	0.0000	0.0000	18.9474	18.9474
2013	629.7815	27.7041	0.0000	0.0000	27.7041	27.7041
2014	809.7190	37.1256	0.0000	0.0000	37.1256	37.1256
2015	989.6566	47.7806	0.0000	0.0000	47.7806	47.7806
2016	1,169.5942	58.9592	0.0000	0.0000	58.9592	58.9592
2017	1,349.5317	72.0785	0.0000	0.0000	72.0785	72.0785
2018	1,529,4693	84.6102	0.0000	0.0000	84.6102	84.6102
2019	1,709.4069	100.9747	0.0000	0.0000	100.9747	100.9747
NOMINAL	8,996.8783	462.1229	0,0000	0.0000	462.1229	462.1229
NPV		286.6382	0.0000	0.0000	286.6382	286.6382

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM; Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		(15)	(16)	(17)	(18)
	< UTIL	JTY PROG	RAM COST	S & REBAT	ES	٠.٨	C	PART	ICIPATING	CUSTOMER	. COSTS &	BENEFITS	****		***********	B. B	
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV. I	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	O & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	75.6868	0.0000	75,6868	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	86.4600	2.9078	7.3802	10.2880	0.0000	0.0000	0.0000	0.0000
2011	77.5790	0.0000	77.5790	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	259.3800	9.4604	22.5835	32.0439	0.0000	0.0000	0.0000	0.0000
2012	79.5185	0.0000	79.5185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	432,3000	16.9979	38.3919	55.3899	0.0000	0.0000	0.0000	0.0000
2013	81.5064	0.0000	81.5064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	605.2200	24.5378	54.8237	79.3615	0.0000	0.0000	0.0000	0.0000
2014	83,5441	0.0000	83.5441	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	778.1400	32.2522	71.8973	104.1495	0.0000	0.0000	0.0000	0.0000
2015	85.6327	0.0000	85.6327	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	951.0600	41.2508	89.6320	130.8828	0.0000	0.0000	0.0000	0.0000
2016	87.7735	0.0000	87.7735	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,123.9800	50.3740	108.0473	158.4213	0.0000	0.0000	0.0000	0.0000
2017	89.9678	0.0000	89,9678	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,296,9000	60.5915	127.1634	187.7549	0.0000	0.0000	0.0000	0.0000
2018	92.2170	0.0000	92.2170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,469.8200	71.4242	147.0009	218,4251	0.0000	0.0000	0.0000	0.0000
2019	94.5225	0.0000	94.5225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,642.7400	84,3886	167.5810	251.9696	0.0000	0.0000	0.0000	0.0000
			A 40								A SHEET MALL Y					Arr a management	otherwise a promise and
NOMINAL	847.9483	0.0000	847,9483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8,646,0000	394.1852	834.5013	1,228.6865	0.0000	0.0000	0.0000	0.0000
NPV	604.9978	0.0000	604.9978	0.0000	0.0000	0.0000	0.000	0.0000	0.0000		245,4025	524.1143	769.5168		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	75.687	0.000	0.000	75.687	0.000	0.000	3.354	0.000	3.354	(72.333)	(72.333)
2011	0.000	77.579	0.000	0.000	77.579	0.000	0.000	10.588	0.000	10.588	(66.991)	(134,361)
2012	0.000	79.518	0.000	0.000	79.518	0.000	0.000	18.947	0.000	18.947	(60.571)	(186.291)
2013	0.000	81.506	0.000	0.000	81.506	0.000	0.000	27,704	0.000	27.704	(53.802)	(229.001)
2014	0.000	83.544	0.000	0.000	83.544	0.000	0.000	37.126	0.000	37.126	(46.418)	(263.120)
2015	000,0	85.633	0.000	0.000	85.633	0.000	0.000	47.781	0.000	47.781	(37.852)	(288.881)
2016	0.000	87,774	0.000	0.000	87.774	0.000	0.000	58.959	0.000	58,959	(28.814)	(307.039)
2017	0.000	89.968	0.000	0.000	89.968	0.000	0.000	72.078	0.000	72.078	(17.889)	(317.478)
2018	0.000	92.217	0.000	0.000	92.217	0.000	0.000	84.610	0.000	84.610	(7.607)	(321.587)
2019	0.000	94.522	0.000	0.000	94.522	0.000	0.000	100.975	0.000	100.975	6.452	(318.360)
NOMINAL	0.000	847.948	0.000	0,000	847.948	0.000	0.000	462.123	0.000	462.123	(385.825)	
NPV	0.000	604.998	0.000	0.000	604.998	0.000	0.000	286.638	0.000	286.638	(318.360)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.47

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Single Family Survey On Line

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	10.288	0.000	0.000	0.000	10.288	0.000	0.000	0.000	0.000	10.288	10.288	10	0	1.00
2011	32.044	0.000	0.000	0.000	32.044	0.000	0.000	0.000	0.000	32.044	39,958	40	0	1.00
2012	55.390	0.000	0.000	0.000	55,390	0.000	0.000	0.000	0.000	55.390	87.446	87	0	1.00
2013	79,362	0.000	0.000	0.000	79.362	0.000	0.000	0.000	0.000	79.362	150,446	150	0	1.00
2014	104.150	0.000	0.000	0.000	104.150	0.000	0.000	0.000	0.000	104.150	226.999	227	0	1.00
2015	130.883	0.000	0.000	0.000	130.883	0.000	0.000	0.000	0.000	130.883	316.076	316	0	1.00
2016	158.421	0.000	0.000	0.000	158.421	0.000	0.000	0.000	0.000	158.421	415.908	416	0	1.00
2017	187.755	0.000	0.000	0.000	187.755	0.000	0.000	0.000	0.000	187.755	525.461	525	0	1.00
2018	218,425	0.000	0.000	0.000	218.425	0.000	0.900	0.000	0.000	218.425	643.469	643	0	1.00
2019	251.970	0.000	0.000	0.000	251.970	0,000	0.000	0.000	0.000	251.970	769.517	770	0	1.00
		V 44	s arms armen a			MORE SOME SAME AND AND AND AND				commence of the commence of				
NOMINAL	1,228.687	0.000	0.000	0.000	1,228.687	0.000	0.000	0.000	0.000	1,228.687				
NPV	769,517	0.000	0.000	0.000	769.517	0,000	0.000	0.000	0.000	769.517				

In-service year of generation unit: Discount rate: 2018 8.00%

Benefit/Cost Ratio:

1.00

RATE IMPACT TEST PROGRAM; Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET C	(14) UMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	75.687	0.000	10.288	0.000	85.975	3.354	0.000	0.000	0.000	3.354	(82.621)	(82.621)
2011	0.000	77.579	0.000	32.044	0.000	109.623	10.588	0.000	0.000	0.000	10.588	(99.034)	(174,319)
2012	0.000	79.518	0.000	55.390	0.000	134.908	18.947	0.000	0.000	0.000	18.947	(115.961)	(273.737)
2013	0.000	81.506	0.000	79.362	0.000	160.868	27.704	0.000	0.000	0.000	27.704	(133.164)	(379.447)
2014	0.000	83.544	0.000	104.150	0.000	187.694	37.126	0.000	0.000	0.000	37.126	(150.568)	(490.119)
2015	0.000	85.633	0.000	130.883	0.000	216.516	47.781	0.000	0.000	0.000	47.781	(168.735)	(604.957)
2016	0.000	87.774	0.000	158.421	0.000	246.195	58.959	0.000	0.000	0.000	58.95 9	(187.236)	(722.947)
2017	0.000	89.968	0.000	187.755	0.000	277.723	72.078	0.000	0.000	0.000	72.078	(205,644)	(842.939)
2018	0.000	92.217	0.000	218.425	0.000	310.642	84.610	0.000	0.000	0.000	84.610	(226.032)	(965.057)
2019	0.000	94.522	0.000	251.970	0.000	346.492	100.975	0.000	0.000	0.000	100.975	(245.517)	(1,087.876)
NOMINAL	0.000	847.948	0.000	1,228.687	0.000	######################################	462.123	0.000	0.000	0.000	462.123	(1,614.512)	. м. •
NPV	0.000	604.998	0.000	769.517	0.000	########	286.638	0.000	0.000	0.000	286.638	(1,087.876)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]: 0.21

Residential Home Energy Surveys – Multi Family On-Line

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PROGRAM: Residential Multi Family Survey On Line

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES	·····	IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.00 KW/CUST	(1) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8)* CUSTOMER KWH REDUCTION AT METER	100.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	10.74022 S/KW/YR
		(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
		(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
		(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
II. ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	0 %
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	15 %
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 S/KW/YR
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(19)* CAPACITY COST ESCALATION RATE	2.5 %
III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER	47.63 \$/CUST 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE	2.5 %		
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %	(2) NON-FUEL ESCALATION RATE	2.0 %
(6) CUSTOMER O & M COST	0.00 S/CUST/YR	(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %	FACTOR FOR CUSTOMER BILL	1.0
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR		
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %		
(12)* UTILITY DISCOUNT RATE	8.00 %		
(13)* UTILITY AFUDC RATE	0.00 %		
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 S/CUST		
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR		
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM: Residential Multi Family Survey On Line

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(9)	(8)	(7)	(6)	(5)	(4)	(3)	(2)	(1)
					YTLIITU			
					AVERAGE			
PROGRAM	PROGRAM		INCREASED	AVOIDED	SYSTEM	ADJUSTED	CUMULATIVE	
KWH	KW	REPLACEMENT	MARGINAL	MARGINAL	FUEL	CUMULATIVE	TOTAL	
EFFECTIVENESS	EFFECTIVENESS	FUEL COST	FUEL COST	FUEL COST	COSTS	PARTICIPATING	PARTICIPATING	
FACTOR	FACTOR	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	CUSTOMERS	CUSTOMERS	YEAR
1	J	3.36	3.87	3.73	3.36	566	566	2010
1	1	3.65	3.99	3.92	3.65	1132	1132	2011
1	1	3.93	4.24	4.21	3.93	1698	1698	2012
l	I	4.05	4.47	4.40	4.05	2264	2264	2013
1	1	4.14	4.65	4.59	4.14	2830	2830	2014
1	i	4.34	4.96	4.83	4.34	3396	3396	2015
1	1	4.48	5.20	5.04	4.48	3962	3962	2016
1	1	4.67	5.60	5.34	4,67	4528	4528	2017
1	1	4.85	5.91	5.53	4.86	5094	5094	2018
1	1	5.06	5.58	5.91	5.14	5660	5660	2019

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(1) (2)		(4)	(5)	(6)	
	< FORM	[2.3>	< FOR	M 2.4>	<> FORM 2.5>		
	Total Reso	urce Test	Participar	its Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	Acceptage	Name of Street						44	No. of the last of	****
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				*******	-			~	ari dili se remini	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Multi Family Survey On Line

* UNIT SIZE OF AVOIDED GENERATION UNIT = 0 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
. ,	` '	AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDÈÓ	` '	AVOIDED	• •
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMBIAT	volument (matches man,)	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Multi Family Survey On Line

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0 \$0 * INSERVICE COSTS OF AVOIDED DIST. (000) = **(7)** (8) (1) (2) (3) (4) (5) (6)**AVOIDED AVOIDED AVOIDED AVOIDED** TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION DISTRIBUTION TOTAL AVOIDED **PROGRAM FUEL** CAPACITY **CAPACITY** O&M DISTRIBUTION O&M TRANSMISSION COST COST **COST SAVINGS** COST COST COST \$(000) \$(000) \$(000) Year \$(000) (000)\$(000) \$(000) 2010 0.000000 0.000000 0.000000 0.000000 1.097840 0.000000 0.000000 2011 0.000000 0.000000 3.465793 0.000000 0.000000 0.000000 0.000000 2012 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 6.201852 2013 0.000000 0.000000 0.0000000.000000 0.000000 0.000000 9.068074 0.000000 12.151920 2014 0.000000 0.000000 0.000000 0.000000 0.000000 2015 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 15.639505 2016 19.298480 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 23.592659 2017 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 2018 0.000000 0.000000 0.000000 0.000000 27.694539 0.000000 0.000000 0.000000 33.050925 2019 0.000000 0.000000 0.000000 0.000000 0.000000 NOMINAL 151.261586 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 **NPV** 0.000000 0.000000 0.000000 0.000000 93.822128 0.000000 0.000000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Multi Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	29.4485	1.0978	0.0000	0.0000	1.0978	1.0978
2011	88.3455	3.4658	0.0000	0.0000	3.4658	3.4658
2012	147.2425	6.2019	0.0000	0.0000	6.2019	6.2019
2013	206.1394	9.0681	0.0000	0.0000	9.0681	9.0681
2014	265.0364	12.1519	0.0000	0.0000	12.1519	12.1519
2015	323.9334	15.6395	0.0000	0.0000	15.6395	15.6395
2016	382.8304	19.2985	0.0000	0.0000	19.2985	19.2985
2017	441.7274	23,5927	0.0000	0.0000	23.5927	23.5927
2018	500.6243	27.6945	0.0000	0.0000	27.6945	27.6945
2019	559.5213	33.0509	0.0000	0.0000	33.0509	33.0509
NOMINAL	2,944.8491	151.2616	0.0000	0.0000	151.2616	151.2616
NPV		93.8221	0.0000	0.0000	93.8221	93.8221

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Multi Family Survey On Line

(1)		(3)	(4) RAM COST	(5) S&RFRAT	(6)	(7)	(8)	(9)	(10)	(11) CUSTOMER	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
	0		id the COB1	JUNE	2.5			IAKI	CHAING	COSTOMER		JUNEI 113		.,				
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.	
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE	
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.	
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL	
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)	
2010		0.0000	26.9596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	28.3000	0.9518	2.4157	3.3675	0.0000	0.0000	0.0000	0.0000	
2011		0.0000	27.6336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	84.9000	3.0966	7.3920	10.4886	0.0000	0.0000	0.0000	0.0000	
2012		0.0000	28.3244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	141.5000	5.5637	12.5664	18.1302	0.0000	0.0000	0.0000	0.0000	
2013	29.0325	0.0000	29.0325	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	198.1000	8.0317	17. 944 8	25.9765	0.0000	0.0000	0.0000	0.0000	
2014	29.7583	0.0000	29.7583	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	254.7000	10.5568	23.5334	34.0901	0.0000	0.0000	0.0000	0.0000	
2015	30.5023	0.0000	30.5023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	311.3000	13.5022	29.3383	42,8404	0.0000	0.0000	0.0000	0.0000	
2016	31.2648	0.0000	31.2648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	367.9000	16.4884	35.3659	51.8543	0.0000	0.0000	0.0000	0.0000	
2017	32.0465	0.0000	32.0465	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	424.5000	19.8328	41.6230	61.4557	0.0000	0.0000	0.0000	0.0000	
2018	32.8476	0.0000	32.8476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	481.1000	23.3785	48.1162	71.4947	0.0000	0.0000	0.0000	0.0000	
2019	33.6688	0.0000	33.6688	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	537.7000	27.6220	54.8524	82.4744	0.0000	0.0000	0.0000	0.0000	
	- 222 335.5						77 Tabanas											
NOMINAL	302.0384	0.0000	302.0384	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,830.0000	129.0243	273.1481	402.1724	0.0000	0.0000	0.0000	0.0000	
NPV	215.4996	0.0000	215.4996	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		80.3249	171.5526	251.8775		0.0000	0.0000	0.0000	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM; Residential Multi Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	26.960	0.000	0.000	26.960	0.000	0.000	1.098	0.000	1.098	(25.862)	(25.862)
2011	0.000	27.634	0.000	0.000	27.634	0.000	0.000	3,466	0.000	3.466	(24.168)	(48.239)
2012	0.000	28.324	0.000	0.000	28.324	0.000	0.000	6.202	0.000	6.202	(22.123)	(67.206)
2013	0.000	29.033	0.000	0.000	29.033	0.000	0.000	9.068	0.000	9.068	(19.964)	(83.054)
2014	0.000	29.758	0.000	0.000	29.758	0.000	0.000	12.152	0.000	12.152	(17.606)	(95.995)
2015	0.000	30.502	0.000	0.000	30.502	0.000	0.000	15.640	0.000	15.640	(14,863)	(106.111)
2016	0.000	31.265	0.000	0.000	31.265	0.000	0.000	19.298	0.000	19.298	(11.966)	(113.652)
2017	0.000	32.046	0.000	0.000	32.046	0.000	0.000	23.593	0.000	23,593	(8.454)	(118.584)
2018	0.000	32.848	0.000	0.000	32.848	0.000	0.000	27.695	0.000	27.695	(5.153)	(121.368)
2019	0.000	33.669	0.000	0.000	33.669	0.000	0.000	33.051	0.000	33.051	(0.618)	(121.677)
NOMINAL	0.000	302.038	0.000	0.000	302.038	0.000	0.000	151.262	0.000	151.262	(150.777)	P Absence Front
NPV	0.000	215.500	0.000	0.000	215.500	0.000	0.000	93.822	0.000	93.822	(121.677)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.44

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Multi Family Survey On Line

(1)	(2) SAVINGS IN PARTICIPANTS BILL	(3) TAX CREDITS	(4) UTILITY REBATES	(5) OTHER BENEFITS		(7) CUSTOMER EQUIPMENT COSTS	(8) CUSTOMER O & M COSTS	(9) OTHER COSTS	(10) TOTAL COSTS	(11) NET BENEFITS	(12) CUMULATIVE DISCOUNTED NET BENEFITS		CUMULATIVE DISCOUNTED COSTS	
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010 2011	3.367 10.489	0.000	0.000	0.000	3.367 10.489	0.000	0.000	0.000	0,000	3.367 10.489	3.367 13.079	3 13	0	1.00 1.00
2012	18.130	0.000	0.000	0.000	18.130	0.000	0.000	0.000	0.000	18.130	28.623	29	0	1.00
2013	25.977	0.000	0.000	0.000	25.977	0.000	0.000	0.000	0.000	25.977	49.244	49	0	1.00
2014	34.090	0.000	0.000	0.000	34.090	0.000	0.000	0.000	0.000	34.090	74.301	74	0	1.00
2015	42.840	0.000	0.000	0.000	42.840	0.000	0.000	0.000	0.000	42.840	103.458	103	0	1.00
2016	51.854	0.000	0.000	0.000	51.854	0.000	0.000	0.000	0.000	51.854	136.135	136	0	1.00
2017	61.456	0.000	0.000	0.000	61.456	0.000	0.000	0.000	0.000	61.456	171.993	172	0	1.00
2018	71.495	0.000	0.000	0.000	71.495	0.000	0.000	0.000	0.000	71.495	210.620	211	0	1.00
2019	82.474	0.000	0.000	0.000	82.474	0.000	0.000	0.000	0.000	82.474	251.877	252	0	1.00
NOMINAL	402.172	0.000	0.000	0.000	402.172	0.000	0.000	0.000	0.000	402.172				
NPV	251.877	0.000	0.000	0.000	251.877	0.000	0.000	0.000	0.000	251.877				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 1.00

RATE IMPACT TEST PROGRAM: Residential Multi Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)
2010	0.000	26.960	0.000	3.367	0.000	30.327	1.098	0.000	0.000	0.000	1.098	(29.229)	(29.229)
2011	0.000	27.634	0.000	10.489	0.000	38.122	3.466	0.000	0.000	0.000	3.466	(34.656)	(61.318)
2012	0.000	28.324	0.000	18.130	0.000	46,455	6.202	0.000	0.000	0.000	6.202	(40.253)	(95.829)
2013	0.000	29.033	0.000	25.977	0.000	55.009	9.068	0.000	0.000	0.000	9.068	(45.941)	(132.298)
2014	0.000	29.758	0.000	34.090	0.000	63.848	12.152	0.000	0.000	0.000	12.152	(51.697)	(170.297)
2015	0.000	30.502	0.000	42.840	0.000	73.343	15.640	0.000	0.000	0.000	15.640	(57.703)	(209.568)
2016	0.000	31.265	0.000	51.854	0.000	83.119	19.298	0.000	0.000	0.000	19.298	(63.821)	(249.786)
2017	0.000	32.046	0.000	61.456	0.000	93.502	23.593	0.000	0.000	0.000	23.593	(69.910)	(290.578)
2018	0.000	32.848	0.000	71.495	0.000	104.342	27.695	0.000	0.000	0.000	27.695	(76.648)	(331.988)
2019	0.000	33.669	0.000	82.474	0.000	116.143	33.051	0.000	0.000	0.000	33.051	(83.092)	(373.555)
NOMINAL	0.000	302.038	0.000	402.172	0.000	704.211	151.262	0.000	0.000	0.000	151.262	(552.949)	
NPV	0.000	215.500	0.000	251.877	0.000	467.377	93.822	0.000	0.000	0.000	93.822	(373.555)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.20

Residential Duct Repair Rebates

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 9:36 AM

PROGRAM: Residential Energy Efficiency Duct Repair

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES	IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS				
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8) CUSTOMER KWH REDUCTION AT METER (8) CUSTOMER KWH REDUCTION AT METER (8) CUSTOMER KWH REDUCTION AT METER (9) CUSTOMER KWH REDUCTION AT METER (1) CUSTOMER KWH CUSTOMER (1) CUSTOMER KWH REDUCTION AT METER (1) CUSTOMER KWH CUSTOMER (2) KW /CUSTOMER (3) KWH/CUST/YR (4) CUSTOMER KWH REDUCTION AT METER (5) CUSTOMER KWH CUSTOMER (6) CUSTOMER KWH REDUCTION AT METER (6) CUSTOMER KWH CUSTOMER (7) CUSTOMER KWH CUSTOMER (8) CUSTOMER KWH CUSTOMER (8) CUSTOMER ((I) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M ESCALATION RATE (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR			
II. ECONOMIC LIFE AND K FACTORS	(12) T&D FIXED O&M ESCALATION RATE(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 % 0 CENTS/KWH			
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6) SWITCH REV REQ(0) OR VAL-OF-DEF (1) (1) YEARS 20 YEARS 0.00	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) A VOIDED GENERATING UNIT FUEL COST (17) A VOIDED GEN UNIT FUEL ESCALATION RATE (18)* A VOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR 2.5 %			
III. UTILITY AND CUSTOMER COSTS	_				
(1)** UTILITY NONRECURRING COST PER CUSTOMER	V. NON-FUEL ENERGY AND DEMAND CHARGES	·			
(3) UTILITY COST ESCALATION RATE 2.5 % (4) CUSTOMER EQUIPMENT COST 459.00 \$/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 8.00 % (13)* UTILITY AFUDC RATE 0.00 % (14)* UTILITY AFUDC RATE 150.00 \$/CUST (15)* UTILITY RECURRING REBATE/INCENTIVE 150.00 \$/CUST/YR (16)* UTILITY REBATE/INCENTIVE 0.00 \$/CUST/YR	(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH 2.0 % 0.00 \$/KW/MO 2.5 %			

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010

9:36 AM

PROGRAM: Residential Energy Efficiency Duct Repair

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

	(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YE	AR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
20	010	135	135	3.36	3.73	3 87	3.36	i	1
20	110	270	270	3.65	3.92	3,99	3.65	i	1
20)12	405	405	3.93	4.21	4.24	3.93	1	1
20	113	540	540	4.05	4.40	4.47	4.05	1	1
20	114	675	675	4.14	4.59	4.65	4.14	1	1
20	115	810	810	4.34	4.83	4.96	4.34	1	1
20	116	945	945	4.48	5,04	5.20	4.48	1	1
20	17	1080	1080	4.67	5.34	5.60	4.67	1	1
20	18	1215	1215	4.86	5.53	5.91	4.85	1	ŧ
20	119	1350	1350	5,14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOF	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
_						
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
	-						******			
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				7000 045					***************************************	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Duct Repair

* UNIT SIZE OF AVOIDED GENERATION UNIT =

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) =

280 kW \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	33.6124	367.8854	0.0000	0.0000	20.9541	17.8395	0.0000	36.7271
2019	0.0212	33.6876	367.8854	0.0000	0.0000	22.7096	18.6042	0.0000	37.7930
NOMINAL	The same of the sa	67.3000	735.7708	0.0000	0.0000	43.6637	36.4437	0.0000	74.5201
NPV		35.0119		0.0000	0.0000	22.6813	18.9448	0.0000	38.7484

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency Duct Repair

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	AVOIDED	AVOIDED	(4)	AVOIDED	AVOIDED	(7)	(0)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.801268
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.529539
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.526476
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.618412
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.869184
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.414628
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.085162
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.219306
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	20.213099
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24.122504
310310111							:=:::::::::::::::::::::::::::::::::::
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	110.399578
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	68.476892

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	21.4932	0.8013	0.0000	0.0000	0.8013	0.8013
2011	64.4797	2.5295	0.0000	0.0000	2.5295	2.5295
2012	107.4662	4.5265	0.0000	0.0000	4.5265	4.5265
2013	150.4527	6.6184	0.0000	0.0000	6.6184	6.6184
2014	193.4391	8.8692	0.0000	0.0000	8.8692	8.8692
2015	236.4256	11.4146	0.0000	0.0000	11.4146	11.4146
2016	279.4121	14.0852	0.0000	0.0000	14.0852	14.0852
2017	322.3985	17.2193	0.0000	0.0000	17.2193	17.2193
2018	365.3850	20.2131	0.0000	0.0000	20.2131	20.2131
2019	408.3715	24.1225	0.0000	0.0000	24.1225	24.1225
NOMINAL	2,149.3236	110.3996	0.0000	0.0000	110.3996	110.3996
NPV		68.4769	0.0000	0.0000	68.4769	68.4769

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	JITY PROGE	RAM COSTS	& REBATE	S	>	<	PARTIC	CIPATING (CUSTOMER C	COSTS & BE	NEFITS					>
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	14.5128	0.0000	14.5128	20.2500	0.0000	20.2500	60.7500	0.0000	60,7500	20.6550	0.6947	1.7631	2.4578	0.0000	0.0000	0.0000	0.0000
2011	14.8756	0.0000	14.8756	20.2500	0.0000	20.2500	62.2688	0.0000	62.2688	61.9650	2.2601	5.3951	7.6552	0,0000	0.0000	0.0000	0,0000
2012	15.2475	0.0000	15.2475	20.2500	0.0000	20.2500	63.8255	0.0000	63,8255	103,2750	4.0607	9.1717	13.2324	0.0000	0.0000	0.0000	0.0000
2013	15.6287	0.0000	15.6287	20.2500	0.0000	20.2500	65.4211	0.0000	65.4211	144.5850	5.8620	13.0972	18,9592	0.0000	0.0000	0.0000	0.0000
2014	16.0194	0.0000	16.0194	20,2500	0.0000	20,2500	67.0566	0.0000	67.0566	185.8950	7,7049	17,1760	24.8810	0.0000	0.0000	0.0000	0.0000
2015	16.4199	0.0000	16.4199	20.2500	0.0000	20.2500	68,7330	0.0000	68,7330	227,2050	9.8547	21,4128	31,2675	0.0000	0.0000	0.0000	0.0000
2016	16.8304	0.0000	16.8304	20,2500	0.0000	20.2500	70.4514	0.0000	70.4514	268.5150	12.0342	25.8121	37.8463	0.0000	0.0000	0.0000	0.0000
2017	17.2511	0.0000	17.2511	20,2500	0.0000	20.2500	72.2127	0.0000	72.2127	309,8250	14.4751	30.3789	44.8540	0.0000	0.0000	0.0000	0.0000
2018	17.6824	0.0000	17.6824	20.2500	0.0000	20,2500	74.0180	0.0000	74.0180	351.1350	17.0630	35.1180	52.1810	0.0000	0.0000	0.0000	0.0000
2019	18.1245	0.0000	18.1245	20.2500	0.0000	20.2500	75.8684	0.0000	75.8684	392.4450	20,1601	40.0345	60.1947	0.0000	0.0000	0.0000	0.0000
				20.2500	0.0000	20.2300	75.0004	0.0000	75.0004	372.4430	20.1001	40.0345	00,1541	V.0000	0.0000	0.0000	0,0000
NOMINAL	162.5921	0.0000	162.5921	202.5000	0.0000	202.5000	680,6054	0.0000	680.6054	2,065.5000	94.1695	199,3595	293.5290	0.0000	0.0000	0.0000	0.0000
		2.3000		202.5000	0.0000	202.3000	000.0034	0,0000	080.0034	2,000.000	24.1023	177.3373	475.3270	0.0000	0.0000	V.0000	0.0000
NPV	116.0069	0.0000	116.0069	146,7495	0.0000	146.7495	485.6013	0.0000	485.6013		58.6258	125.2091	183.8350		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)
2010	0.000	14.513	60.750	0.000	75.263	0.000	0.000	0.801	0.000	0.801	(74.462)	(74.462)
2011	0.000	14.876	62.269	0.000	77.144	0.000	0.000	2.530	0.000	2.530	(74.615)	(143.549)
2012	0.000	15.247	63,825	0.000	79.073	0.000	0.000	4.526	0.000	4.526	(74.546)	(207.461)
2013	0.000	15.629	65.421	0.000	81.050	0.000	0.000	6.618	0.000	6.618	(74.431)	(266.547)
2014	0.000	16.019	67.057	0.000	83.076	0.000	0.000	8.869	0.000	8.869	(74.207)	(321.091)
2015	0.000	16.420	68.733	0.000	85.153	0.000	0.000	11.415	0.000	11.415	(73.738)	(371.276)
2016	0.000	16.830	70.451	0.000	87.282	0.000	0.000	14.085	0.000	14.085	(73.197)	(417.402)
2017	0.000	17.251	72.213	0.000	89.464	0.000	0.000	17.219	0.000	17.219	(72.244)	(459.556)
2018	0.000	17.682	74.018	0.000	91.700	36.727	0.000	20.213	0.000	56.940	(34.760)	(478.336)
2019	0.000	18.124	75.868	0.000	93.993	37.793	0.000	24.123	0.000	61.915	(32.077)	(494.383)
NOMINAL	0.000	162.592	680.605	0.000	843.198	74.520	0.000	110,400	0.000	184.920	(658.278)	
11QMINTE	0.000	102.372	380.003	0.000	073.170	14.320	0.000	110.400	0.000	104.720	(020.270)	
NPV	0.000	116.007	485.601	0.000	601.608	38.748	0.000	68.477	0.000	107.225	(494.383)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.18

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2) SAVINGS IN PARTICIPANTS BILL	(3) TAX CREDITS	(4) UTILITY REBATES	(5) OTHER BENEFITS	(6) TOTAL BENEFITS	(7) CUSTOMER EQUIPMENT COSTS	(8) CUSTOMER O & M COSTS	(9) OTHER COSTS	(10) TOTAL COSTS	(11) NET BENEFITS	(12) CUMULATIVE DISCOUNTED NET BENEFITS		CUMULATIVE DISCOUNTED COSTS	Benefit to Cost Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)		\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010 2011	2.458 7.655	0.000	20,250 20,250	0.000	22.708 27.905	60.750 62.269	0.000	0.000	60.750 62.269	(38.042) (34.364)	(38.042) (69.860)	23 49	61 118	0.37 0.41
2012	13,232	0.000	20.250	0.000	33,482	63.825	0.000	0.000	63.825	(30.343)	(95.875)	77	173	0.45
2013	18.959	0.000	20.250	0.000	39.209	65,421	0.000	0.000	65.421	(26.212)	(116.682)	108	225	0.48
2014	24.881	0.000	20,250	0.000	45.131	67.057	0.000	0.000	67.057	(21.926)	(132.798)	142	274	0.52
2015	31.267	0.000	20.250	0.000	51.517	68.733	0 000	0.000	68.733	(17.216)	(144.515)	177	321	0.55
2016	37.846	0.000	20.250	0.000	58.096	70.451	0.000	0.000	70.451	(12.355)	(152.301)	213	366	0.58
2017	44.854	0.000	20,250	0.000	65.104	72.213	0.000	0.000	72.213	(7.109)	(156.449)	251	408	0.62
2018	52.181	0,000	20.250	0.000	72.431	74.018	0.000	0.000	74.018	(1.587)	(157.306)	290	448	0.65
2019	60,195	0.000	20.250	0.000	80.445	75.868	0.000	0.000	75.868	4.576	(155.017)	331	486	0.68
NOMINAL	293.529	0.000	202.500	0.000	496.029	680.605	0.000	0.000	680.605	(184.576)				
NPV	183,835	0.000	146.749	0.000	330.584	485.601	0.000	0.000	485.601	(155.017)				

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	14.513	20.250	2.458	0.000	37.221	0.801	0.000	0.000	0.000	0.801	(36.419)	(36.419)
2011	0.000	14.876	20.250	7.655	0.000	42.781	2.530	0.000	0.000	0.000	2.530	(40.251)	(73.689)
2012	0.000	15.247	20.250	13.232	0.000	48.730	4.526	0.000	0.000	0.000	4.526	(44.203)	(111.586)
2013	0.000	15.629	20.250	18.959	0.000	54.838	6.618	0.000	0.000	0.000	6.618	(48.219)	(149.864)
2014	0.000	16.019	20.250	24.881	0.000	61.150	8.869	0.000	0.000	0.000	8.869	(52.281)	(188.293)
2015	0.000	16.420	20.250	31.267	0.000	67.937	11.415	0.000	0.000	0.000	11.415	(56.523)	(226.761)
2016	0.000	16.830	20.250	37.846	0.000	74.927	14.085	0.000	0.000	0.000	14.085	(60.842)	(265.102)
2017	0.000	17.251	20.250	44.854	0.000	82.355	17.219	0.000	0.000	0.000	17.219	(65.136)	(303.108)
2018	0.000	17.682	20.250	52.181	0.000	90.113	56.940	0.000	0.000	0.000	56.940	(33.173)	(321.030)
2019	0.000	18.124	20.250	60.195	0.000	98.569	61.915	0.000	0.000	0.000	61.915	(36.654)	(339.366)
NOMINAL	0.000	162.592	202.500	293.529	0.000	658.621	184.920	0.000	0.000	0.000	184.920	(473.701)	
NPV	0.000	116.007	146.749	183.835	0.000	446.591	107.225	0.000	0.000	0.000	107.225	(339.366)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.24

Residential Ceiling Insulation Rebates

PSC FORM CE 1.3 PAGE 1 OF 1 Run Date: 3/29/2010 9:40 AM

PROGRAM: Residential Energy Efficiency Insulation

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.17 KW /CUST 0.18 KW GEN/CUST 3.9 % 477.6 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 459.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O&M ESCALATION RATE (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR
II. ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 % 0 CENTS/KWH
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR
III. UTILITY AND CUSTOMER COSTS			
(1)** UTILITY NONRECURRING COST PER CUSTOMER	154.29 \$/CUST 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	-
(4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE	2.5 % 576.45 \$VCUST 2.5 % 0.00 \$VCUST/YR 2.5 % 270.00 \$VCUST 2.5 % 0.00 \$VCUST/YR 2.5 % 8.00 % 0.00 %	(1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	0.00 \$/KW/MO
(15)* UTILITY RECURRING REBATE/INCENTIVE (16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.00 \$/CUST/YR 0.0 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010 9:40 AM

PROGRAM: Residential Energy Efficiency Insulation

* Avoided Generation Unit:

7FA CT

* Program Generation Equivilency Factor:

1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
 YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	225	225	3.36	3.73	3.87	3.36	I	1
2011	450	450	3.65	3.92	3.99	3.65	1	I
2012	675	675	3.93	4.21	4.24	3,93	l	1
2013	900	900	4.05	4.40	4.47	4.05	1	1
2014	1125	1125	4,14	4.59	4.65	4.14	1	1
2015	1350	1350	4.34	4.83	4.96	4,34	ł	1
2016	1575	1575	4.48	5.04	5.20	4.48	1	1
2017	1800	1800	4.67	5.34	5.60	4.67	}	1
2018	2025	2025	4.86	5.53	5.91	4.85	1	1
2019	2250	2250	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FORI	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
					*****				*****	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) AFUDC RATE: \$120.06

0.00%

A VOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Insulation

ontial Energy Efficiency madiation

* UNIT SIZE OF AVOIDED GENERATION UNIT =

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) =

367 kW \$0

			1110	DICTION CONTRO	i it oldbo do.	0.111 (000)	•••		
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	44.0183	481,7772	0.0000	0.0000	27.4412	23.3623	0.0000	48.0972
2019	0.0212	44.1168	481.7772	0.0000	0.0000	29.7401	24.3638	0.0000	49.4931
NOMINAL		88.1351	963.5544	0.0000	0.0000	57.1813	47.7261	0.0000	97.5904
		55.1551	,03.3344	0.0000	2.0000	37.1013	47.7201	3.000	77.5704
NPV		45.8511		0.0000	0.0000	29.7031	24.8099	0.0000	50.7443

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency Insulation

			D TRANS. $(000) =$	\$0			
			* INSERVIC	E COSTS OF AVOID	DED DIST. (000) =	\$0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
, ,	AVOIDED	AVOIDED	• • • • • • • • • • • • • • • • • • • •	AVOIDED	AVOIDED	, ,	
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.003170
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.323847
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.316189
2013	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	16.546031
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.172960
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	28.536570
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	35.212906
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	43.048265
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	50.532748
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	60.306259
NOMIÑAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	275.998945
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	171.192230

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
1/17 t D	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	53.7331	2.0032	0.0000	0.0000	2.0032	2.0032
2011	161.1993	6.3238	0.0000	0.0000	6.3238	6.3238
2012	268.6655	11.3162	0.0000	0.0000	11.3162	11.3162
2013	376.1316	16.5460	0.0000	0.0000	16.5460	16.5460
2014	483.5978	22.1730	0.0000	0.0000	22,1730	22.1730
2015	591.0640	28.5366	0.0000	0.0000	28.5366	28.5366
2016	698.5302	35.2129	0.0000	0.0000	35.2129	35.2129
2017	805.9964	43.0483	0.0000	0.0000	43.0483	43.0483
2018	913.4625	50.5327	0.0000	0.0000	50.5327	50.5327
2019	1,020.9287	60.3063	0.0000	0.0000	60.3063	60.3063
2019	1,020.7267	00.5005	0.0000	0.0000	00.3003	00.3003
NOMINAL	6 272 2001	275 0000	0.0000	0.000	275 0000	256 0000
NOMINAL	5,373.3091	275.9989	0.0000	0.0000	275.9989	275.9989
NPV		171.1922	0.0000	0.0000	171.1922	171.1922

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGE	RAM COSTS	& REBATE	S	>	<	PARTI	CIPATING C	CUSTOMER C	COSTS & BE	NEFITS					
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
													-				
2010	34.7160	0.0000	34.7160	22.5000	0.0000	22,5000	129.7013	0.0000	129.7013	51.6375	1.7366	4.4078	6.1444	0.0000	0.0000	0.0000	0.0000
2011	35.5839	0.0000	35.5839	22,5000	0.0000	22.5000	132.9438	0.0000	132.9438	154.9125	5.6501	13.4878	19,1379	0.0000	0.0000	0.0000	0.0000
2012	36.4735	0.0000	36,4735	22.5000	0.0000	22,5000	136.2674	0.0000	136.2674	258,1875	10.1519	22,9293	33.0811	0.0000	0.0000	0.0000	0.0000
2013	37.3853	0.0000	37.3853	22.5000	0.0000	22.5000	139.6741	0.0000	139.6741	361.4625	14.6550	32.7430	47.3980	0.0000	0.0000	0.0000	0.0000
2014	38.3199	0.0000	38.3199	22.5000	0.0000	22.5000	143,1659	0,0000	143.1659	464.7375	19.2623	42.9401	62.2024	0.0000	0.0000	0.0000	0.0000
2015	39.2779	0.0000	39.2779	22.5000	0.0000	22,5000	146.7451	0.0000	146.7451	568.0125	24.6367	53.5320	78.1687	0.0000	0.0000	0.0000	0.0000
2016	40.2599	0.0000	40.2599	22.5000	0.0000	22.5000	150.4137	0.0000	150.4137	671.2875	30.0854	64.5303	94.6158	0.0000	0.0000	0.0000	0.0000
2017	41.2664	0.0000	41,2664	22.5000	0.0000	22,5000	154.1740	0.0000	154,1740	774.5625	36.1878	75.9473	112.1350	0.0000	0.0000	0.0000	0.0000
2018	42.2981	0.0000	42.2981	22,5000	0.0000	22.5000	158.0284	0.0000	158.0284	877,8375	42.6575	87,7950	130,4525	0.0000	0.0000	0.0000	0.0000
2019	43.3555	0.0000	43.3555	22,5000	0.0000	22.5000	161.9791	0.0000	161,9791	981.1125	50.4004	100.0863	150.4867	0.0000	0,0000	0.0000	0.0000
NOMINAL	388.9364	0.0000	388,9364	225.0000	0.0000	225.0000	1.453.0926	0.0000	1,453.0926	5,163,7500	235,4238	498.3988	733,8226	0.0000	0.0000	0.0000	0.0000
							,			,							
NPV	277.5000	0.0000	277.5000	163.0550	0.0000	163.0550	1,036.7588	0.0000	1,036.7588		146.5646	313.0228	459,5874		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM; Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	34.716	129.701	0.000	164.417	0.000	0.000	2.003	0.000	2.003	(162.414)	(162.414)
2011	0.000	35.584	132.944	0.000	168.528	0.000	0.000	6.324	0.000	6.324	(162.204)	(312.603)
2012	0.000	36.473	136.267	0.000	172.741	0.000	0.000	11.316	0.000	11.316	(161.425)	(450.998)
2013	0.000	37.385	139.674	0.000	177.059	0.000	0.000	16.546	0.000	16.546	(160.513)	(578.419)
2014	0.000	38.320	143.166	0.000	181.486	0.000	0.000	22.173	0.000	22.173	(159.313)	(695.519)
2015	0.000	39.278	146.745	0.000	186.023	0.000	0.000	28.537	0.000	28.537	(157.486)	(802.701)
2016	0.000	40.260	150.414	0.000	190.674	0.000	0.000	35.213	0.000	35.213	(155.461)	(900.668)
2017	0.000	41.266	154.174	0.000	195.440	0.000	0.000	43.048	0.000	43.048	(152.392)	(989.587)
2018	0.000	42.298	158.028	0.000	200.326	48.097	0.000	50.533	0.000	98.630	(101.696)	(1,044.531)
2019	0.000	43.356	161.979	0.000	205.335	49.493	0.000	60.306	0.000	109.799	(95.535)	(1,092.322)
NOMINAL	0.000	388.936	1,453.093	0.000	1,842.029	97.590	0.000	275.999	0.000	373.589	(1,468.440)	<u> </u>
NPV	0.000	277.500	1,036.759	0.000	1,314.259	50.744	0.000	171.192	0.000	221.937	(1,092.322)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.17

PARTICIPANT COSTS AND BENEFITS PROGRAM; Residential Energy Efficiency Insulation

(1)	(2) SAVINGS IN PARTICIPANTS BILL	(3) TAX CREDITS	(4) UTILITY REBATES	(5) OTHER BENEFITS	(6) TOTAL BENEFITS	(7) CUSTOMER EQUIPMENT COSTS	(8) CUSTOMER O & M COSTS	(9) OTHER COSTS		(11) NET BENEFITS	(12) CUMULATIVE DISCOUNTED NET BENEFITS		CUMULATIVE DISCOUNTED COSTS	Benefit to Cost Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010 2011	6.144 19.138	60.750 62.269	22.500 22.500	0.000	89.394	129.701	0,000	0.000	129.701 132.944	(40.307) (29.037)	(40.307) (67.193)	89 186	130 253	0.69 0.73
2012	33.081	63.825	22.500	0.000 0.000	103.907 119.407	132.944 136,267	0,000 0,000	0.000	136,267	(16.861)	(81.648)	288	370	0.78
2013	47,398	65.421	22,500	0.000	135.319	139,674	0.000	0.000	139.674	(4.355)	(85.106)	395	481	0.82
2014	62.202	67.057	22.500	0.000	151.759	143.166	0.000	0.000	143.166	8.593	(78.789)	507	586	0.87
2015	78.169	68.733	22.500	0.000	169.402	146,745	0.000	0.000	146.745	22.657	(63.370)	622	686	0.91
2016	94.616	70.451	22.500	0.000	187.567	150.414	0.000	0.000	150.414	37.153	(39.957)	740	780	0.95
2017	112.135	72.213	22.500	0.000	206.848	154.174	0.000	0.000	154.174	52,674	(9.222)	861	870	0.99
2018	130.453	74.018	22.500	0.000	226.971	158,028	0.000	0.000	158.028	68.942	28.025	984	956	1.03
2019	150.487	75.868	22.500	0.000	248.855	161.979	0.000	0.000	161.979	86.876	71.485	1,108	1,037	1.07
NOMINAL	733.823	680.605	225.000	0.000	1,639.428	1,453.093	0.000	0.000	######	186.335				
NPV	459.587	485.601	163.055	0.000	1,108.244	1,036.759	0.000	0.000	#######	71.485				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 1.07

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$ (000)	\$ (000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	34.716	22.500	6.144	0.000	63.360	2.003	0.000	0.000	0.000	2.003	(61.357)	(61.357)
2011	0.000	35.584	22.500	19.138	0.000	77.222	6.324	0.000	0.000	0.000	6.324	(70.898)	(127.004)
2012	0.000	36.473	22.500	33.081	0.000	92.055	11.316	0.000	0.000	0.000	11.316	(80.738)	(196.224)
2013	0.000	37.385	22.500	47.398	0.000	107.283	16.546	0.000	0.000	0.000	16.546	(90.737)	(268.254)
2014	0.000	38.320	22.500	62.202	0.000	123.022	22.173	0.000	0.000	0.000	22.173	(100.849)	(342.381)
2015	0.000	39.278	22.500	78.169	0.000	139.947	28.537	0.000	0.000	0.000	28.537	(111.410)	(418.205)
2016	0.000	40.260	22.500	94.616	0.000	157.376	35.213	0.000	0.000	0.000	35.213	(122.163)	(495.188)
2017	0.000	41.266	22.500	112.135	0.000	175.901	43.048	0.000	0.000	0.000	43.048	(132.853)	(572.707)
2018	0.000	42.298	22.500	130.453	0.000	195.251	98.630	0.000	0.000	0.000	98.630	(96.621)	(624.908)
2019	0.000	43.356	22.500	150.487	0.000	216.342	109.799	0.000	0.000	0.000	109.799	(106.543)	(678.206)
NOMINAL	0.000	388.936	225.000	733.823	0.000	########	373.589	0.000	0.000	0,000	373.589	(974.170)	north 1 manual Co. o halled the co. sales sa.
NPV	0.000	277.500	163.055	459.587	0.000	900.142	221.937	0.000	0.000	0.000	221.937	(678.206)	

Discount rate:

8.00%

Benefit / Cost Ratio [col (12) / col (7)]:

0.25

Residential Window Film/Solar Screen Rebates

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010

8:31 AM

PROGRAM: Residential Energy Efficiency Window Film Solar Screen Rey I

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	······
(1) CUSTOMER KW REDUCTION AT THE METER	0.03 KW /CUST 0.04 KW GEN/CUST 3.9 % 111.0 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 106.6 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	. 2018 2030 . 120.0557 \$/KW 0 \$/KW 0 \$/KW . 0 \$/ . 10.74022 \$/KW/YR 2.5 %
II. ECONOMIC LIFE AND K FACTORS (1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00 1	(17) DISTRIBUTION FIAEDO & M COST (12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	. 0 % 0 CENTS:KWH 2.5 % 15 % 3.363149 CENTS:KWH 2.5 % 0 \$KW:YR
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	33.40 \$/CUST 0.00 \$/CUST/YR 2.5 % 200.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 60.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 \$/CUST/YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (I) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL * FIRE Program Version Number: 1.03	. 2.0 % . 0.00 \$/KW/MO 2.5 %

SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010

8:31 AM

PROGRAM: Residential Energy Efficiency Window Film Solar Screen Rev I

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	90	90	3.36	3.73	3.87	3.36	1	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4,24	3.93	1	l
2013	360	360	4.05	4.40	4.47	4.05	ı	1
2014	450	450	4.14	4.59	4.65	4.14	1	1
2015	540	540	4.34	4.83	4.96	4.34	1	1
2016	630	630	4.48	5.04	5.20	4.48	1	1
2017	720	720	4.67	5.34	5,60	4.67	1	1
2018	810	810	4.86	5.53	5.91	4.85	ı	1
2019	900	900	5.14	5.91	5.58	5.06	i	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM	2.3>	< FOR	M 2.4>	< FOI	RM 2.5>	
	Total Resor	urce Test	Participa	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
			*****				###***********************************		-	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

* UNIT SIZE OF AVOIDED GENERATION UNIT = 29 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

			11.5	LICTICE COULD (or arronded off	01111 (000)	Ψ		
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	3.5023	38.3328	0.0000	0.0000	2.1834	1.8588	0.0000	3.8269
2019	0.0212	3.5102	38.3328	0.0000	0.0000	2.3663	1.9385	0.0000	3.9379
NOMINAL		7.0125	76.6656	0.0000	0.0000	4.5497	3.7973	0.0000	7.7648
NPV		3.6482		0.0000	0.0000	2.3633	1.9740	0.0000	4.0375

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.00000	0.000000	0.000000	0.000000	0.00000	0.186153
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.587669
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.051603
2013	0.00000	0.000000	0.000000	0.000000	0.00000	0.000000	1.537607
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.060513
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	2.651877
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.272303
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.000436
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.695962
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.604205
NOMINAL	0.000000	0,000000	0.000000	0.00000	0.000000	0.00000	25.648328
HOMINAL	0.000000	0.000000	0.00000	0.000000	0.00000	0.000000	23.048328
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.908736

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* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	4.9934	0.1862	0.0000	0.0000	0.1862	0.1862
2011	14.9801	0.5877	0.0000	0.0000	0.5877	0.5877
2012	24.9668	1.0516	0.0000	0.0000	1.0516	1.0516
2013	34.9536	1.5376	0.0000	0.0000	1.5376	1.5376
2014	44.9403	2.0605	0.0000	0.0000	2.0605	2.0605
2015	54.9270	2.6519	0.0000	0.0000	2.6519	2.6519
2016	64.9138	3.2723	0.0000	0.0000	3.2723	3.2723
2017	74.9005	4.0004	0.0000	0.0000	4.0004	4.0004
2018	84.8872	4.6960	0.0000	0.0000	4.6960	4.6960
2019	94.8740	5.6042	0.0000	0.0000	5.6042	5.6042
NOMINAL	499.3367	25.6483	0.0000	0.0000	25.6483	25.6483
NPV		15.9087	0.0000	0.0000	15.9087	15.9087

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2) < UTIL	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
	CITE OTTE	HILIKOOF	CAM COST	3 & KLDAT	L3			, AK	IK II A I INO	COSTOMEN	. (0313 & 1	DEINER 113***			*************			
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.	
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE	
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	O & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.	
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL	
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)	
2010	3.0064	0.0000	3.0064	9.0000	0.0000	9.0000	18.0000	0.0000	18.0000	4.7986	0.1614	0.4096	0.5710	0,0000	0.0000	0.0000	0.0000	
2011	3.0816	0.0000	3.0816	9.0000	0.0000	9.0000	18.4500	0.0000	18.4500	14.3959	0.5251	1.2534	1.7785	0.0000	0.0000	0.0000	0.0000	
2012	3.1586	0.0000	3.1586	9.0000	0.0000	9.0000	18.9113	0.0000	18.9113	23.9931	0.9434	2.1308	3.0742	0.0000	0.0000	0.0000	0,0000	
2013	3.2376	0.0000	3.2376	9.0000	0.0000	9.0000	19.3840	0.0000	19.3840	33.5904	1.3619	3.0428	4.4047	0.0000	0.0000	0.0000	0.0000	
2014	3.3185	0.0000	3.3185	9.0000	0.0000	9.0000	19.8686	0.0000	19.8686	43.1876	1.7900	3.9904	5.7804	0.0000	0.0000	0.0000	0.0000	
2015	3.4015	0.0000	3.4015	9.0000	0.0000	9.0000	20.3653	0.0000	20.3653	52.7849	2.2895	4.9747	7.2641	0.0000	0.0000	0.0000	0.0000	
2016	3.4865	0.0000	3.4865	9.0000	0.0000	9.0000	20.8745	0.0000	20.8745	62.3821	2.7958	5.9967	8.7926	0.0000	0.0000	0.0000	0.0000	
2017	3.5737	0.0000	3.5737	9.0000	0.0000	9.0000	21.3963	0.0000	21.3963	71.9794	3.3629	7.0577	10.4206	0.0000	0.0000	0.0000	0.0000	
2018	3.6630	0.0000	3.6630	9.0000	0.0000	9.0000	21.9313	0.0000	21.9313	81.5766	3.9641	8.1587	12.1228	0.0000	0.0000	0.0000	0.0000	
2019	3.7546	0.0000	3.7546	9.0000	0.0000	9.0000	22.4795	0.0000	22,4795	91.1739	4.6837	9.3009	13.9846	0.0000	0.0000	0.0000	0.0000	
																m.s m.s		
NOMINAL	33.6822	0.0000	33.6822	90.0000	0.0000	90.0000	201.6609	0.0000	201.6609	479.8625	21.8777	46.3157	68.1935	0.0000	0.0000	0.0000	0.0000	
NPV	24.0317	0.0000	24.0317	65.2220	0.0000	65.2220	143.8819	0.0000	143.8819		13.6201	29.0889	42.7090		0.0000	0.0000	0.0000	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	3.006	18.000	0.000	21.006	0.000	0.000	0.186	0.000	0.186	(20.820)	(20.820)
2011	0.000	3.082	18.450	0.000	21.532	0.000	0.000	0.588	0.000	0.588	(20.944)	(40.213)
2012	0.000	3.159	18.911	0.000	22.070	0.000	0.000	1.052	0.000	1.052	(21.018)	(58.233)
2013	0.000	3.238	19.384	0.000	22.622	0.000	0.000	1.538	0.000	1.538	(21.084)	(74.970)
2014	0.000	3.319	19.869	0.000	23.187	0.000	0.000	2.061	0.000	2.061	(21.127)	(90.498)
2015	0.000	3.401	20.365	0.000	23.767	0.000	0.000	2.652	0.000	2.652	(21.115)	(104.869)
2016	0.000	3.487	20.874	0.000	24.361	0.000	0.000	3.272	0.000	3.272	(21.089)	(118.158)
2017	0.000	3.574	21.396	0.000	24.970	0.000	0.000	4.000	0.000	4.000	(20.970)	(130.394)
2018	0.000	3.663	21.931	0.000	25.594	3.827	0.000	4.696	0.000	8.523	(17.071)	(139.617)
2019	0.000	3.755	22.480	0.000	26.234	3.938	0.000	5.604	0.000	9.542	(16.692)	(147.967)
NOMINAL	0.000	33.682	201.661	0.000	235.343	7.765	0.000	25.648	0.000	33.413	(201.930)	rr tallite i gyra san, a <u>ua</u>
NPV	0.000	24.032	143.882	0.000	167.914	4.037	0.000	15.909	0.000	19.946	(147.967)	

Discount Rate: 8.00% ol (11) / col (6)}: 0.12

Benefit/Cost Ratio [col (11) / col (6)]:

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
				-	-									
2010	0.571	5.400	9.000	0.000	14.971	18.000	0.000	0.000	18.000	(3.029)	(3.029)	15	18	0.83
2011	1.778	5.400	9.000	0.000	16.178	18.450	0.000	0.000	18.450	(2.272)	(5.132)	30	35	0.85
2012	3.074	5.400	9.000	0.000	17.474	18.911	0.000	0.000	18.911	(1.437)	(6.364)	45	51	0.88
2013	4.405	5.400	9.000	0.000	18.805	19.384	0.000	0.000	19.384	(0.579)	(6.824)	60	67	0.90
2014	5.780	5.400	9.000	0.000	20.180	19.869	0.000	0.000	19.869	0.312	(6.595)	75	81	0.92
2015	7.264	5.400	9.000	0.000	21.664	20.365	0.000	0.000	20.365	1.299	(5.711)	89	95	0.94
2016	8.793	5.400	9.000	0.000	23.193	20.874	0.000	0.000	20.874	2.318	(4.250)	104	108	0.96
2017	10.421	5.400	9.000	0.000	24.821	21.396	0.000	0,000	21.396	3.424	(2.252)	119	121	0.98
2018	12.123	5.400	9.000	0.000	26.523	21.931	0.000	0.000	21.931	4.592	0.228	133	133	1.00
2019	13.985	5.400	9.000	0.000	28.385	22.480	0.000	0.000	22.480	5.905	3.182	147	144	1.02
NOMINAL	68.193	54.000	90,000	0.000	212.193	201.661	0.000	0.000	201.661	10.533				
NPV	42.709	39.133	65.222	0.000	147.064	143.882	0.000	0.000	143.882	3.182				

In-service year of generation unit: 2018
Discount rate: 8.00%

Benefit/Cost Ratio: 1.02

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	INCREACED	UTHITV					AVOIDED	AVOIDED					CUMULATIVE DISCOUNTED
	INCREASED	UTILITY		*****	Amuen	mam	GEN UNIT	AVOIDED		OFFIE	mam. 1		
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D		OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	3.006	9.000	0.571	0.000	12.577	0.186	0.000	0.000	0.000	0.186	(12.391)	(12.391)
2011	0.000	3.082	9.000	1.778	0.000	13.860	0.588	0.000	0.000	0.000	0.588	(13.272)	(24.681)
2012	0.000	3.159	9.000	3.074	0.000	15.233	1.052	0.000	0.000	0.000	1.052	(14.181)	(36.839)
2013	0.000	3.238	9.000	4.405	0.000	16.642	1.538	0.000	0.000	0.000	1.538	(15.105)	(48.829)
2014	0.000	3.319	9,000	5.780	0.000	18.099	2.061	0.000	0.000	0.000	2.061	(16.038)	(60.618)
2015	0.000	3.401	9.000	7.264	0.000	19.666	2.652	0.000	0.000	0.000	2.652	(17.014)	(72.197)
2016	0.000	3.487	9.000	8.793	0.000	21.279	3.272	0.000	0.000	0.000	3.272	(18.007)	(83.545)
2017	0.000	3.574	9.000	10.421	0.000	22.994	4.000	0.000	0.000	0.000	4.000	(18.994)	(94.627)
2018	0.000	3.663	9.000	12.123	0.000	24.786	8.523	0.000	0.000	0.000	8.523	(16.263)	(103.414)
2019	0.000	3.755	9.000	13.985	0.000	26.739	9.542	0.000	0.000	0.000	9.542	(17.197)	(112.016)
NÖMINÄL	0,000	33.682	90.000	68.193	0.000	191.876	33,413	0.000	0.000	0.000	33.413	(158.462)	Al chance in administra
NPV	0.000	24.032	65.222	42.709	0.000	131.963	19.946	0.000	0.000	0.000	19.946	(112.016)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.15

Residential Home Energy Fix-Up Program

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 9:37 AM

PROGRAM: Residential Home Energy Fix Up

(1) CUSTOMER KW REDUCTION AT THE METER 0.27 KW /CUST (1) BASE YEAR (2) GENERATOR KW REDUCTION PER CUSTOMER 0.28 KW GEN/CUST (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) KW LINE LOSS PERCENTAGE 3.9 % (3) IN-SERVICE YEAR FOR AVOIDED T& D (4) GENERATION KWH REDUCTION PER CUSTOMER 260.1 KWH/CUST/YR (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) KWH LINE LOSS PERCENTAGE 3.9 % (5) BASE YEAR AVOIDED TRANSMISSION COST (6) GROUP LINE LOSS MULTIPLIER 1.0000 (6) BASE YEAR DISTRIBUTION COST (7) CUSTOMER KWH PROGRAM INCREASE AT METER 0.0 KWH/CUST/YR (7) GEN. TRAN, & DIST COST ESCALATION RATE	2018 2030 120.0557 \$/KW 0 \$/KW
(2) GENERATOR KW REDUCTION PER CUSTOMER 0.28 KW GEN/CUST (3) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) KW LINE LOSS PERCENTAGE 3.9 % (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE 3.9 % (5) BASE YEAR AVOIDED TRANSMISSION COST (6) GROUP LINE LOSS MULTIPLIER 1.0000 (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT COST (4) BASE YEAR AVOIDED TRANSMISSION COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST	2018 2030 120.0557 \$/KW 0 \$/KW
(4) GENERATION KWH REDUCTION PER CUSTOMER 260.1 KWH/CUST/YR (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) KWH LINE LOSS PERCENTAGE 3.9 % (5) BASE YEAR AVOIDED TRANSMISSION COST (6) GROUP LINE LOSS MULTIPLIER 1.0000 (6) BASE YEAR DISTRIBUTION COST (6) BASE YEAR DISTRIBUTION COST (7) COST (7	
(5) KWH LINE LOSS PERCENTAGE 3.9 % (5) BASE YEAR AVOIDED TRANSMISSION COST (6) GROUP LINE LOSS MULTIPLIER 1.0000 (6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(6) GROUP LINE LOSS MULTIPLIER	0 \$/KW
	0 %
(8) CUSTOMER KWH REDUCTION AT METER 250.0 KWH/CUST/YR (8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
II. ECONOMIC LIFE AND K FACTORS (12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	TE 2.5 %
(2) GENERATOR ECONOMIC LIFE	
(3) T & D ECONOMIC LIFE	3.363149 CENTS/KWH
(4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(5) K FACTOR FOR T & D	0 \$/KW/YR
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	2.5 %
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER	2.0 %
(7) CUSTOMER O & M ESCALATION RATE 2.5 % (4) DEMAND CHARGE ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION 0.00 \$/CUST (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2.5 %
(9)* CUSTOMER TAX CREDIT FER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (9)* CUSTOMER TAX CREDIT ESCALATION RATE (9)* CUSTOMER BILL (1)*	1.0
(10)* INCREASED SUPPLY COSTS	1.0
(11)* SUPPLY COSTS ESCALATION RATE	
(12)* UTILITY DISCOUNT RATE 8.00 %	
(13)* UTILITY AFUDC RATE	
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	
(15)* UTILITY RECURRING REBATE/INCENTIVE	
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	
(19) STEEL RESIDENCE STEEL STE	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM: Residential Home Energy Fix Up

* Avoided Generation Unit:

7FA CT

* Program Generation Equivilency Factor:

(1) (2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	52	52	3.36	3.73	3.87	3.36	1	1
2011	104	104	3,65	3.92	3.99	3.65	1	1
2012	156	156	3.93	4.21	4.24	3.93	1	1
2013	208	208	4,05	4.40	4.47	4.05	1	1
2014	260	260	4.14	4.59	4.65	4.14	1	ì
2015	312	312	4.34	4.83	4.96	4.34	l	1
2016	364	364	4.48	5.04	5.20	4.48	1	1
2017	416	416	4.67	5,34	5.60	4.67	1	l
2018	468	468	4,86	5.53	5.91	4.85	1	1
2019	520	520	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	 -9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8 -8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-6 -7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	
						· -				0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	Ö	200.070	0001.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	J			0.070				0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Home Energy Fix Up

* UNIT SIZE OF A VOIDED GENERATION UNIT = 131 kW

* INSERVICE COSTS OF A VOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
, ,	, ,	AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	15.7859	172.7753	0.0000	0.0000	9.8410	8.3782	0.0000	17.2487
2019	0.0212	15.8212	172.7753	0.0000	0.0000	10.6654	8.7374	0.0000	17.7493
NONTRA		21 6071	245 5506	0.0000	0.0000	20.5064	17 1166	0.000	24,0070
NOMINAL		31.6071	345.5506	0.0000	0.0000	20.5064	17.1156	0.0000	34.9979
NPV		16.4432		0.0000	0.0000	10.6521	8.8973	0.0000	18.1980

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Home Energy Fix Up

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0 \$0 * INSERVICE COSTS OF AVOIDED DIST. (000) = (1) (7) (8) (2) (3) (4) (5) (6) **AVOIDED AVOIDED** AVOIDED **AVOIDED** TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION DISTRIBUTION TOTAL AVOIDED **PROGRAM** CAPACITY O&M TRANSMISSION CAPACITY O&M DISTRIBUTION **FUEL** COST COST COST COST COST **SAVINGS** COST \$(000) (000)\$(000) \$(000) Year \$(000) \$(000) \$(000) 2010 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.252154 2011 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.796030 2012 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1.424454 2013 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 2.082773 2014 0.000000 0.000000 0.000000 2.791077 0.000000 0.000000 0.000000 2015 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 3.592112 2016 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 4.432513 2017 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 5.418809 2018 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 6.360937 2019 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 7.591202

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

34.742060

21.549252

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

NOMINAL

NPV

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
		······································				
2010	6.7638	0.2522	0.0000	0.0000	0.2522	0.2522
2011	20.2914	0.7960	0.0000	0.0000	0.7960	0.7960
2012	33.8189	1.4245	0.0000	0.0000	1.4245	1.4245
2013	47.3465	2.0828	0.0000	0.0000	2.0828	2.0828
2014	60.8741	2.7911	0.0000	0.0000	2.7911	2.7911
2015	74.4017	3.5921	0.0000	0.0000	3.5921	3.5921
2016	87.9292	4.4325	0.0000	0.0000	4.4325	4.4325
2017	101.4568	5.4188	0.0000	0.0000	5.4188	5.4188
2018	114.9844	6.3609	0,0000	0.0000	6.3609	6.3609
2019	128.5120	7.5912	0.0000	0.0000	7.5912	7.5912
NOMINAL	676.3788	34.7421	0.0000	0.0000	34.7421	34.7421
NPV		21.5493	0.0000	0.0000	21.5493	21.5493

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGR	AM COSTS	& REBATE	S	······································	<	PARTIC	CIPATING C	USTOMER C	COSTS & BE	NEFITS					
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	• FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	4.0721	0.0000	4.0721	28,8080	0.0000	28.8080	5.0835	0.0000	5.0835	6,5000	0.2186	0.5548	0.7734	0.0000	0.0000	0.0000	0,0000
2011	4.1739	0.0000	4.1739	29.5282	0.0000	29.5282	5.2106	0.0000	5.2106	19.5000	0.7112	1.6978	2.4090	0.0000	0.0000	0.0000	0,0000
2012	4.2783	0.0000	4.2783	30.2664	0.0000	30,2664	5.3409	0.0000	5.3409	32,5000	1.2779	2.8863	4.1642	0.0000	0.0000	0.0000	0.0000
2013	4.3852	0.0000	4.3852	31.0231	0.0000	31.0231	5.4744	0.0000	5,4744	45,5000	1.8447	4.1216	5.9663	0.0000	0.0000	0.0000	0.0000
2014	4,4949	0.0000	4.4949	31.7986	0.0000	31.7986	5.6113	0.0000	5.6113	58.5000	2,4247	5,4052	7.8299	0.0000	0.0000	0.0000	0.0000
2015	4.6072	0.0000	4.6072	32.5936	0.0000	32,5936	5.7515	0.0000	5.7515	71,5000	3.1012	6,7385	9.8397	0.0000	0.0000	0.0000	0.0000
2016	4.7224	0.0000	4.7224	33.4084	0.0000	33,4084	5.8953	0.0000	5.8953	84.5000	3.7871	8.1229	11.9100	0.0000	0.0000	0.0000	0.0000
2017	4.8405	0.0000	4.8405	34.2437	0.0000	34.2437	6.0427	0.0000	6.0427	97.5000	4.5552	9,5601	14.1153	0.0000	0.0000	0.0000	0.0000
2018	4.9615	0.0000	4.9615	35.0998	0,0000	35.0998	6.1938	0.0000	6.1938	110,5000	5.3696	11.0514	16.4210	0.0000	0.0000	0.0000	0.0000
2019	5.0855	0.0000	5.0855	35.9772	0.0000	35.9772	6.3486	0.0000	6.3486	123,5000	6.3443	12.5986	18.9429	0.0000	0.0000	0.0000	0.0000
2017	5.0055	0.0000	5.0055	33.7112	0.0000	33.9112	0.5460	0.0000	0.5460	123,3000	0.3443	12.3700	10.7427	0,0000	0.0000	0.0000	0,000
NOMINAL	45,6215	0.0000	45.6215	322.7470	0.0000	322.7470	56.9526	0.0000	56.9526	650,0000	29.6346	62,7372	92.3718	0.0000	0.0000	0.0000	0.0000
HOMINAL	43.0213	0.0000	73.0213	322.1410	0.0000	322.1410	30.7320	0.0000	30.7320	030.000	27.0340	02.1312	74.3/10	0.000	0.0000	0.0000	0.0000
NPV	32.5502	0.0000	32.5502	230.2749	0.0000	230.2749	40.6348	0.0000	40.6348		18.4492	39.4025	57.8517		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
•	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	4.072	5.084	0.000	9.156	0.000	0.000	0.252	0.000	0.252	(8.903)	(8.903)
2011	0.000	4.174	5.211	0.000	9.385	0.000	0.000	0.796	0.000	0.796	(8.589)	(16.856)
2012	0.000	4.278	5.341	0.000	9.619	0.000	0.000	1.424	0.000	1.424	(8.195)	(23.881)
2013	0.000	4.385	5.474	0.000	9.860	0.000	0.000	2.083	0.000	2.083	(7.777)	(30.055)
2014	0.000	4.495	5.611	0.000	10.106	0.000	0.000	2.791	0.000	2.791	(7.315)	(35.432)
2015	0.000	4.607	5.752	0.000	10.359	0.000	0.000	3.592	0.000	3.592	(6.767)	(40.037)
2016	0.000	4.722	5.895	0.000	10.618	0.000	0.000	4.433	0.000	4.433	(6.185)	(43.935)
2017	0.000	4.840	6.043	0.000	10.883	0.000	0.000	5.419	0.000	5.419	(5.464)	(47.123)
2018	0.000	4.961	6.194	0.000	11.155	17.249	0.000	6.361	0.000	23.610	12.454	(40.394)
2019	0.000	5.086	6.349	0.000	11.434	17.749	0.000	7.591	0.000	25.340	13.906	(33.438)
NOMINAL	0.000	45.622	56.953	0.000	102.574	34.998	0.000	34.742	0.000	69.740	(32.834)	The service of the se
	0.00		50,255	0.500		3 1.770	3.000	34.7 12	3.000	021770	(32.034)	
NPV	0.000	32.550	40.635	0.000	73.185	18.198	0.000	21.549	0.000	39.747	(33.438)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.54

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0.773	0,000	28.808	0.000	29.581	5.084	0.000	0.000	5.084	24.498	24.498	30	5	5.82
2011	2,409	0.000	29,528	0.000	31.937	5,211	0.000	0.000	5.211	26.727	49,245	59	10	5.97
2012	4.164	0.000	30.266	0.000	34.431	5.341	0.000	0.000	5.341	29,090	74.185	89	14	6.12
2013	5.966	0.000	31.023	0.000	36.989	5.474	0.000	0.000	5.474	31.515	99.202	118	19	6.27
2014	7,830	0.000	31.799	0.000	39.629	5.611	0.000	0.000	5.611	34.017	124.206	147	23	6.41
2015	9.840	0.000	32.594	0.000	42.433	5.752	0.000	0.000	5.752	36.682	149,171	176	27	6.55
2016	11.910	0.000	33,408	0.000	45.318	5.895	0.000	0.000	5.895	39,423	174.014	205	31	6.69
2017	14.115	0.000	34.244	0.000	48.359	6,043	0.000	0.000	6.043	42.316	198,705	233	34	6.82
2018	16.421	0.000	34.244	0.000	50.665	6.194	0.000	0.000	6.194	44.471	222.731	260	37	6.95
2019	18.943	0.000	34.244	0,000	53.187	6.349	0.000	0.000	6.349	46.838	246.162	287	41	7.06
NOMINAL	92.372	0.000	320.157	0.000	412.529	56.953	0.000	0.000	56.953	355,576				
NPV	57.852	0.000	228.945	0.000	286,797	40.635	0.000	0.000	40.635	246.162				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 7.06

RATE IMPACT TEST PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
							AVOIDED						CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	4.072	28.808	0.773	0.000	33.654	0.252	0.000	0.000	0.000	0.252	(33.401)	(33.401)
2011	0.000	4.174	29.528	2.409	0.000	36.111	0.796	0.000	0.000	0.000	0.796	(35.315)	(66.101)
2012	0.000	4.278	30.266	4.164	0.000	38.709	1.424	0.000	0.000	0.000	1.424	(37.284)	(98.066)
2013	0.000	4.385	31.023	5.966	0.000	41.375	2.083	0.000	0.000	0.000	2.083	(39.292)	(129.257)
2014	0.000	4.495	31.799	7.830	0.000	44,123	2.791	0.000	0.000	0.000	2.791	(41.332)	(159.638)
2015	0.000	4.607	32.594	9.840	0.000	47.041	3.592	0.000	0.000	0.000	3.592	(43.448)	(189.208)
2016	0.000	4.722	33.408	11.910	0.000	50.041	4.433	0.000	0.000	0.000	4.433	(45.608)	(217.949)
2017	0.000	4.840	34.244	14.115	0.000	53.199	5.419	0.000	0.000	0.000	5.419	(47.781)	(245.828)
2018	0.000	4.961	35.100	16.421	0.000	56.482	23.610	0.000	0.000	0.000	23.610	(32.873)	(263.588)
2019	0.000	5.086	35.977	18.943	0.000	60.006	25.340	0.000	0.000	0.000	25.340	(34.665)	(280.930)
NOMINAL	0.000	45.622	322.747	92.372	0.000	460,740	69.740	0.000	0.000	0.000	69.740	(391.000)	
NPV	0.000	32.550	230.275	57.852	0.000	320.677	39.747	0.000	0.000	0.000	39.747	(280.930)	

Discount rate: 8.00% ol (12) / col (7)]: 0.12

Benefit / Cost Ratio [col (12) / col (7)]:

Residential Efficient Electric Heat Pump Rebates – SEER 14

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:19 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES	***************************************	IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.19 KW/CUST	(I) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) KW LINE LOSS PERCENTAGE	3,9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	432.9 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	O S/KW
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8)* CUSTOMER KWH REDUCTION AT METER	416.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
		(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
		(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
		(11) DISTRIBUTION FIXED O & M COST	0 S/KW/YR
II. FCONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	0 %
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(I) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	15 %
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(19)* CAPACITY COST ESCALATION RATE	2.5 %
III. UTILITY AND CUSTOMER COSTS			
(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36 \$/CUST		
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE	2.5 %		
(4) CUSTOMER EQUIPMENT COST	1,591.92 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %	(2) NON-FUEL ESCALATION RATE	2.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR	(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 S/CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %	FACTOR FOR CUSTOMER BILL	1.0
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR		
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %		
(12)* UTILITY DISCOUNT RATE	8.00 %		
(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 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010

9:19 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	90	90	3.36	3.73	3.87	3.36	ı	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4.24	3.93	1	1
2013	360	360	4.05	4.40	4.47	4.05	1	ı
2014	450	450	4.14	4.59	4.65	4,14	1	1
2015	540	540	4.34	4.83	4.96	4.34	1	1
2016	630	630	4.48	5.04	5.20	4.48	1	1
2017	720	720	4.67	5.34	5.60	4.67	1	1
2018	810	810	4,86	5.53	5.91	4.85	1	1
2019	900	900	5.14	5.91	5.58	5.06	1	I

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	[2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	***	*****					********		-	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
					****				****	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06

AFUDC RATE:

0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

* UNIT SIZE OF AVOIDED GENERATION UNIT = 160 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

							**		
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	19.2264	210.4314	0.0000	0.0000	11.9858	10.2042	0.0000	21.0080
2019	0.0212	19.2694	210.4314	0.0000	0.0000	12.9899	10.6416	0.0000	21.6177
NOMINAL	A MARKATON E E A ANNO ANNO ANNO ANNO ANNO ANNO A	38.4958	420.8629	0.0000	0.0000	24.9758	20.8459	0.0000	42.6257
NPV		20.0269		0.0000	0.0000	12.9738	10.8365	0.0000	22.1642

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

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

AVOIDED AVOIDED AVOIDED TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION DISTRIBUTION TOTAL AVOIDED PROGRAM CAPACITY O&M TRANSMISSION CAPACITY O&M DISTRIBUTION FUE COST COST COST COST COST COST COST SAVING Year \$(000) (000) \$(000	(1)	(2)	(2)	(4)	(5)	(6)	(7)	(9)
TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION DISTRIBUTION TOTAL AVOIDED PROGRAM CAPACITY O&M DISTRIBUTION FUE COST	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CAPACITY O&M TRANSMISSION CAPACITY O&M DISTRIBUTION FUE COST COST COST COST COST COST COST SAVING Year \$(000) (000) \$(0								DD 0 CD 11 (
COST (000) COST (000) COST (000) COST (000) COST (000) COST (000) SAVING (000) 2010 (000) 0.000000 </td <td></td> <td></td> <td>***************************************</td> <td></td> <td></td> <td></td> <td></td> <td></td>			***************************************					
Year \$(000) <td></td> <td>CAPACITY</td> <td>O&M</td> <td>TRANSMISSION</td> <td>CAPACITY</td> <td>O&M</td> <td>DISTRIBUTION</td> <td>FUEL</td>		CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
2010 0.000000 <th< td=""><td></td><td>COST</td><td>COST</td><td>COST</td><td>COST</td><td>COST</td><td>COST</td><td>SAVINGS</td></th<>		COST	COST	COST	COST	COST	COST	SAVINGS
2011 0.000000 0.000000 0.000000 0.000000 0.000000	Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2011 0.000000 0.000000 0.000000 0.000000 0.000000								
	2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.726204
2012 0.000000 0.000000 0.000000 0.000000 0.000000	2011	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	2.292567
	2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.102427
2013 0.000000 0.000000 0.000000 0.000000 0.000000	2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.998387
2014 0.000000 0.000000 0.000000 0.000000 0.000000	2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.038302
2015 0.000000 0.000000 0.000000 0.000000 0.000000	2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.345284
2016 0.000000 0.000000 0.000000 0.000000 0.000000	2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.765637
2017 0.000000 0.000000 0.000000 0.000000 0.000000	2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.606169
2018 0.000000 0.000000 0.000000 0.000000 0.000000	2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.319497
2019 0.000000 0.000000 0.000000 0.000000 0.000000	2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21.862661
NOMINAL 0.000000 0.000000 0.000000 0.000000 0.000000	NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.057134
NPV 0.000000 0.000000 0.000000 0.000000 0.000000	NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	62.061846

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	19.4797	0.7262	0.0000	0.0000	0.7262	0.7262
2011	58.4391	2.2926	0.0000	0.0000	2.2926	2.2926
2012	97.3985	4.1024	0.0000	0.0000	4.1024	4.1024
2013	136.3580	5.9984	0.0000	0.0000	5.9984	5.9984
2014	175.3174	8.0383	0.0000	0.0000	8.0383	8.0383
2015	214.2768	10.3453	0.0000	0.0000	10.3453	10.3453
2016	253.2362	12.7656	0.0000	0.0000	12.7656	12.7656
2017	292.1956	15.6062	0.0000	0.0000	15.6062	15.6062
2018	331.1550	18.3195	0.0000	0.0000	18.3195	18.3195
2019	370.1145	21.8627	0.0000	0.0000	21.8627	21.8627
NOMINAL	1,947,9709	100.0571	0.0000	0.0000	100.0571	100.0571
NPV		62.0618	0.0000	0.0000	62.0618	62.0618

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	TY PROGRA	M COSTS &	REBATES -	*********	······································	C	- PARTICII	PATING CUSTO	OMER COSTS	& BENEFIT	S		*****	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	22.4426	0.0000	22.4426	9,0000	0.0000	9.0000	143.2728	0.0000	143.2728	18.7200	0.6296	1.5979	2.2275	0.0000	0.0000	0.0000	0.0000
2011	23.0036	0.0000	23.0036	9.0000	0.0000	9.0000	146.8546	0.0000	146.8546	56.1600	2.0483	4.8897	6.9380	0.0000	0.0000	0.0000	0.0000
2012	23.5787	0.0000	23.5787	9.0000	0.0000	9.0000	150.5260	0.0000	150.5260	93.6000	3.6803	8.3125	11.9928	0.0000	0.0000	0.0000	0.0000
2013	24.1682	0.0000	24.1682	9.0000	0.0000	9.0000	154.2891	0.0000	154.2891	131.0400	5.3128	11.8702	17.1831	0.0000	0.0000	0.0000	0.0000
2014	24.7724	00000	24.7724	9.0000	0.0000	9.0000	158.1464	0.0000	158.1464	168.4800	6.9831	15.5669	22.5501	0.0000	0.0000	0.0000	0.0000
2015	25.3917	0.0000	25.3917	9.0000	0.0000	9.0000	162.1000	0.0000	162.1000	205.9200	8.9315	19.4068	28.3383	0.0000	0.0000	0.0000	0.0000
2016	26.0265	0.0000	26.0265	9.0000	0.0000	9.0000	166.1525	0.0000	166.1525	243.3600	10.9068	23.3940	34.3008	0.0000	0.0000	0.0000	0.0000
2017	26.6772	0.0000	26.6772	9.0000	0.0000	9.0000	170.3063	0.0000	170.3063	280.8000	13.1191	27.5329	40.6520	0.0000	0.0000	0.0000	0.0000
2018	27.3441	0.0000	27.3441	9.0000	0.0000	9.0000	174.5640	0.0000	174.5640	318.2400	15.4645	31.8281	47.2926	0.0000	0.0000	0.0000	0.0000
2019	28.0277	0.0000	28.0277	9.0000	0.0000	9.0000	178.9281	0.0000	178.9281	355.6800	18.2715	36.2840	54.5555	0.0000	0.0000	0.0000	0.0000
NOMINAL	251.4328	0.0000	251.4328	90.0000	0.0000	90.0000	1,605.1399	0.0000	1,605.1399	1,872.0000	85.3475	180.6831	266.0307	0.0000	0.0000	0.0000	0.0000
NPV	179.3933	0.0000	179.3933	65.2220	0.0000	65.2220	1,145.2421	0.0000	1,145.2421		53.1337	113.4793	166.6129		0.0000	0,0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	22.443	143.273	0.000	165.715	0.000	0.000	0.726	0.000	0.726	(164.989)	(164.989)
2011	0.000	23.004	146.855	0.000	169.858	0.000	0.000	2.293	0.000	2.293	(167.566)	(320.143)
2012	0.000	23.579	150.526	0.000	174.105	0.000	0.000	4.102	0.000	4.102	(170.002)	(465.892)
2013	0.000	24.168	154.289	0.000	178.457	0.000	0.000	5.998	0.000	5.998	(172.459)	(602.796)
2014	0.000	24.772	158.146	0.000	182.919	0.000	0.000	8.038	0.000	8.038	(174.880)	(731.338)
2015	0.000	25.392	162.100	0.000	187.492	0.000	0.000	10.345	0.000	10.345	(177.146)	(851.901)
2016	0.000	26.027	166.153	0.000	192.179	0.000	0.000	12.766	0.000	12.766	(179.413)	(964.962)
2017	0.000	26.677	170.306	0.000	196.984	0.000	0.000	15.606	0.000	15.606	(181.377)	(1,070.794)
2018	0.000	27.344	174.564	0.000	201.908	21.008	0.000	18.319	0.000	39.327	(162.581)	(1,158.631)
2019	0.000	28.028	178.928	0.000	206.956	21.618	0.000	21.863	0.000	43.480	(163.475)	(1,240.409)
NOMINAL	0.000	251.433	1,605.140	0.000	1,856.573	42.626	0.000	100.057	0.000	142.683	(1,713.890)	· · · · · · · · · · · · · · · · · · ·
NPV	0.000	179.393	1,145.242	0.000	1,324.635	22.164	0.000	62.062	0.000	84.226	(1,240.409)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.06

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER J4

(1)		(3) TAX CREDITS	(4) UTILITY REBATES	(5) OTHER BENEFITS	BENEFITS	EQUIPMENT COSTS	COSTS		(10) TOTAL COSTS		(12) CUMULATIVE DISCOUNTED NET BENEFITS	CUMULATIVE OF COUNTED BENEFITS	DISCOUNTED COSTS	Benefit to Cost Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010 2011	2.228 6.938	0.000	9.000 9.000	0.000	11.228 15.938	143.273 146.855	0.000	0.000	143.273 146.855	(132.045) (130.917)	(132.045) (253.264)	11 26	143 279	0.08
2012	11.993	0.000	9.000	0.000	20.993	150.526	0.000	0.000	150.526	(129.533)	(364.318)	44	408	11.0
2013 2014	17.183 22.550	0.000	9.000 9.000	0,000	26.183 31.550	154,289 158,146	0.000	0.000	154.289 158.146	(128.106) (126.596)	(466.013) (559.065)	65 88	531 647	0.12 0.14
2015	28.338	0.000	9.000	0.000	37.338	162.100	0.000	0.000	162.100	(124.762)	(643.976)	113	757	0.14
2016	34.301	0.000	9.000	0.000	43.301	166.153	0.000	0.000	166.153	(122.852)	(721.393)	141	862	0.16
2017	40.652	0.000	9.000	0.000	49.652	170.306	0.000	0.000	170.306	(120.654)	(791.794)	170	961	81.0
2018	47.293	0.000	9.000	0.000	56.293	174.564	0.000	0.000	174.564	(118.271)	(855.692)	200	1,056	0.19
2019	54.556	0.000	9.000	0.000	63.556	178.928	0.000	0.000	178.928	(115.373)	(913.407)	232	1,145	0.20
NOMINAL	266.031	0.000	90.000	0.000	356.031	1,605.140	0.000	0.000	1,605.140	(1,249.109)				
NPV	166.613	0.000	65.222	0.000	231.835	1,145,242	0.000	0.000	1,145.242	(913.407)				

In-service year of generation unit: 2018
Discount rate: 8.00%

Discount rate: 8.00%
Benefit/Cost Ratio: 0.20

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(I4) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				-	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	22.443	9.000	2.228	0.000	33.670	0.726	0.000	0.000	0.000	0.726	(32.944)	(32.944)
2011	0.000	23.004	9.000	6.938	0.000	38.942	2.293	0.000	0.000	0.000	2.293	(36.649)	(66.878)
2012	0.000	23.579	9.000	11.993	0.000	44.572	4.102	0.000	0.000	0.000	4.102	(40.469)	(101.574)
2013	0.000	24.168	9.000	17.183	0.000	50.351	5.998	0.000	0.000	0.000	5.998	(44.353)	(136.783)
2014	0.000	24.772	9.000	22.550	0.000	56.322	8.038	0.000	0.000	0.000	8.038	(48.284)	(172.273)
2015	0.000	25.392	9.000	28.338	0.000	62.730	10.345	0.000	0.000	0.000	10.345	(52.385)	(207.925)
2016	0.000	26.027	9.000	34.301	0.000	69.327	12.766	0.000	0.000	0.000	12.766	(56.562)	(243.569)
2017	0.000	26.677	9.000	40.652	0.000	76.329	15.606	0.000	0.000	0.000	15.606	(60.723)	(279.000)
2018	0.000	27.344	9.000	47.293	0.000	83.637	39.327	0.000	0.000	0.000	39.327	(44.309)	(302.939)
2019	0.000	28.028	9.000	54.556	0.000	91.583	43.480	0.000	0.000	0.000	43.480	(48.103)	(327.002)
NOMINAL	0.000	251.433	90.000	266.031	0.000	607.463	142.683	0.000	0.000	0.000	142.683	(464.781)	er i i gamen e e e e e e e e e e e e e e e e e e
NPV	0.000	179.393	65.222	166.613	0.000	411.228	84.226	0.000	0.000	0.000	84.226	(327.002)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.20

Residential Efficient Electric Heat Pump Rebates – SEER 15

Residential High Performance Windows Rebates

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PROGRAM: Residential Energy Efficiency High Performance Windows

(1) CUSTOMER KW REDUCTION AT THE METER	1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	·
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (1) YEARS (2) GENERATOR ECONOMIC LIFE (2) YEARS (3) T & D ECONOMIC LIFE (3) YEARS (3) T & D ECONOMIC LIFE (3) YEARS (4) AVOIDED GEN UNIT FUEL COST (5) K FACTOR FOR GENERATION (6) K FACTOR FOR GENERATION (7) CUSTOMER COST PER CUSTOMER (8) K FACTOR FOR GENERATION (10) CUSTOMER GUIPMENT COST (11) AVOIDED GEN UNIT FUEL COST (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL SCALLATION RATE (18) K FACTOR FOR T & D (19) CAPACITY COST ESCALATION RATE (19) CAPACITY COST ESCALATION RATE (2) ** UTILITY AND CUSTOMER COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER GUIPMENT COST (5) CUSTOMER GUIPMENT ESCALATION RATE (5) CUSTOMER GUIPMENT ESCALATION RATE (6) CUSTOMER GUIPMENT ESCALATION RATE (7) CUSTOMER O & M COST (8) CUSTOMER O & M ESCALATION RATE (10) CUSTOMER TAX CREDIT FER INSTALLATION (10) CUSTOMER TAX CREDIT FER INSTALLATION (10) ** (10)	(2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.39 KW GEN/CUST 3.9 % 811.7 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	2018 2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) CYBARS (5) GENERATOR CAPACITY PACTOR (6) K PACTOR FOR GENERATION (6) K PACTOR FOR GENERATION (6) CYBARS (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GENERATING UNIT FUEL COST (18) AVOIDED GEN UNIT FUEL ESCALATION RATE (2.5 % (18) AVOIDED GEN UNIT FUEL ESCALATION RATE (2.5 % (18) AVOIDED GEN UNIT FUEL ESCALATION RATE (2.5 % (18) AVOIDED GEN UNIT FUEL ESCALATION RATE (2.5 % (18) AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE (2.5 % (19)* CAPACITY COST ESCALATION RATE (2.5 % (1) "* UTILITY NONRECURRING COST PER CUSTOMER (1) SCUSTOMER EQUIPMENT COST (2) UTILITY COST ESCALATION RATE (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT ESCALATION RATE (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER EQUIPMENT ESCALATION RATE (7) CUSTOMER O& M COST (7) CUSTOMER O& M COST (8) CUSTOMER O& M COST (9) CUSTOMER AX CREDIT PER INSTALLATION (1) SCUSTOMER AX CREDIT PER INSTALLATION (1) SUPPLY COST ESCALATION RATE (2) W (3) CUSTOMER BESCALATION RATE (4) CUSTOMER TAX CREDIT PER INSTALLATION (5) CUSTOMER TAX CREDIT PER INSTALLATION (6) CUSTOMER TAX CREDIT PER INSTALLATION (7) CUSTOMER TAX CREDIT PER INSTALLATION (8) CUSTOMER TAX CREDIT PER INSTALLATION RATE (9) CUSTOMER TAX CREDIT PER INSTALLATION (10)* INCREASED SUPPLY COSTS (10)* UTILITY DISCOUNT RATE (10)* UTILITY DISCOUNT RATE (10)* UTILITY POSCECALATION RATE (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY ON RECURRING REBATENCENTIVE (14)* UTILITY APUDC RATE (15)* UTILITY ON RECURRING REBATENCENTIVE (16)* UTILITY ON RECURRING REBATENCENTIVE (17)* UTILITY	II. ECONOMIC LIFE AND K FACTORS			*
(2) GENERATOR ECONOMIC LIFE 20 YEARS (15) GENERATOR CAPACITY FACTOR 15 % (3) T& DECONOMIC LIFE 20 YEARS (16) AVOIDED GENERATING UNIT FUEL COST 3.363149 CENTS/KWH (4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (5) K FACTOR FOR T& D 0.00 (18)* AVOIDED DEVICHASE CAPACITY COST PER KW 0 \$/KW/YR (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % (10)** UTILITY AND CUSTOMER COST PER CUSTOMER 0.00 \$/CUST/YR V. NON-FUEL ENERGY AND DEMAND CHARGES (11)** UTILITY COST ESCALATION RATE 2.5 % (11)** UTILITY COST ESCALATION RATE 2.5 % (12)** UTILITY COST ESCALATION RATE 2.5 % (13)** USITOMER GUIPMENT COST 1.56377 \$/CUST (1)** NON-FUEL COST IN CUSTOMER BILL 8.536 CENTS/KWH (5)** CUSTOMER GUIPMENT ESCALATION RATE 2.5 % (2)** NON-FUEL ESCALATION RATE 2.5 % (2)** NON-FUEL ESCALATION RATE 2.5 % (3)** CUSTOMER O& M ESCALATION RATE 2.5 % (3)** CUSTOMER DEMAND CHARGE PER KW 0.00 \$/KW/MO (7)** CUSTOMER O& M ESCALATION RATE 2.5 % (4)** DEMAND CHARGE PER KW 0.00 \$/KW/MO (7)** CUSTOMER TAX CREDIT PER INSTALLATION 1.500.00 \$/CUST/YR (3)** CUSTOMER DEMAND CHARGE PER KW 0.00 \$/KW/MO (7)** CUSTOMER TAX CREDIT ESCALATION RATE 2.5 % (4)** DEMAND CHARGE SCALATION RATE 2.5 % (4)** DEMAND CHARGE PER KW 0.00 \$/KW/MO (7)** CUSTOMER TAX CREDIT ESCALATION RATE 2.5 % (4)** DEMAND CHARGE PER KW 0.00 \$/KW/MO (7)** CUSTOMER TAX CREDIT ESCALATION RATE 2.5 % (4)** DEMAND CHARGE SCALATION RATE 2.5 % (4)** DEMAND CHARGE SCALATIO	(I) OTHER VIDENCES FOR COMPURED LATION BROCK AND	10 15 150		
(3) T & D ECONOMIC LIFE 20 YEARS (16) AVOIDED GENERATING UNIT FUEL COST 3.363149 CENTS/KWH (4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GENERATING LIVIT FUEL ESCALATION RATE 2.5 % (16)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (18)* AVOIDED PURCHASE CAPACITY COST PER KW 0 \$KWYR (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* UTILITY NON RECURRING COST PER CUSTOMER 0.00 \$CUST/VR (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* UTILITY RECURRING COST PER CUSTOMER 0.00 \$CUST/VR (19)* CAPACITY COST IN CUSTOMER BILL 8.536 CENTS/KWH (19)* CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (1) NON-FUEL ENERGY AND DEMAND CHARGES 8.536 CENTS/KWH (19)* CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (10)* CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (10)* CUSTOMER DEMAND CHARGE PER KW 0.00 \$KWAMO (10)* CUSTOMER TO & M ESCALATION RATE 2.5 % (10)* CUSTOMER TAX CREDIT PER INSTALLATION 1.500 00 \$KCUST (10)* CUSTOMER TAX CREDIT PER INSTALLATION RATE 0.00 % (10)* INCREASED SUPPLY COSTS ESCALATION RATE 8.00 % (10)* UTILITY OF SECALATION RATE 8.00 % (11)* UTILITY OF SECALAT			*	
(4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (5) K FACTOR FOR T & D 0.00 (18)* AVOIDED PURCHASE CAPACITY COST PER KW 0.5 KWYR (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 %	• /			
(5) K FACTOR FOR T & D 0.00 (18)* AVOIDED PURCHASE CAPACITY COST PER KW 0 \$KWYR (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % III. UTILITY AND CUSTOMER COSTS				
UTILITY AND CUSTOMER COSTS 244.34 \$/CUST	(5) K FACTOR FOR T & D	0.00		0 \$/KW/YR
1)** UTILITY NONRECURRING COST PER CUSTOMER 244.34 \$/CUST 245.36 245.36 246.37	(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	ı	(19)* CAPACITY COST ESCALATION RATE	2.5 %
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR 2.5 % 1,563.77 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 % 0.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 % 250.00 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2 0 % 0.00 \$/ KW/MO 2 5 %
	,		* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM Residential Energy Efficiency High Performance Windows

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1,00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	105	105	3.36	3 73	3.87	3.36	j	3
2011	210	210	3,65	3.92	3.99	3.65	1	1
2012	315	315	3.93	4.21	4.24	3.93	i	1
2013	420	420	4.05	4.40	4,47	4.05	1	1
2014	525	525	4.14	4.59	4.65	4.14	1	1
2015	6.30	630	4.34	4.83	4.96	4.34	1	1
2016	735	735	4.48	5 04	5.20	4.48	1	1
2017	840	840	4.67	5 34	5 60	4.67	ĵ	1
2018	945	945	4.86	5,53	5.91	4,85	1	1
2019	1050	1050	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM	2.3>	< FORI	M 2.4>	< FORM 2.5>		
	Total Resor	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
_							
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	- 	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	3.00
					*******				**************************************	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency High Performance Windows

* UNIT SIZE OF AVOIDED GENERATION UNIT =

364 kW \$0

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) =

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	CAPACITI							BENEFITS
V	FACTOR		KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	
<u>Year</u>		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	43.6850	478.1289	0.0000	0.0000	27.2334	23.1854	0.0000	47.7330
2019	0.0212	43.7827	478.1289	0.0000	0.0000	29.5149	24.1793	0.0000	49.1183
NOMINAL	a principal of the second	87.4677	956.2578	0.0000	0.0000	56.7483	47.3647	0.0000	96.8513
NPV		45.5039		0.0000	0.0000	29.4782	24.6220	0.0000	50.3601

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency High Performance Windows

		D TRANS. (000) =	\$0				
			* INSERVIC	E COSTS OF AVOII	DED DIST. (000) =	\$0	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	AVOIDED	AVOIDED	(4)	AVOIDED	AVOIDED	(1)	(6)
	TRANSMISSION		TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
***************************************	<u></u>						
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.588685
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.015354
2012	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	8.974709
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.122423
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.585061
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.631950
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	27.926858
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	34.140971
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	40.076808
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	47.828042
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	218.890861
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	135.770137

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	42.6150	1.5887	0.0000	0.0000	1,5887	1.5887
2011	127.8449	5.0154	0.0000	0.0000	5.0154	5.0154
2012	213.0748	8.9747	0.0000	0.0000	8.9747	8.9747
2013	298.3047	13.1224	0.0000	0.0000	13.1224	13.1224
2014	383.5346	17.5851	0.0000	0.0000	17.5851	17.5851
2015	468.7645	22.6319	0.0000	0.0000	22.6319	22.6319
2016	553.9944	27.9269	0,0000	0.0000	27.9269	27.9269
2017	639.2243	34.1410	0.0000	0.0000	34.1410	34,1410
2018	724,4542	40.0768	0.0000	0.0000	40.0768	40.0768
2019	809.6841	47.8280	0.0000	0.0000	47.8280	47.8280
NOMINAL	4,261,4954	218.8909	0.0000	0.0000	218.8909	218.8909
NPV		135.7701	0.0000	0.0000	135.7701	135.7701

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGE	RAM COSTS	& REBATE	S	>	<	PART	ICIPATING (CUSTOMER C	COSTS & BE	NEFITS					>
									****		7.12	255	DECOT	DIO.	D.C.	21/2	cercer
			TOTAL			TOTAL	PARTIC	PARTIC	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC	IN	REV	REV.	REV.	IN	REV.		REVENUE
	NONREC	RECUR	PGM	NONREC.	RECUR	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
														,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
2010	25.6556	0.0000	25,6556	26.2500	0.0000	26.2500	164.1959	0.0000	164.1959	40.9530	1.3773	3,4957	4.8731	0.0000	0.0000	0.0000	0.0000
2011	26,2970	0.0000	26.2970	26.2500	0.0000	26,2500	168.3007	0 0000	168.3007	122.8589	4.4810	10.6970	15,1780	0.0000	0.0000	0.0000	0.0000
2012	26,9545	0.0000	26,9545	26.2500	0.0000	26.2500	172,5083	0.0000	172.5083	204,7649	8.0513	18,1849	26.2362	0.0000	0.0000	0.0000	0.0000
2013	27 6283	0.0000	27.6283	26.2500	0.0000	26,2500	176.8210	0.0000	176.8210	286,6708	11.6227	25.9680	37.5907	0.0000	0.0000	0.0000	0.0000
2014	28 3190	0.0000	28.3190	26.2500				0.0000	181.2415	368,5767	15.2767	34.0552	49.3319	0.0000	0.0000	0.0000	0.0000
					0.0000	26.2500	181,2415										
2015	29 0270	0.0000	29,0270	26.2500	0.0000	26.2500	185.7725	0.0000	185.7725	450,4827	19.5390	42.4554	61.9945	0.0000	0.0000	0.0000	0.0000
2016	29.7527	0.0000	29.7527	26.2500	0.0000	26,2500	190,4168	0.0000	190,4168	532.3886	23.8603	51.1781	75.0384	0.0000	0.0000	0.0000	0.0000
2017	30.4965	0.0000	30.4965	26.2500	0.0000	26.2500	195.1773	0.0000	195.1773	614,2946	28,7000	60 2327	88.9327	0 0000	0.0000	0.0000	0.0000
2018	31.2589	0,0000	31.2589	26,2500	0.0000	26,2500	200.0567	0.0000	200.0567	696,2005	33 8311	69.6290	103.4601	0.0000	0.0000	0.0000	0.0000
2019	32 0404	0 0000	32.0404	26,2500	0.0000	26.2500	205,0581	0.0000	205,0581	778.1065	39.9718	79 3771	119.3489	0.0000	0 0000	0.0000	0.0000
NOMINAL.	287 4300	ő.0000 ^{**}	287.4300	262.5000	0.0000	262 5000	1.839 5488	0.0000	1,839,5488	4,095,2971	186.7113	395.2730	581.9843	0.0000	0.0000	0.0000	0.0000
									, - ,- ,-								
NPV	205 0768	0.0000	205,0768	190.2308	0.0000	190 2308	1.312.4892	0.0000	1.312.4892		116.2383	248.2540	364.4923		0.0000	0.0000	0.0000
		5.5000	E. 0.0700		5,0000	170.2500	1,312.7072	a,0000	1,5 12.70 72		, 10.2202	A 10.2070	50 t. 1725		0.0000	0,000	5.2000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	25.656	164.196	0.000	189.851	0.000	0.000	1.589	0.000	1.589	(188.263)	(188.263)
2011	0.000	26.297	168.301	0.000	194.598	0.000	0.000	5.015	0.000	5.015	(189.582)	(363.802)
2012	0.000	26.954	172.508	0.000	199.463	0.000	0.000	8.975	0.000	8.975	(190.488)	(527.115)
2013	0.000	27.628	176.821	0.000	204.449	0.000	0.000	13.122	0.000	13.122	(191.327)	(678.996)
2014	0.000	28.319	181,241	0.000	209.561	0.000	0.000	17.585	0.000	17.585	(191.975)	(820.104)
2015	0.000	29.027	185.773	0.000	214.800	0.000	0.000	22.632	0.000	22.632	(192.168)	(950.890)
2016	0.000	29.753	190.417	0.000	220.170	0.000	0.000	27.927	0.000	27.927	(192,243)	(1.072.036)
2017	0.000	30.497	195.177	0.000	225.674	0.000	0.000	34.141	0.000	34.141	(191.533)	(1,183.793)
2018	0.000	31.259	200.057	0.000	231.316	47.733	0.000	40.077	0.000	87.810	(143.506)	(1,261.325)
2019	0.000	32.040	205.058	0.000	237.099	49.118	0.000	47.828	0.000	96.946	(140.152)	(1,331.436)
NOMINAL	0.000	287.430	1,839,549	0.000	2,126.979	96,851	0.000	218.891	0.000	315.742	(1,811.237)	The second secon
NPV	0.000	205.077	1,312.489	0.000	1,517.566	50.360	0.000	135.770	0.000	186.130	(1,331.436)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.12

PARTICIPANT COSTS AND BENEFITS PROGRAM, Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	4.873	157,500	26.250	0.000	188,623	164.196	0.000		164.196	24.427	24,427	189	164	1.15
2011	15.178	157.500	26.250	0.000	198,928	168,301	0.000	0.000	168.301	30.627	52.786	3 73	320	1.16
2012	26.236	157,500	26.250	0.000	209.986	172.508	0.000	0 000	172.508	37.478	84.917	553	468	1.18
2013	37 591	157,500	26 250	0.000	221.341	176.821	0.000	0.000	176.821	44.520	120.258	729	608	1.20
2014	49.332	157,500	26.250	0,000	233,082	181.241	0.000	0.000	181.241	51.840	158.362	900	742	1.21
2015	61,994	157.500	26.250	0.000	245.744	185.773	0.000	0.000	185,773	59.972	199.178	1,067	868	1.23
2016	75 038	157,500	26.250	0.000	258.788	190.417	0.000	0.000	190.417	68.372	242,264	1.230	988	1.25
2017	88.933	157,500	26.250	0.000	272.683	195.177	0.000	0,000	195.177	77.505	287.488	1,389	1,102	1.26
2018	103.460	157.500	26.250	0.000	287.210	200.057	0.000	0.000	200.057	87.153	334 574	1.544	1,210	1.28
2019	119.349	157.500	26,250	0.000	303.099	205,058	0.000	0.000	205.058	98.041	383.619	1,696	1,312	1.29
NOMINAL	581.984	1,575.000	262,500	0.000	2,419.484	1,839.549	0,000	0.000	*######	579.936				
NPV	364.492	1,141.385	190.231	0.000	1,696.108	1,312.489	0.000	0.000	######	383.619				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 1.29

RATE IMPACT TEST

PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2) INCREASED	(3) UTILITY	(4)	(5)	(6)	(7)	(8) AVOIDED GEN UNIT	(9) AVOIDED	(10)	(11)	(12)		(14) CUMULATIVE DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
			DIOPNEDICE										
**** . B	COSTS		INCENTIVES	LOSSES	COSTS		BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	25.656	26.250	4.873	0.000	56.779	1.589	0.000	0.000	0.000	1.589	(55.190)	(55.190)
2011	0.000	26.297	26.250	15.178	0.000	67.725	5.015	0.000	0.000	0.000	5.015	(62.710)	(113.255)
2012	0.000	26.954	26.250	26.236	0.000	79.441	8.975	0.000	0.000	0,000	8.975	(70.466)	(173.668)
2013	0.000	27.628	26.250	37.591	0.000	91.469	13.122	0.000	0.000	0.000	13.122	(78.347)	(235.862)
2014	0.000	28.319	26,250	49.332	0.000	103.901	17.585	0.000	0.000	0.000	17.585	(86.316)	(299.306)
2015	0.000	29.027	26.250	61.994	0.000	117.271	22.632	0.000	0.000	0.000	22.632	(94.640)	(363.717)
2016	0.000	29.753	26.250	75.038	0.000	131.041	27.927	0.000	0.000	0.000	27.927	(103.114)	(428.696)
2017	0.000	30.497	26.250	88.933	0.000	145.679	34.141	0.000	0.000	0.000	34.141	(111.538)	(493.778)
2018	0.000	31.259	26.250	103,460	0.000	160.969	87.810	0.000	0.000	0.000	87.810	(73.159)	(533,303)
2019	0.000	32.040	26.250	119.349	0.000	177.639	96.946	0.000	0.000	0.000	96.946	(80.693)	(573.670)
NOMINAL	0.000	287.430	262.500	581.984	0.000	#######	315.742	0.000	0.000	0.000	315.742	(816,172)	
NPV	0.000	205.077	190.231	364.492	0.000	759.800	186.130	0.000	0.000	0.000	186.130	(573.670)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]: 0.24

Residential Caulking and Weather Stripping Rebates

PROGRAM: Residential Energy Efficiency Caulk & Wihr Strip Rev 1

(6) GROUP LINE LOSS MULTIPLIER 1.0000 (6) BASE YEAR DISTRIBUTION COST (7) CUSTOMER KWH PROGRAM INCREASE AT METER 0.0 KWH/CUST/YR (7) GEN, TRAN, & DIST COST ESCALATION RATE (8)* CUSTOMER KWH REDUCTION AT METER 25.0 KWH/CUST/YR (8) GENERATOR FIXED 0 & M COST 10.7402 (9) GENERATOR FIXED 0 & M COST (11) DISTRIBUTION FIXED 0 & M COST (12) T&D FIXED 0 & M COST (13) AVOIDED GEN UNIT VARIABLE 0 & M COSTS (13) AVOIDED GEN UNIT VARIABLE 0 & M COST ESCALATION RATE (2) GENERATOR ECONOMIC LIFE 20 YEARS (14) GENERATOR CAPACITY FACTOR 1 (3) T & D ECONOMIC LIFE 20 YEARS (15) GENERATOR CAPACITY FACTOR 1 (4) K FACTOR FOR GENERATION 0.02 (17) AVOIDED GEN UNIT FUEL COST 3.36314 (4) K FACTOR FOR GENERATION CAPACITY COST PER KW	IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS				
II. ECONOMIC LIFE AND K FACTORS (12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE 2. (25) GENERATOR ECONOMIC LIFE 20 YEARS (15) GENERATOR CAPACITY FACTOR 1 (3) T & D ECONOMIC LIFE 20 YEARS (16) AVOIDED GENERATING UNIT FUEL COST 3.36314 (4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GEN UNIT FUEL ESCALATION RATE 2 (5) K FACTOR FOR T & D 0.00 (18)* AVOIDED PURCHASE CAPACITY COST PER KW	8 60 67 57 \$7KW 0 \$7KW 0 \$7KW 0 \$7KW/YR 5 \$7KW/YR				
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (1) STUDY PERIOD FOR CONSERVATION PROGRAM (10) STUDY PERIOD FOR CONSERVATION PROGRAM (10) YEARS (11) GENERATOR VARIABLE O&M COST SCALATION RATE (12) GENERATOR ECONOMIC LIFE (13) T & D ECONOMIC LIFE (14) K FACTOR FOR GENERATION (15) A VOIDED GEN UNIT FUEL ESCALATION RATE (16) A VOIDED GEN UNIT FUEL ESCALATION RATE (17) A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR 0 %				
	0 CENTS/KWH .5 % 15 % 19 CENTS/KWH 5 % 0 \$/KW/YR .5 %				
III UTILITY AND CUSTOMER COSTS					
(5) CUSTOMER EQUIPMENT ESCALATION RATE 0 0 % (2) NON-FUEL ESCALATION RATE 2.0 (6) CUSTOMER O & M COST 0.00 \$/CUST/YR (3) CUSTOMER DEMAND CHARGE PER KW 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 CENTS/KWH 0 % 0 \$/KW/MO 5 %				
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE 9.0 % * FIRE Program Version Number: 1.03					

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{••} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010

9:34 AM

PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev I

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	34	34	3.36	3.73	3.87	3,36	1	ŧ
2011	68	68	3,65	3,92	3.99	3.65	i	1
2012	102	102	3 93	4.21	4,24	3.93	1	1
2013	136	136	4 05	4.40	4.47	4 05	1	1
2014	170	170	4.14	4.59	4 65	4.14	1	1
2015	204	204	4.34	4 83	4.96	4.34	I	l
2016	238	238	4.48	5.04	5.20	4.48	Į.	1
2017	272	272	4.67	5.34	5,60	4.67	1	1
2018	306	306	4 86	5.53	5.91	4.85	1	1
2019	340	340	5.14	5.91	5.58	5.06	l	ſ

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participa	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	- 	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0,00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
									the division.	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

* UNIT SIZE OF AVOIDED GENERATION UNIT = 0 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
(17	(171)	AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED	(0)	AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000.0	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	00000
2019	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
			a Ann. M. pharmadel A.S. S. Min. Add in co.		N Comment with the N	en a manual administrative physical			
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0,0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

\$0

0.000000

0.000000

0.000000

0.000000

0.415907

0.496348

2,271596

1.408990

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$0 (1)(4) (5) **(7)** (8) (2) (3) (6) **AVOIDED AVOIDED AVOIDED AVOIDED** TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION DISTRIBUTION TOTAL AVOIDED **PROGRAM CAPACITY** O&M TRANSMISSION **CAPACITY** 0&M DISTRIBUTION **FUEL** COST COST COST COST COST COST **SAVINGS** \$(000) (000)\$(000) \$(000) \$(000) \$(000) Year \$(000) 0.000000 0.000000 2010 0.000000 0.000000 0.000000 0.000000 0.016487 2011 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.052048 2012 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.093137 2013 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.136181 2014 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.182493 2015 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.234869 2016 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.289818 2017 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.354307 0.000000

0.000000

0.000000

0.000000

* INSERVICE COSTS OF AVOIDED TRANS. (000) =

0.000000

0.000000

0.0000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

0.000000

2018

2019

NPV

NOMINAL

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	0.4422	0.0165	0.0000	0.0000	0.0165	0.0165
2011	1.3267	0.0520	0.0000	0.0000	0.0520	0.0520
2012	2.2112	0.0931	0.0000	0.0000	0.0931	0.0931
2013	3.0957	0.1362	0.0000	0.0000	0.1362	0.1362
2014	3.9802	0.1825	0.0000	0.0000	0.1825	0.1825
2015	4.8647	0.2349	0.0000	0.0000	0.2349	0.2349
2016	5.7492	0.2898	0.0000	0.0000	0.2898	0.2898
2017	6.6337	0.3543	0.0000	0.0000	0.3543	0.3543
2018	7,5182	0.4159	0.0000	0.0000	0.4159	0.4159
2019	8.4027	0.4963	0.0000	0.0000	0.4963	0.4963
NOMINAL	44.2248	2.2716	0.0000	0,0000	2.2716	2.2716
NPV		1.4090	0.0000	0.0000	1.4090	1.4090

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	TY PROGRA	AM COSTS	& REBATE	S	> •	<	PARTIC	CIPATING C	USTOMER (COSTS & BE	NEFITS					>
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL I	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	0.2663	0.0000	0 2663	1.7000	0.0000	1,7000	3,4000	0.0000	3.4000	0.4250	0.0143	0.0363	0.0506	0.0000	0.0000	00000	0.0000
2011	0,2729	0 0000	0.2729	1 7000	0.0000	1.7000	3,4000	0.0000	3,4000	1.2750	0.0465	0.1110	0.1575	0.0000	0.0000	0.0000	0,0000
2012	0,2797	0.0000	0.2797	1.7000	0.0000	1.7000	3.4000	0 0000	3.4000	2.1250	0.0836	0,1887	0.2723	0.0000	0.0000	0.0000	0.0000
2013	0.2867	0.0000	0.2867	1,7000	0.0000	1.7000	3.4000	0.0000	3.4000	2.9750	0 1206	0.2695	0,3901	0.0000	0.0000	0.0000	0 0000
2014	0 2939	0.0000	0.2939	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	3.8250	0.1585	0.3534	0,5120	0.0000	0 0000	0.0000	0.0000
2015	0.3012	0.0000	0.3012	1.7000	0 0000	1,7000	3.4000	0.0000	3,4000	4.6750	0.2028	0.4406	0 6434	0.0000	0 0000	0.0000	0.0000
2016	0,3088	0 0000	0.3088	1 7000	0 0000	1.7000	3,4000	0.0000	3.4000	5,5250	0.2476	0.5311	0,7787	0.0000	0.0000	0.0000	0.0000
2017	0 3 1 6 5	0.0000	0 3165	1.7000	0.0000	1 7000	3.4000	0.0000	3.4000	6.3750	0.2978	0.6251	0.9229	0.0000	0 0000	0.0000	0.0000
2018	0.3244	0.0000	0.3244	1,7000	0.0000	1.7000	3.4000	0.0000	3,4000	7.2250	0.3511	0.7226	1.0737	0.0000	0.0000	0.0000	0.0000
2019	0.3325	0.0000	0.3325	1.7000	0.0000	1.7000	3.4000	0.0000	3,4000	8.0750	0.4148	0.8238	1.2386	0.0000	0.0000	0.0000	0.0000
NOMINAL	2 9829	0 0000	2.9829	17 0000	0.0000	17.0000	34.0000	0.0000	34.0000	42,5000	1.9376	4.1020	6.0397	0 0000	0.0000	0.0000	0.0000
NPV	2 1283	0.0000	2.1283	12.3197	0.0000	12 3197	24,6394	0.0000	24.6394		1.2063	2.5763	3.7826		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT		mom	AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL		T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.266	3.400	0.000	3.666	0.000	0.000	0.016	0.000	0.016	(3.650)	(3.650)
2011	0.000	0.273	3.400	0.000	3.673	0.000	0.000	0.052	0.000	0.052	(3.621)	(7.002)
2012	0.000	0.280	3.400	0.000	3.680	0.000	0.000	0.093	0.000	0.093	(3.587)	(10.077)
2013	0.000	0.287	3.400	0.000	3.687	0.000	0.000	0.136	0.000	0.136	(3.551)	(12.896)
2014	0.000	0.294	3.400	0.000	3.694	0.000	0.000	0.182	0.000	0.182	(3.511)	(15.477)
2015	0.000	0.301	3,400	0.000	3.701	0.000	0.000	0.235	0.000	0.235	(3.466)	(17.836)
2016	0.000	0.309	3.400	0.000	3.709	0.000	0.000	0.290	0.000	0.290	(3.419)	(19.991)
2017	0.000	0.316	3.400	0.000	3.716	0.000	0.000	0.354	0.000	0,354	(3,362)	(21.952)
2018	0.000	0.324	3.400	0.000	3.724	0.000	0.000	0.416	0.000	0.416	(3.308)	(23.740)
2019	0.000	0.333	3.400	0.000	3.733	0.000	0.000	0.496	0.000	0.496	(3.236)	(25.359)
s sales		* "										
NOMINAL	0.000	2.983	34.000	0.000	36.983	0.000	0.000	2.272	0.000	2.272	(34.711)	•
NPV	0.000	2.128	24.639	0.000	26.768	0.000	0.000	1.409	0.000	1.409	(25.359)	

Discount Rate: 8.00% ol (11) / col (6)]: 0.05

Benefit/Cost Ratio [col (11) / col (6)]:

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
						4								
2010	0.051	1.020	1.700	0.000	2.771	3,400	0.000	0.000	3,400	(0.629)	(0.629)	3	3	0.81
2011	0.158	1.020	1.700	0.000	2.878	3,400	0.000	0.000	3.400	(0.522)	(1.113)	5	7	0.83
2012	0 272	1.020	1.700	0.000	2.992	3.400	0.000	0.000	3.400	(0.408)	(1.463)	8	9	0.85
2013	0.390	1.020	1.700	0.000	3.110	3.400	0.000	0.000	3.400	(0.290)	(1.693)	10	12	0.86
2014	0.512	1.020	1.700	0.000	3.232	3.400	0.000	0.000	3.400	(0.168)	(1.816)	13	15	0.88
2015	0.643	1.020	1.700	0.000	3.363	3.400	0.000	0.000	3.400	(0.037)	(1.841)	15	17	0.89
2016	0.779	1.020	1.700	0.000	3.499	3.400	0.000	0.000	3.400	0.099	(1.779)	17	19	0.91
2017	0.923	1.020	1.700	0.000	3.643	3.400	0.000	0.000	3,400	0.243	(1.637)	19	21	0 92
2018	1.074	1 020	1,700	0 000	3.794	3,400	0 000	0.000	3.400	0.394	(1.425)	22	23	0.94
2019	1.239	1.020	1.700	0.000	3.959	3.400	0.000	0.000	3.400	0.559	(1.145)	23	25	0.95
NOMINAL	6.040	10,200	17.000	0 000	33.240	34,000	0,000	0 000	34,000	(0.760)				
NPV	3.783	7.392	12.320	0.000	23.494	24.639	0.000	0.000	24.639	(1.145)				

In-service year of generation unit: Discount rate: 2018 8,00%

Benefit/Cost Ratio:

8,00%

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)		(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.266	1.700	0.051	0,000	2.017	0.016	0.000	0.000	0.000	0.016	(2.000)	(2,000)
2011	0.000	0.273	1.700	0.158	0.000	2.130	0.052	0.000	0.000	0.000	0.052	(2.078)	(3.925)
2012	0.000	0.280	1.700	0.272	0.000	2.252	0.093	0.000	0.000	0.000	0.093	(2.159)	(5.776)
2013	0.000	0.287	1.700	0.390	0.000	2.377	0.136	0.000	0.000	0.000	0.136	(2.241)	(7.554)
2014	0.000	0.294	1.700	0.512	0.000	2.506	0.182	0.000	0.000	0.000	0.182	(2.323)	(9.262)
2015	0.000	0.301	1.700	0.643	0.000	2.645	0.235	0.000	0.000	0.000	0.235	(2.410)	(10.902)
2016	0.000	0.309	1.700	0.779	0.000	2.788	0.290	0.000	0.000	0.000	0.290	(2.498)	(12.476)
2017	0.000	0.316	1.700	0.923	0.000	2.939	0.354	0.000	0.000	0.000	0.354	(2.585)	(13.984)
2018	0.000	0.324	1.700	1.074	0.000	3.098	0.416	0.000	0.000	0.000	0.416	(2.682)	(15.434)
2019	0.000	0.333	1.700	1.239	0.000	3.271	0.496	0.000	0.000	0.000	0.496	(2.775)	(16.822)
NOMINAL	0.000	2.983	17.000	6.040	0.000	26.023	2.272	0.000	0.000	0.000	2.272	(23.751)	removables to the same of the
NPV	0.000	2.128	12.320	3.783	0.000	18.231	1.409	0.000	0.000	0.000	1.409	(16.822)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.08

Residential Wall Insulation Rebates

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 8/30 AM

PROGRAM: Residential Energy Efficiency Wall Insulation

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.02 KW:CUST	(I) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.02 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	53.5 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) KWH LINE LOSS PERCENTAGE	39 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(b) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN. TRAN. & DIST COST ESCALATION RATE	
(8)* CUSTOMER KWH REDUCTION AT METER	51.4 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	
		(9) GENERATOR FIXED O&M ESCALATION RATE	
		(10) TRANSMISSION FIXED O & M COST	
		(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
II. ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	• /•
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(19)* CAPACITY COST ESCALATION RATE	2.5 %
III UTILITY AND CUSTOMER COSTS	4		
(1)** UTILITY NONRECURRING COST PER CUSTOMER	16.11 \$/CUST		
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE	2.5 %		
(4) CUSTOMER EQUIPMENT COST	2.215.55 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH
(5) CUSTOMER EQUIPMENT ESCALATION RATE		(2) NON-FUEL ESCALATION RATE	2.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR	(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	(4) DEMAND CHARGE ESCALATION RATE	
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	664.67 \$/CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %	FACTOR FOR CUSTOMER BILL	1.0
(10)* INCREASED SUPPLY COSTS	0.00 \$:CUST:YR	The state of the s	4.0
(11)* SUPPLY COSTS ESCALATION RATE			
(12)* UTILITY DISCOUNT RATE			
(13)* UTILITY AFUDC RATE	0.00 %		
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00 \$ CUST		
(15)* UTILITY RECURRING REBATE INCENTIVE	0.00 \$ CUST YR		
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE		* FIRE Program Version Number: 1.03	
, .v		. Ingerior - monocype commences - prose	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS IIL(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN IIL(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 8:30 AM

PROGRAM: Residential Energy Efficiency Wall Insulation

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	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	7		1 2/	3.73	2.02	3.34		
2010 2011	14	14	3.36 3.65	3.73 3.92	3.87 3.99	3.36	l i	
2012	21	21	3,93	4.21	4.24	3.65 3.93	:	!
				4.40			1	!
2013	28	28	4.05		4.47	4.05	i	i
2014	35	35	4.14	4.59	4,65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	ì	Ì
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	<u> </u>	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOF	VM 2.5>
	Total Resor	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
_						
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	. (6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	Waster					*****	4 177044		*******	***************************************
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0,00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	0.55
				****				•		
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$)
AFUDC RATE: \$120.06 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Wall Insulation

* UNIT SIZE OF AVOIDED GENERATION UNIT = 1 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.1638	1.7928	0.0000	0.0000	0.1021	0.0869	0.0000	0.1790
2019	0.0212	0.1642	1.7928	0.0000	0.0000	0.1107	0.0907	0.0000	0.1842
			100.00.00.000	. XAT 111000			/ 1,000		
NOMINAL		0.3280	3.5857	0.0000	0.0000	0.2128	0.1776	0.0000	0.3632
NPV		0.1706		0.0000	0.0000	0.1105	0.0923	0.0000	0.1888

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency Wall Insulation

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.006983
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.022045
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.039449
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.057680
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.077296
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.099480
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.122754
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.150068
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.176159
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.210230
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0,00000,0	0.962144
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.596783

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	0.1873	0.0070	0.0000	0.0000	0.0070	0.0070
2011	0.5619	0.0220	0.0000	0.0000	0.0220	0.0220
2012	0.9366	0.0394	0.0000	0.0000	0.0394	0.0394
2013	1.3112	0.0577	0.0000	0.0000	0.0577	0.0577
2014	1.6858	0.0773	0.0000	0.0000	0.0773	0.0773
2015	2.0605	0.0995	0.0000	0.0000	0.0995	0.0995
2016	2.4351	0.1228	0.0000	0.0000	0.1228	0.1228
2017	2.8097	0.1501	0.0000	0.0000	0.1501	0.1501
2018	3.1844	0.1762	0.0000	0.0000	0.1762	0.1762
2019	3.5590	0.2102	0.0000	0.0000	0.2102	0.2102
NOMINAL	18.7316	0.9621	0.0000	0.0000	0.9621	0.9621
NPV		0.5968	0.0000	0.0000	0.5968	0.5968

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2)	(3)	(4) AM COST	(5) Særerat	(6)	(7)	(8)	(9)	(10)	(11) CUSTOMER	(12) COSTS & 1	(13)	(14)	(15)	(16)	(17)	(18)	
	OHL	ar i riscono	AMI COST	a or Memoria	L.,			171101	100 1111110	COSTONISA	. 00013 0	DETTECT 5						
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT,	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.	
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE	
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUELI	NONFUEL	INC.	
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL	
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$ (000)	\$(000)	\$(000)	(000)	\$(000)		S(000)	
2010	0.1128	0.0000	0.1128	2.1000	0.0000	2.1000	15.5089	0.0000	15.5089	0.1800	0.0061	0.0154	0.0214	0.0000	0.0000	0.0000	0.0000	
2011	0.1156	0.0000	0.1156	2.1000	0.0000	2.1000	15.8966	0.0000	15.8966	0.5400	0.0197	0.0470	0.0667	0.0000	0.0000	0.0000	0.0000	
2012	0.1185	0.0000	0.1185	2.1000	0.0000	2.1000	16.2940	0.0000	16.2940	0.9001	0.0354	0.0799	0.1153	0.0000	0.0000	0.0000	0.0000	
2013	0.1215	0.0000	0.1215	2.1000	0.0000	2.1000	16.7013	0.0000	16.7013	1.2601	0.0511	0.1141	0.1652	0.0000	0.0000	0.0000	0.0000	
2014	0.1245	0.0000	0.1245	2.1000	0.0000	2.1000	17.1189	0.0000	17.1189	1,6201	0.0671	0.1497	0.2168	0.0000	0,0000	0.0000	0.0000	
2015	0 1276	0.0000	0.1276	2.1000	0.0000	2.1000	17.5468	0.0000	17.5468	1.9801	0.0859	0.1866	0.2725	0.0000	0.0000	0.0000	0.0000	
2016		0.0000	0.1308	2.1000	0.0000	2.1000	17.9855	0.0000	17.9855	2.3401	0.1049	0.2250	0.3298	0.0000	0.0000	0.0000	0.0000	
2017	0.1341	0.0000	0.1341	2.1000	0.0000	2.1000	18.4351	0.0000	18.4351	2.7002	0.1262	0.2648	0.3909	0.0000	0.0000	0.0000	0.0000	
2017	0.1374	0.0000	0.1374	2.1000	0.0000	2.1000	18.8960	0.0000	18.8960	3.0602	0.1487	0.3061	0.4548	0.0000	0.0000	0.0000		
2019	0.1374	0.0000	0.1409	2.1000	0.0000	2.1000	19.3684	0.0000	19.3684	3.4202	0.1757	0.3489					0.0000	
2019	0.1409	0.0000	U.1409	2.1000	0,0000	2.1000	19.3004	0.0000	17.3084	3.4202	0.1737	0.3469	0.5246	0.0000	0.0000	0.0000	0.0000	
NUMBER	1.2636	0.0000	1 2424	21.0000	0.0000	11.0000	173.7516	0.0000	173.7516	18.0010	0.8207	1.7374	2 5 5 5 1	0.0000	0.0000	0.0000		
NOMINAL	1.2030	0.0000	1.2636	21,0000	O.OOO.	21.0000	1/3./310	U.UUUU	1/3./310	16.0010	0.8207	1./3/4	2.5581	0.0000	0.0000	0.0000	0.0000	
NPV	0.9016	0.0000	0.9016	15.2185	0.0000	15.2185	123.9690	0.0000	123.9690		0.5109	1.0912	1.6021		0.0000	0.0000	0.0000	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.113	15.509	0.000	15.622	0.000	0.000	0.007	0.000	0.007	(15.615)	(15.615)
2011	0.000	0.116	15.897	0.000	16.012	0.000	0.000	0.022	0.000	0.022	(15.990)	(30.420)
2012	0.000	0.119	16.294	0.000	16.412	0.000	0.000	0.039	0.000	0.039	(16.373)	(44,458)
2013	0.000	0.121	16.701	0.000	16.823	0.000	0,000	0.058	0.000	0.058	(16.765)	(57.766)
2014	0.000	0.125	17.119	0.000	17.243	0.000	0.000	0.077	0.000	0.077	(17.166)	(70.384)
2015	0.000	0.128	17.547	0.000	17.674	0.000	0.000	0.099	0.000	0.099	(17.575)	(82.345)
2016	0.000	0.131	17.986	0.000	18.116	0.000	0.000	0.123	0.000	0.123	(17,994)	(93.684)
2017	0.000	0.134	18,435	0.000	18.569	0.000	0.000	0.150	0.000	0.150	(18,419)	(104.431)
2018	0.000	0.137	18.896	0.000	19.033	0.179	0.000	0.176	0.000	0.355	(18.678)	(114.523)
2019	0.000	0.141	19.368	0.000	19.509	0.184	0.000	0.210	0.000	0.394	(19.115)	(124.085)
NOMINAL	0.000	1.264	173,752	0.000	175.015	0.363	0.000	0.962	0.000	1.325	(173.690)	Section desires a grant desired and a section of the section of th
NPV	0.000	0.902	123.969	0.000	124.871	0.189	0.000	0.597	0.000	0.786	(124.085)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.01

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O&M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(900)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0.021	4.653	2.100	0.000	6.774	15.509	0.000	0.000	15.509	(8.735)	(8.735)	7	16	0.44
2011	0 067	4.769	2.100	0.000	6.936	15.897	0.000	0.000	15.897	(8.961)	(17.032)	13	30	0.44
2012	0.115	4.888	2.100	0.000	7.104	16.294	0.000	0.000	16.294	(9.190)	(24.911)	19	44	0.44
2013	0.165	5.010	2.100	0.000	7.276	16.701	0.000	0.000	16.701	(9.426)	(32.394)	25	57	0.44
2014	0.217	5.136	2.100	0.000	7.453	17.119	0.000	0.000	17.119	(9.666)	(39,499)	31	70	0.44
2015	0.272	5,264	2.100	0.000	7.637	17.547	0.000	0.000	17.547	(9.910)	(46.244)	36	82	0.44
2016	0.330	5.396	2.100	0.000	7.825	17.986	0.000	0.000	17.986	(10.160)	(52.646)	41	93	0.44
2017	0.391	5.531	2.100	0.000	8.021	18.435	0.000	0.000	18.435	(10.414)	(58.722)	45	104	0.44
2018	0.455	5.669	2.100	0.000	8.224	18.896	0.000	0.000	18.896	(10.672)	(64.488)	50	114	0.44
2019	0.525	5.811	2.100	0.000	8.435	19.368	0.000	0.000	19.368	(10.933)	(69.958)	54	124	0.44
NOMINAL	2.558	52,125	21.000	0.000	75.684	173.752	0.000	0.000	173.752	(98.068)				
NPV	1,602	37.191	15.218	0.000	54.011	123.969	0.000	0.000	123,969	(69,958)				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 0.44

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS		BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.113	2.100	0.021	0.000	2.234	0.007	0.000	0.000	0.000	0.007	(2.227)	(2.227)
2011	0,000	0.116	2.100	0.067	0.000	2.282	0.022	0.000	0.000	0.000	0.022	(2.260)	(4.320)
2012	0.000	0.119	2.100	0.115	0.000	2.334	0.039	0.000	0.000	0.000	0.039	(2.294)	(6.287)
2013	0.000	0.121	2.100	0.165	0.000	2.387	0.058	0.000	0.000	0.000	0.058	(2.329)	(8.136)
2014	0.000	0.125	2.100	0.217	0.000	2,441	0.077	0.000	0.000	0.000	0.077	(2.364)	(9.874)
2015	0.000	0.128	2.100	0.272	0.000	2.500	0.099	0.000	0.000	0.000	0.099	(2.401)	(11.507)
2016	0.000	0.131	2.100	0.330	0.000	2.561	0.123	0.000	0.000	0.000	0.123	(2.438)	(13.044)
2017	0.000	0.134	2.100	0.391	0.000	2.625	0.150	0.000	0.000	0.000	0.150	(2.475)	(14.488)
2018	0.000	0.137	2.100	0.455	0.000	2.692	0.355	0.000	0.000	0.000	0.355	(2.337)	(15.750)
2019	0.000	0.141	2.100	0.525	0.000	2.765	0.394	0.000	0.000	0.000	0.394	(2.371)	(16.937)
NOMINAL	0.000	1.264	21.000	2.558	0.000	24.822	1.325	0.000	0.000	0.000	1.325	(23,496)	James 19. A Million S. A.
NPV	0.000	0.902	15.218	1.602	0.000	17.722	0.786	0.000	0.000	0.000	0.786	(16.937)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.04

Residential Cool/Reflective Roof Rebates

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PROGRAM: Residential Energy Efficiency Cool Reflective Roof

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.31 KW/CUST	(I) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.32 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	715.0 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) GROUP LINE LOSS MULTIPLIER	1 0000	(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8)* CUSTOMER KWH REDUCTION AT METER	687,2 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	10.74022 S/KW/YR
• •		(9) GENERATOR FIXED O&M ESCALATION RATE	
		(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
		(11) DISTRIBUTION FIXED O & M COST	
ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(5) K FACTOR FOR T & D	0.00		
		TRAF A VURIDED PURCHANE CAPACITY CONTINER & W	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(18)* AVOIDED PURCHASE CAPACITY COST PER KW(19)* CAPACITY COST ESCALATION RATE	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	215.24 \$/CUST	(19)* CAPACITY COST ESCALATION RATE	
(b)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	215.24 \$/CUST 0.00 \$/CUST/YR		
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 %	(19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES	2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	215.24 S/CUST 0.00 S/CUST/YR 2.5 % 650 94 S/CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL	2.5 % 8.536 CENTS/KW
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650.94 \$/CUST 2.5 %	(19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE	2.5 % 8.536 CENTS/KW 2.0 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O& M COST	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650 94 \$/CUST 2.5 % 0.00 \$/CUST/YR	(19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE. (3) CUSTOMER DEMAND CHARGE PER KW	8.536 CENTS/KW 2.0 % 0.00 \$/KW/MO
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650.94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 %	(19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE	2.5 % 8.536 CENTS/KWI 2.0 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION	215.24 S/CUST 0.00 S/CUST/YR 2.5 % 650.94 S/CUST 2.5 % 0.00 S/CUST/YR 2.5 % 1,500.00 S/CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KW 2.0 % 0.00 \$/KW/MO 2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650.94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 %	(19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE	8.536 CENTS/KWI 2.0 % 0.00 \$/KW/MO
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O&M COST (7) CUSTOMER O&M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS	215.24 S/CUST 0.00 S/CUST/YR 2.5 % 650 94 S/CUST 2.5 % 0.00 S/CUST/YR 2.5 % 1,500 00 S/CUST 0.0 % 0.60 S/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KWI 2.0 % 0.00 \$/KW/MO 2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650 94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500 00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KWI 2.0 % 0.00 \$/KW/MO 2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650 94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500 00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KW/ 2.0 % 0.00 \$/KW/MO 2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT SCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650.94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KWI 2.0 % 0.00 \$/KW/MO 2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650 94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500 00 \$/CUST 0.0 % 0.60 \$/CUST/YR 2.5 % 8.00 % 0.00 \$/CUST/YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KWI 2.0 % 0.00 \$/KW/MO 2.5 %
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT SCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	215.24 \$/CUST 0.00 \$/CUST/YR 2.5 % 650.94 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	8.536 CENTS/KW 2.0 % 0.00 \$/KW/MO 2.5 %

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS HL(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN HL(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010 9.35 AM

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

	(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
Y	EAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
:	2010	13	13	3.36	3.73	3 87	3.36	1	1
	2011	26	26	3.65	3,92	3,99	3,65	1	1
:	2012	39	39	3.93	4.21	4.24	3,93	1	1
;	2013	52	52	4.05	4,40	4.47	4.05	1	1
	2014	65	65	4.14	4.59	4.65	4.14	I	3
:	2015	78	78	4.34	4.83	4.96	4,34	1	i
	2016	91	91	4.48	5.04	5,20	4.48	1	j
:	2017	104	104	4.67	5.34	5.60	4.67	1	1
:	2018	117	117	4,86	5.53	5.91	4.85	3	1
	2019	130	130	5.14	5.91	5.58	5,06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1) (2)		(3)	(4)	(5)	(6)	
	< FORM	2.3>	< FORI	M 2.4·>	<> FORM 2.5>		
	Total Resor	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
****	***************************************	Spanner Hill Serv		****	and the second second second	******			******	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
					******				elistic re-marketin	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Cool Reflective Roof

* UNIT SIZE OF AVOIDED GENERATION UNIT =

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) =

38 kW \$0

(2) (3) (7) (1) (1A)*(2A)*(4) (5) (6) (6A)**AVOIDED** AVOIDED **AVOIDED AVOIDED** AVOIDED AVOIDED VALUE OF UNIT **GEN UNIT** GEN UNIT **PURCHASED** ANNUAL **GEN UNIT** AVOIDED DEFERRAL UNIT **FIXED** VARIABLE FUEL **CAPACITY CAPACITY** REPLACEMENT **GEN UNIT** COST **O&M COST O&M COST FUEL COST FACTOR** COST KWH GEN COSTS BENEFITS \$(000) (000)\$(000) \$(000) \$(000) \$(000) \$(000) \$(000) Year 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2010 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2011 0.0000 0.0000 0.0000 2012 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2013 0.0000 0.0000 0.0000 0.0000 2014 0.0000 0.0000 0.0000 0.0000 0.0000 0,0000 0.0000 0.0000 0.0000 2015 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2016 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2017 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 4.5377 49.6651 0.0000 0.0000 2.8288 2018 0.0212 2.4084 0.0000 4.9582 0.0212 4.5479 49.6651 0.0000 0.0000 3.0658 2019 2.5116 0.0000 5.1021 NOMINAL 9.0856 99.3302 0.0000 0.0000 5.8947 4.9200 0.0000 10.0603 NPV 4.7267 0.0000 0.0000 3.0620 2.5576 0.0000 5.2311

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency Cool Reflective Roof

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(-)	AVOIDED	AVOIDED	` '	AVOIDED	AVOIDED		(-)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000	0.173268
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.546993
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.978814
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.431179
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.917891
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.468323
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.045805
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.723538
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.370922
2019	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	5.216300
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23.873033
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.807585

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	4.6477	0.1733	0.0000	0.0000	0.1733	0.1733
2011	13.9432	0.5470	0.0000	0.0000	0.5470	0.5470
2012	23.2387	0.9788	0.0000	0.0000	0.9788	0.9788
2013	32.5342	1.4312	0.0000	0.0000	1.4312	1.4312
2014	41.8297	1.9179	0.0000	0.0000	1.9179	1.9179
2015	51.1252	2.4683	0.0000	0.0000	2.4683	2.4683
2016	60.4206	3.0458	0.0000	0.0000	3.0458	3.0458
2017	69.7161	3.7235	0.0000	0.0000	3.7235	3.7235
2018	79.0116	4.3709	0.0000	0.0000	4.3709	4.3709
2019	88.3071	5.2163	0.0000	0.0000	5.2163	5.2163
NOMINAL	464.7742	23.8730	0.0000	0.0000	23.8730	23.8730
NPV		14.8076	0.0000	0.0000	14.8076	14.8076

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency Cool Reflective Roof

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		< UTIL	ITY PROGR	AM COSTS	& REBATE	S 2	··> ·	<	PARTIO	CIPATING C	USTOMER C	COSTS & BE	NEFITS					>
				TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.		
		UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	ĪN	REV.	REV.	REVENUE
		NONREC.	RECUR	PGM	NONREC	RECUR.	INCENT.	EQUIP	O & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
		COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
	YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
-			·														_	
	2010	2 7981	0.0000	2.7981	1.9500	0.0000	1.9500	8.4622	0,0000	8.4622	4.4665	0.1502	0.3813	0.5315	0.0000	0.0000	0.0000	0.0000
	2011	2,8681	0.0000	2 8681	1.9500	0.0000	1.9500	8,6738	0.0000	8.6738	13.3994	0.4887	1.1667	1,6554	0.0000	0.0000	0.0000	0.0000
	2012	2.9398	0.0000	2 9398	1.9500	0.0000	1,9500	8.8906	0.0000	8.8906	22.3324	0,8781	1.9833	2,8614	0.0000	0.0000	0.0000	0.0000
	2013	3 0133	0,0000	3.0133	1,9500	0.0000	1.9500	9.1129	0.0000	9.1129	31.2654	1.2676	2.8322	4.0998	0.0000	0.0000	0.0000	0.0000
	2014	3.0886	0.0000	3.0886	1.9500	0.0000	1.9500	9.3407	0.0000	9.3407	40,1983	1.6661	3.7142	5.3803	0.0000	0.0000	0.0000	0.0000
	2015	3.1658	0.0000	3.1658	1.9500	0,0000	1.9500	9.5742	0,0000	9.5742	49.1313	2.1310	4.6303	6.7613	0.0000	0.0000	0.0000	0,0000
	2016	3.2450	0.0000	3.2450	1.9500	0.0000	1.9500	9.8136	0.0000	9.8136	58.0642	2.6023	5.5817	8.1840	0.0000	0.0000	0.0000	0,0000
	2017	3 3261	0.0000	3.3261	1.9500	0.0000	1.9500	10.0589	0.0000	10.0589	66.9972	3.1301	6.5692	9.6993	0.0000	0.0000	0.0000	0.0000
	2018	3,4092	0.0000	3,4092	1.9500	0.0000	1.9500	10.3104	0.0000	10.3104	75,9302	3.6897	7.5940	11.2837	0.0000	0.0000	0.0000	0.0000
	2019	3 4945	0.0000	3.4945	1 9500	0.0000	1.9500	10.5682	0.0000	10.5682	84.8631	4.3595	8.6571	13.0166	0.0000	0.0000	0.0000	0.0000
	2017	2 4743	0.0000	3.4743	1 7500	0.0000	1,9300	10.3002	0.0000	10.3002	64.0051	4.5575	0.0371	15,0100	0.0000	0.0000	0.0000	0.0000
NO	MÏNIAT	31 3484	0 0000	31 3484	19,5000	0.0000	19.5000	94.8055	0.0000	94.8055	446.6480	20.3634	43,1099	63,4733	0.0000	0.0000	0.0000	0.0000
NO	MINAL	J1 340 4	9 0000	. J. J484	(3,3000	0.0000	17.3000	74 .6033	0.0000	74 .0033	440.0460	20.3034	43.1079	03.4733	0.0000	0.0000	0.0000	0.0000
	NPV	22 3666	0 0000	22 3666	14.1314	0 0000	14.1314	67.6422	0.0000	67.6422		12.6774	27.0755	39,7528		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.798	8.462	0.000	11,260	0.000	0.000	0.173	0.000	0.173	(11.087)	(11.087)
2011	0.000	2.868	8.674	0.000	11.542	0.000	0.000	0.547	0.000	0.547	(10.995)	(21.267)
2012	0.000	2.940	8.891	0.000	11.830	0.000	0.000	0.979	0.000	0.979	(10.852)	(30.571)
2013	0.000	3.013	9.113	0.000	12.126	0.000	0.000	1.431	0.000	1.431	(10.695)	(39.061)
2014	0.000	3.089	9.341	0.000	12.429	0.000	0.000	1.918	0.000	1.918	(10.511)	(46.787)
2015	0.000	3.166	9.574	0.000	12.740	0.000	0.000	2.468	0.000	2.468	(10.272)	(53.778)
2016	0.000	3.245	9.814	0.000	13.059	0.000	0.000	3.046	0.000	3.046	(10.013)	(60.088)
2017	0.000	3.326	10.059	0.000	13.385	0.000	0.000	3.724	0.000	3.724	(9.661)	(65.725)
2018	0.000	3.409	10.310	0.000	13.720	4.958	0.000	4.371	0.000	9.329	(4.390)	(68.097)
2019	0.000	3.494	10.568	0.000	14,063	5.102	0.000	5.216	0.000	10.318	(3.744)	(69.970)
NOMINAL	0.000	31.348	94.805	0.000	126.154	10.060	0.000	23.873	0.000	33.933	(92.220)	A A A A A A A A A A A A A A A A A A A
NPV	0.000	22.367	67.642	0.000	90.009	5.231	0.000	14.808	0.000	20.039	(69.970)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.22

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0,531	19 500	1.950	0.000	21.981	8.462	0.000	0.000	8.462	13.519	13.519	22	8	2.60
2011	1 655	19 500	1,950	0.000	23.105	8.674	0.000	0.000	8.674	14.432	26.882	43	16	2.63
2012	2.861	19 500	1 950	0.000	24.311	8.891	0.000	0.000	8.891	15.421	40,103	64	24	2.66
2013	4.100	19 500	1 950	0.000	25.550	9.113	0.000	0.000	9.113	16.437	53.151	85	31	2.70
2014	5.380	19.500	1.950	0.000	26 830	9,341	0.000	0.000	9.341	17.490	66.006	104	38	2.73
2015	6.761	19.500	1.950	0,000	28.211	9,574	0.000	0.000	9,574	18.637	78.690	123	45	2,76
2016	8.184	19.500	1.950	0.000	29.634	9.814	0 000	0.000	9,814	19.820	91.181	142	51	2.79
2017	9,699	19.500	1.950	0.000	31.149	10.059	0.000	0.000	10.059	21.090	103.487	160	57	2.82
2018	11.284	19 500	1.950	0,000	32.734	10.310	0,000	0.000	10.310	22.423	115,601	178	62	2.85
2019	13.017	19.500	1.959	0.000	34.467	10,568	0.000	0.000	10.568	23,898	127.556	195	68	2.89
NOMINAL	63.473	195.000	19.500	0.000	277.973	94.805	0.000	0.000	94.805	183,168				
NPV	39.753	141.314	14.131	0.000	195.199	67,642	0.000	0.000	67.642	127.556				

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.798	1.950	0.531	0.000	5.280	0.173	0.000	0.000	0.000	0.173	(5.106)	(5.106)
2011	0.000	2.868	1.950	1.655	0.000	6.473	0.547	0.000	0.000	0.000	0.547	(5.926)	(10.594)
2012	0.000	2.940	1.950	2.861	0.000	7.751	0.979	0.000	0.000	0.000	0.979	(6.772)	(16.400)
2013	0.000	3.013	1.950	4.100	0.000	9.063	1.431	0.000	0.000	0.000	1.431	(7.632)	(22.458)
2014	0.000	3.089	1.950	5.380	0.000	10.419	1.918	0.000	0.000	0.000	1.918	(8.501)	(28.707)
2015	0.000	3.166	1.950	6.761	0.000	11.877	2.468	0.000	0.000	0.000	2.468	(9.409)	(35.110)
2016	0.000	3.245	1.950	8.184	0.000	13.379	3.046	0.000	0.000	0.000	3.046	(10.333)	(41.622)
2017	0.000	3.326	1.950	9.699	0.000	14.975	3.724	0.000	0.000	0.000	3.724	(11,252)	(48.187)
2018	0.000	3.409	1.950	11.284	0.000	16.643	9.329	0.000	0.000	0.000	9.329	(7.314)	(52.139)
2019	0.000	3.494	1.950	13.017	0.000	18.461	10.318	0.000	0.000	0.000	10.318	(8.143)	(56.212)
NOMINAL	0.000	31.348	19.500	63.473	0.000	114.322	33.933	0.000	0.000	0.000	33.933	(80,388)	* 1 = wash womany + y
NPV	0.000	22.367	14.131	39.753	0.000	76.251	20.039	0.000	0.000	0.000	20.039	(56.212)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.26

Residential Home Energy Fix-Up Program

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date. 3/29/2010 9:37 AM

PROGRAM: Residential Home Energy Fix Up

I PROGRAM DEMAND SAVINGS AND LINE LOSSES	**************************************	IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS				
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.27 KW /CUST 0.28 KW GEN/CUST 3.9 % 260.1 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 250.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR			
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O &M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	2.5 % 0 \$ /KW/YR			
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS (11)* UTILITY DISCOUNT RATE (13)* UTILITY APUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	78.31 \$/CUST 0 00 \$/CUST/YR 2.5 % 97.76 \$/CUST 2.5 % 6 00 \$/CUST/YR 2.5 % 0 00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (I) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	0.00 \$ /KW/MO 2.5 %			
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	2.5 %	• FIRE Program Version Number: 1.03				

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010 9:37 AM

PROGRAM: Residential Home Energy Fix Up

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1 00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	ĸw	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	52	52	3,36	3.73	3.87	3.36	1	l
2011	104	104	3.65	3,92	3.99	3.65	1	1
2012	156	156	3,93	4.21	4.24	3.93	1	1
2013	208	208	4.05	4.40	4.47	4.05	1	1
2014	260	260	4.14	4.59	4.65	4.14	1	1
2015	312	312	4.34	4.83	4.96	4.34	1	1
2016	364	364	4.48	5.04	5.20	4.48	1	ŧ
2017	416	416	4,67	5.34	5.60	4.67	1	1
2018	468	468	4.86	5.53	5.91	4.85	1	1
2019	520	520	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FORI	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	ict Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	****		-			****	-	-		Miles Printing 10
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				4***	*****			Management of the	p	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Home Energy Fix Up

* UNIT SIZE OF AVOIDED GENERATION UNIT = 131 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

			2.10	ERCTICE COULD C	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. 01.1. (000)	40		
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	15.7859	172.7753	0.0000	0.0000	9.8410	8.3782	0.0000	17.2487
2019	0.0212	15.8212	172.7753	0.0000	0.0000	10.6654	8.7374	0.0000	17.7493
NOMINAL		31.6071	345.5506	0.0000	0.0000	20.5064	17.1156	0.0000	34.9979
NPV		16.4432		0.0000	0.0000	10.6521	8.8973	0.0000	18.1980

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Home Energy Fix Up

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0 (4) (5) (8) (1) (3) (7) (2) (6) **AVOIDED** AVOIDED **AVOIDED AVOIDED** DISTRIBUTION TOTAL AVOIDED TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION **PROGRAM CAPACITY** 0&M **TRANSMISSION** CAPACITY O&M DISTRIBUTION **FUEL** COST COST COST COST COST COST **SAVINGS** \$(000) Year \$(000) (000)\$(000) \$(000) \$(000) \$(000) 2010 0.000000 0.000000 0.000000 0.000000 0.0000000.000000 0.252154 2011 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.796030 2012 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1.424454 2013 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 2.082773 2014 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 2.791077 2015 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 3.592112 2016 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 4.432513 2017 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 5.418809 2018 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 6.360937 2019 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 7.591202 NOMINAL 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 34.742060

0.000000

0.000000

0.000000

0.000000

21.549252

0.000000

0.000000

NPV

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	6.7638	0.2522	0.0000	0.0000	0.2522	0.2522
2011	20.2914	0.7960	0.0000	0.0000	0.7960	0.7960
2012	33.8189	1.4245	0.0000	0.0000	1.4245	1.4245
2013	47.3465	2.0828	0.0000	0.0000	2.0828	2.0828
2014	60.8741	2.7911	0.0000	0.0000	2.7911	2.7911
2015	74.4017	3.5921	0.0000	0.0000	3.5921	3.5921
2016	87.9292	4.4325	0.0000	0.0000	4.4325	4.4325
2017	101.4568	5.4188	0.0000	0.0000	5.4188	5.4188
2018	114,9844	6.3609	0.0000	0.0000	6.3609	6.3609
2019	128.5120	7.5912	0.0000	0.0000	7.5912	7.5912
NOMINAL	676.3788	34.7421	0.0000	0.0000	34.7421	34.7421
NPV		21.5493	0.0000	0.0000	21.5493	21.5493

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Home Energy Fix Up

(1) (2)	(31	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGR	AM COSTS	& REBATE	S	> •	<	PARTIC	CIPATING C	USTOMER C	OSTS & BE	NEFITS				· ***	·>
			TOTAL			TOTAL	PARTIC.	PARTIC	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC	INC.	INC	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR		NONREC.	RECUR.	INCENT	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST	- FUEL I	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
201	0 4.0721	0.0000	4.0721	28 8080	0.0000	28 8080	5.0835	0.0000	5.0835	6.5000	0.2186	0.5548	0.7734	0.0000	0.0000	0 0000	0 0000
201	1 4 1739	0.0000	4.1739	29 5282	0.0000	29,5282	5.2106	0.0000	5.2106	19.5000	0.7112	1.6978	2,4090	0.0000	0 0000	0.0000	0 0000
201	2 4,2783	0.0000	4.2783	30 2664	0 0000	30.2664	5.3409	0.0000	5.3409	32.5000	1.2779	2 8863	4.1642	0.0000	0,0000	0.0000	0.0000
201	3 4,3852	0.0000	4 3852	31 0231	0.0000	31.0231	5.4744	0.0000	5.4744	45,5000	1.8447	4.1216	5.9663	0.0000	0 0000	0.0000	0.0000
201-	4 4,4949	0.0000	4,4949	31.7986	0.0000	31.7986	5.6113	0.0000	5.6113	58,5000	2.4247	5 4052	7.8299	0.0000	0.0000	0.0000	0.0000
201	5 4.6072	0.0000	4.6072	32.5936	0.0000	32.5936	5.7515	0.0000	5.7515	71.5000	3.1012	6.7385	9.8397	0.0000	0.0000	0.0000	0.0000
201	6 4 7224	0.0000	4,7224	33.4084	0.0000	33.4084	5.8953	0.0000	5.8953	84.5000	3.7871	8.1229	11.9100	0.0000	0.0000	0.0000	0.0000
201	7 4 8405	0.000	4.8495	34,2437	0 0000	34.2437	6.0427	0.0000	6.0427	97.5000	4.5552	9.5601	14.1153	0.0000	0.0000	0.0000	0.0000
201	8 4 9615	0.0000	4.9615	35 0998	0.0000	35.0998	6,1938	0.0000	6.1938	110.5000	5.3696	11.0514	16,4210	0.0000	0.0000	0.0000	0 0000
201	9 5.0855	0.0000	5.0855	35.9772	0.000	35.9772	6,3486	0.0000	6.3486	123.5000	6.3443	12.5986	18.9429	0.0000	0 0000	0.0000	0.0000
NOMINA	L 45 6215	0.0000	45 6215	322.7470	0 0000	322.7470	56.9526	0.0000	56 9526	650,0000	29.6346	62.7372	92.3718	0.0000	0.0000	0.0000	0.0000
NP	V 32.5502	0.0000	32.5502	230.2749	0.0000	230.2749	40.6348	0.0000	40.6348		18.4492	39.4025	57.8517		0.0000	0 0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	4.072	5.084	0.000	9.156	0.000	0.000	0.252	0.000	0.252	(8.903)	(8.903)
2011	0.000	4.174	5.211	0.000	9.385	0.000	0.000	0.796	0.000	0.796	(8.589)	(16.856)
2012	0.000	4.278	. 5,341	0.000	9.619	0.000	0.000	1.424	0.000	1.424	(8.195)	(23.881)
2013	0.000	4.385	5.474	0.000	9.860	0.000	0.000	2.083	0.000	2.083	(7.777)	(30.055)
2014	0.000	4.495	5.611	0.000	10.106	0.000	0.000	2.791	0.000	2.791	(7.315)	(35.432)
2015	0.000	4.607	5.752	0.000	10.359	0.000	0.000	3.592	0.000	3.592	(6.767)	(40.037)
2016	0.000	4.722	5.895	0.000	10.618	0.000	0.000	4.433	0.000	4.433	(6.185)	(43.935)
2017	0.000	4.840	6.043	0.000	10.883	0.000	0.000	5.419	0.000	5.419	(5.464)	(47.123)
2018	0.000	4.961	6.194	0.000	11.155	17.249	0.000	6.361	0.000	23.610	12.454	(40.394)
2019	0.000	5.086	6.349	0.000	11.434	17.749	0.000	7.591	0.000	25.340	13.906	(33.438)
NOMINĀL	0.000	45.622	56.953	0.000	102.574	34.998	0.000	34.742	0.000	69.740	(32.834)	and the state of the state of
NPV	0.000	32.550	40.635	0.000	73.185	18.198	0.000	21.549	0.000	39.747	(33.438)	

Discount Rate:

8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.54

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL.	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0 773	0.000	28.808	0 000	29 581	5.084	0.000	0.000	5.084	24.498	24.498	30	5	5.82
2011	2 409	0 000	29 528	0.000	31.937	5,211	0.000	0.000	5,211	26. 7 27	49.245	59	10	5.97
2012	4.164	0,000	30.266	0.000	34,431	5.341	0.000	0.000	5.341	29.090	74.185	89	14	6.12
2013	5.966	0.000	31.023	0 000	36.989	5.474	0.000	0.000	5.474	31.515	99.202	118	19	6.27
2014	7,830	0.000	31.799	0.000	39.629	5.611	0.000	0.000	5 611	34.017	124.206	147	23	6.41
2015	9 840	0.009	32,594	0.000	42,433	5.752	0.000	0 000	5.752	36,682	149.171	176	27	6.55
2016	11 910	0.000	33 408	0.000	45.318	5.895	0.000	0.000	5.895	39.423	174.014	205	31	6,69
2017	14 115	0.000	34 244	0.000	48.359	6.043	0.000	0.000	6.043	42.316	198.705	233	34	6,82
2018	16.421	0.000	34.244	0.000	50.665	6 194	0.000	0.000	6.194	44,471	222.731	260	37	6.95
2019	18 943	0.000	34.244	0.000	53.187	6.349	0.000	0.000	6.349	46.838	246.162	287	41	7 06
	- * ** ** *				gramps 8 - 1987 & André 1	non	-	CONTRACT SERVICE	*** * *	-				
NOMINAL	92.372	0.000	320.157	0.000	412 529	56.953	0 000	0.000	56.953	355,576				
NPV	57,852	0.000	228,945	0.000	286.797	40.635	0.000	0.000	40.635	246.162				

| In-service year of generation unit | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 2018 | | 20

RATE IMPACT TEST PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	4.072	28.808	0.773	0.000	33.654	0.252	0.000	0.000	0.000	0.252	(33.401)	(33.401)
2011	0.000	4.174	29.528	2.409	0.000	36.111	0.796	0.000	0.000	0.000	0.796	(35.315)	(66.101)
2012	0.000	4.278	30.266	4.164	0.000	38,709	1.424	0.000	0.000	0.000	1.424	(37.284)	(98.066)
2013	0.000	4.385	31.023	5.9 6 6	0.000	41.375	2.083	0.000	0.000	0.000	2.083	(39.292)	(129.257)
2014	0.000	4.495	31.799	7.830	0.000	44.123	2.791	0.000	0.000	0.000	2.791	(41.332)	(159.638)
2015	0.000	4.607	32.594	9.840	0.000	47.041	3.592	0.000	0.000	0.000	3.592	(43.448)	(189.208)
2016	0.000	4.722	33.408	11.910	0.000	50.041	4.433	0.000	0.000	0.000	4.433	(45.608)	(217.949)
2017	0.000	4.840	34,244	14.115	0.000	53.199	5.419	0.000	0.000	0.000	5.419	(47.781)	(245.828)
2018	0.000	4.961	35.100	16.421	0.000	56.482	23.610	0.000	0.000	0.000	23.610	(32.873)	(263.588)
2019	0.000	5.086	35.977	18.943	0.000	60.006	25.340	0.000	0.000	0.000	25,340	(34.665)	(280.930)
NOMINAL	0.000	45.622	322,747	92.372	0.000	460,740	69.740	0.000	0.000	0.000	69.740	(391.000)	
NPV	0.000	32.550	230.275	57.852	0.000	320.677	39.747	0.000	0.000	0.000	39.747	(280.930)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.12

Residential Efficient Electric Heat Pump Rebates – SEER 14

INPUT DATA -- PART 1

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PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.19 KW/CUST	(I) BASE YEAR	
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	. 2018
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	432.9 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	0 S/KW
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST.YR	(7) GEN. TRAN, & DIST COST ESCALATION RATE	
(8)* CUSTOMER KWH REDUCTION AT METER	416.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	
		(9) GENERATOR FIXED O&M ESCALATION RATE	
		(10) TRANSMISSION FIXED O & M COST	. 0 \$/KW/YR
		(11) DISTRIBUTION FIXED O & M COST	O S/KW/YR
II. FCONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	. 0 %
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) 1 & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	. 3.363149 CENTS/KWH
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(19)* CAPACITY COST ESCALATION RATE	. 2.5 %
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M SSCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE INCENTIVE	0.00 \$/CUST/YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	2.0 % 0.00 \$/KW/MO 2.5 %
(15)* UTILITY RECURRING REBATE INCENTIVE	0.00 S/CUSTYR		
(16)* UTILITY REBATE INCENTIVE ESCAL RATE	00 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

* Avoided Generation Unit:

7FA CT 1,00

* Program Generation Equivilency Factor.

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE TOTAL	ADJUSTED CUMULATIVE	SYSTEM FUEL	AVOIDED MARGINAL	INCREASED MARGINAL	REPLACEMENT	PROGRAM KW	PROGRAM KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	90	90	3,36	3.73	3.87	3.36	1	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4,24	3.93	Ţ	ì
2013	360	360	4.05	4.40	4.47	4.05	1	1
2014	450	450	4.14	4.59	4.65	4.14	l	1
2015	540	540	4.34	4.83	4.96	4.34	1	t
2016	630	630	4.48	5.04	5.20	4,48	1	1
2017	720	720	4.67	5.34	5.60	4.67	ì	1
2018	810	810	4.86	5.53	5.91	4.85	ì	1
2019	900	900	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participai	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	_(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
water		***		-	yearen dy Asse				******	~~~**
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				****	***			dark was grap	***	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

* UNIT SIZE OF AVOIDED GENERATION UNIT = 160 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	19.2264	210.4314	0.0000	0.0000	11.9858	10.2042	0.0000	21.0080
2019	0.0212	19.2694	210.4314	0.0000	0.0000	12.9899	10.6416	0.0000	21.6177
NOMINAL	or or special control of the special control	38.4958	420,8629	0.0000	0.0000	24.9758	20.8459	0.0000	42.6257
110217111111111		35,4750	12010027	0.000	5.0000	24.5730	20.0432	0.0000	42.0237
NPV		20.0269		0.0000	0.0000	12.9738	10.8365	0.0000	22.1642

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	0.726204
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.292567
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.102427
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.998387
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.038302
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.345284
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.765637
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.606169
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.319497
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21.862661
NOMINAL	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	100.057134
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	62.061846

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
	**************************************	<u>,</u>				
2010	19.4797	0.7262	0.0000	0.0000	0.7262	0.7262
2011	58.4391	2.2926	0.0000	0.0000	2.2926	2.2926
2012	97.3985	4.1024	0.0000	0.0000	4.1024	4.1024
2013	136.3580	5,9984	0.0000	0.0000	5.9984	5.9984
2014	175.3174	8.0383	0.0000	0.0000	8.0383	8.0383
2015	214.2768	10.3453	0.0000	0.0000	10.3453	10.3453
2016	253.2362	12.7656	0.0000	0.0000	12.7656	12.7656
2017	292.1956	15.6062	0.0000	0.0000	15.6062	15.6062
2018	331.1550	18.3195	0.0000	0.0000	18.3195	18.3195
2019	370.1145	21.8627	0.0000	0.0000	21,8627	21.8627
NOMINAL	1,947.9709	100.0571	0.0000	0.0000	100.0571	100.0571
NPV		62.0618	0.0000	0.0000	62.0618	62.0618

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	TY PROGRA	M COSTS &	REBATES		·	<	PARTICII	PATING CUSTO	OMER COSTS	& BENEFIT	`S	*******		a a mara mata di mananana ana		
														** . **	****		***
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.		REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL.	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	22,4426	0.0000	22.4426	9,0000	0.0000	9.0000	143.2728	0.0000	143,2728	18.7200	0.6296	1.5979	2.2275	0.0000	0.0000	0.0000	0.0000
2011	23.0036	0.0000	23,0036	9.0000	0.0000	9.0000	146.8546	0.0000	146.8546	56.1600	2.0483	4,8897	6.9380	0.0000	0.0000	0.0000	0.0000
2012	23.5787	9.0000	23.5787	9,0000	0.0000	9.0000	150.5260	00000	150.5260	93.6000	3,6803	8.3125	11.9928	0.0000	0.0000	0.0000	0.0000
2013	24.1682	0.0000	24.1682	9.0000	0.0000	9.0000	154.2891	0.0000	154.2891	131.0400	5,3128	11.8702	17.1831	0,0000	0.0000	0.0000	0.0000
2014	24,7724	0.0000	24.7724	9.0000	0.0000	9.0000	158.1464	0.0000	158.1464	168.4800	6.9831	15.5669	22.5501	0.0000	0.0000	0.0000	0.0000
2015	25,3917	0.0000	25.3917	9.0000	0.0000	9.0000	162.1000	0.0000	162,1000	205.9200	8.9315	19.4068	28.3383	0.0000	0.0000	0.0000	0.0000
2016	26.0265	0.0000	26.0265	9.0000	0.0000	9,0000	166,1525	0.0000	166,1525	243.3600	10.9068	23.3940	34.3008	0.0000	0.0000	0.0000	0.0000
2017	26.6772	0.0000	26.6772	9.0000	0.0000	9,0000	170.3063	0.0000	170.3063	280,8000	13,1191	27.5329	40.6520	0.0000	0.0000	0.0000	0.0000
2018	27,3441	0.0000	27.3441	9.0000	0.0000	9.0000	174.5640	0.0000	174,5640	318,2400	15,4645	31.8281	47,2926	0.0000	0.0000	0.0000	0.0000
2019	28.0277	0.0000	28.0277	9,0000	0.0000	9.0000	178,9281	0.0000	178.9281	355.6800	18.2715	36,2840	54.5555	0.0000	0.0000	0.0000	0.0000
NOMINAL	251,4328	0.0000	251.4328	90.0000	00000	90.0000	1,605.1399	0,0000	1,605.1399	1.872.0000	85.3475	180.6831	266.0307	0.0000	0.0000	0.0000	0.0000
NPV	179.3933	0.0000	179,3933	65.2220	0.0000	65.2220	1,145.2421	0.0000	1,145.2421		53.1337	113.4793	166.6129		0.0000	0,0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
						, , , , , , , , , , , , , , , , , , , ,						
2010	0.000	22.443	143.273	0.000	165.715	0.000	0.000	0.726	0.000	0.726	(164.989)	(164.989)
2011	0.000	23.004	146.855	0.000	169.858	0.000	0.000	2.293	0.000	2.293	(167.566)	(320.143)
2012	0.000	23.579	150.526	0.000	174.105	0.000	0.000	4.102	0.000	4.102	(170.002)	(465.892)
2013	0.000	24.168	154.289	0.000	178.457	0.000	0.000	5.998	0.000	5.998	(172.459)	(602.796)
2014	0.000	24.772	158.146	0.000	182.919	0.000	0.000	8.038	0.000	8.038	(174.880)	(731.338)
2015	0.000	25.392	162.100	0.000	187.492	0.000	0.000	10.345	0.000	10.345	(177,146)	(851.901)
2016	0.000	26.027	166.153	0.000	192.179	0.000	0.000	12.766	0.000	12.766	(179.413)	(964.962)
2017	0.000	26.677	170.306	0.000	196.984	0.000	0.000	15.606	0.000	15.606	(181.377)	(1,070.794)
2018	0.000	27.344	174.564	0.000	201.908	21.008	0.000	18.319	0.000	39.327	(162.581)	(1,158.631)
2019	0.000	28.028	178,928	0.000	206.956	21.618	0.000	21.863	0.000	43.480	(163.475)	(1,240.409)
NOMINAL	0.000	251.433	1,605.140	0.000	1,856.573	42.626	0.000	100.057	0.000	142.683	(1,713.890)	es e Virginamorio
NPV	0.000	179.393	1,145.242	0.000	1,324.635	22.164	0.000	62.062	0.000	84.226	(1,240.409)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.06

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN						CUSTOMER				CUMULATIVE	CUMULATIVE C	-	
	PARTICIPANTS	TAX	UTILITY	OTHER		EQUIPMENT		OTHER		NET	DISCOUNTED	DISCOUNTED D		to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	2.228	0.000	9.000	0.000	11.228	143.273	0.000	0.000	143.273	(132.045)	(132.045)	11	143	0.08
2011	6.938	0.000	9.000	0.000	15.938	146.855	0.000	0,000	146.855	(130.917)	(253.264)	26	279	0.09
2012	11.993	0.000	9.000	0.000	20.993	150.526	0.000	0.000	150.526	(129.533)	(364.318)	44	408	0.11
2013	17.183	0.000	9.000	0.000	26.183	154.289	0.000	0.000	154.289	(128,106)	(466,013)	65	531	0.12
2014	22.550	0.000	9,000	0.000	31.550	158.146	0.000	0.000	158.146	(126.596)	(559.065)	88	647	0.14
2015	28.338	0.000	9,000	0.000	37.338	162.100	0.000	0.000	162.100	(124.762)	(643.976)	113	757	0.15
2016	34.301	0.000	9.000	0.000	43.301	166.153	0.000	0.000	166.153	(122.852)	(721.393)	141	862	0.16
2017	40.652	0.000	9.000	0.000	49.652	170.306	0.000	0.000	170.306	(120.654)	(791.794)	170	961	0.18
2018	47.293	0.000	9.000	0.000	56.293	174.564	0.000	0.000	174.564	(118.271)	(855.692)	200	1,056	0.19
2019	54.556	0.000	9.000	0,000	63.556	178.928	0.000	0.000	178.928	(115.373)	(913,407)	232	1,145	0.20
NOMINAL	266.031	0.000	90.000	0.000	356.031	1,605.140	0.000	0.000	1,605.140	(1.249.109)				
NPV	166.613	0.000	65.222	0.000	231.835	1,145.242	0.000	0.000	1,145.242	(913.407)				

In-service year of generation unit:

2018 8.00%

Discount rate: 8.00% Benefit/Cost Ratio: 0.20

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET ((14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	22.443	9.000	2.228	0.000	33.670	0.726	0.000	0.000	0.000	0.726	(32.944)	(32.944)
2011	0.000	23,004	9.000	6.938	0.000	38.942	2.293	0.000	0.000	0.000	2.293	(36.649)	(66.878)
2012	0.000	23.579	9.000	11.993	0.000	44.572	4.102	0.000	0.000	0.000	4.102	(40.469)	(101.574)
2013	0.000	24.168	9.000	17.183	0.000	50.351	5.998	0.000	0.000	0.000	5.998	(44.353)	(136.783)
2014	0.000	24.772	9.000	22.550	0.000	56.322	8.038	0.000	0.000	0,000	8.038	(48.284)	(172.273)
2015	0.000	25.392	9.000	28.338	0.000	62.730	10.345	0.000	0.000	0.000	10.345	(52.385)	(207.925)
2016	0.000	26.027	9.000	34.301	0.000	69.327	12.766	0.000	0.000	0.000	12.766	(56.562)	(243.569)
2017	0.000	26.677	9.000	40.652	0.000	76.329	15.606	0.000	0.000	0.000	15.606	(60.723)	(279.000)
2018	0.000	27.344	9.000	47.293	0.000	83,637	39.327	0.000	0.000	0.000	39.327	(44.309)	(302,939)
2019	0.000	28.028	9,000	54.556	0.000	91.583	43.480	0.000	0.000	0.000	43.480	(48.103)	(327.002)
NOMINAL	0.000	251.433	90,000	266.031	0.000	607.463	142.683	0.000	0.000	0.000	142.683	(464.781)	/ statement P state 1 states 1
NPV	0.000	179.393	65.222	166.613	0.000	411.228	84.226	0.000	0.000	0.000	84.226	(327.002)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.20

Residential Efficient Electric Heat Pump Rebates – SEER 15

INPUT DATA -- PART 1

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:20 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER	0.36 KW/CUST	(I) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.37 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	761.7 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 S-KW
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	O S/KW
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	0 S/KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN. TRAN, & DIST COST ESCALATION RATE	0 %
(8)* CUSTOMER KWH REDUCTION AT METER	732.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(-)		(9) GENERATOR FIXED O&M ESCALATION RATE	
		(10) TRANSMISSION FIXED O & M COST	
		(11) DISTRIBUTION FIXED O & M COST	0 5/KW/YR
II. ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	
(5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	(19)* CAPACITY COST ESCALATION RATE	
(I)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER	249.36 \$/CUST 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE	2.5 %		
(4) CUSTOMER EQUIPMENT COST	2,629.38 \$-CUST	(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %	(2) NON-FUEL ESCALATION RATE	
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR	(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1.500.00 \$/CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %	FACTOR FOR CUSTOMER BILL	1.0
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR		
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %		
(12)* UTILITY DISCOUNT RATE	8.00 %		
(13)* UTILITY AFUDC RATE	0.00 %		
(14)* UTILITY NON RECURRING REBATE INCENTIVE	200.00 \$'CUST		
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 SCUST/YR		
(16)* UTILITY REBATE INCENTIVE ESCAL RATE	ە% 0.0	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(1 & 25).

INPUT DATA - PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 9/20 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.90

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				UTILITY					
				AVERAGE					
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
	YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
_									
	2010	383	383	3.36	3.73	3.87	3.36	1	}
	2011	766	766	3.65	3.92	3.99	3.65	1	1
	2012	1149	1149	3.93	4.21	4.24	3.93	1	1
	2013	1532	1532	4.05	4.40	4.47	4.05	}	1
	2014	1915	1915	4.14	4.59	4.65	4.14	1	1
	2015	2298	2298	4.34	4.83	4.96	4.34	1	1
	2016	2681	2681	4.48	5.04	5.20	4.48	1	1
	2017	3064	3064	4.67	5.34	5.60	4.67	1	1
	2018	3447	3447	4.86	5.53	5.91	4.85	1	1
	2019	3830	3830	5.14	5.91	5.58	5.06	1	I

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1) (2)		(3)	(4)	(5)	(6)	
	< FORM	[2.3>	< FOR	M 2.4>	<> FORM 2.5>		
	Total Reso	urce Test	Participa	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
		000.00/	4 0000	0.00/						
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
20 10	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00	5,00	0.00	0.00	0.00	0.00

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

* UNIT SIZE OF AVOIDED GENERATION UNIT = 1.291 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
(1)	(17)	AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED	(0)	AVOIDED	(/)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
							DEDI LOTTICATO		
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
<u>Year</u>		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	155.0255	1,696.7418	0.0000	0.0000	96.6436	82.2783	0.0000	169.3908
2019	0.0212	155.3722	1,696.7418	0.0000	0.0000	104.7399	85.8053	0.0000	174.3068
NOMINAL	•	310.3976	3,393.4836	0.0000	0.0000	201.3835	168.0836	0.0000	343.6975
NPV		161.4802		0.0000	0.0000	104.6096	87.3764	0.0000	178.7133

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
. ,	AVOIDED	AVOIDED	. ,	AVOIDED	AVOIDED	, ,	` /
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.437915
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.167064
2012	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	30.719549
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	44.916765
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	60.191937
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	77.466943
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	95.590894
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	116.861191
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	137.178978
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	163.710692
	W (*	of one comme y copperate or	population a single decided and the contraction of		Enganisation of National Confession of Market	~	
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	749.241929
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	464.727852

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	145.8668	5.4379	0.0000	0.0000	5.4379	5.4379
2011	437.6004	17.1671	0.0000	0.0000	17.1671	17.1671
2012	729.3340	30.7195	0.0000	0.0000	30.7195	30.7195
2013	1,021.0676	44.9168	0.0000	0.0000	44.9168	44.9168
2014	1,312.8012	60.1919	0.0000	0.0000	60.1919	60.1919
2015	1,604.5349	77.4669	0.0000	0.0000	77.4669	77.4669
2016	1,896.2685	95.5909	0.0000	0.0000	95,5909	95.5909
2017	2,188.0021	116.8612	0.0000	0.0000	116.8612	116.8612
2018	2,479.7357	137.1790	0.0000	0.0000	137.1790	137.1790
2019	2,771.4693	163.7107	0.0000	0.0000	163.7107	163.7107
NOMINAL	14,586.6805	749.2419	0.0000	0.0000	749.2419	749.2419
NPV		464.7279	0.0000	0.0000	464.7279	464.7279

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM; Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	, ,	(18)
	< UTII	LITY PROG	RAM COST	S & REBAT	ES		-K	PAR	TICIPATING	CUSTOMER	COSTS &	BENEFITS	**************			*********	
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTII.	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0.0000	95.5056	76.6000	0.0000		1,007.0525		1.007.0525	140.1780	4.7144	11.9656	16.6800	0.0000	0.0000	0.0000	0.0000
2011	97.8933	0.0000	97.8933	76.6000	0.0000		1,032.2289		1,032.2289	420.5340	15.3382	36.6147	51.9529	0.0000	0.0000	0.0000	0.0000
2012	100.3406	0.0000	100.3406	76.6000	0.0000	76.6000	1.058,0346	0.0000	1.058.0346	700.8900	27.5588	62.2450	89.8038	0.0000	0.0000	0.0000	0.0000
2013	102.8491	0.0000	102.8491	76.6000	0.0000	76.6000	1,084.4854	0.0000	1,084.4854	981.2460	39.7833	88.8859	128.6692	0.0000	0.0000	0.0000	0.0000
2014	105.4204	0.0000	105.4204	76.6000	0.0000	76.6000	1,111.5976	0.0000	1,111.5976	1,261,6020	52.2906	116.5675	168.8581	0.0000	0.0000	0.0000	0.0000
2015	108.0559	0.0000	108.0559	76,6000	0.0000	76.6000	1,139.3875	0.0000	1,139.3875	1,541.9580	66.8801	145.3208	212.2009	0.0000	0.0000	0.0000	0.0000
2016	110.7573	0.0000	110.7573	76.6000	0 0000	76.6000	1,167.8722	0.0000	1,167.8722	1,822.3140	81.6716	175.1776	256.8492	0.0000	0.0000	0.0000	0.0000
2017	113.5262	0.0000	113.5262	76.6000	0.0000	76.6000	1,197.0690	0.0000	1,197.0690	2,102.6700	98.2373	206.1706	304.4079	0.0000	0.0000	0.0000	0.0000
2018	116.3644	0.0000	116.3644	76.6000	0.0000	76.6000	1,226,9957	0.0000	1,226.9957	2,383.0260	115.8004	238.3332	354.1336	0.0000	0.0000	0.0000	0.0000
2019	119.2735	00000	119.2735	76.6000	0.0000	76.6000	1,257.6706	0.0000	1,257.6706	2,663.3820	136,8196	271.6999	408.5195	0.0000	0.0000	0.0000	0.0000
NOMINAI.	1,069.9862	0.0000	1,069,9862	766.0000	0.0000	766.0000	#########	0.0000	########	14,017.8000	639.0943	1,352.9808	1,992.0751	0.0000	0.0000	0.0000	0.0000
NPV	763.4184	0.0000	763.4184	555.1116	0.0000	555.1116	8,049.8109	0.0000	8,049.8109		397.8723	849.7489	1,247.6212		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3) UTILITY	(4) PARTICIPANT	(5)	(6)	(7) AVOIDED	(8)	(9) PROGRAM	(10)	(11)	(12)	(13) CUMULATIVE DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS		BENEFITS	SAVINGS	BENEFITS	BENEFITS		
3/E A D						BENEFITS					BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	95,506	1,007.053	0.000	1,102.558	0.000	0.000	5.438	0.000	5.438	(1.097.120)	(1,097.120)
2011	0.000	97.893	1,032.229	0.000	1,130.122	0.000	0.000	17.167	0.000	17.167	(1,112,955)	(2,127.634)
2012	0.000	100.341	1,058.035	0.000	1,158.375	0.000	0.000	30.720	0.000	30.720	(1,127.656)	(3,094.417)
2013	0.000	102.849	1,084.485	0.000	1,187.335	0.000	0.000	44.917	0.000	44.917	(1,142,418)	(4,001.305)
2014	0.000	105.420	1,111.598	0.000	1,217.018	0.000	0.000	60.192	0.000	60.192	(1,156.826)	(4,851.607)
2015	0.000	108.056	1,139.388	0.000	1,247.443	0.000	0.000	77.467	0.000	77.467	(1,169,976)	(5,647.873)
2016	0.000	110.757	1,167.872	0.000	1,278.629	0.000	0.000	95.591	0.000	95.591	(1,183.039)	(6,393.388)
2017	0.000	113.526	1,197.069	0.000	1,310.595	0.000	0.000	116.861	0.000	116.861	(1,193,734)	(7,089,921)
2018	0.000	116.364	1,226.996	0.000	1,343.360	169.391	0.000	137.179	0.000	306.570	(1,036.790)	(7,650.066)
2019	0.000	119.273	1,257.671	0.000	1,376,944	174.307	0.000	163.711	0.000	338.017	(1,038.927)	(8,169.788)
NOMINAL	0.000	1,069.986	11,282.394	0.000	12,352.380	343.698	0.000	749.242	0.000	1,092.939	(11,259.441)	the same of the same
NPV	0.000	763.418	8,049.811	0.000	8,813.229	178.713	0.000	464.728	0.000	643.441	(8,169.788)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS		UTILITY	OTHER	TOTAL	EQUIPMENT		OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS		COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
	-							,	-					
2010	16.680	574.500	76.600	0.000	667.780	1,007.053	0.000	0.000	#######	(339.273)	(339.273)	668	1,007	0.66
2011	51.953	574.500	76.600	0.000	703.053	1,032.229	0.000	0.000	#######	(329.176)	(644.065)	1,319	1,963	0.67
2012	89.804	574.500	76.600	0.000	740.904	1,058.035	0.000	0.000	#######	(317.131)	(915,954)	1,954	2,870	0.68
2013	128,669	574.500	76.600	0,000	779.769	1,084.485	0.000	0.000	444444	(304.716)	(1,157.847)	2,573	3.731	0.69
2014	168.858	574.500	76.600	0.000	819.958	1,111.598	0.000	0.000	######	(291.639)	(1,372,211)	3,176	4,548	0.70
2015	212.201	574.500	76.600	0.000	863.301	1,139,388	0.000	0.000	#######	(276.087)	(1,560.111)	3,763	5,323	0.71
2016	256.849	574.500	76.600	0.000	907.949	1,167.872	0.000	0.000	#######	(259.923)	(1,723.906)	4,335	6,059	0.72
2017	304.408	574.500	76.600	0.000	955.508	1,197.069	0.000	0.000	#######	(241.561)	(1,864.855)	4,893	6,758	0.72
2018	354.134	574.500	76.600	0.000	1,005.234	1,226,996	0.000	0.000	#######	(221.762)	(1,984.666)	5,436	7,421	0.73
2019	408.519	574.500	76.600	0.000	1.059.619	1,257.671	0.000	0.000	#######	(198.051)	(2,083.741)	5,966	8,050	0.74
NOMINAL	1,992.075	5,745.000	766.000	0.000	8,503.075	11,282.394	0.000	0.000	#######	(2,779.319)				
NPV	1,247.621	4,163,337	555.112	0.000	5,966.070	8,049.811	0.000	0.000	#######	(2,083.741)				

In-service year of generation unit:

Discount rate:

Discount rate: 8.00%
Benefit/Cost Ratio: 0.74

2018

RATE IMPACT TEST PROGRAM; Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL			OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	95,506	76.600	16.680	0.000	188.786	5.438	0.000	0.000	0.000	5.438	(183.348)	(183.348)
2011	0.000	97.893	76.600	51.953	0.000	226.446	17.167	0.000	0.000	0.000	17.167	(209.279)	(377.125)
2012	0.000	100.341	76.600	89.804	0.000	266.744	30.720	0.000	0.000	0.000	30,720	(236.025)	(579,478)
2013	0.000	102.849	76,600	128.669	0.000	308.118	44.917	0.000	0.000	0.000	44.917	(263.202)	(788.416)
2014	0.000	105.420	76.600	168.858	0.000	350.878	60.192	0.000	0.000	0.000	60.192	(290.687)	(1,002.079)
2015	0.000	108.056	76.600	212.201	0.000	396.857	77.467	0.000	0.000	0.000	77.467	(319.390)	(1,219.451)
2016	0.000	110,757	76.600	256.849	0.000	444.206	95.591	0.000	0.000	0.000	95.591	(348.616)	(1,439.137)
2017	0.000	113.526	76.600	304.408	0.000	494.534	116.861	0.000	0.000	0.000	116.861	(377.673)	(1,659.506)
2018	0.000	116.364	76.600	354.134	0.000	547.098	306.570	0.000	0.000	0.000	306.570	(240.528)	(1,789.456)
2019	0.000	119.273	76.600	408.519	0.000	604.393	338.017	0.000	0.000	0.000	338.017	(266.375)	(1,922.710)
NOMINAL	0,000	1,069.986	766.000	1,992.075	0.000	#######################################	1,092.939	0.000	0.000	0.000	1,092.939	(2,735.122)	and the second s
NPV	0.000	763.418	555.112	1,247.621	0.000	#########	643.441	0.000	0.000	0.000	643.441	(1,922.710)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.25

Residential Efficient Electric Heat Pump Rebates – SEER 16

INPUT DATA -- PART I

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:21 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1V. AVOIDED GENERATOR, TRANS, AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.45 KW/CUST 0.47 KW GEN/CUST 3.9 % 969.8 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 932.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	2030 120.0557 \$:KW 0 \$:KW 0 \$:KW 0 9:4 10.74022 \$:KW:YR
II. ECONOMIC LIFE AND K FACTORS (1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 % 0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER	2.5 % 0.00 \$ CUST/YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE INCENTIVE (15)* UTILITY RECURRING REBATE INCENTIVE (16)* UTILITY REBATE INCENTIVE ESCAL RATE	0.0 % 0.00 \$CUST:YR 2.5 % 8.00 % 0.00 % 300.00 \$CUST 0.00 \$CUST:YR 0.0 %	FACTOR FOR CUSTOMER BILL * FIRE Program Version Number: 1.03	1.0

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 9:21 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	110	110	3.36	3.73	3.87	3.36	i	}
2011	220	220	3.65	3.92	3.99	3.65	1	1
2012	330	330	3.93	4.21	4.24	3.93	l l	1
2013	440	440	4.05	4.40	4.47	4.05	i	j
2014	550	550	4.14	4.59	4.65	4.14	ł	1
2015	660	660	4.34	4.83	4.96	4.34	1	1
2016	770	770	4.48	5.04	5.20	4.48	ì	i
2017	880	880	4.67	5.34	5.60	4.67	1	1
2018	990	990	4,86	5.53	5.91	4.85	1	1
2019	1100	1100	5 14	5.91	5 58	5.06		1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Resor	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
****				****		*****	*****		-	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				***					·	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* UNIT SIZE OF AVOIDED GENERATION UNIT = 464 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
			,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	55.6554	609.1436	0.0000	0.0000	34.6958	29.5386	0.0000	60.8126
2019	0.0212	55.7798	609.1436	0.0000	0.0000	37.6024	30.8048	0.0000	62.5775
NOMINAL		111.4352	1,218,2872	0.0000	0.0000	72.2983	60.3433	0.0000	123.3901
NPV		57.9727		0.0000	0.0000	37.5557	31.3688	0.0000	64.1595

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

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

(1)	(2) AVOIDED	(3) AVOIDED	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	TRANSMISSION		TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST						
37		COST	COST	COST	COST	COST	SAVINGS
YearYear	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.00000						
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.988525
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.277616
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.233461
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.425070
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.010863
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	28.327951
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	34.955480
2017	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	42.733558
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	50.163324
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	59.865386
NOMINAL	0.000000	0,000000	0.000000	0.000000	0.000000	0.000000	273.981233
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	169.940716

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	53.3403	1.9885	0.0000	0.0000	1.9885	1.9885
2011	160.0208	6.2776	0.0000	0.0000	6.2776	6.2776
2012	266.7014	11.2335	0.0000	0.0000	11.2335	11.2335
2013	373.3819	16.4251	0.0000	0.0000	16.4251	16.4251
2014	480.0624	22.0109	0.0000	0.0000	22.0109	22.0109
2015	586.7430	28.3280	0.0000	0.0000	28.3280	28.3280
2016	693.4235	34.9555	0.0000	0.0000	34.9555	34.9555
2017	800.1041	42.7336	0.0000	0.0000	42.7336	42.7336
2018	906.7846	50.1633	0.0000	0.0000	50.1633	50.1633
2019	1,013.4651	59.8654	0.0000	0.0000	59.8654	59.8654
NOMINAL	5,334.0271	273.9812	0.0000	0.0000	273.9812	273.9812
NPV		169.9407	0.0000	0.0000	169.9407	169.9407

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM; Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	, ,
	Constan UIIL	ITY PROGI	RAM COST	S & REBAT	ES		K	PAR	HCIPATING	CUSTOMER	COSTS &	BENEFITS		***********			
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	27.4298	0.0000	27.4298	33.0000	0.0000	33.0000	408.5070	0.0000	408.5070	51.2600	1.7240	4.3756	6.0995	0.0000	0.0000	0.0000	0.0000
2011	28.1156	0.0000	28.1156	33,0000	0.0000	33.0000	418.7197	0.0000	418.7197	153.7800	5.6088	13.3892	18.9980	0.0000	0.0000	0.0000	0.0000
2012	28.8185	0.0000	28.8185	33.0000	00000	33.0000	429.1877	0.0000	42 9 .187 7	256.3000	10.0776	22.7616	32.8393	0.0000	00000	0.0000	0.0000
2013	29.5389	0.0000	29,5389	33.0000	0.0000	33.0000	439.9174	0.0000	439.9174	358.8200	14.5479	32.5036	47.0515	0.0000	0.0000	0.0000	0.0000
2014	30.2774	0.0000	30.2774	33.0000	0.0000	33.0000	450.9153	0.0000	450.9153	461.3400	19,1215	42.6262	61.7477	0.0000	0.0000	0.0000	0.0000
2015	31.0343	0.0000	31.0343	33.0000	0.0000	33.0000	462.1882	0.0000	462.1882	563.8600	24.4566	53.1406	77.5972	0.0000	0.0000	0.0000	0.0000
2016	31.8102	0.0000	31.8102	33.0000	0.0000	33,0000	473.7429	0.9000	473.7429	666.3800	29.8655	64.0586	93.9241	0.0000	0.0000	0.0000	0.0000
2017	32,6054	0.0000	32.6054	33.0000	0.0000	33.0000	485,5865	0.0000	485.5865	768.9000	35.9232	75.3920	111.3152	0.0000	0.0000	0.0000	0.0000
2018	33,4206	0.0000	33.4206	33.0000	0.0000	33.0000	497.7261	0.0000	497.7261	871.4200	42.3457	87.1532	129,4989	0.0000	0.0000	0.0000	0.0000
2019	34.2561	0.0000	34.2561	33.0000	0.0000	33.0000	510.1693	0.0000	510.1693	973.9400	50.0319	99.3546	149.3865	0.0000	0.0000	0.0000	0.0000
NOMINAL	307.3067	0.0000	307.3067	330,0000	0.0000	330.0000		0.0000	4,576.6599	5,126,0000	233.7027	494.7552	728.4579	0.0000	0.0000	0.0000	0.0000
NPV	219.2585	0.0000	219.2585	239.1473	0.0000	239.1473	3,265.3749	0.0000	3,265.3749		145,4931	310.7344	456.2275		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2) INCREASED	(3) UTILITY	(4) PARTICIPANT	(5)	(6)	(7)	(8)	(9) PROGRAM	(10)	(11)	(12)	(13) CUMULATIVE DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
		· · · · · · · · · · · · · · · · · · ·	······································									<u> </u>
2010	0.000	27.430	408.507	0.000	435.937	0.000	0.000	1.989	0.000	1.989	(433.948)	(433.948)
2011	0.000	28.116	418.720	0.000	446.835	0.000	0.000	6.278	0.000	6.278	(440.558)	(841.872)
2012	0.000	28,818	429.188	0.000	458.006	0.000	0.000	11.233	0.000	11.233	(446.773)	(1,224.908)
2013	0.000	29.539	439.917	0.000	469.456	0.000	0.000	16.425	0.000	16.425	(453.031)	(1,584.538)
2014	0.000	30.277	450.915	0.000	481.193	0.000	0.000	22,011	0.000	22.011	(459.182)	(1,922.051)
2015	0.000	31.034	462.188	0.000	493.222	0.000	0.000	28.328	0.000	28.328	(464.895)	(2,238.450)
2016	0.000	31.810	473.743	0.000	505.553	0.000	0.000	34.955	0.000	34.955	(470.598)	(2,535,006)
2017	0.000	32.605	485.586	0.000	518.192	0.000	0.000	42.734	0.000	42.734	(475.458)	(2,812.432)
2018	0.000	33.421	497.726	0.000	531.147	60.813	0.000	50.163	0.000	110.976	(420.171)	(3,039.437)
2019	0,000	34.256	510.169	0.000	544.425	62.577	0.000	59.865	0.000	122.443	(421.982)	(3,250.533)
NOMÎNAL	0.000	307.307	4,576.660	0.000	4,883.967	123.390	0.000	273.981	0,000	397.371	(4,486.595)	and the second s
NPV	0.000	219.259	3,265.375	0.000	3,484.633	64.159	0.000	169.941	0.000	234.100	(3,250.533)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	6.100	165.000	33.000	0.000	204.100	408.507	0.000	0.000	408.507	(204,407)	(204.407)	204	409	0.50
2011	18,998	165.000	33.000	0.000	216.998	418.720	0.000	0.000	418.720	(201,722)	(391,187)	405	796	0.51
2012	32.839	165.000	33.000	0.000	230.839	429.188	0.000	0.000	429.188	(198.348)	(561.239)	603	1,164	0.52
2013	47.051	165.000	33,000	0.000	245.051	439.917	0.000	0.000	439.917	(194.866)	(715.929)	797	1,513	0.53
2014	61.748	165.000	33.000	0.000	259.748	450.915	0.000	0.000	450,915	(191.168)	(856.443)	988	1,845	0.54
2015	77.597	165.000	33.000	0.000	275.597	462.188	0.000	0.000	462.188	(186.591)	(983.434)	1,176	2,159	0.54
2016	93.924	165.000	33.000	0.000	291,924	473.743	0.000	0.000	473.743	(181.819)	(1,098.011)	1,360	2,458	0.55
2017	111.315	165.000	33.000	0.000	309.315	485.586	0.000	0.000	485.586	(176.271)	(1,200.863)	1,540	2,741	0.56
2018	129,499	165.000	33.000	0.000	327.499	497.726	0.000	0.000	497.726	(170.227)	(1,292,832)	1,717	3,010	0.57
2019	149.387	165.000	33.000	0.000	347.387	510.169	0.000	0.000	510.169	(162.783)	(1,374.264)	1,891	3,265	0.58
NOMINAL	728.458	1,650.000	330.000	0.000	2.708.458	4,576.660	0.000	0.000	#######	(1,868.202)				
NPV	456.228	1,195.737	239.147	0.000	1,891.111	3,265.375	0.000	0.000	#######	(1,374,264)				

In-service year of generation unit: 2018
Discount rate: 8.00%

Discount rate: 8.00%
Benefit/Cost Ratio: 0.58

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
							AVOIDED					NET	CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	27,430	33.000	6,100	0.000	66,529	1,989	0.000	0.000	0.000	1.989	(64.541)	(64.541)
2011	0.000	28.116	33.000	18.998	0.000	80.114	6.278	0.000	0.000	0.000	6.278	(73.836)	(132.907)
2012	0.000	28.818	33.000	32,839	0.000	94,658	11.233	0.000	0.000	0.000	11.233	(83.424)	(204,430)
2013	0.000	29.539	33.000	47.051	0.000	109.590	16.425	0.000	0.000	0.000	16.425	(93.165)	(278.388)
2014	0.000	30.277	33.000	61.748	0.000	125.025	22,011	0.000	0.000	0.000	22.011	(103.014)	(354.106)
2015	0.000	31.034	33.000	77.597	0.000	141.632	28.328	0.000	0.000	0.000	28,328	(113.304)	(431.219)
2016	0.000	31.810	33,000	93,924	0.000	158.734	34,955	0.000	0.000	0.000	34.955	(123.779)	(509.221)
2017	0.000	32.605	33.000	111.315	0.000	176.921	42.734	0.000	0.000	0.000	42.734	(134.187)	(587.518)
2018	0.000	33.421	33.000	129,499	0.000	195,919	110.976	0.000	0.000	0.000	110.976	(84.943)	(633.410)
2019	0.000	34.256	33.000	149.387	0.000	216.643	122.443	0.000	0.000	0.000	122.443	(94.200)	(680.533)
NOMINAL	0.000	307.307	330,000	728.458	0.000	#########	397.371	0.000	0,000	0.000	397.371	(968.393)	At the second se
NPV	0.000	219.259	239.147	456.228	0.000	914.633	234.100	0.000	0.000	0.000	234.100	(680.533)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.26

INPUT DATA - PART 1

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:20 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	2030 120.0557 \$;KW 0 \$;KW 0 \$;KW 0 % 10.74022 \$;KW;YR
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO 2.5 %
	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE (15) GENERATOR VARIABLE O & M COST ESCALATION RATE (16) AVOIDED GEN UNIT FACTOR (16) AVOIDED GEN UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED FIXED OWN ON THE ESCALATION RATE (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA - PART 2

PSC FORM CE 1.2 PAGE I OF I Run Date: 3/30/2010 9:20 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT * Program Generation Equivilency Factor. 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	383	383	3.36	3.73	3.87	3.36	1	1
2011	766	766	3.65	3,92	3,99	3.65	1	I
2012	1149	1149	3.93	4.21	4.24	3.93	1	t
2013	1532	1532	4.05	4.40	4.47	4.05	1	1
2014	1915	1915	4.14	4.59	4.65	4.14	1	1
2015	2298	22 9 8	4.34	4.83	4.96	4.34	l	1
2016	2681	2681	4.48	5.04	5.20	4.48	ŧ	1
2017	3064	3064	4.67	5.34	5.60	4.67	1	1
2018	3447	3447	4.86	5.53	5.91	4.85	1	1
2019	3830	3830	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
			4.0000	0.00/	0.00					
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	ò	200.070	0001.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	v			0.076	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

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

(1)	(2) AVOIDED	(3) AVOIDED	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.437915
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.167064
2012	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	30.719549
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	44.916765
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	60.191937
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	77.466943
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	95.590894
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	116.861191
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	137.178978
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	163.710692
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	749.241929
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	464.727852

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	145.8668	5.4379	0.0000	0.0000	5.4379	5.4379
2011	437.6004	17.1671	0.0000	0.0000	17.1671	17.1671
2012	729.3340	30.7195	0.0000	0.0000	30.7195	30.7195
2013	1,021.0676	44.9168	0.0000	0.0000	44.9168	44.9168
2014	1,312.8012	60.1919	0.0000	0.0000	60.1919	60.1919
2015	1,604.5349	77.4669	0.0000	0.0000	77.4669	77.4669
2016	1,896.2685	95.5909	0.0000	0.0000	95.5909	95.5909
2017	2,188.0021	116.8612	0.0000	0.0000	116.8612	116.8612
2018	2,479.7357	137.1790	0.0000	0.0000	137.1790	137.1790
2019	2,771.4693	163.7107	0.0000	0.0000	163.7107	163.7107
NOMINAL	14,586.6805	749.2419	0.0000	0.0000	749.2419	749.2419
NPV		464.7279	0.0000	0.0000	464.7279	464.7279

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

((1)	(2)	(3)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	<.	····· UTIL	ITY PROC	RAM COST	S & REBAT	ES		·<	PAR	FICIPATING	CUSTOMER	COSTS &	BENEFITS			~~~		
				TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
		UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	N	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	 FUEL 	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
		COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEA	\R	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
										,								
20	10	95.5056	0.0000	95.5056	76.6000	0.0000	76.6000	1,007.0525	0.0000	1,007.0525	140.1780	4.7144	11.9656	16.6800	0.0000	0.0000	0.0000	0.0000
20	11	97,8933	0.0000	97.8933	76.6000	0.0000	76.6000	1,032.2289	0.0000	1,032.2289	420.5340	15.3382	36.6147	51.9529	0.0000	0.0000	0.0000	0.0000
20	12	100.3406	0.0000	100,3406	76.6000	0.0000	76,6000	1.058.0346	0.0000	1,058,0346	700.8900	27.5588	62.2450	89.8038	0.0000	0.0000	0.0000	0.0000
20		102.8491	0.0000	102.8491	76.6000	0.0000	76.6000	1,084,4854	0.0000	1,084,4854	981.2460	39.7833	88.8859	128.6692	0.0000	0.0000	0.0000	0.0000
20		105.4204	0.0000	105.4204	76.6000	0.0000		1,111.5976		1,111.5976	1,261.6020	52.2906	116,5675	168.8581	0.0000	0.0000	0.0000	0.0000
		108.0559	0.0000	108.0559	76.6000	0.0000		1.139.3875		1,139.3875	1,541,9580	66.8801	145,3208	212.2009	0.0000	0.0000	0.0000	0.0000
		110.7573	0.0000	110.7573	76.6000	0.0000		1,167,8722		1,167.8722	1,822.3140	81.6716	175.1776		0.0000	0.0000	0.0000	0.0000
		113.5262	0.0000	113.5262	76.6000	0.0000		1,197.0690		1.197.0690	2,102,6700	98.2373	206.1706	304.4079	0.0000	0.0000	0.0000	0.0000
		116.3644	0.0000	116.3644	76.6000	0.0000		1,226,9957		1,226,9957	2,383.0260	115.8004	238.3332	354.1336	0.0000	0.0000	0.0000	0.0000
_		119.2735	0.0000	119.2735	76.6000	0.0000		1.257.6706		1.257.6706	2,663.3820	136.8196	271.6999	408.5195	0.0000	0.0000	0.0000	0.0000
20	.,	117.2733	0.0000	117.2733	70.0000	0.0000	, 0.0000	1,237.0700	0.0000	1,237.0700	2,005.5020	150.0170	2.1.0	100.5175	0.0000	0.0000	0.0000	4.0500
NOMIN	AT 1	069.9862	0.0000	1.069.9862	766.0000	0.0000	766,0000	********	0.0000	**********	14,017,8000	639 0943	1.352,9808	1.992.0751	0.0000	0.0000	0.0000	0.0000
1.0101111		VU > GUZ	0.0000	1,007.7002		0.000			2.0000		,	557.0745	.,	.,	2.3000	4.0000	2.0000	0.000
NI	v	763.4184	0.0000	763.4184	555.1116	0.0000	555.1116	8,049.8109	0.0000	8,049.8109		397.8723	849.7489	1,247.6212		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
	3,000,7									4(11)		
2010	0.000	95,506	1,007.053	0.000	1,102.558	0.000	0.000	5.438	0.000	5.438	(1,097.120)	(1,097.120)
2011	0.000	97.893	1,032.229	0.000	1,130.122	0.000	0.000	17.167	0.000	17.167	(1,112,955)	(2,127.634)
2012	0.000	100.341	1,058.035	0.000	1,158.375	0.000	0.000	30.720	0.000	30.720	(1,127.656)	(3,094.417)
2013	0.000	102.849	1,084.485	0.000	1,187.335	0.000	0.000	44.917	0.000	44.917	(1,142.418)	(4,001.305)
2014	0.000	105.420	1,111.598	0.000	1,217.018	0.000	0.000	60.192	0.000	60.192	(1,156.826)	(4,851.607)
2015	0.000	108.056	1,139.388	0.000	1,247.443	0.000	0.000	77.467	0.000	77.467	(1,169.976)	(5,647.873)
2016	0.000	110.757	1,167.872	0.000	1,278.629	0.000	0.000	95.591	0.000	95.591	(1,183.039)	(6,393.388)
2017	0.000	113.526	1,197.069	0.000	1,310.595	0.000	0.000	116.861	0.000	116.861	(1,193.734)	(7,089.921)
2018	0.000	116.364	1,226.996	0.000	1,343.360	169.391	0.000	137.179	0.000	306.570	(1,036.790)	(7,650.066)
2019	0.000	119.273	1,257.671	0.000	1,376.944	174.307	0.000	163.711	0.000	338.017	(1,038.927)	(8,169.788)
NOMINAL	0.000	1,069.986	11,282.394	0.000	12,352.380	343.698	0.000	749.242	0.000	1,092.939	(11,259.441)	The second secon
NPV	0.000	763.418	8,049.811	0.000	8,813.229	178.713	0.000	464.728	0.000	643.441	(8,169.788)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER J5

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	16.680	574.500	76.600	0.000	667.780	1,007.053	0.000	0.000	#######	(339.273)	(339.273)	668	1,007	0.66
2011	51.953	574.500	76.600	0.000	703.053	1,032.229	0.000	0.000	#######	(329.176)	(644.065)	1,319	1,963	0.67
2012	89.804	574.500	76.600	0.000	740.904	1,058.035	0.000	0.000	#######	(317.131)	(915,954)	1,954	2,870	0.68
2013	128.669	574.500	76.600	0.000	779.769	1,084.485	0.000	0.000	#######	(304.716)	(1,157.847)	2,573	3,731	0.69
2014	168.858	574.500	76.600	0.000	819.958	1,111.598	0.000	0.000	#######	(291.639)	(1,372.211)	3,176	4,548	0.70
2015	212.201	574.500	76.600	0.000	863.301	1,139.388	0.000	0.000	#######	(276.087)	(1,560.111)	3,763	5,323	0.71
2016	256.849	574.500	76.600	0.000	907.949	1,167.872	0.000	0.000	######	(259.923)	(1,723.906)	4,335	6,059	0.72
2017	304.408	574.500	76.600	0.000	955.508	1,197.069	0.000	0.000	#######	(241.561)	(1,864.855)	4,893	6,758	0.72
2018	354.134	574.500	76.600	0.000	1,005.234	1,226.996	0.000	0.000	######	(221.762)	(1,984.666)	5,436	7,421	0.73
2019	408.519	574.500	76.600	0.000	1,059,619	1,257.671	0.000	0.000	#######	(198.051)	(2,083.741)	5,966	8,050	0.74
T							، پرورسید سیس							
NOMINAL	1,992.075	5,745.000	766.000	0.000	8,503.075	11,282.394	0.000	0.000	#######	(2,779.319)				
NPV	1,247.621	4,163,337	555,112	0.000	5.966.070	8.049.811	0.000	0.000	*******	(2.083.741)				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 0.74

RATE IMPACT TEST PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)		(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D		OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	95.506	76.600	16.680	0.000	188.786	5.438	0.000	0.000	0.000	5.438	(183.348)	(183.348)
2011	0.000	97.893	76.600	51.953	0.000	226.446	17.167	0.000	0.000	0.000	17.167	(209.279)	(377.125)
2012	0.000	100.341	76.600	89.804	0.000	266.744	30.720	0.000	0.000	0.000	30.720	(236.025)	(579.478)
2013	0.000	102.849	76.600	128,669	0.000	308.118	44.917	0.000	0.000	0.000	44.917	(263.202)	(788.416)
2014	0.000	105.420	76.600	168.858	0.000	350.878	60.192	0.000	0.000	0.000	60.192	(290.687)	(1,002.079)
2015	0.000	108.056	76.600	212.201	0.000	396.857	77.467	0.000	0.000	0.000	77.467	(319.390)	(1,219.451)
2016	0.000	110.757	76.600	256.849	0.000	444.206	95.591	0.000	0.000	0.000	95.591	(348.616)	(1,439.137)
2017	0.000	113.526	76.600	304.408	0.000	494.534	116.861	0.000	0.000	0.000	116.861	(377.673)	(1,659.506)
2018	0.000	116.364	76.600	354.134	0.000	547.098	306.570	0.000	0.000	0.000	306.570	(240.528)	(1,789.456)
2019	0.000	119.273	76.600	408.519	0.000	604.393	338.017	0.000	0.000	0.000	338.017	(266.375)	(1,922.710)
NOMINAL	0.000	1,069.986	766.000	1,992.075	0.000	######################################	1,092.939	0.000	0.000	0.000	1,092.939	(2,735.122)	
NPV	0.000	763.418	555.112	1,247.621	0.000	######################################	643.441	0.000	0.000	0.000	643.441	(1,922.710)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]: 0.25

Residential Efficient Electric Heat Pump Rebates – SEER 16

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PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.45 KW /CUST 0.47 KW GEN/CUST 3.9 % 969.8 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 932.0 KWH/CUST/YR	(I) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	0 \$1KW 0 \$1KW 0 %
II. ECONOMIC LIFE AND K FACTORS (1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	2.5 % 0 \$/KW/YR
#II. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	249.36 \$/CUST 0.00 \$/CUST/YR 2.5 % 3.713.70 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1.500.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	8.536 CENTS/KWH 2.0 % 0.00 \$/KW/MO 2.5 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE (16)* UTILITY REBATE/INCENTIVE ESCAL RATE	300.00 \$/CUST 0.00 \$/CUST/YR 0.0 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date; 3/30/2010 9:21 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT

* Program Generation Equivilency Factor: 1.00

	(1)	(2)	(3)	(4) UTILITY	(5)	(6)	(7)	(8)	(9)
				AVERAGE					
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
_	YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(CKWH)	(C/KWH)	FACTOR	FACTOR
				,		.,			
	2010	110	110	3.36	3.73	3.87	3.36	1	1
	2011	220	220	3.65	3.92	3.99	3.65	1	1
	2012	330	330	3.93	4.21	4.24	3.93	1	1
	2013	440	440	4.05	4.40	4.47	4.05	1	1
	2014	550	550	4.14	4.59	4.65	4.14	i	1
	2015	660	660	4.34	4.83	4.96	4.34	1	I
	2016	770	770	4.48	5.04	5.20	4.48	1	1
	2017	880	880	4.67	5.34	5.60	4.67	1	1
	2018	990	990	4.86	5.53	5.91	4.85	1	i
	2019	1100	1100	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM	[2.3>	< FOR	M 2.4>	<> FORM 2.5>		
	Total Resor	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
_			***************************************				
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
			4.0000							
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	Ô	200,070	0001.000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* UNIT SIZE OF AVOIDED GENERATION UNIT = 464 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
ζ-,	()	AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED	(-7	AVOIDED	\ /
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	55.6554	609.1436	0.0000	0.0000	34.6958	29.5386	0.0000	60.8126
2019	0.0212	55.7798	609.1436	0.0000	0.0000	37.6024	30.8048	0.0000	62.5775
NOMINAL		111.4352	1,218.2872	0.0000	0.0000	72,2983	60.3433	0.0000	123.3901
NPV		57.9727		0.0000	0.0000	37.5557	31.3688	0.0000	64.1595

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

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

(1)	(2) AVOIDED	(3) AVOIDED	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.988525
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.277616
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.233461
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.425070
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.010863
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	28.327951
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	34.955480
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	42.733558
2018	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000	50.163324
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	59.865386
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	273.981233
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	169.940716

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	. KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	53.3403	1.9885	0.0000	0.0000	1.9885	1.9885
2011	160.0208	6.2776	0.0000	0.0000	6.2776	6.2776
2012	266.7014	11.2335	0.0000	0.0000	11.2335	11.2335
2013	373.3819	16.4251	0.0000	0.0000	16.4251	16.4251
2014	480.0624	22.0109	0.0000	0.0000	22.0109	22.0109
2015	586.7430	28.3280	0.0000	0.0000	28.3280	28.3280
2016	693.4235	34.9555	0.0000	0.0000	34.9555	34.9555
2017	800.1041	42.7336	0.0000	0.0000	42.7336	42.7336
2018	906.7846	50.1633	0.0000	0.0000	50.1633	50.1633
2019	1,013.4651	59.8654	0.0000	0.0000	59.8654	59.8654
NOMINAL	5,334.0271	273.9812	0.0000	0.0000	273.9812	273.9812
NPV		169.9407	0.0000	0.0000	169.9407	169.9407

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	• -	(6)	(7)		(9)		(11)	(12)		(14)	(15)	(16)	(17)	(18)
	< UTII	LITY PROG	RAM COST	S & REBAT	ES	ح ـــــ	.K	PAR	TICIPATING	CUSTOMER	COSTS &	BENEFITS		*****	******		
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUELI	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0.0000	27.4298	33.0000	0.0000	33.0000	408.5070	0,0000	408.5070	51.2600	1.7240	4.3756	6.0995	0.0000	0.0000	0.0000	0.0000
2011	28.1156	0.0000	28.1156	33.0000	0.0000	33.0000	418.7197	0.0000	418.7197	153.7800	5.6088	13.3892	18.9980	0.0000	0.0000	0.0000	0.0000
2012	28.8185	0.0000	28.8185	33.0000	0.0000	33.0000	429.1877	0.0000	429.1877	256.3000	10.0776	22.7616	32.8393	0.0000	0.0000	0.0000	0.0000
2013	29.5389	0.0000	29.5389	33.0000	0.0000	33.0000	439.9174	0.0000	439,9174	358.8200	14.5479	32.5036	47.0515	0.0000	0.0000	0.0000	0.0000
2014	30.2774	0.0000	30.2774	33.0000	0.0000	33.0000	450.9153	0.0000	450.9153	461.3400	19.1215	42.6262	61.7477	0.0000	0.0000	0.0000	0.0000
2015	31.0343	0.0000	31.0343	33.0000	0.0000	33.0000	462.1882	0.0000	462.1882	563.8600	24.4566	53.1406	77.5972	0.0000	0.0000	0.0000	0.0000
2016	31.8102	0.0000	31.8102	33.0000	0.0000	33.0000	473.7429	0.0000	473.7429	666.3800	29.8655	64.0586	93.9241	0.0000	0.0000	0.0000	0.0000
2017	32.6054	0.0000	32.6054	33,0000	0.0000	33.0000	485.5865	0.0000	485.5865	768.9000	35.9232	75.3920	111.3152	0.0000	0.0000	0.0000	0.0000
2018	33.4206	0.0000	33.4206	33.0000	0.0000	33.0000	497.7261	0.0000	497.7261	871.4200	42.3457	87.1532	129.4989	0.0000	0.0000	0.0000	0.0000
2019	34.2561	0.0000	34.2561	33.0000	0.0000	33.0000	510.1693	0.0000	510.1693	973.9400	50.0319	99.3546	149.3865	0.0000	0.0000	0.0000	0.0000
NOMINAL	307.3067	0.0000	307.3067	330.0000	0.0000	330.0000	4,576.6599	0.0000	4,576.6599	5,126.0000	233.7027	494.7552	728.4579	0.0000	0.0000	0.0000	0.0000
NPV	219.2585	0.0000	219.2585	239.1473	0.0000	239.1473	3,265.3749	0.0000	3,265,3749		145.4931	310.7344	456.2275		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	27.430	408.507	0.000	435.937	0.000	0.000	1.989	0.000	1.989	(433.948)	(433.948)
2011	0.000	28.116	418.720	0.000	446.835	0.000	0.000	6.278	0.000	6.278	(440.558)	(841.872)
2012	0.000	28.818	429.188	0.000	458.006	0.000	0.000	11.233	0.000	11.233	(446.773)	(1,224.908)
2013	0.000	29.539	439.917	0.000	469.456	0.000	0.000	16.425	0.000	16.425	(453.031)	(1,584.538)
2014	0.000	30.277	450.915	0.000	481.193	0.000	0.000	22.011	0.000	22.011	(459.182)	(1,922.051)
2015	0.000	31.034	462.188	0.000	493.222	0.000	0.000	28.328	0.000	28.328	(464.895)	(2,238.450)
2016	0.000	31.810	473.743	0.000	505.553	0.000	0.000	34.955	0.000	34.955	(470.598)	(2,535.006)
2017	0.000	32.605	485.586	0.000	518.192	0.000	0.000	42.734	0.000	42.734	(475.458)	(2,812.432)
2018	0.000	33.421	497.726	0.000	531.147	60.813	0.000	50.163	0.000	110.976	(420.171)	(3,039.437)
2019	0.000	34.256	510.169	0.000	544.425	62.577	0.000	59.865	0.000	122.443	(421.982)	(3,250.533)
NOMINAL	0.000	307.307	4,576.660	0.000	4,883.967	123.390	0.000	273.981	0.000	397.371	(4,486.595)	to the distance of a Character
NPV	0.000	219.259	3,265.375	0.000	3,484.633	64.159	0.000	169.941	0.000	234.100	(3,250.533)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	6.100	165.000	33.000	0.000	204.100	408.507	0.000	0.000	408.507	(204.407)	(204.407)	204	409	0.50
2011	18.998	165.000	33.000	0.000	216.998	418.720	0.000	0.000	418.720	(201.722)	(391.187)	405	796	0.51
2012	32.839	165.000	33.000	0.000	230.839	429.188	0.000	0.000	429.188	(198.348)	(561.239)	603	1,164	0.52
2013	47.051	165.000	33.000	0.000	245.051	439.917	0.000	0.000	439.917	(194.866)	(715.929)	797	1,513	0.53
2014	61.748	165.000	33.000	0.000	259.748	450.915	0.000	0.000	450.915	(191.168)	(856.443)	988	1,845	0.54
2015	77.597	165.000	33.000	0.000	275.597	462.188	0.000	0.000	462.188	(186.591)	(983.434)	1,176	2,159	0.54
2016	93.924	165.000	33.000	0.000	291,924	473.743	0.000	0.000	473.743	(181.819)	(1,098.011)	1,360	2,458	0.55
2017	111.315	165.000	33.000	0.000	309.315	485.586	0.000	0.000	485.586	(176.271)	(1,200.863)	1,540	2,741	0.56
2018	129.499	165.000	33.000	0.000	327.499	497.726	0.000	0.000	497.726	(170.227)	(1,292.832)	1,717	3,010	0.57
2019	149.387	165.000	33.000	0.000	347.387	510.169	0.000	0.000	510.169	(162.783)	(1,374.264)	1,891	3,265	0.58
NOMINAL	728.458	1,650.000	330.000	0.000	2,708.458	4,576.660	0.000	0.000	#######	(1,868.202)				
NPV	456.228	1,195.737	239.147	0.000	1,891.111	3,265.375	0.000	0.000	#######	(1,374.264)				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 0.58

RATE IMPACT TEST

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	27.430	33.000	6.100	0.000	66.529	1.989	0.000	0.000	0.000	1.989	(64.541)	(64.541)
2011	0.000	28.116	33.000	18.998	0.000	80.114	6.278	0.000	0.000	0.000	6.278	(73.836)	(132.907)
2012	0.000	28.818	33.000	32.839	0.000	94.658	11.233	0.000	0.000	0.000	11.233	(83.424)	(204.430)
2013	0.000	29,539	33.000	47.051	0.000	109.590	16.425	0.000	0.000	0.000	16.425	(93.165)	(278.388)
2014	0.000	30.277	33.000	61.748	0.000	125.025	22.011	0.000	0.000	0.000	22.011	(103.014)	(354.106)
2015	0.000	31.034	33.000	77.597	0.000	141.632	28.328	0.000	0.000	0.000	28,328	(113.304)	(431.219)
2016	0.000	31.810	33.000	93.924	0.000	158.734	34.955	0.000	0.000	0.000	34.955	(123.779)	(509.221)
2017	0.000	32.605	33.000	111.315	0.000	176.921	42.734	0.000	0.000	0.000	42.734	(134.187)	(587.518)
2018	0.000	33.421	33.000	129.499	0.000	195.919	110.976	0.000	0.000	0.000	110.976	(84.943)	(633.410)
2019	0.000	34.256	33.000	149.387	0.000	216.643	122.443	0.000	0.000	0.000	122.443	(94.200)	(680.533)
NÖMINÄL	0.000	307.307	330.000	728.458	0.000	<i>₩₩₩₩₩₩</i>	397.371	0.000	0.000	0.000	397.371	(968.393)	• Inf SM SM of all annual state.
NPV	0.000	219.259	239.147	456.228	0.000	914.633	234.100	0.000	0.000	0.000	234.100	(680.533)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.26

Residential Efficient Electric Heat Pump Rebates – SEER 17

PSC FORM CE L.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:21 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	~
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.60 KW /CUST 0.62 KW GEN·CUST 3.9 % 1.215.4 KWH·CUST/YR 3.9 % 1.0000 0.0 KWH·CUST/YR 1,168.0 KWH·CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0 22 0.00 1	(12) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST SCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE INCENTIVE (15)* UTILITY REGURENING REBATE INCENTIVE (16)* UTILITY REBATE INCENTIVE ESCAL RATE	249.36 \$'CUST 0.00 \$'CUST'YR 2.5 % 4.844.82 \$'CUST 2.5 % 0.00 \$'CUST'YR 2.5 % 1.500.00 \$'CUST 0.0 % 0.00 \$'CUSTYR 2.5 % 8.00 % 0.00 \$'CUSTYR 2.5 % 8.00 % 0.00 \$'CUSTYR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL	2.0 % 0.00 \$/KW/MO 2.5 %

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(1 & 25)

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE LOF I Run Date: 3/30/2010 9:21 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT

* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(CKWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	72	72	3.36	3.73	3.87	3.36	1	1
2011	144	144	3.65	3.92	3.99	3.65	1	l
2012	216	216	3.93	4.21	4.24	3.93	I	i
2013	288	288	4.05	4.40	4.47	4.05	1	1
2014	360	360	4.14	4.59	4.65	4.14	1	1
2015	432	432	4.34	4.83	4.96	4.34	1	1
2016	504	504	4.48	5.04	5.20	4.48	1	1
2017	576	576	4.67	5.34	5.60	4.67	1	1
2018	648	648	4.86	5.53	5.91	4.85	1	1
2019	720	720	5.14	5.91	5.58	5.06	1	Í

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOF	LM 2.5>
	Total Resor	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
			*************************************				*****		******	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	2,40
				Tenan	*****			*******	****	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06

AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM; Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* UNIT SIZE OF AVOIDED GENERATION UNIT = 405 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
						, , , , , , , , , , , , , , , , , , , ,			
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	48.5719	531.6162	0.0000	0.0000	30.2800	25,7791	0.0000	53.0728
2019	0.0212	48.6806	531.6162	0.0000	0.0000	32.8167	26.8842	0.0000	54.6131
NOMINAL	. 6. 6	97.2525	1,063.2325	0.0000	0.0000	63.0967	52.6633	0.0000	107.6859
NPV		50.5943		0.0000	0.0000	32.7758	27.3764	0.0000	55.9937

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

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

(1)	(2) AVOIDED	(3) AVOIDED	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.631165
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.149458
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.214681
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.473299
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.055262
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23.237099
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	28.673586
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	35.053856
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	41.148409
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	49.106901
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0,000000	224.743716
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	139.400453

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	43.7544	1.6312	0.0000	0.0000	1.6312	1.6312
2011	131.2633	5.1495	0.0000	0.0000	5.1495	5.1495
2012	218.7721	9.2147	0.0000	0.0000	9.2147	9.2147
2013	306.2810	13.4733	0.0000	0.0000	13.4733	13.4733
2014	393.7898	18.0553	0.0000	0.0000	18.0553	18.0553
2015	481.2986	23.2371	0.0000	0.0000	23.2371	23.2371
2016	568.8075	28.6736	0.0000	0.0000	28.6736	28.6736
2017	656.3163	35.0539	0.0000	0.0000	35.0539	35.0539
2018	743.8252	41.1484	0.0000	0.0000	41.1484	41.1484
2019	831.3340	49.1069	0.0000	0.0000	49.1069	49.1069
NOMINAL	4,375,4422	224.7437	0.0000	0.0000	224.7437	224.7437
NPV		139.4005	0.0000	0.0000	139.4005	139.4005

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(1)	(2)	(3)	(4) 2 AM COST	(5) C & DEDAT	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Caraca Offic	371 7 KOQ1	CAMI COST	o & KEDAT	E.3 1004000000			LAK:	rich Allivo	COSTONIEN	(031316)	DENEL ITS					
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR		NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.		NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0,0000	17.9541	21.6000	0.0000	21.6000	348.8270	0.0000	348.8270	42.0480	1.4141	3.5892	5.0034	0.0000	0.0000	0.0000	0.0000
2011	18.4029	0.0000	18.4029	21.6000	0.0000	21.6000	357.5477	0.0000	357.5477	126.1440	4.6009	10.9830	15.5839	0.0000	0.0000	0.0000	0.0000
2012	18,8630	0.0000	18.8630	21.6000	0.0000	21.6000	366.4864	0.0000	366.4864	210.2400	8,2666	18.6711	26.9377	0.0000	0.0000	0.0000	0.0000
2013	19.3346	0.0000	19.3346	21.6000	0.0000	21.6000	375, 64 86	0.0000	375.6486	294,3360	11.9335	26.6623	38.5958	0.0000	0.0000	0.0000	0.0000
2014	19.8179	0.0000	19.8179	21,6000	0.0000	21.6000	385.0398	0.0000	385.0398	378.4320	15.6852	34.9658	50.6509	0.0000	0.0000	0.0000	0.0000
2015	20.3134	0.0000	20.3134	21.6000	0.0000	21.6000	394.6658	0.0000	394,6658	462.5280	20.0615	43.5906	63.6521	0.0000	0.0000	0.0000	0.0000
2016	20.8212	0.0000	20.8212	21.6000	0.0000	21.6000	404.5324	0.0000	404.5324	546.6240	24,4983	52.5465	77.0449	0.0000	0.0000	0.0000	0.0000
2017	21.3417	0.0000	21.3417	21.6000	0.0000	21.6000	414.6457	0.0000	414,6457	630.7200	29.4674	61.8432	91.3106	0.0000	0.0000	0.0000	0.0000
2018	21.8753	0.0000	21.8753	21.6000	0.0000	21.6000	425.0119	0.0000	425.0119	714.8160	34,7357	71.4908	106.2264	0.0000	0.0000	0.0000	0.0000
2019	22.4222	0.0000	22.4222	21.6000	0.0000	21.6000	435.6372	0.0000	435.6372	798.9120	41,0406	81.4995	122.5401	0.0000	0.0000	0.0000	0.0000
av de					V 700			n og nøgenmen 12	104		Chart IV Continues who		146				
NOMINAL	201.1462	0.0000	201.1462	216.0000	0.0000	216.0000	3,908.0425	0.0000	3,908.0425	4,204.8000	191.7037	405,8421	597.5458	0.0000	0.0000	0.0000	0.0000
NPV	143,5147	0.0000	143,5147	156,5328	0.0000	156.5328	2,788,3269	0.0000	2,788.3269		119.3464	254.8919	374.2383		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	17.954	348.827	0.000	366.781	0.000	0.000	1.631	0.000	1.631	(365.150)	(365.150)
2011	0.000	18.403	357.548	0.000	375,951	0.000	0.000	5.149	0.000	5.149	(370.801)	(708,484)
2012	0.000	18.863	366.486	0.000	385.349	0.000	0.000	9.215	0.000	9.215	(376.135)	(1,030.959)
2013	0.000	19.335	375.649	0.000	394.983	0.000	0.000	13.473	0.000	13.473	(381.510)	(1,333.814)
2014	0.000	19.818	385.040	0.000	404.858	0.000	0.000	18.055	0.000	18.055	(386.802)	(1,618.125)
2015	0.000	20.313	394.666	0.000	414.979	0.000	0.000	23.237	0.000	23.237	(391.742)	(1,884.738)
2016	0.000	20.821	404.532	0.000	425.354	0.000	0.000	28.674	0.000	28.674	(396.680)	(2,134.714)
2017	0.000	21.342	414.646	0.000	435.987	0.000	0.000	35.054	0.000	35.054	(400.934)	(2,368.655)
2018	0.000	21.875	425.012	0.000	446.887	53.073	0.000	41.148	0.000	94.221	(352.666)	(2,559.190)
2019	0.000	22.422	435.637	0.000	458.059	54.613	0.000	49.107	0.000	103.720	(354.339)	(2,736.447)
NOMINAL	0.000	201.146	3,908.043	0.000	4,109.189	107.686	0.000	224.744	0.000	332.430	(3,776.759)	OF TY / ALL ORGANISMS /
NPV	0.000	143.515	2,788.327	0.000	2,931.842	55.994	0.000	139.400	0.000	195.394	(2,736.447)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(1)	(2) SAVINGS IN	(3)	(4)	(5)	(6)	(7) CUSTOMER	(8) CUSTOMER	(9)	(10)	(11)	(12) CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	5,003	108.000	21.600	0.000	134.603	348.827	0.000	0.000	348.827	(214.224)	(214,224)	135	349	0.39
2011	15.584	108.000	21.600	0.000	145.184	357.548	0.000	0.000	357.548	(212.364)	(410.857)	269	680	0.40
2012	26,938	108.000	21.600	0.000	156.538	366.486	0.000	0.000	366.486	(209.949)	(590.854)	403	994	0.41
2013	38.596	108.000	21.600	0.000	168.196	375.649	0.000	0.000	375.649	(207.453)	(755.537)	537	1,292	0.42
2014	50.651	108.000	21.600	0.000	180.251	385.040	0.000	0.000	385.040	(204.789)	(906.063)	669	1,575	0.42
2015	63.652	108.000	21.600	0.000	193.252	394.666	0.000	0.000	394.666	(201.414)	(1,043.141)	801	1,844	0.43
2016	77.045	108.000	21.600	0.000	206.645	404.532	0.000	0.000	404.532	(197.888)	(1.167.844)	931	2,099	0.44
2017	91.311	108.000	21.600	0.000	220.911	414.646	0.000	0.000	414.646	(193,735)	(1,280,887)	1,060	2,341	0.45
2018	106.226	108.000	21.600	0.000	235.826	425.012	0.000	0.000	425.012	(189.185)	(1,383.098)	1,187	2,570	0.46
2019	122,540	108.000	21,600	0.000	252.140	435.637	0.000	0.000	435.637	(183.497)	(1,474.892)	1,313	2,788	0.47
NOMINAL	597.546	1,080.000	216.000	0.000	1,893.546	3,908.043	0.000	0.000	#######	(2,014.497)				
NPV	374.238	782.664	156.533	0.000	1,313.435	2,788.327	0.000	0.000	#######	(1,474.892)				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 0.47

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
							AVOIDED					NET (CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	17.954	21.600	5.003	0.000	44.557	1.631	0.000	0.000	0.000	1.631	(42.926)	(42,926)
2011	0.000	18.403	21.600	15.584	0.000	55.587	5.149	0.000	0.000	0.000	5.149	(50.437)	(89.627)
2012	0.000	18.863	21.600	26.938	0.000	67.401	9.215	0.000	0.000	0.000	9.215	(58.186)	(139.513)
2013	0.000	19.335	21,600	38.596	0.000	79.530	13.473	0.000	0.000	0.000	13.473	(66.057)	(191.951)
2014	0.000	19.818	21.600	50.651	0.000	92.069	18.055	0,000	0.000	0.000	18.055	(74.014)	(246.353)
2015	0.000	20.313	21.600	63.652	0.000	105.565	23.237	0.000	0.000	0.000	23.237	(82.328)	(302.384)
2016	0.000	20.821	21.600	77.045	0.000	119,466	28.674	0.000	0.000	0.000	28.674	(90.792)	(359,599)
2017	0.000	21.342	21.600	91.311	0.000	134.252	35.054	0.000	0.000	0.000	35.054	(99.199)	(417.480)
2018	0.000	21.875	21.600	106.226	0.000	149.702	94.221	0.000	0.000	0.000	94.221	(55.480)	(447.455)
2019	0.000	22.422	21.600	122.540	0.000	166.562	103.720	0.000	0.000	0.000	103.720	(62.842)	(478.892)
NOMINAL	0.000	201.146	216.000	597.546	0.000	######################################	332.430	0.000	0.000	0.000	332.430	(682.262)	At the second second
NPV	0.000	143.515	156.533	374.238	0.000	674.286	195.394	0.000	0.000	0.000	195.394	(478.892)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.29

Residential Efficient Electric Heat Pump Rebates – SEER 18

R SEER 18

INPUT DATA -- PART 1

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 9:22 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1) CUSTOMER KW REDUCTION AT THE METER	L PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(4) GENERATION KWH REDUCTION PER CUSTOMER (132.5 KWHCUSTYR (1) BASE YEAR AVOIDED GENERATING UNIT COST (2) CSKW (3) KWH LINE LOSS PERCENTAGE (3) 5% (3) BASE YEAR AVOIDED FRANSMISSION COST (3) SKW (4) GROUP LINE LOSS MULTIPLIER (10.0 KWHCUSTYR (7) GEN. TRAN. & DIST COST ESCALATION RATE (1.0 KW) (7) ('UISTOMER KWH PROGRAM INCREASE AT METER (1.0 KWHCUSTYR (8) GENERATOR FIXED OA M COST (1.0 KW) (1) CHINDRING KWH REDUCTION AT METER (1.365,0 KWHCUSTYR (8) GENERATOR FIXED OA M COST (1.0 KW) (1) DISTRIBUTION FIXED OA M COST (1.0 KW) (1.0 KW) (1) DISTRIBUTION FIXED OA M COST (1.0 KW) (1.0 KW	(2) GENERATOR KW REDUCTION PER CUSTOMER	0.68 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) KWH LINE LOSS PERCENTAGE 3.9 % (5) BASE YEAR AVOIDED TRANSMISSION COST 0.5 KW (6) GROUP LINE LOSS MULTIPLIER 1.000 (6) BASE YEAR DISTRIBUTION COST 0.5 KW (7) CUSTOMER KWH PROGRAM IN CREASE AT METER 1.000 KWHCUSTAYR (7) GEN, TRAN, & DIST COST ESCALATION RATE 1.000 KWHCUSTAYR (8) GENERATOR FIXED 0.4 M COST 1.07.402.2 \$ K.W.YR (10) TRANSMISSION FIXED 0.4 M COST 1.07.402.2 \$ K.W.YR (10) TRANSMISSION FIXED 0.4 M COST 1.07.402.2 \$ K.W.YR (10) TRANSMISSION FIXED 0.4 M COST 1.07.402.2 \$ K.W.YR (10) TRANSMISSION FIXED 0.4 M COST 1.07.402.2 \$ K.W.YR (10) TRANSMISSION FIXED 0.4 M COST 1.07.402.2 \$ K.W.YR (11) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (11) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (11) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (11) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (11) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (11) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (12) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (12) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (13) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (13) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (13) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (13) TRANSMISSION FIXED 0.4 M COST 1.0 \$ K.W.YR (14) GENERATOR CARLATION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRE CARLATION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRE CARLATION RATE 1.0 \$ K.W.YR (15) CUSTOMER GUIVERNOT FOR FOUR FIRE CARLATION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRE TEXT CARLATION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRENST EXCLASION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRENST EXCLASION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRENST EXCLASION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRENST EXCLASION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRENST EXCLASION RATE 1.0 \$ K.W.YR (15) CUSTOMER FOUR FIRENST EXCLASION RATE 1.0 \$ K.W.YR (15) CU				****
(6) BASE YEAR DISTRIBUTION COST			* * * * * * * * * * * * * * * * * * * *	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER (1) 0. KWH/CUSTYR (1) GEN, TRAN. & DIST COST, ESCALATION RATE (1) 10,7402 S. KWYR (1) GEN, TRAN. & DIST COST, ESCALATION RATE (2) 5 % (10) TRAN. S. DIST COST, ESCALATION RATE (2) 5 % (10) TRAN. S. DIST COST, ESCALATION RATE (2) 5 % (10) TRAN. S. DIST COST, ESCALATION RATE (2) 5 % (10) TRAN. S. DIST COST, ESCALATION RATE (2) 5 % (10) TRAN. S. DIST COST, ESCALATION RATE (2) 5 % (10) TRAN. S. DIST COST, ESCALATION RATE (3) S. KWYR (1) STRUBUTION INTEO 0. & M. COST (3) S. KWYR (1) STRUBUTION INTEO 0. & M. COST (3) S. KWYR (1) STUDY PERIOD FOR CONSERVATION PROGRAM (10) YEARS (13) AVOIDED GEN LIVIT VARIABLE 0. & M. COSTS (2) GENERATOR ECONOMIC LIFE (2) YEARS (13) AVOIDED GENERATION RATE (2.5 % (14) GENERATOR VARIABLE 0. & M. COSTS (3) TA D. ECONOMIC LIFE (2) YEARS (15) AVOIDED GENERATING UNIT FUEL ECOST (3) S.	, , , , , , , , , , , , , , , , , , , ,		, , ,	
19 GENERATOR FIXED O& M SCALATION RATE 2.5 % (10) TRANSMISSION FIXED O & M COST 0.5 KW/YR (11) DISTRIBUTION FIXED O & M COST 0.5 KW/YR (11) DISTRIBUTION FIXED O & M COST 0.5 KW/YR (12) TRANSMISSION FIXED O & M COST 0.5 KW/YR (13) DISTRIBUTION FIXED O & M COST 0.5 KW/YR (13) AVOIDED GEN LINIT VARIBALE O & M COST 0.5 KW/YR (13) AVOIDED GEN LINIT VARIBALE O & M COST 0.5 KW/YR (13) AVOIDED GEN LINIT VARIBALE O & M COST 0.5 KW/YR (14) GENERATOR VARIBALE O & M COST 0.5 KW/YR (15) GENERATOR CAPACITY FACTOR 0.5 KW/YR (15) GENERATING UNIT FUEL COST 0.5 KW/YR (15) KACTOR FOR GENERATION 0.0 CW/YR (15) AVOIDED GEN UNIT FUEL ESCALATION RATE 0.5 KW/YR (15) KW/Y				0 %
(10) TRANSMISSION FIXED 0 & M COST 0 S VKWYR	(8)* CUSTOMER KWH REDUCTION AT METER	1,368,0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	10.74022 S/KW/YR
11. ECONOMIC LIFE AND K FACTORS			(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (1) YEARS (1) GENERATOR CONOMIC LIFE (2) YEARS (3) T & D ECONOMIC LIFE (3) YEARS (4) GENERATOR CAPACITY FACTOR (5) T & D ECONOMIC LIFE (5) YEARS (6) AVOIDED GENERATOR CAPACITY FACTOR (7) AVOIDED GENERATOR CAPACITY FACTOR (8) T & D ECONOMIC LIFE (9) YEARS (15) GENERATOR CAPACITY FACTOR (15) WHITH THE LESCALATION RATE (17) AVOIDED GENERATOR WHITH FUEL COST (18) AVOIDED GENERATOR WHITH FUEL COST (18) AVOIDED GENERATION WHITH FUEL COST (19) AVOIDED GENERATION WHITH FUEL COST (19) AVOIDED GENERATION WHITH FUEL COST (19) AVOIDED GENERATION WHITH FUEL COST (10) AVOIDED GEN UNIT VARIABLE O & M COST (10) AVOIDED GENERATION WHITH FUEL COST (10) AVOIDED GENERATION FUEL COS				
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (2) YEARS (3) T & D ECONOMIC LIFE (3) YEARS (15) GENERATOR CAPACITY FACTOR (3) T & D ECONOMIC LIFE (3) YEARS (16) AVOIDED GENERATING UNIT FUEL COST (3) 3-36349 CENTS/KWH (4) K FACTOR FOR GENERATION (2) (2) (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (3) KACTOR FOR T & D (6) SWITCH REV REQ(6) OR VAL-OF-DEF (1) (1) (19)* CAPACITY COST ESCALATION RATE (2.5 % (3) VILILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (2.5 % (4) CUSTOMER EQUIPMENT COST (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (2.5 % (6) CUSTOMER EQUIPMENT ESCALATION RATE (2.5 % (6) CUSTOMER Q & M COST (6) CUSTOMER O & M ESCALATION RATE (2.5 % (3) UTILITY COST ESCALATION RATE (2.5 % (4) DEMAND CHARGE ESCALATION RATE (2.5 % (5) CUSTOMER O & M ESCALATION RATE (2.5 % (6) CUSTOMER O & M ESCALATION RATE (2.5 % (6) CUSTOMER O & M ESCALATION RATE (2.5 % (4) DEMAND CHARGE ESCALATION RATE (2.5 % (5) USTOMER TAX CREDIT ERINSTALLATION (1)* SUSTOMER TAX CREDIT ERINSTALLATION (1)* SUPPLY COSTS (1)* DIVERSITY AND AND CHARGE ESCALATION RATE (2.5 % (4) DEMAND CHARGE ESCALAT	II. ECONOMIC LIFE AND K FACTORS			
(2) GENERATOR ECONOMIC LIFE 20 YEARS (15) GENERATOR CAPACITY FACTOR 15 % (3) T & D ECONOMIC LIFE 20 YEARS (16) A VOIDED GENERATING UNIT FUEL COST 3.363149 CENTS/KWH (4) K FACTOR FOR GENERATION 0.02 (17) A VOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (5) K FACTOR FOR T & D 0.00 (18)* A VOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (16)* SWITCH REV REQQI) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* UTILITY NONRECURRING COST PER CUSTOMER 0.00 SCUSTYR V. NON-FUEL ENERGY AND DEMAND CHARGES 0.00 SCUSTYR 0	AL CTUDY PERIOD FOR CONCERNATION PROCESS	10 3224.00		
(3) T & D ECONOMIC LIFE 20 YEARS (16) AVOIDED GENERATING UNIT FUEL COST 3.363149 CENTS/KWH (4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (5) K FACTOR FOR T & D 0.00 (18)* AVOIDED PURCHASE CAPACITY COST FER KW 0.5 KW-YR (6)* SWITCH REV REQ(6) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* CAPACITY COST ESCALATION RATE 2.5 % (19)* UTILITY NONRECURRING COST PER CUSTOMER 0.00 \$CUSTYR V. NON-FUEL ENERGY AND DEMAND CHARGES (19)* UTILITY COST ESCALATION RATE 2.5 % (19)* CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL COST IN CUSTOMER BILL 8.536 CENTS/KWH (5) CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (6) CUSTOMER O & M COST 0.00 \$CUSTYR (3) CUSTOMER DEMAND CHARGE FER KW 0.00 \$KW-MO (7) CUSTOMER O & M COST 2.5 % (4) DEMAND CHARGE ESCALATION RATE 2.			, , , , , , , , , , , , , , , , , , , ,	
(4) K FACTOR FOR GENERATION 0.22 (17) AVOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (5) K FACTOR FOR T & D 0.00 (18)* AVOIDED PURCHASE CAPACITY COST PER KW 0.5 K/W-YR (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER 0.00 \$CUST YR V. NON-FUEL ENERGY AND DEMAND CHARGES (19)** UTILITY COST ESCALATION RATE 2.5 % (2) NON-FUEL ENERGY AND DEMAND CHARGES (19)** UTILITY COST ESCALATION RATE 2.5 % (2) NON-FUEL ENERGY AND DEMAND CHARGES (2) SCUST (3) UTILITY COST ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (6) CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (6) CUSTOMER O & M COST 0.00 \$CUST YR (3) CUSTOMER DEMAND CHARGE PER KW 0.00 \$K/W-MO (7) CUSTOMER O & M ESCALATION RATE 2.5 % (4) DEMAND CHARGE ESCALATION RATE 2.5 % (8)* CUSTOMER TAX CREDIT ESCALATION RATE 0.0 % FACTOR FOR CUSTOMER TAX CREDIT ESCALATION RATE 0.0 % FACTOR FOR CUSTOMER BILL 1.0 (10)* INCREASED SUPPLY COSTS 1.00 % (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY AND ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY AND ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY AND ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY AND ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RATE 2.5 % (10)* DIVERSITY AND ANNUAL DEMAND ADJUSTMENT (10)* SUPPLY COSTS ESCALATION RA	· · · · · · · · · · · · · · · · · ·			
(5) K FACTOR FOR T & D 0.00 (18)* AVOIDED PURCHASE CAPACITY COST PER KW 0 \$ \$ \text{KW-YR} \\ (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1 (19)* CAPACITY COST ESCALATION RATE 2.5 % UTILITY AND CUSTOMER COSTS UTILITY AND CUSTOMER COST PER CUSTOMER 249.36 \$ \text{CUST} \\ (2)** UTILITY RECURRING COST PER CUSTOMER 0.00 \$ \text{CUSTYR} 2.5 \\ (3) UTILITY COST ESCALATION RATE 2.5 \\ (4) CUSTOMER EQUIPMENT COST 6.022 & \$ \text{CUST} \\ (5) CUSTOMER EQUIPMENT ESCALATION RATE 2.5 \\ (6) CUSTOMER QUIPMENT ESCALATION RATE 2.5 \\ (7) CUSTOMER O & M COST 0.00 \$ \text{CUST/YR} \\ (8)* CUSTOMER O & M ESCALATION RATE 2.5 \\ (8)* CUSTOMER TAX CREDIT PER INSTALLATION 1.500.00 \$ \text{CUST} \\ (8)* CUSTOMER TAX CREDIT PER INSTALLATION 1.500.00 \$ \text{CUST} \\ (10)* INCREASED SUPPLY COSTS 1.00 \$ \text{CUSTOMER BILL 1.00 }\\ (10)* INCREASED SUPPLY COSTS 1.00 \$ \text{CUSTOMER BILL 1.00 }\\ (10)* UTILITY DISCOUNT RATE 2.5 \\ (12)* UTILITY DISCOUNT RATE 3.00 \\ (13)* UTILITY PRODUCT RATE 3.00 \\ (14)* UTILITY DISCOUNT RATE 3.00 \\ (14)* UTILITY PRODUCT RATE 3.00 \\ (14)* UTILITY ON RECURRING REBATE INCENTIVE 300.00 \$ \text{CUST}				
(19)* CAPACITY COST ESCALATION RATE 2.5 %				
(1)** UTILITY NONRECURRING COST PER CUSTOMER 249.36 \$-CUST (2)** UTILITY RECURRING COST PER CUSTOMER 0.00 \$-CUSTYR V. NON-FUEL ENERGY AND DEMAND CHARGES (3) UTILITY COST ESCALATION RATE 2.5 % (4) CUSTOMER EQUIPMENT COST 6.022.82 \$-CUST (1) NON-FUEL COST IN CUSTOMER BILL 8.536 CENTS/KWH (5) CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (6) CUSTOMER O & M COST 0.00 \$-CUSTYR (3) CUSTOMER DEMAND CHARGE PER KW 0.00 \$-KW-MO (7) CUSTOMER O & M ESCALATION RATE 2.5 % (4) DEMAND CHARGE ESCALATION RATE 2.5 % (8)* CUSTOMER TAX CREDIT PER INSTAULATION 1.500.00 \$-CUST (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (9)* CUSTOMER TAX CREDIT ESCALATION RATE 0.0 % FACTOR FOR CUSTOMER BILL 1.0 (10)* INCREASED SUPPLY COSTS 0.00 \$-CUSTYR (11)* SUPPLY COSTS ESCALATION RATE 2.5 % (12)* UTILITY DISCOUNT RATE 8.00 % (13)* UTILITY AFUDC RATE 0.00 % (14)* UTILITY NON RECURRING REBATE INCENTIVE 300.00 \$-CUST	• • • • • • • • • • • • • • • • • • • •		• •	
(3) UTILITY COST ESCALATION RATE	(1)** UTILITY NONRECURRING COST PER CUSTOMER			
(4) CUSTOMER EQUIPMENT COST 6.022.82 \$-CUST (1) NON-FUEL COST IN CUSTOMER BILL 8.536 CENTS/KWH (5) CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (6) CUSTOMER O & M COST 0.00 \$-CUSTOMER DEMAND CHARGE PER KW 0.00 \$-KW/MO (7) CUSTOMER O & M ESCALATION RATE 2.5 % (4) DEMAND CHARGE ESCALATION RATE 2.5 % (8)* CUSTOMER TAX CREDIT PER INSTALLATION 1.500.00 \$-CUST (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (9)* CUSTOMER TAX CREDIT ESCALATION RATE 0.0 % (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL 1.0 (10)* INCREASED SUPPLY COSTS 0.0 % (5)* SUPPLY COSTS SECALATION RATE 2.5 % (12)* UTILITY DISCOUNT RATE 8.00 % (13)* UTILITY AFUDC RATE 0.00 % (14)* UTILITY NON RECURRING REBATE INCENTIVE 300.00 \$-CUST		******	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(5) CUSTOMER EQUIPMENT ESCALATION RATE 2.5 % (2) NON-FUEL ESCALATION RATE 2.0 % (6) CUSTOMER O & M COST 0.00 \$'CUST'YR (3) CUSTOMER DEMAND CHARGE PER KW 0.00 \$'KW'MO (7) CUSTOMER O & M ESCALATION RATE 2.5 % (4) DEMAND CHARGE ESCALATION RATE 2.5 % (8)* CUSTOMER TAX CREDIT PER INSTALLATION 1.500.00 \$'CUST (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (9)* CUSTOMER TAX CREDIT ESCALATION RATE 0.0 % \$'CUST'YR (11)* SUPPLY COSTS ESCALATION RATE 2.5 % (12)* UTILITY DISCOUNT RATE 2.5 % (12)* UTILITY DISCOUNT RATE 8.00 % (13)* UTILITY AFUDC RATE 0.00 % (14)* UTILITY NON RECURRING REBATE INCENTIVE 300.00 \$'CUST'			(1) MONI EUEL COST IN CUSTOMED BILL	R CIA CENTERVIRU
(6) CUSTOMER O & M COST				
(7) CUSTOMER O & M ESCALATION RATE 2.5 % (4) DEMAND CHARGE ESCALATION RATE 2.5 % (8)* CUSTOMER TAX CREDIT PER INSTALLATION 1,500.00 \$CUST (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT (9)* CUSTOMER TAX CREDIT ESCALATION RATE 0.0 % FACTOR FOR CUSTOMER BILL 1.0 (10)* INCREASED SUPPLY COSTS 0.00 % \$CUSTYR 1.0 (11)* SUPPLY COSTS ESCALATION RATE 2.5 % 1.0 (12)* UTILITY DISCOUNT RATE 8.00 % 1.0 (13)* UTILITY AFUDC RATE 0.00 % \$CUST				
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	(7) CUSTOMER O & M ESCALATION RATE		* * * * * * * * * * * * * * * * * * * *	2.5 %
(10)* INCREASED SUPPLY COSTS	(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00 \$/CUST	(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	
(11)* SUPPLY COSTS ESCALATION RATE 2.5 % (12)* UTILITY DISCOUNT RATE 8.00 % (13)* UTILITY AFUDC RATE 0.00 % (14)* UTILITY NON RECURRING REBATE INCENTIVE 300.00 \$-CUST	(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %	FACTOR FOR CUSTOMER BILL	1.0
(12)* UTILITY DISCOUNT RATE	,			
(13)* UTILITY AFUDC RATE	•			
(14)* UTILITY NON RECURRING REBATE INCENTIVE 300.00 S/CUST				
· · · · · · · · · · · · · · · · · · ·				
VIST OTHER FERMING REDATES INCENTIVE				
(16)* UTILITY REBATE INCENTIVE ESCAL RATE	, , , , , , , , , , , , , , , , , , , ,		* FIDE Program Van im Mumber, 1 02	
(10) OTHER LINE REPORTED THE EAST AND PORT	(10) CHERT REPAREMEENING ESCAL RATE	W-11 0	Frage Fogrant Version Pounder: 1.05	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA ~ PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 9:22 AM

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				UTILITY					
				AVERAGE					
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
_	YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C·KWH)	FACTOR	FACTOR
	2010	30	30	3.36	3.73	3.87	3.36	i	1
	2011	60	60	3.65	3.92	3.99	3.65	1	1
	2012	90	90	3.93	4,21	4.24	3.93	1	\$
	2013	120	120	4.05	4.40	4.47	4.05	1	1
	2014	150	150	4.14	4.59	4.65	4.14	1	t
	2015	180	180	4.34	4.83	4.96	4.34	1	1
	2016	210	210	4.48	5.04	5.20	4 48	1	1
	2017	240	240	4.67	5.34	5.60	4,67	1	l l
	2018	270	270	4.86	5.53	5.91	4.85	1	i
	2019	300	300	5.14	5.91	5.58	5.06	1	i

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	[2.3>	< FOR	M 2.4>	< FOR	LM 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				-	+			-	****	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

* UNIT SIZE OF AVOIDED GENERATION UNIT = 183 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	21.9248	239.9657	0.0000	0.0000	13.6681	11.6364	0.0000	23,9565
. 2019	0.0212	21.9739	239.9657	0.0000	0.0000	14.8131	12.1352	0.0000	24.6517
NOMINAL		43.8987	479.9313	0.0000	0.0000	28.4811	23.7716	0.0000	48.6082
NPV		22.8377		0.0000	0.0000	14.7947	12.3574	0.0000	25.2749

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.796031
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.513006
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.496891
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.575155
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.811215
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.340022
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.993103
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.106762
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.080987
2019	0.000000	000000	0.000000	0.000000	0.000000	0.000000	23.964840
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	109.678012
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	68.029331

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 11

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	21.3528	0.7960	0.0000	0.0000	0.7960	0.7960
2011	64.0583	2.5130	0.0000	0.0000	2.5130	2.5130
2012	106.7638	4.4969	0.0000	0.0000	4.4969	4.4969
2013	149.4693	6.5752	0.0000	0.0000	6.5752	6.5752
2014	192.1748	8.8112	0.0000	0.0000	8.8112	8.8112
2015	234.8803	11.3400	0.0000	0.0000	11.3400	11.3400
2016	277.5858	13.9931	0.0000	0.0000	13.9931	13.9931
2017	320.2914	17.1068	0.0000	0,000	17.1068	17.1068
2018	362,9969	20.0810	0.0000	0.0000	20.0810	20.0810
2019	405,7024	23.9648	0.0000	0.0000	23.9648	23.9648
NOMINAL	2,135,2758	109.6780	0.0000	0.0000	109.6780	109.6780
NPV		68.0293	0.0000	0.0000	68.0293	68.0293

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(H)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
	•	UIIL	III PKOGK	AM COST	S & KEBAI	E3		6	PAR	TICIPATING	COSTOMEN	CUSIS & I	DENETI15		********				
				TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.	
		UTIL	UTIL.	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE	
	1	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	O & M	CUST CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.	
		COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL	
YE.	ΛR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)	
	010	7.4809	0000,0	7.4809	9.0000	0.0000	9.0000	180.6846	0.0000		20.5200	0.6901	1.7516	2,4417	0.0000	0.0000	0.0000	0.0000	
	011	7.6679	0.0000	7.6679	9.0000	0.0000	9.0000	185.2017	0.0000	185,2017	61.5600	2.2453	5.3599	7.6051	0.0000	0.0000	0.0000	0.0000	
	012	7.8596	0.0000	7.8596	9.0000	00000	9.0000	189.8318	0.0000	189.8318	102.6000	4.0342	9.1118	13.1460	0.0000	0.0000	0.0000	0.0000	
20	013	8.0561	0.0000	8.0561	9.0000	0.0000	9.0000	194.5776	0.0000	194.5776	143.6400	5.8237	13.0116	18.8353	0.0000	0.0000	0.0000	0.0000	
20	014	8.2575	0.0000	8.2575	9.0000	0.0000	9.0000	199.4420	0.0000	199.4420	184.6800	7.6546	17.0638	24.7183	0.0000	0.0000	0.0000	0.0000	
20	015	8.4639	0.0000	8.4639	9.0000	0.0000	9.0000	204.4280	0.0000	204.4280	225.7200	9.7903	21.2728	31.0631	0.0000	0.0000	0.0000	0.0000	
20	016	8.6755	0.0000	8.6755	9.0000	0.0000	9.0000	209.5387	0.0000	209.5387	266.7600	11.9555	25.6434	37.5989	0.0000	0.0000	0.0000	0.0000	
20	017	8.8924	0.0000	8,8924	9.0000	0.0000	9.0000	214.7772	0.0000	214,7772	307.8000	14.3805	30.1803	44.5608	0.0000	0.0000	0.0000	0.0000	
20	018	9.1147	0.0000	9.1147	9.0000	0.0000	9,0000	220.1466	0.0000	220.1466	348.8400	16.9515	34.8885	51.8400	0.0000	0.0000	0.0000	0.0000	
20	019	9.3426	0.0000	9.3426	9.0000	0.0000	9.0000	225.6503	0.0000	225.6503	389.8800	20.0284	39,7729	59.8012	0.0000	0.0000	0.0000	0.0000	
												ALTERNA AT 1700	195. A supplement		. ,		cent of		
NOMIN	IAL -	83.8109	0.0000	83.8109	90.0000	0.0000	90.0000	2,024.2786	0.0000	2,024.2786	2,052.0000	93.5540	198.0565	291.6105	0.0000	0.0000	0.0000	0.0000	
N.	PV	59.7978	0.0000	59.7978	65.2220	0.0000	65.2220	1,444.2909	0.0000	1,444.2909		58.2427	124,3908	182.6334		0.0000	0.0000	0.0000	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL.	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	7.481	180.685	0.000	188.165	0.000	0.000	0.796	0.000	0.796	(187.369)	(187.369)
2011	0.000	7.668	185.202	0.000	192.870	0.000	0.000	2.513	0.000	2.513	(190.357)	(363.626)
2012	0.000	7.860	189.832	0.000	197.691	0.000	0.000	4.497	0.000	4.497	(193.194)	(529.259)
2013	0.000	8.056	194.578	0.000	202.634	0.000	0.000	6.575	0.000	6.575	(196.058)	(684.896)
2014	0.000	8.257	199.442	0.000	207.699	0.000	0.000	8.811	0.000	8.811	(198.888)	(831.085)
2015	0.000	8.464	204.428	0.000	212.892	0.000	0.000	11.340	0.000	11.340	(201.552)	(968.258)
2016	0.000	8.676	209,539	0.000	218,214	0.000	0.000	13,993	0.000	13.993	(204.221)	(1,096.952)
2017	0.000	8.892	214.777	0.000	223,670	0.000	0.000	17.107	0.000	17.107	(206.563)	(1,217,479)
2018	0.000	9.115	220.147	0.000	229.261	23.956	0.000	20.081	0.000	44.037	(185.224)	(1,317.550)
2019	0.000	9.343	225.650	0.000	234.993	24.652	0.000	23.965	0.000	48.617	(186.376)	(1,410.784)
NOMINAL	0.000	83.811	2,024.279	0.000	2,108.089	48.608	0,000	109.678	0.000	158.286	(1,949.803)	* * Management of NA
NPV	0.000	59.798	1,444.291	0.000	1,504.089	25.275	0.000	68.029	0.000	93.304	(1,410.784)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.06

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	2.442	45,000	9.000	0.000	56.442	180.685	0.000	0.000	180.685	(124.243)	(124.243)	56	181	0.31
2011	7.605	45.000	9.000	0.000	61. 6 05	185.202	0.000	0.000	185.202	(123.597)	(238.684)	113	352	0.32
2012	13.146	45.000	9.000	0.000	67.146	189.832	0.000	0.000	189.832	(122.686)	(343.867)	171	515	0.33
2013	18.835	45.000	9.000	0.000	72.835	194.578	0.000	0.000	194.578	(121.742)	(440.510)	229	669	0.34
2014	24.718	45,000	9.000	0.000	78.718	199.442	0.000	0.000	199,442	(120,724)	(529,246)	287	816	0.35
2015	31.063	45.000	9.000	0.000	85,063	204.428	0.000	0.000	204.428	(119.365)	(610.484)	345	955	0.36
2016	37.599	45,000	9,000	0.000	91.599	209.539	0.000	0.000	209.539	(117.940)	(684,806)	402	1,087	0.37
2017	44.561	45.000	9.000	0.000	98,561	214.777	0.000	0.000	214,777	(116.216)	(752.617)	460	1,212	0.38
2018	51.840	45.000	9.000	0.000	105.840	220,147	0.000	0.000	220,147	(114.307)	(814.373)	517	1.331	0.39
2019	59.801	45,000	9.000	0.000	113.801	225.650	0.000	0.000	225.650	(111.849)	(870,326)	574	1,444	0.40
NOMINAL	291.611	450.000	90.000	0.000	831.611	2,024.279	0.000	0.000	######################################	(1,192.668)				
NPV	182.633	326.110	65.222	0.000	\$73.965	1,444.291	0.000	0.000	#######	(870.326)				

In-service year of generation unit: 2018
Discount rate: 8.00%
Benefit/Cost Ratio: 0.40

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	7.481	9.000	2.442	0.000	18.923	0.796	0.000	0.000	0.000	0.796	(18.127)	(18.127)
2011	0.000	7.668	9.000	7.605	0.000	24.273	2.513	0.000	0.000	0.000	2.513	(21.760)	(38.275)
2012	0.000	7.860	9.000	13.146	0.000	30.006	4.497	0.000	0.000	0.000	4.497	(25.509)	(60.144)
2013	0.000	8.056	9.000	18.835	0.000	35.891	6.575	0.000	0.000	0.000	6.575	(29.316)	(83.416)
2014	0.000	8.257	9.000	24.718	0.000	41.976	8.811	0.000	0.000	0.000	8.811	(33,165)	(107.793)
2015	0.000	8.464	9.000	31.063	0.000	48.527	11.340	0.000	0.000	0.000	11.340	(37.187)	(133.102)
2016	0.000	8,676	9.000	37.599	0.000	55.274	13.993	0.000	0.000	0.000	13.993	(41.281)	(159.116)
2017	0.000	8.892	9.000	44.561	0.000	62.453	17.107	0.000	0.000	0.000	17.107	(45.346)	(185.576)
2018	0.000	9.115	9.000	51.840	0.000	69.955	44.037	0.000	0.000	0.000	44.037	(25.917)	(199.578)
2019	0.000	9.343	9.000	59,801	0.000	78.144	48.617	0.000	0.000	0.000	48.617	(29.527)	(214.349)
NOMINAL	0.000	83,811	90.000	291.611	0.000	465.421	158.286	0.000	0.000	0.000	158.286	(307.135)	
NPV	0.000	59.798	65.222	182.633	0.000	307.653	93.304	0.000	0.000	0.000	93.304	(214.349)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.30

Residential Gold Ring Home Program

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 9:38 AM

PROGRAM: Residential Energy Efficiency Gold Ring

	IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
0.89 KW /CUST 0.93 KW GEN/CUST 3.9 % 1,366.8 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 1.313 5 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) TAD FIXED O MM ESCALATION RATE	2010 2018 2030 120.0557 \$/KW 0 \$/KW 0 %/ 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR
10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH 2.5 % 15 %
411.44 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 % 0.00 % 700.00 \$/CUST 0.00 \$/CUST 0.00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL * FIRE Program Version Number: 1 03	8.536 CENTS/KWH 2.0 % 0.00 \$/KW/MO 2.5 %
	0.93 KW GEN/CUST 3.9 % 1,366.8 KWH/CUST/YR 3.9 % 1,0000 0.0 KWH/CUST/YR 1.313.5 KWH/CUST/YR 1.313.5 KWH/CUST/YR 10 YEARS 20 YEARS 20 YEARS 20 YEARS 0.22 0,000 1 411.44 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR	0.89 KW/CUST (1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T& D (4) BASE YEAR AVOIDED GENERATING UNIT COST (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR AVOIDED TRANSMISSION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O & M COST (13) AVOIDED GEN UNIT VARIABLE O & M COST (14) GENERATOR VARIABLE O & M COST (14) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GENERATING UNIT FUEL COST (18) AVOIDED GENERATING UNIT FUEL ESCALATION RATE (18) AVOIDED PURCHASE CAPACITY COST PER KW (19) CAPACITY COST ESCALATION RATE (19)

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1 2 PAGE 1 OF 1 Run Date: 3/29/2010 9.38 AM

PROGRAM: Residential Energy Efficiency Gold Ring

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 3.00

	° (1)	(2)	(3)	(4) UTILITY	(5)	(6)	(7)	(8)	(9)
			. In this distance	AVERAGE		DIADDIADD		DD 0 CD 4 4 4	nn o an 13.1
		CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
		TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
		PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
	YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
_									
	2010	6	6	3 36	3.73	3,87	3.36	1	1
	2011	12	12	3,65	3.92	3,99	3,65	1	1
	2012	18	18	3.93	4.21	4.24	3.93	1	1
	2013	24	24	4.05	4.40	4.47	4.05	1	
	2014	30	30	4.14	4.59	4.65	4.14	1	1
	2015	36	36	4.34	4 83	4.96	4.34	1	1
	2016	42	42	4.48	5.04	5.20	4.48	i	1
	2017	48	48	4.67	5.34	5.60	4.67	ī	1
	2018	54	54	4.86	5.53	5.91	4.85	1	1
	2019	60	60	5.14	5.91	5 58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM	2.3>	< FOR!	M 2.4>	< FORM 2.5>		
	Total Reso	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
		500.00/	4.0000			2.22		0.00	0.00	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	- 5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
		200.076	0001.0000	*		0.00	0.00			0.00
2018	0			0.0%	0.00			0.00	0.00	

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Energy Efficiency Gold Ring

* UNIT SIZE OF A VOIDED GENERATION UNIT = 50 kW

* INSERVICE COSTS OF A VOIDED GEN. UNIT (000) = \$0

(1) (1A)*(2) (2A)*(3) (4) (5) (6) (6A) (7) **AVOIDED** AVOIDED AVOIDED AVOIDED AVOIDED **AVOIDED** VALUE OF **GEN UNIT** ANNUAL UNIT **GEN UNIT GEN UNIT PURCHASED AVOIDED DEFERRAL** CAPACITY UNIT FIXED VARIABLE **FUEL** REPLACEMENT CAPACITY **GEN UNIT** KWH GEN **O&M COST O&M COST** COST **FUEL COST** COSTS BENEFITS **FACTOR** COST \$(000) \$(000) Year \$(000) (000)\$(000) \$(000) \$(000) \$(000) 2010 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2011 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2012 0.00000.0000 0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 2013 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00002014 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2015 0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000 2016 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2017 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 2018 0.0212 6.0040 65.7137 0.0000 0.0000 3.7429 0.0000 3.1866 6.5604 2019 0.0212 6.0175 65.7137 0.0000 0.0000 4.0565 3.3232 0.0000 6.7508 NOMINAL 12.0215 131.4273 0.0000 0.0000 7.7994 6.5098 0.0000 13.3112 0.0000 **NPV** 6.2540 0.0000 4.0515 0.0000 3.3840 6.9214

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Energy Efficiency Gold Ring

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.152864
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.482578
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.863548
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.262641
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.692037
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.177649
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.687126
2017	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	3.285048
2018	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	3.856195
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.602020
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21.061706
NPV	0.000000	0.000000	0.000000	0.00000	0.000000	0.00000	13.063820

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	4.1004	0.1529	0.0000	0.0000	0.1529	0.1529
2011	12.3012	0.4826	0.0000	0.0000	0.4826	0.4826
2012	20.5021	0.8635	0.0000	0.0000	0.8635	0.8635
2013	28.7029	1.2626	0.0000	0.0000	1.2626	1.2626
2014	36.9037	1.6920	0.0000	0.0000	1,6920	1.6920
2015	45.1046	2.1776	0.0000	0.0000	2.1776	2.1776
2016	53.3054	2.6871	0.0000	0.0000	2.6871	2.6871
2017	61.5062	3.2850	0.0000	0.0000	3.2850	3.2850
2018	69.7071	3.8562	0.0000	0.0000	3.8562	3.8562
2019	77.9079	4.6020	0.0000	0.0000	4.6020	4.6020
NOMINAL	410.0416	21,0617	0.0000	0.0000	21.0617	21.0617
NPV		13.0638	0.0000	0.0000	13.0638	13.0638

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	<	UTIL	TY PROGR	AM COSTS	& REBATE	S		<	PARTIC	CIPATING C	USTOMER (OSTS & BE	NEFITS	********				<
				TOTAL			TOTAL	PARTIC	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	1	UTIL	UTIL	UTIL	UTIL.	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV	REVENUE
	NON	REC.	RECUR	PGM	NONREC.	RECUR	INCENT	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	CC	OSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEA	R S	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$ (000)		\$(000)
20		1686	0.0000	2.4686	4.2000	0 0000	4.2000	0.0000	00000	0.0000	3.9405	0.1325	0.3364	0.4689	0.0000	0.0000	0.0000	0.0000
20		5303	0 0000	2.5303	4.2000	0.0000	4,2000	0.0000	0.0000	0.0000	11.8215	0.4312	1.0293	1.4604	0.0000	0.0000	0.0000	0.0000
20		5936	0.0000	2.5936	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	19.7025	0.7747	1.7498	2.5244	0.0000	0.0000	0.0000	0.0000
20		5584	0.0000	2.6584	4.2000	0,0000	4.2000	0.0000	0.0000	0.0000	27.5835	1.1183	2.4986	3.6170	0.0000	0.0000	0.0000	0.0000
20		7249	0.0000	2,7249	4.2000	0 0000	4.2000	0.0000	0.0000	0.0000	35,4645	1.4699	3.2768	4.7467	0.0000	0.0000	0.0000	0.0000
20		7930	0.0000	2 7930	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	43,3455	1.8800	4,0851	5.9651	0 0000	0.0000	0.0000	0 0000
20	16 2.8	8628	0.0000	2.8628	4.2000	0 0000	4.2000	0.0000	00000	0.0000	51.2265	2.2958	4.9244	7.2202	0 0000	0.0000	0,0000	0.0000
20	17 2.9	9344	0.0000	2 9344	4.2000	0.0000	4.2000	0.0000	0 0000	0.0000	59.1075	2.7615	5.79 56	8,5571	00000	0,0000	0.0000	0.0000
20	18 30	0078	0.0000	3 0078	4.2000	0 0000	4,2000	0.0000	0.0000	0.0000	66.9885	3.2552	6.6997	9,9549	0.0000	0.0000	0.0000	0000.0
20	19 3.6	0830	0.0000	3.0830	4 2000	0.0000	4.2000	0.0000	0.0000	0.0000	74.8695	3.8461	7.6377	11.4838	0.0000	0,0000	0.0000	0,0000
			_															
NOMINA	L 27.6	5568	0.0000	27.6568	42,0000	0.0000	42,0000	0.0000	0.0000	0.0000	394.0500	17.9654	38.0332	55.9986	0.0000	0.0000	0.0000	0 0000
NP	V 19.7	7327	0.0000	19.7327	30,4369	0.0000	30.4369	0.0000	0.0000	0.0000		11,1845	23.8870	35.0715		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.469	0.000	0.000	2.469	0.000	0.000	0.153	0.000	0.153	(2.316)	(2.316)
2011	0.000	2.530	0.000	0.000	2.530	0.000	0.000	0.483	0.000	0.483	(2.048)	(4.212)
2012	0.000	2.594	0.000	0.000	2.594	0.000	0.000	0.864	0.000	0.864	(1.730)	(5,695)
2013	0.000	2.658	0.000	0.000	2.658	0.000	0.000	1.263	0.000	1.263	(1.396)	(6.803)
2014	0.000	2.725	0.000	0.000	2.725	0.000	0.000	1.692	0.000	1.692	(1.033)	(7.562)
2015	0.000	2.793	0.000	0.000	2.793	0.000	0.000	2.178	0.000	2.178	(0.615)	(7.981)
2016	0.000	2.863	0.000	0.000	2.863	0.000	0.000	2.687	0.000	2.687	(0.176)	(8.092)
2017	0.000	2.934	0.000	0.000	2.934	0.000	0.000	3.285	0.000	3.285	0.351	(7.887)
2018	0.000	3.008	0.000	0.000	3.008	6.560	0.000	3.856	0.000	10.417	7.409	(3.884)
2019	0.000	3.083	0.000	0.000	3.083	6.751	0.000	4.602	0.000	11.353	8.270	0.253
NOMINAL	0.000	27.657	0.000	0.000	27.657	13.311	0.000	21.062	0.000	34.373	6.716	
NPV	0.000	19.733	0.000	0.000	19.733	6.921	0.000	13.064	0.000	19.985	0.253	

Discount Rate: 8

8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

1.01

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2) SAVINGS IN PARTICIPANTS BILL	(3) TAX CREDITS	(4) UTILITY REBATES	OTHER BENEFITS	(6) TOTAL BENEFITS	(7) CUSTOMER EQUIPMENT COSTS	(8) CUSTOMER O & M COSTS	(9) OTHER COSTS	(10) TOTAL COSTS	(11) NET BENEFITS	(12) CUMULATIVE DISCOUNTED NET BENEFITS		CUMULATIVE DISCOUNTED COSTS	Benefit to Cost Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010 2011	0.469 1.460	0.000	4 200 4,200	0.000	4.669 5.660	0.000	0.000	0.000	0.000	4.669 5.660	4.669 9.910	5 10	0	1.00
2012	2.524	0.000	4,200	0.000	6 724	0.000	0.000	0,000	0.000	6,724	15,675	16	0	1 00
2013	3 617	0.000	4.200	0.000	7.817	0.000	0 000	0.000	0.000	7.817	21,881	22	0	1.00
2014	4,747	0 000	4,200	0.000	8.947	0.000	0.000	0.000	0.000	8.947	28.457	28	0	1.00
2015	5.965	0.000	4.200	0.000	10,165	0,000	0.000	0.000	0.000	10,165	35.375	35	0	1.00
2016	7 220	0.000	4,200	0.000	11,420	0.000	0.000	0.000	0.000	11.420	42 572	43	0	1.00
2017	8 557	0.000	4,200	0.000	12,757	0.000	0.000	0.000	0.000	12,757	50,015	50	0	1 00
2018	9.955	0.000	4.200	0.000	14.155	0.000	0.000	0.000	0.000	14.155	57,663	58	0	1.00
2019	11.484	0 000	4,200	0.000	15.684	0.000	0.000	0.000	0.000	15.684	65.508	66	0	1.00
NOMINAL	55.999	0.000	42.000	0.000	97,999	0.000	0.000	0,000	0.000	97,999				
NPV	35.071	0 000	30,437	0.000	65.508	0.000	0.000	0.000	0.000	65.508				

In-service year of generation unit. 2018
Discount rate: 8 00%
Benefit/Cost Ratio 1.00

Residential Compact Fluorescent Lighting

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PROGRAM: Residential Lighting Program (CFL)

1 PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MUTTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.04 KW CUST 9.04 KW GEN CUST 3.9 % 60.8 KWH CUST YR 3.9 % 1.0000 0.0 KWH CUST YR 58.4 KWH CUST YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN. TRAN. & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	2030 120.0557 \$ KW 0 \$ KW 0 \$ KW 0 % 10.74022 \$ KW YR 2 5 % 0 \$ KW YR 0 \$ KW YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION	10 YEARS 20 YEARS 20 YEARS 0.22	(12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O& M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE	0 CENTS KW 2.5 % 15 % 3.363149 CENTS KW 2.5 %
(5) K FACTOR FOR OLARRATION (5) K FACTOR FOR 1 & D (5)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	9.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE (19)* CAPACITY COST ESCALATION RATE	
(5) K FACTOR FOR 1 & D		· · · · · · · · · · · · · · · · · · ·	
(5) K FACTOR FOR 1 & D. (5)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1 1:00 3:CUST 0:00 3:CUST YR	· · · · · · · · · · · · · · · · · · ·	
(5) K FACTOR FOR 1 & D. (5)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTH FY AND CUSTOMER COSTS (1)** UTH HY NONRECURRING COST PER CUSTOMER (2)** UTHLITY RECURRING COST PER CUSTOMER (3) UTHLITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST	1 100 S-CUST 000 S-CUST YR 2.5 % 0.90 S-CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL.	2.5 % 8.536 CENTS KW
(5) K FACTOR FOR 1 & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTILITY AND CUSTOMER COSTS (1)** UTILITY RECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) THILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE	1 100 S-CUST 000 S-CUST YR 2.5 % 0.90 S-CUST 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL	2.5 % 8.536 CENTS KV 2.0 %
(5) K FACTOR FOR 1 & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTH HY AND CUSTOMER COST PER CUSTOMER (2)** UTH HY RECURRING COST PER CUSTOMER (3) UTH HY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER OF M COST	1 100 S-CUST 000 S-CUST YR 2.5 % 0.90 S-CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL.	2.5 % 8.536 CENTS KV 2.0 % 0.00 S.KW MO
(5) K FACTOR FOR 1 & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTILITY AND CUSTOMER COSTS (1)** UTILITY RECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) THILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE	1 00 3-CUST O 00 5 CUST YR 2.5 % 0.90 \$ CUST 2.5 % 0.90 \$ CUST 2.5 % 0.90 \$ CUST YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RAYE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2.5 % 8.536 CENTS KV 2.0 % 0.00 \$-KW MO 2.5 %
(5) K FACTOR FOR 1 & D. (5)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTH IFY AND CUSTOMER COSTS (1)** UTH IFY NONRECURRING COST PER CUSTOMER (2)** UTHLITY RECURRING COST PER CUSTOMER (3) ITHLITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION	1 1 00 3-CUST 000 5-CUST YR 2.5 % 0.90 5-CUST YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BIEL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW. (4) DEMAND CHARGE ESCALATION RATE.	2.5 % 8.536 CENTS KY 2.0 % 0.00 S.KW MO 2.5 %
(5) K FACTOR FOR 1 & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTILITY AND CUSTOMER COSTS (1)** UTILITY RECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) THILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O& M COST (7) CUSTOMER O& M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS	1 1 00 3-CUST 900 \$-CUST YR 2.5 % 0.90 \$-CUST YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RAYE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2.5 % 8.536 CENTS KV 2.0 % 0.00 \$-KW MO 2.5 %
(5) K FACTOR FOR 1 & D. (5)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTH IFY AND CUSTOMER COSTS (1)** UTH IFY NONRECURRING COST PER CUSTOMER (2)** UTHLITY RECURRING COST PER CUSTOMER (3) ITHLITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION	1 1 00 3-CUST 000 5-CUST YR 2.5 % 0.90 5-CUST YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RAYE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2.5 % 8.536 CENTS KV 2.0 % 0.00 \$-KW MO 2.5 %
(5) K FACTOR FOR 1 & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTH HY AND CUSTOMER COST PER CUSTOMER (2)** FILLITY RECURRING COST PER CUSTOMER (3) FIRLITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER OR M COST (7) CUSTOMER OR M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE	1 00 \$-CUST VR 2.5 % 0.00 \$-CUST YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RAYE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2.5 % 8.536 CENTS KV 2.0 % 0.00 \$-KW MO 2.5 %
(5) K FACTOR FOR 1 & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) IF UTILITY AND CUSTOMER COST (2)** UTILITY RECURRING COST PER CUSTOMER (3) THILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O& M COST (7) CUSTOMER O& M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PESCALATION RATE (16)* UTILITY OSST ESCALATION RATE (16)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE	1 100 \$-CUST 0.00 \$-CUST YR 2.5 % 8.00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RAYE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	2.5 % 8.536 CENTS KV 2.0 % 0.00 \$-KW MO 2.5 %

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

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PROGRAM: Residential Lighting Program (CFL)

* Avoided Generation Unit: 7FA CT

* Program Generation Equivilency Factor: 1 00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	191
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	FFFECTIVENESS	EFFECTIVENESS
YEAR_	CUSTOMERS	CUSTOMERS	(C KWH)	(C KWH)	(C KWH)	(C.KWH)	FACTOR	FACTOR
2010	2876	2876	3.36	3 73	3.87	3.36	1	ļ
2011	57 <u>52</u>	5752	3.65	3.92	3.99	3.65	1	1
2012	8628	8628	3,93	4.21	4.24	3.93	1	1
2013	11504	11504	4.05	4.40	4.47	4 05	1	1
2014	14380	143%0	4.14	4 59	4.65	4.14	1	1
2015	17256	17256	4,34	4.83	4 96	4.34	1	1
2016	20132	20132	4 48	5.04	5.20	4.48	!	1
3017	23408	23008	4.67	5,34	5.60	4.67	1	1
2618	25884	25884	4.86	5.53	5.91	4.85	1	1
2019	28760	28760	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	[2.3>	< FOR	M 2.4>	< FOR	.M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
	W M estin	****	***			*****	personality and the sair		~ ~ ~ ~	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
								****	******	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06

AFUDC RATE:

0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Residential Lighting Program (CFL)

* UNIT SIZE OF AVOIDED GENERATION UNIT = 1,077 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL						DEDI ACCIACIA	CAPACITY	GEN UNIT
		CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT		
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		<u>\$(000)</u>	(000)	\$(000)	\$(000)	\$(000)	\$(0 00)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	129.3453	1,415,6743	0.0000	0.0000	80.6345	68.6488	0.0000	141.3310
2019	0.0212	129.6346	1.415.6743	0,0000	0,0000	87.3896	71.5915	0.0000	145.4326
NOMINAL		258.9799	2,831,3487	0.0000	0.0000	168.0241	140.2403	0.0000	286.7636
NPV		134.7308		0.0000	0.0000	87.2808	72.9024	0.0000	149.1092

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Residential Lighting Program (CFL)

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.257799
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.284612
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.403766
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	26.909173
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	36.060371
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	46.409650
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	57.267523
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	70.010339
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	82.182517
2019	0.00000	0.000000	0.000000	0.000000	0,00000	0.000000	98.077394
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	448.863144
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	278.413683

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	87.3873	3.2578	0.0000	0.0000	3.2578	3.2578
2011	262.1619	10.2846	0.0000	0.0000	10.2846	10.2846
2012	436.9365	18.4038	0.0000	0.0000	18.4038	18.4038
2013	611.7111	26.9092	0.0000	0.0000	26.9092	26.9092
2014	786.4857	36.0604	0.0000	0.000.0	36.0604	36.0604
2015	961.2604	46.4096	0.0000	0.0000	46.4096	46.4096
2016	1,136.0350	57.2675	0.0000	0.0000	57.2675	57.2675
2017	1.310.8096	70.0103	0.0000	0.0000	70.0103	70.0103
2018	1,485.5842	82.1825	0.0000	0.0000	82,1825	82.1825
2019	1,660.3588	98.0774	0.0000	0.0000	98.0774	98.0774
NOMINAL	8,738.7305	448.8631	0.0000	0.0000	448.8631	448.8631
NPV		278.4137	0.0000	0.000.0	278.4137	278.4137

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Residential Lighting Program (CFL)

(1)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
	< HTIL	ITY PROGE	CAM COST	S & REBAT	ES			PARI	TCIPATING	CUSTOMER	COSTS & I	BENEFITS						/ w
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED	EFFECT.	INC.	INC	INC.	EFFECT.	
	UTH	UTH	UTH.	UTIL.	UTIL	REBATE	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE	
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.	
	COSTS	COSTS	COSTS	REBATES	REBATES	COSES	COSTS	COSTS	COSTS	KWII	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL	
YLAR	\$(000)	5(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)	
2010	2.8760	0,0000	2.8760	0000.0	0,0000	0.0000	0.0000	0.0000	0 0000	83.9792	2.8243	7.1685	9.9928	0.0000	0.0000	0.0000	0.0000	
2011	2,9479	0.0000	2.9479	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	251.9376	9.1889	21,9355	31.1244	0.0000	0.0000	0.0000	0.0000	
2012	3.0216	0000	3.0216	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	419.8960	16.5102	37.2904	53.8006	0.0000	0.0000	0.0000	0.0000	
2013	3.0971	0.0000	3.0971	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	587.8544	23.8338	53.2506	77.0844	0.0000	0900,0	0.0000	0.0000	
2014	3.1746	0.0000	3.1746	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	755.8128	31.3268	69.8344	101.1612	0.0000	0.0000	0.0000	0.0000	
2015	3,2539	0.0000	3.2539	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	923.7712	40.0672	87.0602	127.1274	0.0000	0.0000	0.0000	0.0000	
2016	3.3353	0.0000	3.3353	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.091.7296	48.9286	104.9471	153.8757	0.0000	0.0000	0.0000	0.0000	
2017	3.4187	0.0000	3 4187	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,259.6880	58 8530	123.5147	182.3676	0.0000	0.0000	0,0000	0.0000	
2018	3.5041	0.0000	3.5041	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,427.6464	69.3748	142.7830	212.1578	0.0000	0.0000	0,0000	0.0000	
2019	3.5917	0.0000	3 5917	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,595.6048	81.9672	162,7726	244.7398	0.0000	0.0000	0000,0	0.0000	
NOMINAL	32.2209	0.0000	32.2209	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000	8,397.9200	382.8748	810.5569	1,193.4318	0.0000	0.0000	0.0000	0.0000	
NPV	22.9891	0.0000	22.9891	0.0000	0000.0	0.0000	0.0000	0.0000	0.0000		238.3612	509.0759	747.4370		0.0000	0.0000	0.0000	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.876	0.000	0.000	2.876	0.000	0.000	3.258	0.000	3.258	0.382	0.382
2011	0.000	2.948	000.0	0.000	2.948	0.000	0.000	10.285	0.000	10.285	7.337	7.175
2012	0.000											
2013	000.0											
2014	0.000											
2015	0.000											
2016	0.000											
2017	0.000											
2018	0.000											
2019	0.000											
NOMINAL	0.000	5.824	0.000	0.000	5.824	0.000	0.000	13.542	0.000	13.542	7.719	
NPV	0.000	5.606	0.000	0.000	5.606	0.000	0.000	12.781	0.000	12.781	7.175	
			Discount Rate:	8.00%								

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 2.28

PARTICIPANT COSTS AND BENEFITS PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE CU	MULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	O & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED DI	SCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(600)	\$(000)	
2010	9,993	0.000	0.009	0.000	9,993	0.000	0.000	0.000	0.000	9,993	9.993	10	0	1.00
2011	31,124	0.000	0.000	0.000	31,124	0.000	0.000	0.000	0.000	31.124	38.812	39	Ð	1.00
2012	53,801	0.000	0.000	000.0	53.801	0.000	0.000	0.000	0.000	53.801	84,937	85	0	1.00
2013	77.084	0.000	0.000	0.000	77.084	0.000	0.000	0.000	0.000	77.084	146.129	146	0	1.00
2014	101.161	0.000	0.000	000.0	101.161	0.000	0.000	0.000	0.000	101.161	220.486	220	0	1.00
2015	127.127	0.000	0.000	0.000	127,127	0.000	0.000	0.000	0.000	127.127	307.006	307	0	1.00
2016	153.876	0.000	0.000	0.000	153.876	0.000	0.000	0.000	0.000	153.876	403.974	404	0	1.00
2017	182.368	0.000	0.000	0.000	182.368	0,000	0.000	0.000	0.000	182.368	510.384	510	0	1.00
2018	212.158	0.000	0.000	0.000	212.158	0.000	0.000	0.000	0.000	212.158	625.006	625	0	1.00
2019	244.740	0.000	0.000	0.000	244,740	0.000	0.000	0.000	0.000	244.740	747.437	747	0	1.00
NOMINAL	1.193.432	0.000	0.000	0,000	1.193.432	0.000	0.000	0.000	0.000	1,193,432				
3 (F33 ·	747 477	0.06.0	0.000	0.000	717 127	6 440	5 1000	0.000	0.000	7.7.437				
NPV	747,437	0.000	0.000	0.000	747.437	0.000	0.000	0.000	0.000	747.437				

In-service year of generation unit: 2018 Discount rate.

8.00% Benefit/Cost Ratio: E.00

RATE IMPACT TEST PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)		(14) CUMULATIVE
	INCREASED	UTILITY		BELLEVILLE	omund	TOTAL	GEN UNIT		BEVENUE	OTHER	TOTAL		DISCOUNTED
	SUPPLY	PROGRAM	No London Company Company	REVENUE		TOTAL	& FUEL		REVENUE	OTHER	TOTAL	TO ALL	NET
3.1m s.m	COSTS		INCENTIVES		COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.876	0.000	9,993	0.000	12.869	3.258	0.000	0.000	0.000	3.258	(9.611)	(9.611)
2011	0.000	2.948	0.000	31.124	0.000	34.072	10.285	0.000	0.000	0.000	10.285	(23.788)	(31.637)
2012													
2013													
2014													
2015													
2016													
2017													
2018													
2019													
NOMINAL	0.000	5.824	0.000	41.117	0.000	46.941	13.542	0.000	0.000	0.000	13.542	(33.399)	
NPV	0.000	5.606	0.000	38.812	000,0	44,417	12.781	0.000	0.000	0.000	12.781	(31.637)	
	Benefit / 0	Cost Ratio [co	Discount rate: ol (12) / col (7)]:	8.00% 0.29									

Commercial Energy Audits

PROGRAM; Commercial Energy Audit

1 PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	9.15 KW/CUST 0.16 KW GEN/CUST 3.9 % 883.0 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 848.6 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR AVOIDED TRANSMISSION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 25 % 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(13) A VOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) A VOIDED GENERATING UNIT FUEL COST (17) A VOIDED GEN UNIT FUEL ESCALATION RATE (18)* A VOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 25 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR 2.5 %
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY AFUDC RATE (15)* UTILITY RECURRING REBATE/INCENTIVE	576 50 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 % 0.00 \$/CUST/YR 0.00 \$/CUST	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL	7.98 \$/KW/MO 2.5 %
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	00%	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PROGRAM: Commercial Energy Audit

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL.	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	248	248	3.36	3,73	3 87	3.36	i	1
2011	496	496	3.65	3,92	3.99	3 65	1	l
2012	744	744	3.93	4 2 [4.24	3.93	1	1
2013	992	992	4.05	4.40	4.47	4.05	1	1
2014	1240	1240	4.14	4,59	4.65	4.14	1	1
2015	1488	1488	4.34	4.83	4 96	4.34	i	t
2016	1736	1736	4,48	5.04	5,20	4.48	1	ţ
2017	1984	1984	4.67	5.34	5 60	4,67	1	1
2018	2232	2232	4.86	5.53	5.91	4.85	1	1
2019	2480	2480	5.14	5.91	5 58	5,06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Resor	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0,0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	-9	200.0%	1,0000	0.0%	0,00	0.00	0.00	0.00	0.00	0.00
						0.00				0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	-,
				****				******	******	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) AFUDC RATE: 0.00%

\$120.06

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Energy Audit

* UNIT SIZE OF AVOIDED GENERATION UNIT = 346 kW * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	41.5565	454.8328	0.0000	0.0000	25.9065	22.0557	0.0000	45,4073
2019	0.0212	41.6494	454.8328	0.0000	0.0000	28.0768	23.0012	0.0000	46.7251
NOMINAL		83.2059	909.6655	0.0000	0.0000	53.9834	45.0569	0.0000	92.1324
HOMINAL		03.2039	909.0033	0,0000	0.0000	33.7634	43.0309	0.000.0	92,1324
NPV		43.2868		0.0000	0.0000	28.0419	23.4223	0.0000	47.9063

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Energy Audit

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.082040
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.886675
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23.060021
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	33.717342
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	45.183844
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	58.151547
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	71.756521
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	87.723341
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	102.975146
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	122.891515
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	562.427991
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	348.853878

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	109.4968	4.0820	0.0000	0.0000	4.0820	4.0820
2011	328.4903	12.8867	0.0000	0.0000	12.8867	12.8867
2012	547.4839	23.0600	0.0000	0.0000	23.0600	23.0600
2013	766.4774	33.7173	0,000	0.0000	33.7173	33.7173
2014	985.4710	45.1838	0.0000	0.0000	45.1838	45.1838
2015	1,204.4645	58,1515	0.0000	0.0000	58.1515	58.1515
2016	1,423.4581	71.7565	0.0000	0.0000	71. 75 65	71.7565
2017	1,642.4516	87.7233	0.0000	0.0000	87.7233	87.7233
2018	1,861.4452	102.9751	0.0000	0.0000	102.9751	102.9751
2019	2,080.4387	122.8915	0.0000	0.0000	122.8915	122.8915
NOMINAL	10,949,6774	562,4280	0.0000	0.0000	562.4280	562.4280
NPV		348.8539	0.0000	0.0000	348,8539	348.8539

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM; Commercial Energy Audit

(1) (2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTII	LITY PROGR	AM COSTS	& REBATE	S	······································	<	PARTIO	CIPATING	CUSTOMER (COSTS & BI	ENEFITS	*******				·····
			TOTAL			TOTAL	PARTIC	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT	INC.	INC	INC.	EFFECT.
	UTIL	UTIL.	UTIL.	UTIL.	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV	IN	REV.	REV.	REVENUE
	NONREC	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0 0000	142,9722	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	105,2264	3.5389	5.5439	9 0828	0.0000	0.0000	0.0000	0.0000
201		0.0000	146,5466	0,000	0.0000	0 0000	0.0000	0.0000	0.0000	315,6792	11.5138	16.9909	28,5047	0.0000	0,0000	0.0000	0.0000
2013		0.0000	150,2102	0.0000	0 0000	0.0000	0.0000	0.0000	0.0000	526,1320	20.6874	28.9299	49,6173	0.0000	0.0000	0.0000	0.0000
2013	3 153,9655	0.0000	153.9655	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000	736,5848	29.8638	41 3770	71.2409	0 0000	0.0000	0.0000	0.0000
2014	157 8146	0.0000	157.8146	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	947.0376	39.2526	54.3488	93.6015	0 0000	0.0000	0.0000	0.0000
2013	161.7600	0.0000	161,7600	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,157,4904	50,2044	67.8624	118.0668	0.0000	0 0000	0.0000	0.0000
2016	165 8040	0.0000	165.8040	0,0000	0.0000	0 0000	0.0000	0.0000	0.0000	1,367.9432	61.3078	81.9352	143,2430	0.0000	0 0000	0.0000	0.0000
201	169,9491	0.0000	169.9491	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,578.3960	73.7431	96.5854	170.3285	0,0000	0.0000	0.0000	0.0000
2013	3 174 1978	0.0000	174.1978	0.0000	0.0000	0.0000	0.0000	0.0000	0 0000	1,788.8488	86.9271	111.8316	198.7587	0 0000	0.0000	0.0000	0.0000
2019	178 5527	0.0000	178 5527	0.0000	0.0000	0 0000	0.0000	0 0000	0.0000	1,999.3016	102.7054	127.6930	230.3984	0.0000	0,0000	0.0000	0.0000
			0.00000 4400			opportunity of the contract of					as accounts a separation to Specialist for an		mar (1807) 1	- ,			
NOMINAI	1,601.7727	0.0000	1,601.7727	0.0000	0 0000	0.0000	0.0000	0.0000	0.0000	10,522.6400	479.7443	633.0982	1,112.8425	0.0000	0.0000	0.0000	0.0000
NPV	/ 1,142 8396	0 0000	1,142.8396	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000		298.6679	397.3466	696,0145		0.0000	0,0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	142,972	0.000	0.000	142.972	0.000	0.000	4.082	0.000	4.082	(138.890)	(138.890)
2011	0.000	146.547	0.000	0.000	146.547	0.000	0.000	12.887	0.000	12.887	(133.660)	(262.649)
2012	0.000	150.210	0.000	0.000	150.210	0.000	0.000	23.060	0.000	23.060	(127.150)	(371.660)
2013	0.000	153.965	0.000	0.000	153.965	0.000	0.000	33.717	0.000	33.717	(120.248)	(467.117)
2014	0.000	157.815	0.000	0.000	157.815	0.000	0.000	45.184	0.000	45.184	(112.631)	(549.904)
2015	0.000	161.760	0.000	0.000	161.760	0.000	0.000	58.152	0.000	58.152	(103.608)	(620.418)
2016	0.000	165.804	0.000	0.000	165.804	0.000	0.000	71,757	0.000	71.757	(94.047)	(679.684)
2017	0.000	169.949	0.000	0.000	169.949	0.000	0.000	87.723	0.000	87.723	(82.226)	(727.662)
2018	0.000	174.198	0.000	0.000	174.198	45,407	0.000	102.975	0.000	148.382	(25.815)	(741.609)
2019	0.000	178.553	0.000	0.000	178.553	46.725	0.000	122.892	0.000	169.617	(8.936)	(746.079)
NOMINAL	0.000	1,601.773	0.000	0.000	1,601.773	92.132	0.000	562.428	0.000	654.560	(947.212)	
NPV	0.000	1,142.840	0.000	0.000	1,142.840	47.906	0.000	348.854	0.000	396.760	(746.079)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.35

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	9 083	0,000	0.000	0.000	9.083	0 000	0.000	0.000	0.000	9.083	9.083	9	0	1 00
2011	28 505	0.000	0.000	0 000	28 505	0 000	0.000	0 000	0.000	28.505	35.476	35	0	1.00
2012	49,617	0.000	0.000	0.000	49 617	0.000	0.000	0.000	0.000	49.617	78.015	78	0	1.00
2013	71.241	0.000	0.000	0.000	71.241	0.000	0.000	0 000	0.000	71.241	134 568	135	0	1.00
2014	93 601	0.000	0.000	0.000	93.601	0.000	0 000	0.000	0.000	93.601	203.368	203	0	00.1
2015	118 067	0.000	0.000	0.000	118.067	0.000	0.000	0.000	0.000	118,067	283.722	284	0	1.00
2016	143,243	0.000	0.000	0.000	143.243	0.000	0 000	0.000	0.000	143,243	373.990	374	0	1.00
2017	170,328	0 000	0.000	0.000	170.328	0.000	0.000	0.000	0.000	170.328	473.375	473	0	1.00
2018	198 759	0.000	0.000	0.000	198.759	0.000	0.000	0.000	0.000	198.759	580.758	581	0	1.00
2019	230,398	0 000	0.000	0.000	230.398	0.000	0 000	0.000	0.000	230.398	696.014	696	0	1.00
NOMINAL	1,112.843	0.000	0000	0.000	1,112.843	0,000	0.000	0.000	0,000	1,112.843				
NPV	696.014	0.000	0.000	0.000	696,014	0.000	0.000	0.000	0.000	696,014				

RATE IMPACT TEST PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	142.972	0.000	9.083	0.000	152.055	4.082	0.000	0.000	0.000	4.082	(147.973)	(147.973)
2011	0.000	146.547	0.000	28.505	0.000	175.051	12.887	0.000	0.000	0.000	12,887	(162.165)	(298.125)
2012	0.000	150.210	0.000	49.617	0.000	199.828	23.060	0.000	0.000	0.000	23.060	(176.768)	(449.675)
2013	0.000	153.965	0.000	71.241	0.000	225.206	33.717	0.000	0.000	0.000	33,717	(191.489)	(601.685)
2014	0.000	157,815	0.000	93.601	0.000	251,416	45.184	0.000	0.000	0.000	45.184	(206,232)	(753.272)
2015	0.000	161.760	0.000	118.067	0.000	279.827	58.152	0.000	0.000	0.000	58.152	(221.675)	(904.141)
2016	0.000	165.804	0.000	143.243	0.000	309.047	71.757	0.000	0.000	0.000	71.757	(237.290)	(1,053.674)
2017	0.000	169.949	0.000	170.328	0.000	340.278	87.723	0.000	0.000	0.000	87.723	(252.554)	(1,201.037)
2018	0.000	174.198	0.000	198.759	0.000	372.956	148.382	0.000	0.000	0.000	148.382	(224.574)	(1.322.367)
2019	0.000	178.553	0.000	230.398	0.000	408.951	169.617	0.000	0.000	0.000	169.617	(239,335)	(1,442.094)
NOMINAL	0.000	1,601.773	0.000	1,112.843	0.000	#######	654.560	0.000	0.000	0.000	654.560	(2,060.055)	
NPV	0.000	1,142.840	0.000	696.014	0.000	########	396.760	0.000	0.000	0.000	396.760	(1,442.094)	

Discount rate:

8.00%

Benefit / Cost Ratio [col (12) / col (7)]:

0.22

Commercial Indoor Lighting Retrofit Program

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 8/54 AM

PROGRAM Commercial Indoor Lighting

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	·
(1) CUSTOMER KW REDUCTION AT THE METER	81.00 KW /CUST	(I) BASE YEAR	2010
(2) GENERATOR KW REDUCTION PER CUSTOMER	84.29 KW GEN/CUST	(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) KW LINE LOSS PERCENTAGE	3.9 %	(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) GENERATION KWH REDUCTION PER CUSTOMER	378,629.6 KWH/CUST/YR	(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) KWH LINE LOSS PERCENTAGE	3.9 %	(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) GROUP LINE LOSS MULTIPLIER	1.0000	(6) BASE YEAR DISTRIBUTION COST	0 S/KW
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR	(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8)* CUSTOMER KWH REDUCTION AT METER	363,863.0 KWH/CUST/YR	(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
		(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
		(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
		(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
IL ECONOMIC LIFE AND K FACTORS		(12) T&D FIXED O&M ESCALATION RATE	0 %
		(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS	(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(2) GENERATOR ECONOMIC LIFE	20 YEARS	(15) GENERATOR CAPACITY FACTOR	
(3) T & D ECONOMIC LIFE	20 YEARS	(16) AVOIDED GENERATING UNIT FUEL COST	
			2.5 %
(4) K FACTOR FOR GENERATION	0.22	(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	
,	0.22	(18)* AVOIDED FURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 \$/KW/YR 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D	0.00	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 S/KW/YR
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER	0.00 1 48,143.55 \$/CUST	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 S/KW/YR
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR	(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 S/KW/YR
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 \$/KW/YR 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL	0 \$/KW/YR 2.5 % 3.586 CENTS/KWF
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE	0.00 1 48,143.55 \$/CUST 9.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE	0 \$/KW/YR 2.5 % 3.586 CENTS/KWF 2.0 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW	0 \$/KW/YR 2.5 % 3.586 CENTS/KWF 2.0 % 7 98 \$/KW/MO
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) (III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE	0 S/KW/YR 2.5 % 3.586 CENTS/KWF 2.0 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) (III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 1 48,143,55 S/CUST 0.00 S/CUST/YR 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST/YR 2.5 % 0.00 S/CUST/YR	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	0 \$/KW/YR 2.5 % 3.586 CENTS/KWI 2.0 % 7 98 \$/KW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE	0 \$/kW/YR 2.5 % 3.586 CENTS/KWI- 2.0 % 7 98 \$/kW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS	0.00 1 48,143.55 \$/CUST 9.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	0 \$/kW/YR 2.5 % 3.586 CENTS/KWH 2.0 % 7 98 \$/kW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	0 \$/kW/YR 2.5 % 3.586 CENTS/KWH 2.0 % 7 98 \$/kW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS (12)* UTILITY DISCOUNT RATE	0.00 1 48,143.55 S/CUST 0.00 S/CUST/YR 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST/YR 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	0 \$/kW/YR 2.5 % 3.586 CENTS/KWI- 2.0 % 7 98 \$/kW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	0 \$/kW/YR 2.5 % 3.586 CENTS/KWI- 2.0 % 7 98 \$/kW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY APUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 1 48,143.55 S/CUST 0.00 S/CUST/YR 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST/YR 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST 2.5 % 0.00 S/CUST	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	0 \$7KW/YR 2.5 % 3.586 CENTS/KWH 2.0 % 7 98 \$7KW/MO 2.5 %
(4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (I) III. UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* CUSTOMER TAX CREDIT PER INSTAULATION (9)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE	0.00 1 48,143.55 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 %	(18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT	3.586 CENTS/KWH 2.0 % 7 98 \$'KW/MO 2.5 %

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010 8:54 AM

PROGRAM: Commercial Indoor Lighting

* Avoided Generation Unit. 7FA CT
* Program Generation Equivilency Factor: 1.00

(1	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	8	8	3.36	3,73	3.87	3,36	!	1
2011	16	16	3.65	3.92	3 99	3.65	1	1
2012	24	24	3.93	4.21	4 24	3.93	1	1
2013	32	32	4 05	4.40	4.47	4.05	1	1
2014	40	40	4.14	4.59	4.65	4.14	1	ł
2015	48	48	4.34	4.83	4.96	4,34	1	1
2016	56	56	4.48	5.04	5.20	4.48	1	1
2017	64	64	4.67	5.34	5.60	4.67	i	1
2018	72	72	4.86	5.53	5.91	4 85	t	1
2019	80	80	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>	
	Total Reso	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
****			***	***		Mad W warm	Management and color		*****	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0,00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				****	St. St. State Street					
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Indoor Lighting

* UNIT SIZE OF AVOIDED GENERATION UNIT = 6.069 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	728.5792	7,974.2435	0.0000	0.0000	454.1998	386.6866	0.0000	796.0924
2019	0.0212	730.2086	7,974.2435	0.0000	0.0000	492.2501	403.2625	0.0000	819.1962
NOMINAL		1,458.7878	15,948.4870	0.0000	0.0000	946.4499	789.9491	0.0000	1,615.2886
NPV		758.9148		0.0000	0.0000	491.6376	410.6464	0.0000	839.9060

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Commercial Indoor Lighting

				COSTS OF AVOIDE E COSTS OF AVOID	\$0 \$0		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	56.461239
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	178.243648
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	318.957535
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	466.365592
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	624.965939
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	804.330331
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	992.509219
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0,000000	1,213.356264
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1,424.313506
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1,699.789223
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7,779.292496
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4,825.215667

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Indoor Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	1,514.5182	56.4612	0.0000	0.0000	56.4612	56.4612
2011	4,543.5546	178.2436	0.0000	0.0000	178.2436	178.2436
2012	7,572.5911	318.9575	0.0000	0.0000	318.9575	318.9575
2013	10,601.6275	466.3656	0.0000	0.0000	466.3656	466.3656
2014	13,630.6639	624.9659	0.0000	0.0000	624.9659	624.9659
2015	16,659.7003	804.3303	0.0000	0.0000	804.3303	804.3303
2016	19,688.7367	992.5092	0.0000	0.0000	992.5092	992.5092
2017	22,717.7732	1,213.3563	0.0000	0.0000	1,213.3563	1,213.3563
2018	25,746,8096	1,424.3135	0.0000	0.0000	1,424.3135	1,424.3135
2019	28,775.8460	1,699.7892	0.0000	0.0000	1,699.7892	1,699.7892
NOMINAL	151,451.8210	7,779,2925	0.0000	0.0000	7,779.2925	7,779.2925
NPV		4,825.2157	0.0000	0.0000	4,825.2157	4,825.2157

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Commercial Indoor Lighting

((1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	<	UTIL	ITY PROGI	RAM COSTS	& REBATE	S	······································	C	PARTIC	CIPATING	CUSTOMER (COSTS & BE	NEFITS		******			·>
				AND AND AND A SE			***************************************	n		momile	********		222	CPPEOT	nic	DIO.	nic	nerecar.
				TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL		RED.	RED.	EFFECT	INC.	INC.	INC.	
		UTIL	UTIL	UTIL	UTIL	UTII.	REBATE/	CUST	CUST	PARTIC.	IN	REV	REV.	REV.	IN	REV.		REVENUE
	N	ONREC	RECUR	PGM	NONREC.	RECUR	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
		COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEA	٨R	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
20	10 3	85.1484	0 0000	385,1484	0 0000	0 0000	0.0000	0.0000	0.0000	0.0000	1,455.4520	48,9490	83,2331	132,1822	0.0000	0.0000	0.0000	0.0000
20	11 3	94,7771	0.0000	394,7771	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4,366,3560	159.2545	255,1590	414.4135	0.0000	0.0000	0.0000	0.0000
20	12 4	04.6466	0.0000	404.6466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7,277,2600	286.1400	434,5658	720,7058	0.0000	0.0000	0.0000	0.0000
20	13 4	14.7627	0.0000	414,7627	0 0000	0.0000	0.0000	0.0000	0.0000	0.0000	10,188,1640	413,0655		1.034.7669	0.0000	0.0000	0.0000	0.0000
20		25,1318	0.0000	425,1318	0.0000	0 0000	0.0000	0,0000	0.0000			542.9276		1,359,7488	0.0000	0.0000	0.0000	0.0000
		35.7601	0.0000	435.7601	0 0000	0.0000	0.0000	0.0000	0.0000		16,009,9720	694,4085	1.020.1882		0.0000	0.0000	0.0000	0.0000
		46.6541	0.0000	446.6541	0.0000	0.0000	0.0000	0.0000	0,0000		18,920,8760	847.9864	1.232.0732	*	0.0000	0.0000	0.0000	0.0000
20		57.8204	0.0000								21,831.7800				0.0000	0.0000	0.0000	0.0000
				457.8204	0.0000	0,0000	0.0000	0.0000	0.0000		•	•	•	*				
		69.2660	0.0000	469.2660	0.0000	0.0000	0.0000	0.0000	0,0000		24,742.6840		1,682.5213		0.0000	0.0000	0.0000	0.0000
20	19 4	80. 9976	0.0000	480.9976	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	27,653.5880	1,420.5822	1,921.6672	3,342.2493	0.0000	0.0000	0.0000	0.0000
						نسوب سورت برويد								. 17 #1500				
NOMINA	AL 4,3	14.9648	0.0000	4,314.9648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	############	6,635 6426	9,520.6855	***	00000	0 0000	0.0000	0.0000
N	PV 3,0	78 6596	0.0000	3,078,6596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4,131.0618	5,974,7088	########		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Indoor Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	385.148	0.000	0.000	385.148	0.000	0.000	56.461	0.000	56.461	(328.687)	(328.687)
2011	0.000	394.777	0.000	0.000	394.777	0.000	0.000	178.244	0.000	178.244	(216.533)	(529.181)
2012	0.000	404.647	0.000	0.000	404.647	0.000	0.000	318.958	0.000	318.958	(85.689)	(602.646)
2013	0.000	414.763	0.000	0.000	414.763	0.000	0.000	466.366	0.000	466.366	51.603	(561.682)
2014	0.000	425.132	0.000	0.000	425.132	0.000	0.000	624.966	0.000	624.966	199.834	(414.798)
2015	0.000	435.760	0.000	0.000	435.760	0.000	0.000	804.330	0.000	804.330	368.570	(163.955)
2016	0.000	446.654	0.000	0.000	446.654	0.000	0.000	992.509	0.000	992.509	545.855	180.026
2017	0.000	457.820	0.000	0.000	457.820	0.000	0.000	1,213.356	0.000	1,213.356	755.536	620.874
2018	0.000	469.266	0.000	0.000	469.266	796.092	0.000	1,424.314	0.000	2,220.406	1,751,140	1,566.961
2019	0.000	480.998	0.000	0.000	480.998	819.196	0.000	1,699.789	0.000	2,518.985	2,037.988	2,586.462
NOMINAL	0.000	4,314.965	0.000	0.000	4,314.965	1,615.289	0.000	7,779.292	0.000	9,394.581	5,079.616	NAME OF THE PARTY.
NPV	0.000	3,078.660	0.000	0.000	3,078.660	839.906	0.000	4,825.216	0.000	5,665.122	2,586,462	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 1.84

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Indoor Lighting

(1)		(3) TAX CREDITS	(4) UTILITY REBATES	OTHER BENEFITS	BENEFITS	(7) CUSTOMER EQUIPMENT COSTS	COSTS	COSTS	(10) TOTAL COSTS	(11) NET BENEFITS	(12) CUMULATIVE DISCOUNTED NET BENEFITS	DISCOUNTED BENEFITS	CUMULATIVE DISCOUNTED COSTS	Benefit to Cost Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	
2010	132.182	0.000	0 000	0.000	132.182	0.000	0.000	0 000	0.000	132.182	132.182	132	0	1.00
2011	414.413	0.000	0.000	0.000	414.413	0 000	0.000	0.000	0.000	414.413	515,898	516	0	1.00
2012	720 706	0 000	0.000	0.000	720.706	0 000	0.000	0.000	0.000	720,706	1,133.787	1,134	0	1.00
2013	1,034.767	0.000	0.000	0 000	1,034.767	0.000	0.000	0 000	0.000	1,034.767	1,955.219	1,955	0	1.00
2014	1,359.749	0.000	0.000	0.000	1,359.749	0.000	0.000	0.000	0.000	1,359.749	2,954.675	2,955	0	1.00
2015	1,714.597	0.000	0.000	0.000	1,714 597	0 000	000,0	0.000	0.000	1,714.597	4,121.600	4,122	0	1.00
2016	2,080,060	0.000	0.000	0.000	2,080,060	0.000	0.000	0.000	0.000	2,080.060	5,432.391	5,432	0	1.00
2017	2,472.742	0.000	0 000	0.000	2,472 742	0.000	0.000	0.000	0.000	2,472.742	6,875.212	6,875	0	1.00
2018	2,884.864	0.000	0.000	0 000	2,884.864	0.000	0.000	0.000	0.000	2,884.864	8,433.814	8,434	0	1.00
2019	3,342.249	0.000	0.000	0.000	3,342.249	0.000	0 000	0.000	0.000	3,342.249	10,105.771	10,106	0	1 00
NOMINAL	16,156 328	0.000	0.000	0.000	16,156 328	0.000	0.000	0,000	0.000	16,156.328				
NPV	10,105.771	0.000	0 000	0 000	10,105,771	0.000	0.000	0.000	0.000	10,105.771				

RATE IMPACT TEST PROGRAM: Commercial Indoor Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET ((14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	385.148	0.000	132.182	0.000	517.331	56.461	0.000	0.000	128.383	184.844	(332.487)	(332.487)
2011	0.000	394.777	0.000	414.413	0.000	809.191	178.244	0.000	0.000	259.975	438.219	(370.972)	(675.979)
2012	0.000	404.647	0.000	720.706	0.000	1,125.352	318.958	0.000	0.000	394.857	713.815	(411.537)	(1,028.806)
2013	0.000	414.763	0.000	1,034.767	0.000	1,449.530	466.366	0.000	0.000	404.729	871.094	(578.435)	(1.487.986)
2014	0.000	425.132	0.000	1,359.749	0.000	1,784.881	624.966	0.000	0.000	414.847	1,039.813	(745.068)	(2,035.633)
2015	0.000	435.760	0.000	1,714.597	0.000	2,150.357	804.330	0.000	0.000	425.218	1,229.549	(920.808)	(2,662.320)
2016	0.000	446.654	0.000	2,080.060	0.000	2,526.714	992.509	0.000	0.000	435.849	1,428.358	(1,098,356)	(3,354,470)
2017	0.000	457.820	0.000	2,472.742	0.000	2,930.562	1,213.356	0.000	0.000	446.745	1,660.101	(1,270.461)	(4,095.772)
2018	0.000	469.266	0.000	2,884.864	0.000	3,354.130	2,220.406	0.000	0.000	457.913	2,678.319	(675.810)	(4,460.892)
2019	0.000	480.998	0.000	3,342.249	0.000	3,823.247	2,518.985	0.000	0.000	469,361	2,988.347	(834.900)	(4,878.549)
NOMINAL	0.000	4,314.965	0.000	16,156.328	0.000	20,471.293	9,394.581	0.000	0.000	3,837.878	13,232.459	(7,238.834)	v • and
NPV	0.000	3,078.660	0.000	10,105.771	0.000	13,184.430	5,665.122	0.000	0.000	2,640.759	8,305.881	(4,878.549)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]: 0.63

Commercial Efficient Electric Heat Pump Rebates – SEER 14

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 8:56 AM

PROGRAM: Commercial Heat Pump SEER 14

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.19 KW/CUST 0.20 KW GEN/CUST 3.9 % 432.9 KWH/CUST/YR 3.9 % 1 0000 0 0 KWH/CUST/YR 416.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00 1	(12) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O& M COST SCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT PER INSTALLATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	129 84 \$/CUST 0 00 \$/CUST/YR 2 5 % 1,591,92 \$/CUST 2.5 % 0,00 \$/CUST/YR 2.5 % 1,500,00 \$/CUST 0 0 % 0.00 \$/CUST/YR 2 5 % 8.00 % 0,00 % 100,00 \$/CUST 0 00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	2.0 % 7.98 \$ /KW/MO 2.5 %
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	00 %	* FIRE Program Version Number, 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

PROGRAM, Commercial Heat Pump SEER 14

* Avoided Generation Unit:

* Program Generation Equivilency Factor.

7FA CT 1 00

(1)(2) (3) (4) (5) (6) (7) (8) (9) UTILITY AVERAGE CUMULATIVE PROGRAM ADJUSTED SYSTEM AVOIDED INCREASED PROGRAM TOTAL CUMULATIVE **FUEL** MARGINAL MARGINAL REPLACEMENT KW KWH PARTICIPATING PARTICIPATING COSTS FUEL COST FUEL COST FUEL COST EFFECTIVENESS **EFFECTIVENESS** YEAR CUSTOMERS CUSTOMERS (C/KWH) (C/KWH) (C/KWH) (C/KWH) FACTOR FACTOR 2010 3.36 3.73 3.87 3.36 2011 2 3.65 3.92 3 99 3.65 2012 3 3,93 4,21 4,24 3 93 2013 4.47 4.05 4.40 4.05 2014 4.14 4.59 4 65 4.14 2015 4.34 4.83 4.96 4.34 2016 4,48 5.04 5.20 4.48 2017 4.67 5.34 5.60 4.67 2018 5.53 5.91 4.86 4.85 2019 10 5.14 591 5 58 5.06

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	12.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)_	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0,0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009		200.00/	4.0000			0.00	0.00	0.00	0.00	0.00
	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0,00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0	200.070	0301.0000			0.00	0.50			0.00
2010	U			0.0%	0.00			0.00	0.00	
				****					Warranteen	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Heat Pump SEER 14

* UNIT SIZE OF AVOIDED GENERATION UNIT = 2 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.2136	2.3381	0.0000	0.0000	0.1332	0.1134	0.0000	0.2334
2019	0.0212	0.2141	2.3381	0.0000	0.0000	0.1443	0.1182	0.0000	0.2402
NOMINAL		0.4277	4.6763	0.0000	0.0000	0.2775	0.2316	0.0000	0.4736
NPV		0.2225		0.0000	0.0000	0.1442	0.1204	0.0000	0.2463

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Heat Pump SEER 14

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.008069
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.025473
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.045583
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.066649
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.089314
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.114948
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.141840
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.173402
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.203550
2019	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	0.242918
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.111746
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.689576

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	0.2164	0.0081	0.0000	0.0000	0.0081	0.0081
2011	0.6493	0.0255	0.0000	0.0000	0.0255	0.0255
2012	1.0822	0.0456	0.0000	0.0000	0.0456	0.0456
2013	1.5151	0.0666	0.0000	0.0000	0.0666	0.0666
2014	1.9480	0.0893	0.0000	0.0000	0.0893	0.0893
2015	2.3809	0.1149	0.0000	0.0000	0.1149	0.1149
2016	2.8137	0.1418	0.0000	0.0000	0.1418	0.1418
2017	3.2466	0.1734	0.0000	0.0000	0.1734	0.1734
2018	3.6795	0.2035	0.0000	0.0000	0.2035	0.2035
2019	4.1124	0.2429	0.0000	0.0000	0.2429	0.2429
NOMINAL	21.6441	1.1117	0.0000	0.0000	1.1117	- i.1117
NPV		0.6896	0.0000	0.0000	0.6896	0.6896

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGRA	AM COSTS	& REBATE	S			PARTIC	CIPATING C	USTOMER (COSTS & BE	NEFITS			a ar ar Miliphyn yr ymar fer ferny arma af dy	*	·····
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL.	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0.0000	0 1298	0.1000	0 0000	0.1000	1.5919	0.0000	1.5919	0.2080	0.0070	0.0166	0.0236	0.0000	0.0000	0 0000	0.0000
2011	0 1331	0.0000	0.1331	0.1000	0.0000	0.1000	1.6317	0.0000	1.6317	0 6240	0.0228	0.0508	0.0736	0.0000	0 0000	0.0000	0,0000
2012	0.1364	0.0000	0.1364	0.1000	0.0000	0.1000	1,6725	0.0000	1.6725	1.0400	0.0409	0.0866	0.1275	0.0000	0.0000	0.0000	0,0000
2013	0.1398	0.0000	0.1398	0.1000	0.0000	0.1000	1,7143	0.0000	1.7143	1 4560	0.0590	0.1240	0.1830	0.0000	0.0000	0 0000	0.0000
2014	0.1433	0.0000	0.1433	0.1000	0.0000	0.1000	1.7572	0.0000	1.7572	1.8720	0.0776	0.1631	0,2407	0.0000	0.0000	0.0000	0.0000
2015	0.1469	0.0000	0.1469	0.1000	0000,0	0 1000	18011	0.0000	1.8011	2.2880	0.0992	0.2039	0.3031	0.0000	0.0000	0.0000	0 0000
2016	0.1506	0.0000	0.1506	0.1000	0.0000	0.1000	1.8461	0.0000	1.8461	2.7040	0.1212	0.2464	0.3676	0.0000	0 0000	0.0000	0.0000
2017	0.1543	0.0000	0.1543	0.1000	0.0000	0.1000	1 8923	0.0000	1.8923	3 1200	0.1458	0.2908	0.4366	0.0000	0.0000	0.0000	0,000
2018	0.1582	0.0000	0.1582	0.1000	0.0000	0.1000	1.9396	0.0000	1.9396	3.5360	0.1718	0.3371	0.5089	0.0000	0.0000	0.0000	0.0000
2019	0.1621	0.000	0.1621	0.1000	0.0000	0.1000	1.9881	0 0000	1.9881	3.9520	0.2030	0.3853	0.5883	0.0000	0.0000	0.0000	0.0000
NOMINAL	1 4546	0.0000	1,4546	1,0000	0.0000	1.0000	17.8349	0.0000	17.8349	20,8000	0.9483	1.9046	2.8529	0.0000	0.0000	0.0000	0.0000
NPV	1 0378	0.0000	1 0378	0.7247	0,0000	0.7247	12 7249	0.0000	12.7249		0.5904	1.1948	1.7851		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				CUMULATIVE DISCOUNTED
									0.000 100 10	mamıı	3. 11777	
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)
2010	0.000	0.130	1.592	0.000	1.722	0.000	0.000	800.0	0.000	0.008	(1.714)	(1.714)
2011	0.000	0.133	1.632	0.000	1.765	0.000	0.000	0.025	0.000	0.025	(1.739)	(3.324)
2012	0.000	0.136	1.673	0.000	1,809	0.000	0.000	0.046	0.000	0.046	(1.763)	(4.836)
2013	0.000	0.140	1.714	0.000	1.854	0.000	0.000	0.067	0.000	0.067	(1.787)	(6.255)
2014	0.000	0.143	1.757	0.000	1.900	0.000	0.000	0.089	0.000	0.089	(1.811)	(7.586)
2015	0.000	0.147	1.801	0.000	1.948	0.000	0.000	0.115	0.000	0.115	(1.833)	(8.834)
2016	0.000	0.151	1.846	0.000	1.997	0.000	0.000	0.142	0.000	0.142	(1.855)	(10.003)
2017	0.000	0.154	1.892	0.000	2.047	0.000	0.000	0.173	0.000	0.173	(1.873)	(11.096)
2018	0.000	0.158	1.940	0.000	2.098	0.233	0.000	0.204	0.000	0.437	(1.661)	(11.993)
2019	0.000	0.162	1.988	0.000	2.150	0.240	0.000	0.243	0.000	0.483	(1.667)	(12.827)
NOMINAL	0.000	1.455	17.835	0.000	19.289	0.474	0.000	1.112	0.000	1.585	(17.704)	
NPV	0.000	1.038	12.725	0.000	13.763	0.246	0.000	0.690	0.000	0.936	(12.827)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Heat Pump SEER 14

(1)	(2) SAVINGS IN PARTICIPANTS	(3) TAX	(4) UTILITY	(5) OTHER	(6) TOTAL	(7) CUSTOMER EOUIPMENT	(8) CUSTOMER O & M	(9) OTHER	(10)	(11) NET	(12) CUMULATIVE DISCOUNTED		CUMULATIVE DISCOUNTED	Benefit to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)		
2010	0.024	1,500	0.100	0.000	1.624	1,592	0 000	0.000	1.592	0.032	0.032	2	2	1.02
2011	0.074	1,500	0.100	0.000	1.674	1,632	0.000	0.000	1.632	0.042	0.070	3	3	1.02
2012	0 128	1.500	0.100	0 000	1.728	1.673	0.000	0.000	1.673	0.055	0.118	5	5	1 03
2013	0.183	1.500	0.100	0.000	1.783	1714	0.000	0.000	1.714	0 069	0.172	6	6	1.03
2014	0.241	1 500	0.100	0.000	1.841	1,757	0.000	0.000	1.757	0.083	0.233	7	7	1 03
2015	0.303	1.500	0 100	0.000	1,903	1.801	0.000	0.000	1.801	0.102	0.303	9	8	1.04
2016	0.368	1.500	0 100	0 000	1.968	1.846	0.000	0.000	1.846	0.121	0.379	10	10	1.04
2017	0.437	1.500	0.100	0.000	2.037	1.892	0.000	0.000	1.892	0.144	0,464	11	11	1.04
2018	0.509	1.500	0 100	0.000	2.109	1.940	0.000	0.000	1.940	0.169	0.555	12	12	1.05
2019	0 588	1 500	0.100	0.000	2.188	1.988	0.000	0.000	1.988	0,200	0,655	13	13	1.05
NOMINAL	2 853	15 000	1 000	0.000	18.853	17.835	0 000	0.000	17.835	1.018				
NPV	1 785	10.870	0.725	0.000	13.380	12.725	0.000	0 000	12.725	0.655				

In-service year of generation unit

Discount rate
Benefit/Cost Ratio:

2018
8 00%
1 05

RATE IMPACT TEST
PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)		(14) CUMULATIVE
	INCREASED	UTILITY			omerna		GEN UNIT	AVOIDED	N. 812 Janua 77 Jan	OTHER	TOT 11		DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL			OTHER	TOTAL	TO ALL	NET
	COSTS		INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.130	0.100	0.024	0.000	0.253	0.008	0.000	0.000	0.000	0.008	(0.245)	(0.245)
2011	0.000	0.133	0.100	0.074	0.000	0.307	0.025	0.000	0.000	0.000	0.025	(0.281)	(0.506)
2012	0.000	0.136	0.100	0.128	0.000	0.364	0.046	0.000	0.000	0.000	0.046	(0.318)	(0.779)
2013	0.000	0.140	0.100	0.183	0.000	0.423	0.067	0.000	0.000	0.000	0.067	(0.356)	(1.061)
2014	0.000	0.143	0.100	0.241	0.000	0.484	0.089	0.000	0.000	0.000	0.089	(0.395)	(1.351)
2015	0.000	0.147	0.100	0.303	0.000	0.550	0.115	0.000	0.000	0.000	0.115	(0.435)	(1.648)
2016	0.000	0.151	0.100	0.368	0.000	0.618	0.142	0.000	0.000	0.000	0.142	(0.476)	(1.948)
2017	0.000	0.154	0.100	0.437	0.000	0.691	0.173	0.000	0.000	0.000	0.173	(0.517)	(2.250)
2018	0.000	0.158	0.100	0.509	0.000	0.767	0.437	0.000	0.000	0.000	0.437	(0.330)	(2.428)
2019	0.000	0.162	0.100	0.588	0.000	0.850	0.483	0.000	0.000	0.000	0.483	(0.367)	(2.612)
ÑOMINAL	0.000	1.455	1.000	2.853	0.000	5.307	1,585	0.000	0.000	0.000	1.585	(3.722)	
NPV	0.000	1.038	0.725	1.785	0.000	3.548	0.936	0.000	0.000	0.000	0.936	(2.612)	

Discount rate: 8,00%
Benefit / Cost Ratio [col (12) / col (7)]; 0.26

Commercial Efficient Electric Heat Pump Rebates – SEER 15

INPUT DATA -- PART 1

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 8:58 AM

PROGRAM: Commercial Heat Pump SEER 15

i. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.36 KW /CUST 0.37 KW GEN/CUST 3.9 % 761.7 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 732.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 %
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF(1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00 1	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR 2.5 %
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS	129.84 \$/CUST 0.00 \$/CUST/YR 2.5 % 2,629.38 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 % 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	7.98 \$/KW/MO
(11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE (16)* UTILITY REBATE/INCENTIVE ESCAL RATE	2.5 % 8.00 % 0.00 % 200.00 \$/CUST 0.00 \$/CUST/YR 0.0 %	• FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date. 3/29/2010 8:58 AM

PROGRAM: Commercial Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY					
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	4	4	3,36	3.73	3.87	3.36	1	1
2011	8	8	3.65	3.92	3.99	3.65	1	1
2012	12	12	3.93	4.21	4.24	3.93	1	1
2013	16	16	4.05	4.40	4.47	4.05	1	}
2014	20	20	4.14	4,59	4.65	4.14	1	i
2015	24	24	4.34	4.83	4.96	4.34	I	7
2016	28	28	4.48	5.04	5 20	4.48	i	1
2017	32	32	4,67	5.34	5.60	4.67	1	1
2018	36	36	4.86	5.53	5,91	4.85	1	1
2019	40	40	5.14	5.91	5.58	5.06	1	1

- (

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR!	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	***	de the group.	*****		-	Action of the	re-richt zu an.ex		was as three day	sandouguniaje pa
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				Michigan.				www.com/wyt	******	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0 00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Heat Pump SEER 15

* UNIT SIZE OF AVOIDED GENERATION UNIT = 13 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVQIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Yеат		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	00000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	1.6191	17.7205	0.0000	0.0000	1.0093	0.8593	0.0000	1.7691
2019	0.0212	1.6227	17.7205	0.0000	0.0000	1.0939	0.8961	0.0000	1.8204
NOMINAL		3.2418	35.4411	0.0000	0.0000	2,1032	1.7554	0.0000	3.5895
NPV		1.6865		0.0000	0.0000	1.0925	0.9125	0.0000	1.8665

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Heat Pump SEER 15

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.056793
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.179290
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.320831
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.469105
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.628636
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.809054
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.998338
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.220482
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.432679
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.709772
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.824981
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.853555

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	1.5234	0.0568	0.0000	0.0000	0.0568	0.0568
2011	4.5702	0.1793	0.0000	0.0000	0.1793	0.1793
2012	7.6171	0.3208	0.0000	0.0000	0.3208	0.3208
2013	10.6639	0.4691	0.0000	0.0000	0.4691	0.4691
2014	13.7107	0.6286	0.0000	0.0000	0.6286	0.6286
2015	16.7575	0.8091	0.0000	0.0000	0.8091	0.8091
2016	19.8044	0.9983	0.0000	0.0000	0.9983	0.9983
2017	22.8512	1.2205	0.0000	0.0000	1.2205	1.2205
2018	25.8980	1.4327	0.0000	0.0000	1.4327	1.4327
2019	28.9448	1.7098	0.0000	0.0000	1.7098	1.7098
NOMINAL	152.3413	7.8250	0.0000	0.0000	7,8250	7.8250
NPV		4.8536	0.0000	0.0000	4.8536	4.8536

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	TY PROGRA	AM COSTS	& REBATE	S	·>	<	PARTIO	CIPATING C	USTOMER (COSTS & BE	NEFITS					>
			TOTAL			TOTAL	PARTIC.	PARTIC	TOTAL	REDUCT	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IΝ	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
3616	A 5100	0.0000	0.5103	0.8000	0.0000	0.0000	10 6176	0.0000	10 5176	1.4640	0.0403	0.1216	0.1707	0.0000	0.0000	0.0000	0.0000
2010	0.5193	0 0000	0.5193	0.8000	0 0000	0 8000	10 5175	0 0000	10.5175	1.4640	0.0492	0 1215	0 1707	0.0000	0.0000	0,0000	0.0000
2011	0.5323	0 0000	0.5323	0.8000	0.0000	0 8000	10 7805	0 0000	10.7805	4 3920	0.1602	0.3728	0 5329	0.0000	0 0000	0.0000	0 0000
2012	0.5456	0 0000	0.5456	0.8000	0.0000	0.8000	11.0500	0.0000	11.0500	7 3200	0.2878	0 6355	0 9233	0.0000	0.0000	0.0000	0.0000
2013	0 5593	0.0000	0.5593	0 8000	0.0000	0.8000	11.3262	0.0000	11.3262	10 2480	0.4155	0.9100	1.3255	0.0000	0.0000	0.0000	0.0000
2014	0 5733	0.0000	0.5733	0.8000	0.0000	0.8000	11.6094	0.0000	11 6094	13.1760	0.5461	1,1967	1 7428	0.0000	0.0000	0,0000	0.0000
2015	0.5876	0.0000	0.5876	0.8000	0.0000	0.8000	11.8996	0.0000	11.8996	16.1040	0.6985	1.4961	2 1946	0.0000	0.0000	0.0000	0 0000
2016	0.6023	0.0000	0.6023	0.8000	0.0000	0.8000	12.1971	0.0000	12,1971	19.0320	0.8530	1,8085	2.6615	0.0000	0.0000	0 0000	0.0000
2017	0.6173	0.0000	0.6173	0.8000	0.0000	0.8000	12 5020	0.0000	12.5020	21,9600	1.0260	2,1345	3,1605	0.0000	0.0000	0.0000	0.0000
2018	0.6328	0.0000	0 6328	0.8000	0.0000	0.8000	12.8146	0.0000	12.8146	24 8880	1.2094	2.4744	3 6838	0.0000	0.0000	0.0000	0.0000
2019	0 6486	0.0000	0.6486	0.8000	0.0000	0 8000	13.1349	0.0000	13.1349	27.8160	1.4289	2.8288	4.2578	0,0000	0.0000	0.0000	0.0000
NOMINAL	5 8184	0 0000	5 8184	8 0000	0.0000	8.0000	117,8318	0.0000	117.8318	146.4000	6.6746	13.9787	20.6533	Ó,0000	0.0000	0.0000	0.0000
NPV	4.1514	0.0000	4.1514	5.7975	0 0000	5 7975	84.0711	0 0000	84 0711		4.1553	8,7687	12.9240		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.519	10.518	0.000	11.037	0.000	0.000	0.057	0.000	0.057	(10.980)	(10.980)
2011	0.000	0.532	10.780	0.000	11,313	0.000	0.000	0.179	0.000	0.179	(11.133)	(21.289)
2012	0.000	0.546	11.050	0.000	11.596	0.000	0.000	0.321	0.000	0.321	(11.275)	(30,955)
2013	0.000	0.559	11.326	0.000	11.885	0.000	0.000	0.469	0.000	0.469	(11.416)	(40.018)
2014	0.000	0.573	11.609	0.000	12.183	0.000	0.000	0.629	0.000	0.629	(11.554)	(48.510)
2015	0.000	0.588	11.900	0.000	12.487	0.000	0.000	0.809	0.000	0.809	(11.678)	(56.458)
2016	0.000	0.602	12.197	0.000	12.799	0.000	0.000	0.998	0.000	0.998	(11.801)	(63.895)
2017	0.000	0.617	12.502	0.000	13.119	0.000	0.000	1.220	0.000	1.220	(11.899)	(70.838)
2018	0.000	0.633	12.815	0.000	13.447	1.769	0.000	1.433	0.000	3.202	(10.246)	(76.373)
2019	0.000	0.649	13.135	0.000	13.784	1.820	0.000	1.710	0.000	3.530	(10.253)	(81.502)
NOMINAL	0.000	5.818	117.832	0.000	123.650	3.590	0.000	7.825	0.000	11.415	(112.236)	TO THE TOTAL CONTRACT OF THE TOTAL CONTRACT ON THE TOTAL CONTRACT OF THE TOTAL CONTRACT OF THE TOTAL CONTRACT
NPV	0.000	4.151	84.071	0.000	88.222	1.866	0.000	4.854	0.000	6.720	(81.502)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.08

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0 171	6,000	0.800	0.000	6.971	10.518	0.000	0.000	10.518	(3 547)	(3.547)	7	11	0.66
2011	0 533	6.000	0.800	0.000	7.333	10.780	0.000	0.000	10.780	(3.448)	(6.739)	14	20	0 67
2012	0 923	6.000	0.800	0.000	7.723	11.050	0.000	0.000	11.050	(3.327)	(9.591)	20	30	0.68
2013	1.325	6.000	0.800	0.000	8.125	11.326	0.000	0.000	11.326	(3.201)	(12.132)	27	39	0 69
2014	1.743	6.000	0.800	0.000	8.543	11.609	0.000	0.000	11.609	(3.067)	(14.386)	33	47	0.70
2015	2.195	6,000	0.800	0 000	8,995	11.900	0.000	0.000	11.900	(2.905)	(16.363)	39	56	0.71
2016	2.661	6.000	0 800	0.000	9.461	12.197	0.000	0.000	12.197	(2.736)	(18.087)	45	63	0.71
2017	3,160	6 000	0.800	0 000	9,960	12.502	0 000	0.000	12.502	(2.542)	(19.570)	51	71	0.72
2018	3 684	6.000	0.800	0.000	10 484	12.815	0.000	0.000	12.815	(2.331)	(20.829)	57	78	0.73
2019	4.258	6,000	0 800	0.000	11.058	13.135	0.000	0.000	13.135	(2.077)	(21.868)	62	84	0.74
NOMINAL	20 653	60.000	8.000	0 000	88.653	117.832	0.000	0.000	117.832	(29.178)				
NPV	12,924	43 481	5.798	0.000	62.203	84.071	0.000	0.000	84.071	(21.868)				

RATE IMPACT TEST
PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.519	0.800	0.171	0.000	1.490	0.057	0.000	0.000	0.000	0.057	(1.433)	(1.433)
2011	0.000	0.532	0.800	0.533	0.000	1.865	0.179	0.000	0.000	0.000	0.179	(1.686)	(2.994)
2012	0.000	0.546	0.800	0.923	0.000	2.269	0.321	0.000	0.000	0.000	0.321	(1.948)	(4.665)
2013	0.000	0,559	0.800	1.325	0.000	2.685	0.469	0.000	0.000	0.000	0.469	(2.216)	(6.423)
2014	0.000	0.573	0.800	1.743	0.000	3.116	0.629	0.000	0.000	0.000	0.629	(2.487)	(8.252)
2015	0.000	0.588	0.800	2.195	0.000	3.582	0.809	0.000	0.000	0.000	0.809	(2.773)	(10.139)
2016	0.000	0.602	0.800	2.661	0.000	4.064	0.998	0.000	0.000	0.000	0.998	(3.065)	(12.071)
2017	0.000	0.617	0.800	3.160	0.000	4.578	1.220	0.000	0.000	0.000	1.220	(3.357)	(14.030)
2018	0.000	0.633	. 0.800	3.684	0.000	5.117	3.202	0.000	0.000	0.000	3.202	(1.915)	(15.064)
2019	0.000	0.649	0.800	4.258	0.000	5.706	3.530	0.000	0.000	0.000	3.530	(2.176)	(16.153)
NOMINAL	0.000	5.818	8.000	20.653	0.000	34.472	11.415	0.000	0.000	0.000	11.415	(23.057)	POST 2
NPV	0.000	4.151	5.798	12.924	0.000	22.873	6.720	0.000	0.000	0.000	6.720	(16.153)	

Discount rate: 8.00% col (12) / col (7)]: 0.29

Benefit / Cost Ratio [col (12) / col (7)]:

Commercial Efficient Electric Heat Pump Rebates – SEER 16

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 9:30 AM

PROGRAM: Commercial Heat Pump SEER 16

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.45 KW/CUST 0.47 KW GEN/CUST 3.9 % 969.8 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 932.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O M ESCALATION RATE	0 \$/KW 0 \$/KW 0 %
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K PACTOR FOR GENERATION (5) K PACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 6.22 0.00 1	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 \$/KW/YR 2.5 %
(1)** UTILITY NONRECURRING COST PER CUSTOMER(2)** UTILITY RECURRING COST PER CUSTOMER	129.84 \$/CUST 0.00 \$/CUST/YR	V NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	2.5 % 3.713 70 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,509.00 \$/CUST 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 % 300.00 \$/CUST 0.00 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.6 %	• FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1

Run Date: 3/29/2010 9 30 AM

PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4) UTILITY	(5)	(6)	(7)	(8)	(9)
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	7	7	3,36	3.73	3,87	3.36	1	1
2011	14	14	3.65	3,92	3,99	3.65	ı	1
2012	21	21	3.93	4.21	4.24	3,93	1	1
2013	28	28	4.05	4.40	4,47	4.05	1	Ĭ
2014	35	35	4.14	4.59	4 65	4.14	1	1
2015	43	42	4,34	4.83	4.96	4,34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5 34	5,60	4 67	1	}
2018	63	63	4.86	5 53	5.91	4.85	1	1
2019	70	70	5 14	5.91	5.58	5,06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM 2.3>		< FOR	M 2.4>	<> FORM 2.5>		
	Total Reso	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
_	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0,0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING .	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
	****			***	water	************	»——»	jump of the county	majorana de de de	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				Augusta					******	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE:

0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Heat Pump SEER 16

* UNIT SIZE OF AVOIDED GENERATION UNIT = 30 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year_		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	3.5417	38.7637	0.0000	0.0000	2.2079	1.8797	0.0000	3.8699
2019	0.0212	3.5496	38.7637	0.0000	0.0000	2.3929	1.9603	0.0000	3.9822
NOMINAL		7.0913	77.5274	0.0000	0.0000	4,6008	3.8400	0.0000	7.8521
NPV		3.6892		0.0000	0.0000	2.3899	1.9962	0.0000	4.0829

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Heat Pump SEER 16

		\$0					
		\$0					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	AVOIDED	AVOIDED	(4)	AVOIDED	AVOIDED	(//	(0)
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.126543
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.399485
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.714857
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.045232
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.400691
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1,802688
2016	0.000000	0.000000	0.000000	0.00000	0.000000	0.000000	2.224440
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.719408
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.192212
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.809615
NOMINAL	0.00000	0.000000	0.000000	0.000000	0.000000	0.000000	17.435169
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.814409

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	3.3944	0.1265	0.0000	0.0000	0.1265	0.1265
2011	10.1831	0.3995	0.0000	0.0000	0.3995	0.3995
2012	16.9719	0.7149	0.0000	0.0000	0.7149	0.7149
2013	23.7607	1.0452	0.0000	0.0000	1.0452	1.0452
2014	30.5494	1.4007	0.0000	0.0000	1.4007	1.4007
2015	37.3382	1.8027	0.0000	0.0000	1.8027	1.8027
2016	44.1270	2.2244	0.0000	0.0000	2.2244	2.2244
2017	50.9157	2.7194	0.0000	0.0000	2,7194	2.7194
2018	57.7045	3.1922	0.0000	0.0000	3.1922	3.1922
2019	64.4932	3.8096	0.0000	0.0000	3.8096	3.8096
NOMINAL	339.4381	17.4352	0.0000	0.0000	17.4352	17.4352
NPV		10.8144	0.0000	0.0000	10.8144	10.8144

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGRA	AM COSTS	& REBATE	S	>	<	PARTI	CIPATING C	USTOMER (COSTS & BE	NEFITS				*******	
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC	INC.	INC.	EFFECT.
	UTIL.	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT	EQUIP	O & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0.0000	0.9089	2,1000	0.0000	2 1000	25.9959	0.0000	25.9959	3.2620	0.1097	0.2679	0 3776	0.0000	0 0000	0.0000	0.0000
2011	0.9316	0.0000	0.9316	2.1000	0,0000	2.1000	26,6458	0.0000	26,6458	9.7860	0.3569	0.8219	1.1789	0.0000	0.0000	0.0000	0.0000
2012	0.9549	0.0000	0.9549	2.1000	0 0000	2.1000	27.3119	0.0000	27.3119	16.3100	0.6413	1.4012	2.0425	0.0000	0.0000	0,000	0.0000
2013	0 9787	0.0000	0.9787	2 1000	0.0000	2.1000	27.9947	0.0000	27.9947	22.8340	0.9258	2.0064	2.9322	0.0000	0.0000	0.0000	0.0000
2014	1 0032	0.0000	1 0032	2.1000	0.0000	2,1000	28.6946	0.0000	28.6946	29 3580	1.2168	2.6386	3.8554	0.0000	0.0000	0.0000	0.0000
2015	1.0283	0 0000	1.0283	2.1000	0.0000	2,1000	29.4120	0.0000	29.4120	35.8820	1 5563	3.2986	4.8549	0.0000	0.0000	0.0000	0.0000
2016	1.0540	0 0000	1.0540	2.1000	0.0000	2.1000	30,1473	0.0000	30.1473	42.4060	1.9005	3.9874	5.8879	0 0000	0.0000	0.0000	0.0000
2017	1 0803	0.0000	1 0803	2.1000	0.0000	2.1000	30.9010	0.0000	30.9010	48.9300	2,2860	4.7060	6.9920	0.0000	0.0000	0.0000	0.0000
2018	1.1074	0.0000	1,1074	2.1000	0.0000	2,1000	31.6735	0.0000	31.6735	55.4540	2.6947	5.4553	8.1501	0.0000	0.0000	0.0000	0.0000
2019	1 1350	0.0000	1.1350	2 1000	0.000	2.1000	32.4653	0.0000	32.4653	61.9780	3.1838	6.2365	9.4204	0.0000	0 0000	0.0000	0.0000
	,																
NOMINAL	10.1823	0.0000	10.1823	21 0000	0 0000	21.0000	291.2420	0.0000	291.2420	326,2000	14.8720	30.8197	45.6917	0.0000	0.0000	0.0000	0.0000
NPV	7.2649	0.0000	7.2649	15.2185	0.0000	15.2185	207 7966	0.0000	207.7966		9.2587	19.3331	28.5917		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)
									,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
2010	0.000	0.909	25,996	0.000	26.905	0.000	0.000	0.127	0.000	0.127	(26.778)	(26.778)
2011	0.000	0.932	26.646	0.000	27.577	0.000	0.000	0.399	0.000	0.399	(27.178)	(51.943)
2012	0.000	0.955	27.312	0.000	28.267	0.000	0.000	0.715	0.000	0.715	(27.552)	(75.564)
2013	0.000	0.979	27.995	0.000	28.973	0.000	0.000	1.045	0.000	1.045	(27.928)	(97.735)
2014	0.000	1.003	28.695	0.000	29.698	0.000	0.000	1.401	0.000	1.401	(28.297)	(118.534)
2015	0.000	1.028	29.412	0.000	30.440	0.000	0.000	1.803	0.000	1.803	(28.638)	(138.024)
2016	0.000	1.054	30.147	0.000	31.201	0.000	0.000	2.224	0.000	2.224	(28.977)	(156.284)
2017	0.000	1.080	30.901	0.000	31.981	0.000	0.000	2.719	0.000	2.719	(29.262)	(173.358)
2018	0.000	1.107	31.673	0.000	32.781	3.870	0.000	3.192	0.000	7.062	(25.719)	(187.254)
2019	0.000	1.135	32.465	0.000	33.600	3.982	0.000	3.810	0.000	7.792	(25.809)	(200.164)
NOMINAL	0.000	10.182	291.242	0.000	301.424	7.852	0.000	17,435	0.000	25.287	(276.137)	
NPV	0.000	7.265	207.797	0.000	215.061	4.083	0.000	10.814	0.000	14.897	(200.164)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Heat Pump SEER 16

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)			(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)		CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2010	0.378	10.500	2.100	0.000	12,978	25,996	0.000	0.000	25.996	(13,018)	(13.018)	13	26	0.50
2011	1.179	10 500	2,100	0 000	13,779	26,646	0.000	0.000	26.646	(12.867)	(24,932)	26	51	0.51
2012	2 042	10 500	2.100	0.000	14.642	27.312	0.000	0.000	27.312	(12.669)	(35,794)	38	74	0.52
2013	2.932	10 500	2.100	0.000	15.532	27,995	0.000	0.000	27.995	(12.463)	(45.687)	51	96	0.53
2014	3 855	10 500	2 100	0.000	16.455	28.695	0.000	0.000	28.695	(12.239)	(54.684)	63	117	0.53
2015	4 855	10.500	2 100	0.000	17,455	29.412	0.000	0.000	29.412	(11.957)	(62.821)	75	137	0.54
2016	5 888	10,500	2.100	0 000	18.488	30.147	0.000	0.000	30.147	(11.659)	(70.169)	86	156	0.55
2017	6 992	10.500	2.100	0.000	19.592	30.901	0,000	0.000	30.901	(11.309)	(76.767)	98	174	0.56
2018	8 150	10.500	2.100	0.000	20,750	31,673	0.000	0.000	31.673	(10.923)	(82,669)	109	192	0.57
2019	9,420	10,500	2.100	0 000	22.020	32,465	0.000	0.000	32.465	(10.445)	(87.894)	120	208	0.58
NOMINAL	45 692	105,000	21.000	0.000	171.692	291.242	0,000	0.000	291.242	(119,550)				
NPV	28.592	76 092	15.218	0.000	119.903	207.797	0.000	0.000	207.797	(87.894)				

RATE IMPACT TEST PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)		(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D		OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.909	2.100	0.378	0.000	3.386	0.127	0.000	0.000	0.000	0.127	(3.260)	(3.260)
2011	0.000	0.932	2.100	1.179	0.000	4.210	0.399	0.000	0.000	0.000	0.399	(3.811)	(6.789)
2012	0.000	0,955	2.100	2.042	0.000	5.097	0.715	0.000	0.000	0.000	0.715	(4.382)	(10.546)
2013	0.000	0.979	2.100	2.932	0.000	6.011	1.045	0.000	0.000	0.000	1.045	(4.966)	(14.488)
2014	0.000	1.003	2.100	3.855	0.000	6.959	1.401	0.000	0.000	0.000	1.401	(5.558)	(18.573)
2015	0.000	1.028	2,100	4,855	0.000	7.983	1.803	0.000	0.000	0.000	1.803	(6.181)	(22,779)
2016	0.000	1.054	2.100	5.888	0.000	9.042	2.224	0.000	0.000	0.000	2,224	(6.817)	(27.075)
2017	0.000	1.080	2.100	6.992	0.000	10.172	2.719	0.000	0.000	0.000	2.719	(7.453)	(31.424)
2018	0.000	1.107	2.100	8.150	0.000	11.357	7.062	0,000	0.000	0.000	7.062	(4.295)	(33.745)
2019	0.000	1.135	2.100	9.420	0.000	12.655	7.792	0.000	0.000	0.000	7.792	(4.864)	(36.178)
NOMINAL	0.000	10.182	21.000	45.692	0,000	76.874	25.287	0.000	0.000	0.000	25.287	(51.587)	THE SAME IS
NPV	0.000	7.265	15.218	28.592	0.000	51.075	14.897	0.000	0.000	0.000	14.897	(36.178)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]; 0.29

Commercial Efficient Electric Heat Pump Rebates – SEER 17

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 9:32 AM

PROGRAM: Commercial Heat Pump SEER 17

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.60 KW/CUST 0.62 KW GEN/CUST 3.9 % 1,215.4 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 1,168.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	0 \$/KW 0 \$/KW 0 % 10 74022 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0 22 0.00	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	3.363149 CENTS/KWH 2.5 % 0 S/KW/YR
(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84 \$/CUST 0.00 \$/CUST/YR 2.5 %	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	4,844.82 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 % 300.00 \$/CUST 0.00 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	2.0 % 7 98 \$/KW/MO 2.5 %
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	00 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

INPUT DATA -- PART 2

PSC FORM CE 1.2 PAGE 1 OF 1

Run Date: 3/29/2010 9:32 AM

PROGRAM. Commercial Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY	(5)	(6)	(7)	(8)	(9)
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
 YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	4	4	3.36	3.73	3.87	3.36	1	1
2011	8	8	3,65	3.92	3.99	3.65	1	1
2012	12	12	3.93	4.21	4.24	3.93	1	1
2013	16	16	4.05	4.40	4.47	4.05	1	1
2014	20	20	4.14	4.59	4.65	4.14	1	1
2015	24	24	4.34	4 83	4.96	4.34	j	1
2016	28	28	4.48	5.04	5.20	4.48	1	1
2017	32	32	4 67	5 34	5 60	4.67	1	1
2018	36	36	4.86	5.53	5.91	4.85	1	1
2019	40	40	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	ict Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0,0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS BEFORE	PLANT ESCALATION	CUMULATIVE ESCALATION	YEARLY	ANNUAL	CUMULATIVE AVERAGE	CUMULATIVE SPENDING	YEARLY TOTAL	INCREMENTAL YEAR-END	CUMULATIVE YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(%)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
					******	*****	wycon-may print	******		-
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				No services					-	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Heat Pump SEER 17

* UNIT SIZE OF AVOIDED GENERATION UNIT = 22 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(IA)*	(2) AVOIDED	(2A)* AVOIDED	(3) AVOIDED	(4) AVOIDED	(5) AVOIDED	(6)	(6A) AVOIDED	(7)
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)
2010	0.0000	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	2.6984	29.5342	0.0000	0.0000	1.6822	1,4322	0.0000	2.9485
2019	0.0212	2.7045	29.5342	0.0000	0.0000	1.8231	1.4936	0.0000	3.0341
NOMINAL		5,4029	59.0685	0.0000	0.0000	3.5054	2.9257	0.0000	5.9826
NPV		2.8108		0.0000	0.0000	1.8209	1.5209	0.0000	3.1108

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Heat Pump SEER 17

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

(1)	(2) AVOIDED	(3) AVOIDED	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	TRANSMISSION		TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
					O&M	DISTRIBUTION	FUEL
	CAPACITY	0&M	TRANSMISSION	CAPACITY			
	COST	COST	COST	COST	COST	COST	SAVINGS
Year_	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.090620
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.286081
2012	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000	0.511927
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.748517
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.003070
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.290950
2016	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000	1.592977
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.947436
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.286023
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.728161
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.485762
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.744470

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	2.4308	0.0906	0.0000	0.0000	0.0906	0.0906
2011	7.2924	0.2861	0.0000	0.0000	0.2861	0.2861
2012	12.1540	0.5119	0.0000	0.0000	0.5119	0.5119
2013	17.0156	0.7485	0.0000	0.0000	0.7485	0.7485
2014	21.8772	1.0031	0.0000	0.0000	1.0031	1.0031
2015	26.7388	1.2909	0.0000	0.0000	1.2909	1.2909
2016	31.6004	1.5930	0.0000	0.0000	1.5930	1.5930
2017	36.4620	1.9474	0.0000	0.0000	1.9474	1.9474
2018	41.3236	2.2860	0.0000	0.0000	2.2860	2.2860
2019	46.1852	2.7282	0.0000	0.0000	2.7282	2.7282
NOMINAL	243.0801	12.4858	0.0000	0.0000	12.4858	12.4858
NPV		7.7445	0.0000	0.000	7.7445	7.7445

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	ITY PROGRA	AM COSTS	& REBATE	S	·	<	PARTIC	CIPATING C	USTOMER C	COSTS & BE	NEFITS-					·
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	ŧΝ	REV.	REV.	REVENUE
	NONREC	RECUR	PGM	NONREC.	RECUR	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$ (000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010		0.0000	0.5193	1,2000	0.0000	1.2000	19.3793	0.0000	19.3793	2 3 3 6 0	0.0786	0.1987	0.2773	0,0000	0,0000	0.0000	0,0000
2011	0.5323	0.0000	0.5323	1.2000	0.0000	1.2000	19.8638	0.0000	19.8638	7.0080	0.2556	0.6099	0.8655	0.0000	0 0000	0.0000	0.0000
2012		0.0000	0 5456	1.2000	0 0000	1.2000	20.3604	0.0000	20.3604	11.6800	0.4593	1.0397	1.4989	0.0000	0.0000	0.0000	0.0000
2013	0.5593	0 0000	0.5593	1,2000	0.0000	1.2000	20.8694	0.0000	20.8694	16.3520	0.6630	1.4889	2.1519	0.0000	0.0000	0.0000	0.0000
2014	0 5733	0.0000	0.5733	1.2000	0.0000	1.2000	21.3911	0.0000	21.3911	21,0240	0.8714	1.9582	2,8296	0.0000	0.0000	0.0000	0.0000
2015	0.5876	0,0000	0.5876	1 2000	0.0000	1.2000	21.9259	0.0000	21.9259	25.6960	1.1145	2,4482	3,5627	0.0000	0.0000	0.0000	0.0000
2016	0.6023	0.0000	0 6023	1.2000	0.0000	1.2000	22.4740	0.0000	22.4740	30.3680	1.3610	2.9596	4.3206	0.0000	0.0000	0.0000	0.0000
2017	0.6173	0.0000	0.6173	1.2000	0.0000	1.2000	23.0359	0.0000	23.0359	35.0400	1.6371	3.4932	5.1303	0.0000	0 0000	0.0000	0.0000
2018	0.6328	0.0000	0.6328	1.2000	0.000	1.2000	23.6118	0.0000	23.6118	39.7120	1.9298	4.0498	5.9795	0.0000	0.0000	0.0000	0.0000
2019	0 6486	0.0000	0.6486	1.2000	0.0000	1.2000	24.2021	0.0000	24.2021	44.3840	2.2800	4.6301	6 9101	0.0000	0.0000	0.0000	0.0000
ÑOMINAL	5.8184	0,0000	5.8184	12 0000	0.0000	12,0000	217.1135	0.0000	217.1135	233,6000	10,6502	22.8762	33.5264	0 0000	0.0000	0.0000	0.0000
NPV	4.1514	0 0000	4.1514	8.6963	0.0000	8.6963	154.9071	0.0000	154.9071		6.6304	14.3497	20.9800		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	B1000 000		n. n. mr. o. n. 1. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.					**************************************				CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
		~~										
2010	0.000	0.519	19.379	0.000	19.899	0.000	0.000	0.091	0.000	0.091	(19.808)	(19.808)
2011	0.000	0.532	19.864	0.000	20.396	0.000	0.000	0.286	0.000	0.286	(20.110)	(38.428)
2012	0.000	0.546	20.360	0.000	20.906	0.000	0.000	0.512	0.000	0.512	(20.394)	(55.913)
2013	0.000	0.559	20.869	0.000	21.429	0.000	0.000	0.749	0.000	0.749	(20.680)	(72.330)
2014	0.000	0.573	21.391	0.000	21.964	0.000	0.000	1.003	0.000	1.003	(20.961)	(87.737)
2015	0.000	0.588	21.926	0.000	22.513	0.000	0.000	1.291	0.000	1.291	(21.223)	(102.180)
2016	0.000	0.602	22.474	0.000	23.076	0.000	0.000	1.593	0.000	1.593	(21.483)	(115.719)
2017	0.000	0.617	23.036	0.000	23.653	0.000	0.000	1.947	0.000	1.947	(21.706)	(128.384)
2018	0.000	0.633	23.612	0.000	24.245	2.948	0.000	2.286	0.000	5.235	(19.010)	(138.654)
2019	0.000	0.649	24.202	0.000	24.851	3.034	0.000	2.728	0.000	5.762	(19.088)	(148.203)
NOMINAL	0.000	5.818	217.113	0.000	222.932	5.983	0.000	12.486	0.000	18.468	(204.464)	
NPV	0.000	4.151	154.907	0.000	159.058	3.111	0.000	7.744	0.000	10.855	(148.203)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.07

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0,277	6.000	1.200	0.000	7.477	19.379	0.000	0.000	19.379	(11.902)	(11.902)	7	19	0.39
2011	0 865	6.000	1.200	0.000	8,065	19.864	0.000	0.000	19.864	(11.798)	(22,826)	15	38	0,40
2012	1.499	6 000	1,200	0.000	8.699	20,360	0.000	0.000	20.360	(11.661)	(32.824)	22	55	0.41
2013	2 152	6.000	1,200	0.000	9.352	20.869	0.000	0.000	20.869	(11.517)	(41.967)	30	72	0.42
2014	2,830	6,000	1,200	0.000	10.030	21.391	0.000	0.000	21.391	(11.362)	(50 318)	37	88	0.43
2015	3.563	6.000	1.200	0.000	10,763	21.926	0.000	0.000	21.926	(11.163)	(57.916)	45	102	0.43
2016	4.321	6 000	1.200	0.000	11.521	22.474	0.000	0.000	22.474	(10.953)	(64.818)	52	117	0.44
2017	5.130	6.000	1,200	0.000	12.330	23.036	0.000	0.000	23.036	(10.706)	(71,065)	59	130	0.45
2018	5.980	6.000	1.200	0.000	13,180	23.612	0.000	0.000	23.612	(10.432)	(76.701)	66	143	0 46
2019	6.910	6.000	1,200	0 000	14.110	24,202	0.000	0.000	24,202	(10.092)	(81,749)	73	155	0.47
NOMINAL	33,526	60,000	12 000	0.000	105.526	217.113	0.000	0.000	217.113	(111.587)				
NPV	20.980	43 481	8 696	0.000	73.158	154.907	0.000	0.000	154.907	(81.749)				

In-service year of generation unit: 2018
Discount rate. 8.00%

Benefit/Cost Ratio: 0.47

RATE IMPACT TEST
PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.519	1.200	0.277	0.000	1.997	0.091	0.000	0.000	0.000	0.091	(1.906)	(1.906)
2011	0.000	0.532	1,200	0.865	0.000	2.598	0.286	0.000	0.000	0.000	0.286	(2.312)	(4.046)
2012	0.000	0.546	1.200	1.499	0.000	3.245	0.512	0.000	0.000	0.000	0.512	(2.733)	(6.389)
2013	0.000	0.559	1.200	2.152	0.000	3.911	0.749	0.000	0.000	0.000	0.749	(3.163)	(8.900)
2014	0.000	0.573	1.200	2.830	0.000	4.603	1.003	0.000	0.000	0.000	1.003	(3.600)	(11.546)
2015	0.000	0.588	1.200	3.563	0.000	5.350	1.291	0.000	0.000	0.000	1.291	(4.059)	(14.309)
2016	0.000	0.602	1.200	4.321	0.000	6.123	1.593	0.000	0.000	0.000	1.593	(4.530)	(17.163)
2017	0.000	0.617	1.200	5.130	0.000	6,948	1.947	0.000	0.000	0.000	1.947	(5.000)	(20.081)
2018	0.000	0.633	1.200	5.980	0.000	7.812	5.235	0.000	0.000	0.000	5.235	(2.578)	(21.473)
2019	0.000	0.649	1.200	6.910	0.000	8.759	5.762	0.000	0.000	0.000	5.762	(2.996)	(22.972)
NOMINAL	0.000	5,818	12.000	33.526	0.000	51.345	18.468	0.000	0.000	0.000	18,468	(32.877)	- Appendix at the control of the con
NPV	0.000	4.151	8.696	20.980	0.000	33,828	10.855	0.000	0.000	0.000	10.855	(22.972)	

Discount rate; 8.00%

Benefit / Cost Ratio [col (12) / col (7)]: 0.32

Commercial Efficient Electric Heat Pump Rebates – SEER 18

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 9.33 AM

PROGRAM: Commercial Heat Pump SEER 18

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.65 KW /CUST 0.68 KW GEN/CUST 3.9 % 1,423.5 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 1,368.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR AVOIDED TRANSMISSION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O M ESCALATION RATE	2030 120.0557 \$/KW 0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	3.363149 CENTS/KWH
(1)** UTILITY AND CUSTOMER COSTS (1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	129.84 \$/CUST 0.00 \$/CUST/YR 2.5 % 6,022 82 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 1,500.00 \$/CUST 0.0 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 % 300.00 \$/CUST 0.00 %	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	2.0 % 7.98 \$/KW/MO
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %	* FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PROGRAM: Commercial Heat Pump SEER 18

* Avoided Generation Unit:
* Program Generation Equivilency Factor: 7FA CT 1.00

(1)	(2)	(3)	(4) UTILITY	(5)	(6)	(7)	(8)	(9)
			AVERAGE					
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
	_							
2010	3	3	3.36	3,73	3,87	3.36	1	1
2011	6	٠ 6	3.65	3.92	3.99	3.65	1	1
2012	9	9	3.93	4.21	4.24	3.93	1	1
2013	12	12	4.05	4.40	4,47	4.05	Ť	1
2014	15	15	4.14	4.59	4.65	4.14	1	1
2015	18	18	4.34	4.83	4.96	4.34	ı	1
2016	21	21	4.48	5,04	5.20	4.48	1	1
2017	24	24	4.67	5,34	5 60	4.67	1	1
2018	27	27	4.86	5.53	5.91	4.85	1	1
2019	30	30	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR!	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)_	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	- 9 -8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-0 -7		-							
		200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0,00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	2.00
				******				*****		
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Heat Pump SEER 18

* UNIT SIZE OF AVOIDED GENERATION UNIT =

18 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) =

\$0

		•							
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	2.1925	23.9966	0.0000	0.0000	1.3668	1.1636	0.0000	2.3956
2019	0.0212	2.1974	23.9966	0.0000	0.0000	1.4813	1.2135	0.0000	2.4652
NOMINAL		4,3899	47.9931	0.0000	0.0000	2.8481	2.3772	0.0000	ä.8608
NPV		2.2838		0.0000	0.0000	1.4795	1.2357	0.0000	2.5275

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Heat Pump SEER 18

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.079603
2011	0.000000	0.00000	0.000000	0.000000	0.000000	0.000000	0.251301
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.449689
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.657515
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.881122
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.134002
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.399310
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.710676
2018	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	2.008099
2019	0.000000	0.000000	0.000000	0.000000	0,00000	0.000000	2.396484
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.967801
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.802933

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
	<u>, </u>					-
2010	2.1353	0.0796	0.0000	0.0000	0.0796	0.0796
2011	6.4058	0.2513	0.0000	0.0000	0.2513	0.2513
2012	10.6764	0.4497	0.0000	0.0000	0.4497	0.4497
2013	14.9469	0.6575	0.0000	0.0000	0.6575	0.6575
2014	19.2175	0.8811	0.0000	0.0000	0.8811	0.8811
2015	23.4880	1.1340	0.0000	0.0000	1.1340	1.1340
2016	27.7586	1.3993	0.0000	0.0000	1.3993	1.3993
2017	32.0291	1.7107	0.0000	0.0000	1.7107	1.7107
2018	36.2997	2.0081	0.0000	0.0000	2.0081	2.0081
2019	40.5702	2.3965	0.0000	0.0000	2.3965	2.3965
NOMINAL	213.5276	10.9678	0.0000	0.0000	10.9678	10.9678
NPV		6.8029	0.0000	0.0000	6.8029	6.8029

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGRA	AM COSTS	& REBATE	S	>	<	PARTI	CIPATING C	USTOMER (COSTS & BE	NEFITS					>
			TOTAL			TOTAL	PARTIC	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV	REV	REV	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	0 3895	0.0000	0.3895	0 9000	0.0000	0.9000	18 0685	0.0000	18.0685	2.0520	0.0690	0.1670	0,2360	0 0000	0 0000	0.0000	0.0000
2011	0 3992	0.0000	0.3992	0.9000	0.0000	0.9000	18 5202	0.0000	18.5202	6.1560	0.2245	0.5124	0 7369	0.0000	0 0000	0.0000	0.0000
2012	0.4092	0.0000	0.4092	0.9000	0.0000	0.9000	18,9832	0.0000	18.9832	10.2600	0.4034	0.8735	1,2769	0.0000	0,0000	0.0000	0 0000
2013	0.4195	0.0000	0.4195	0 9000	0 0000	0.9000	19.4578	0.0000	19.4578	14.3640	0.5824	1.2508	1.8331	0 0000	0.0000	0.0000	0 0000
2014	0.4299	0 0000	0.4299	0.9000	0 0000	0 9000	19 9442	0 0000	19.9442	18.4680	0,7655	1.6448	2,4103	0.0000	0.0000	0.0000	0.0000
2015	0.4407	0 0000	0 4407	0 9000	0.0000	0.9000	20.4428	0.0000	20 4428	22.5720	0.9790	2.0562	3.0352	0 0000	0.0000	0.0000	0.0000
2016	0.4517	0.0000	0.4517	0 9000	0.0000	0 9000	20.9539	0.0000	20.9539	26.6760	1.1956	2.4855	3.6811	0.0000	0.0000	0.0000	0.0000
2017	0 4630	0.0000	0 4630	0.9000	0.0000	0.9000	21.4777	0.0000	21.4777	30.7800	1.4380	2.9334	4.3714	0.0000	0.0000	0.0000	0.0000
2018	0.4746	0.0000	0 4746	0 9000	0.0000	0.9000	22.0147	0.0000	22.0147	34.8840	1.6951	3.4004	5.0956	0 0000	0.0000	0.0000	0.0000
2019	0,4864	0.0000	0 4864	0 9000	0.0000	0.9000	22.5650	0.0000	22 5650	38.9880	2,0028	3.8873	5 8902	0.0000	0.0000	0.0000	0 0000
NOMINAL	4.3638	0 0000	4.3638	9 0000	0.0000	9.0000	202,4279	0.0000	202.4279	205.2000	9.3554	19.2113	28.5667	0.0000	0.0000	0.0000	0.0000
NPV	3 1135	0.0000	3.1135	6.5222	0.0000	6.5222	144.4291	0.0000	144.4291		5.8243	12.0513	17.8756		0.0000	0.0000	0 0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
												CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.390	18.068	0.000	18.458	0.000	0.000	0.080	0.000	0.080	(18.378)	(18.378)
2011	0.000	0.399	18.520	0.000	18.919	0.000	0.000	0.251	0.000	0.251	(18.668)	(35.664)
2012	0.000	0.409	18.983	0.000	19.392	0.000	0.000	0.450	0.000	0.450	(18.943)	(51,904)
2013	0.000	0.419	19.458	0.000	19.877	0.000	0.000	0.658	0.000	0.658	(19.220)	(67.161)
2014	0.000	0.430	19,944	0.000	20.374	0,000	0.000	0.881	0.000	0.881	(19,493)	(81,489)
2015	0,000	0.441	20,443	0.000	20.883	0.000	0.000	1.134	0.000	1.134	(19.749)	(94.930)
2016	0.000	0.452	20.954	0.000	21.406	0.000	0.000	1.399	0.000	1.399	(20.006)	(107.538)
2017	0.000	0.463	21.478	0.000	21.941	0.000	0.000	1.711	0.000	1.711	(20.230)	(119.342)
2018	0.000	0.475	22.015	0.000	22.489	2.396	0.000	2.008	0.000	4.404	(18,085)	(129.113)
2019	0.000	0.486	22.565	0.000	23.051	2.465	0.000	2.396	0.000	4,862	(18.190)	(138.212)
NOMINAL	0.000	4.364	202.428	0.000	206.792	4.861	0.000	10.968	0.000	15.829	(190.963)	** F. B
NPV	0.000	3.114	144.429	0.000	147.543	2.527	0.000	6.803	0.000	9.330	(138.212)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.06

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Heat Pump SEER 18

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)		TOTAL COSTS	NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)		CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
ILAK	3(000)	\$(000)	3(000)	\$(000)	\$(000)	\$(000)	\$(000)	3(000)	3(000)	3(000)	3(000)	\$(000)	\$(000)	
2010	0.236	4.500	0.900	0.000	5.636	18.068	0,000	0.000	18.068	(12.432)	(12,432)	6	18	0.31
2011	0.737	4,500	0.900	0.000	6.137	18,520	0.000	0.000	18,520	(12.383)	(23.898)	П	35	0.32
2012	1.277	4.500	0.900	0.000	6 677	18.983	0,000	0.000	18.983	(12.306)	(34.449)	17	51	0 33
2013	1.833	4 500	0.900	0.000	7.233	19.458	0.000	0.000	19.458	(12.225)	(44.153)	23	67	0.34
2014	2.410	4.500	0.900	0.000	7.810	19.944	0.000	0.000	19.944	(12.134)	(53.072)	29	82	0 35
2015	3.035	4.500	0.900	0.000	8.435	20,443	0.000	0.000	20.443	(12.008)	(61.244)	34	96	0.36
2016	3.681	4.500	0.900	0.000	9 081	20.954	0.000	0.000	20.954	(11.873)	(68,726)	40	109	0.37
2017	4 371	4.500	0.900	0.000	9.771	21.478	0.000	0.000	21,478	(11.706)	(75.557)	46	121	0.38
2018	5.096	4.500	0.900	0.000	10.496	22.015	0.000	0.000	22.015	(11.519)	(81.780)	51	133	0.39
2019	5 89 0	4 500	0 900	0 000	11.290	22.565	0.000	0.000	22.565	(11.275)	(87.420)	57	144	0 39
NOMINAL	28 567	45 000 [°]	9.000	0.000	82.567	202,428	0.000	0.000	202,428	(119.861)				
NPV	17,876	32 611	6.522	0.000	57,009	144,429	0.000	0.000	144,429	(87.420)				

In-service year of generation unit: 2018
Discount rate. 8 60%
Benefit/Cost Ratio: 0.39

RATE IMPACT TEST PROGRAM: Commercial Heat Pump SEER 18

(1)	(2) INCREASED	(3) UTILITY	(4)	(5)	(6)	(7)	(8) AVOIDED GEN UNIT	(9) AVOIDED	(10)	(11)	(12)		(14) CUMULATIVE
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL		PEARMIE	OTHER	TAT 41		DISCOUNTED
			NOTATEDO					T&D		OTHER	TOTAL	TO ALL	NET
	COSTS		INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.390	0.900	0.236	0.000	1.526	0.080	0.000	0.000	0.000	0.080	(1.446)	(1.446)
2011	0.000	0.399	0.900	0.737	0.000	2.036	0.251	0.000	0.000	0.000	0.251	(1.785)	(3.099)
2012	0.000	0.409	0.900	1.277	0.000	2.586	0.450	0.000	0.000	0.000	0.450	(2,136)	(4.930)
2013	0.000	0.419	0.900	1.833	0.000	3,153	0.658	0.000	0.000	0.000	0.658	(2.495)	(6.911)
2014	0.000	0.430	0.900	2.410	0.000	3.740	0.881	0.000	0.000	0.000	0.881	(2.859)	(9.012)
2015	0.000	0.441	0.900	3.035	0.000	4.376	1.134	0.000	0.000	0.000	1.134	(3.242)	(11.219)
2016	0.000	0.452	0.900	3.681	0.000	5.033	1.399	0.000	0.000	0.000	1.399	(3.633)	(13,509)
2017	0.000	0.463	0.900	4.371	0.000	5.734	1.711	0.000	0.000	0.000	1.711	(4.024)	(15.856)
2018	0.000	0.475	0.900	5,096	0.000	6.470	4.404	0.000	0.000	0.000	4.404	(2.066)	(16.973)
2019	0.000	0.486	0.900	5.890	0.000	7.277	4.862	0.000	0.000	0.000	4.862	(2.415)	(18.181)
NOMINĀL	0.000	4.364	9.000	28.567	0.000	41.931	15.829	0.000	0.000	0.000	15.829	(26.102)	
NPV	0.000	3.114	6,522	17.876	0.000	27.511	9.330	0.000	0.000	0.000	9.330	(18.181)	

Discount rate: 8.00% of (12) / col (7)]: 0.34

Benefit / Cost Ratio [col (12) / col (7)]:

Commercial Duct Repair Rebates

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/29/2010 8:50 AM

PROGRAM: Commercial Energy Efficiency Disci

1 PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS, AND DIST, COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.22 KW/CUST 0.23 KW GEN/CUST 3.9 % 391.3 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 376.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M ESCALATION RATE (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	10.74022 \$/KW/YR 2.5 %
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00 1	(13) A VOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) A VOIDED GENERATING UNIT FUEL COST (17) A VOIDED GEN UNIT FUEL ESCALATION RATE (18)* A VOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 S/KW/YR
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER	45.10 \$/CUST 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	
(3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* LITILITY AFUDC RATE (14)* UTILITY REDATE/INCRITIVE ESCALATIONENTIVE (15)* UTILITY REBATE/INCENTIVE ESCAL RATE	2 5 % 450.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 0.00 \$/CUST 2 5 % 0.00 \$/CUST/YR 2 5 % 0.00 \$/CUST/YR 2 5 % 8 00 % 0 00 % 150 00 \$/CUST 0 00 \$/CUST/YR 0.0 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL * FIRE Program Version Number: 1.03	3.586 CENTS/KWH 2.0 % 798 \$/KW/MO 2.5 %
The property of the second of		t tree i regionic a prototi regitival. 1,00	

SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/29/2010 8:50 AM

PROGRAM: Commercial Energy Efficiency Duct

* Avoided Generation Unit 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL.	MARGINAL	MARGINAL	REPLACEMENT	ĸw	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	10	10	3.36	3.73	3 87	3.36	1	1
2011	20	20	3 65	3.92	3.99	3.65	1	1
2012	30	30	3,93	4.21	4.24	3.93	1	ł
2013	40	40	4.05	4,40	4.47	4.05	1	1
2014	50	50	4.14	4.59	4.65	4.14	\$	1
2015	60	60	4.34	4 83	4.96	4.34	1	i
2016	70	70	4,48	5,04	5.20	4.48	1	1
2017	80	80	4.67	5 34	5.60	4.67	1	1
2018	90	90	4.86	5.53	5.91	4.85	1	1
2019	100	100	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)	
	< FORM	2.3>	< FOR	M 2.4>	<> FORM 2.5>		
	Total Reso	urce Test	Participar	nts Test	Rate Impact Test		
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
					7,2		
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO, YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2000		202.00/	4.0000	0.09/	0.00	0.00	0.00	0.00	0.00	0.00
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187,0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
									*	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Energy Efficiency Duct

* UNIT SIZE OF AVOIDED GENERATION UNIT = 21 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	· ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
						,			
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	2.4898	27.2508	0.0000	0.0000	1.5522	1.3214	0.0000	2.7205
2019	0.0212	2.4954	27.2508	0.0000	0.0000	1.6822	1.3781	0.0000	2.7995
NOMINAL	e e que véy	4,9852	54.5015	0.0000	0.0000	3.2343	2.6995	0.0000	5.5200
									2.5.200
NPV		2.5935		0.0000	0.0000	1.6801	1.4033	0.0000	2.8703

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Energy Efficiency Duct

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0 (1) (4) (5) (7) (8) **(2)** (3) (6) **AVOIDED AVOIDED AVOIDED** AVOIDED TRANSMISSION TRANSMISSION TOTAL AVOIDED DISTRIBUTION DISTRIBUTION TOTAL AVOIDED **PROGRAM CAPACITY** O&M TRANSMISSION CAPACITY O&M DISTRIBUTION **FUEL** COST COST COST COST COST **SAVINGS** COST Year \$(000) (000)\$(000) \$(000) \$(000) \$(000) \$(000) 0.000000 0.000000 2010 0.000000 0.000000 0.000000 0.000000 0.072931 2011 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.230236 2012 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.411996 2013 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.602402 2014 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.807265 2015 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1.038949 0.000000 2016 0.000000 0.000000 0.000000 0.000000 0.000000 1.282019 2017 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1.567286 2018 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 1.839779 2019 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 2.195609 **NOMINAL** 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 10.048473

0.000000

0.000000

0.000000

0.000000

6.232707

0.000000

0.000000

NPV

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	1.9563	0.0729	0.0000	0.0000	0.0729	0.0729
2011	5.8689	0.2302	0.0000	0.0000	0.2302	0.2302
2012	9.7815	0.4120	0.0000	0.0000	0.4120	0.4120
2013	13.6941	0.6024	0.0000	0.0000	0.6024	0.6024
2014	17.6067	0.8073	0.0000	0.0000	0.8073	0.8073
2015	21.5193	1.0389	0.0000	0.0000	1.0389	1.0389
2016	25.4318	1.2820	0.0000	0.0000	1.2820	1.2820
2017	29.3444	1.5673	0.0000	0.0000	1.5673	1.5673
2018	33.2570	1.8398	0.0000	0.0000	1.8398	1.8398
2019	37.1696	2.1956	0.0000	0.0000	2.1956	2.1956
NOMINAL	195,6296	10.0485	0.0000	0.0000	10.0485	10.0485
NPV		6.2327	0.0000	0.0000	6.2327	6.2327

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM. Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	TY PROGRA	AM COSTS	& REBATE	S	> ·	<	PARTIO	CIPATING C	USTOMER (COSTS & BE	NEFITS			~~~~		·····>
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC	INC.	INC	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV	REV	REV.	IN	REV.		REVENUE
	NONREC	RECUR		NONREC.	RECUR	INCENT.	EQUIP	0 & M	CUST	CUST.		NONFUEL	REDUCT.	CUST.		NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
											,						
2010	0 4510	0.0000	0 4510	1 5000	0.0000	1 5000	4.5000	0.0000	4.5000	1.8800	0 0632	0.1735	0.2367	0.0000	0.0000	0.0000	0 0000
2011	0 4623	0 0000	0.4623	1.5000	0.0000	1.5000	4.6125	0,0000	4.6125	5 6400	0.2057	0.5325	0.7382	0.0000	0.0000	0.0000	0.0000
2012	0.4738	0.0000	0 4738	1,5000	0.0000	1,5000	4,7278	0.0000	4.7278	9.4000	0.3696	0.9079	1.2775	0.0000	0 0000	0.0000	0,0000
2013	0 4857	0.0000	0 4857	1.5000	0.0000	1.5000	4 8460	0.0000	4.8460	13,1600	0.5336	1.3004	1.8340	0.0000	0 0000	0.0000	0.0000
2014	0.4978	0.0000	0.4978	1.5000	0.0000	1 5000	4.9672	0.0000	4.9672	16.9200	0.7013	1.7106	2.4119	0 0000	0 0000	0.0000	0.0000
2015	0.5103	0.0000	0.5103	1 5000	0.0000	1 5000	5.0913	0.0000	5.0913	20.6800	0.8970	2.1389	3.0359	0.0000	0.0000	0.0000	0.0000
2016	0.5230	0.0000	0.5230	1.5000	0.0000	1.5000	5.2186	0 0000	5,2186	24.4400	1.0953	2.5862	3.6815	0.0000	0.0000	0.0000	0.0000
2017	0.5361	0 0000	0.5361	1.5000	0.0000	1,5000	5 3491	0,0000	5.3491	28,2000	1.3175	3,0530	4.3705	0.0000	0 0000	0.0000	0.0000
2018	0.5495	0.0000	0 5495	1.5000	0.0000	1.5000	5.4828	0.0000	5,4828	31.9600	1,5531	3.5400	5.0930	0.0000	0 0000	0.0000	0.0000
2019	0.5632	0.0000	0 5632	1.5000	0,0000	1.5000	5.6199	0.0000	5.6199	35.7200	1.8350	4.0478	5.8828	0.0000	0.0000	0.0000	0.0000
Tillian				~							Anne Comment		n impiat		10.25.2	212.	1,5
NOMINAL	5 05 27	0,0000	5 0527	15 0000	0.0000	15 0000	50 4152	0.0000	50.4152	188.0000	8.5712	19 9908	28 5621	0.0000	0.0000	0 0000	0.0000
NPV	3 6050	0.0000	3.6050	10.8703	0 0000	10 8703	35.9705	0.0000	35.9705		5.3361	12,5389	17.8750		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
		_			COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	
1 1 T T A PA	COSTS	COSTS	COSTS	COSTS								BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0,000	0.451	4.500	0.000	4.951	0.000	0.000	0.073	0.000	0.073	(4.878)	(4.878)
2011	0.000	0.462	4.613	0.000	5.075	0.000	0.000	0.230	0.000	0.230	(4.845)	(9.364)
2012	0.000	0.474	4.728	0.000	5.202	0.000	0.000	0.412	0.000	0.412	(4,790)	(13.470)
2013	0.000	0.486	4.846	0.000	5.332	0.000	0.000	0.602	0.000	0.602	(4.729)	(17.224)
2014	0.000	0.498	4.967	0.000	5.465	0.000	0.000	0.807	0.000	0.807	(4.658)	(20.648)
2015	0.000	0.510	5.091	0.000	5.602	0.000	0.000	1.039	0.000	1.039	(4.563)	(23.753)
2016	0.000	0.523	5.219	0.000	5.742	0.000	0.000	1.282	0.000	1.282	(4.460)	(26.564)
2017	0.000	0.536	5.349	0.000	5.885	0.000	0.000	1.567	0.000	1.567	(4.318)	(29.083)
2018	0.000	0.549	5.483	0.000	6.032	2.721	0.000	1.840	0.000	4.560	(1.472)	(29.878)
2019	0.000	0.563	5.620	0.000	6.183	2.799	0.000	2.196	0.000	4.995	(1.188)	(30.473)
NOMINAL	0,000	5.053	50.415	0.000	55,468	5.520	0.000	10.048	0.000	15.568	(39.899)	* the wife PV
NPV	0.000	3.605	35.970	0.000	39.576	2.870	0.000	6.233	0.000	9.103	(30.473)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.23

PARTICIPANT COSTS AND BENEFITS PROGRAM Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0.237	0.000	1 500	0 000	1.737	4.500	0.000	0.000	4 500	(2.763)	(2.763)	2	5	0.39
2011	0.738	0.000	1 500	0 000	2 238	4.613	0 000	0.000	4.613	(2.374)	(4.962)	4	9	0.43
2012	1 278	0.000	1 500	0.000	2 778	4.728	0.000	0.000	4.728	(1.950)	(6.634)	6	13	0.48
2013	1 834	0.000	1,500	0.000	3.334	4.846	0.000	0.000	4.846	(1.512)	(7.834)	9	17	0.53
2014	2,412	0.000	1 500	0.000	3.912	4.967	0.000	0.000	4.967	(1.055)	(8.610)	12	20	0.58
2015	3 036	0.000	1.500	0.000	4.536	5.091	0.000	0.000	5.091	(0.555)	(8 988)	15	24	0 62
2016	3 682	0.000	1.500	0.000	5,182	5.219	0,000	0.000	5 219	(0.037)	(9.011)	18	27	0 67
2017	4 370	0.000	1.500	0.000	5.870	5 349	0.000	0 000	5 349	0,521	(8.707)	21	30	0.71
2018	5.093	0.000	1.500	0 000	6.593	5.483	0 000	0.000	5.483	1.110	(8.107)	25	33	0.76
2019	5 883	0.000	1 500	0.000	7.383	5.620	0.000	0.000	5.620	1.763	(7.225)	29	36	0.80
NOMINAL	28 562	0.000	15.000	0.000	43,562	50.415	0,000	0,000	50.415	(6.853)				
NPV	17.875	0.000	10 870	0.000	28.745	35.970	0.000	0.000	35.970	(7.225)				

In-service year of generation unit: 2018
Discount rate 8 00%
Benefit/Cost Ratio 0.80

RATE IMPACT TEST PROGRAM: Commercial Energy Efficiency Duct

(1)	(2) INCREASED	(3) UTILITY	(4)	(5)	(6)	(7)	(8) AVOIDED GEN UNIT	(9) AVOIDED	(10)	(11)	(12)		(14) CUMULATIVE DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T&D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.451	1.500	0.237	0.000	2.188	0.073	0.000	0.000	0.000	0.073	(2.115)	(2.115)
2011	0.000	0.462	1.500	0.738	0.000	2.700	0.230	0.000	0.000	0.000	0.230	(2.470)	(4.402)
2012	0.000	0.474	1.500	1.278	0.000	3.251	0.412	0.000	0.000	0.000	0.412	(2.839)	(6.836)
2013	0.000	0.486	1.500	1.834	0.000	3.820	0.602	0.000	0.000	0.000	0.602	(3,217)	(9.390)
2014	0.000	0.498	1,500	2.412	0.000	4.410	0.807	0.000	0.000	0,000	0.807	(3.602)	(12.038)
2015	0.000	0.510	1.500	3.036	0.000	5.046	1.039	0.000	0.000	0.000	1.039	(4.007)	(14.765)
2016	0.000	0.523	1.500	3.682	0.000	5.705	1,282	0.000	0.000	0.000	1.282	(4.423)	(17.552)
2017	0.000	0.536	1.500	4.370	0.000	6.407	1.567	0.000	0.000	0.000	1.567	(4.839)	(20.376)
2018	0.000	0.549	1.500	5.093	0.000	7.143	4.560	0.000	0.000	0.000	4.560	(2.582)	(21.771)
2019	0.000	0.563	1.500	5.883	0.000	7.946	4.995	0.000	0.000	0.000	4.995	(2.951)	(23.247)
NOMINAL	0.000	5.053	15.000	28.562	0.000	48.615	15.568	0.000	0.000	0.000	15.568	(33.046)	
NPV	0.000	3.605	10.870	17.875	0.000	32.350	9.103	0.000	0.000	0.000	9.103	(23.247)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)];

0.28

Commercial Window Film/Solar Screen Rebates

PSC FORM CE 1.1 PAGE 1 OF 1 Run Date: 3/30/2010 10:43 AM

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

1 PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.02 KW /CUST 0.02 KW GEN/CUST 3.9 % 77.5 KWH/CUST/YR 3.9 % 1.0000 0.0 KWH/CUST/YR 74.5 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T& D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR AVOIDED TRANSMISSION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST	0 \$/KW 0 \$/KW 0 % 10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 26 YEARS 20 YEARS 0.22 0.00	(12) T&D FIXED O&M ESCALATION RATE (13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE O & M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) A VOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH 2.5 % 15 % 3.363149 CENTS/KWH 2.5 % 0 S/KW/YR
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER (3) UTILITY RECURRING COST PER CUSTOMER (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS (11)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY NON RECURRING REBATE/INCENTIVE (15)* UTILITY RECURRING REBATE/INCENTIVE	9.86 \$/CUST 0.00 \$/CUST/YR 2.5 % 356.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 106.80 \$/CUST 0.00 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 % 133.43 \$/CUST 0.00 \$/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL (2) NON-FUEL ESCALATION RATE (3) CUSTOMER DEMAND CHARGE PER KW (4) DEMAND CHARGE ESCALATION RATE (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	00 %	• FIRE Program Version Number: 1.03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 10:43 AM

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor. 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	i	1
2012	21	21	3.93	4.21	4,24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4,67	t	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Imp	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	- 9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
	=					-		0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00		
									0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

* UNIT SIZE OF AVOIDED GENERATION UNIT = 1 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	0.1574	1.7228	0.0000	0.0000	0.0981	0.0835	0.0000	0.1720
2019	0.0212	0.1578	1.7228	0.0000	0.0000	0.1064	0.0871	0.0000	0.1770
NOMINAL		0.3152	3.4457	0.0000	0.0000	0.2045	0,1707	0.0000	0.3490
NPV		0.1640		0.0000	0.0000	0.1062	0.0887	0.0000	0.1815

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED		
	TRANSMISSION	TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.010117
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.031938
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.057152
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.083565
2014	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	0.111983
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.144122
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.177841
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	0.217413
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.255212
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.304573
NOMINAL	0.000000	0,000000	0.000000	0,000000	0.000000	0.000000	1.393915
NPV	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	0.864596

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	0.2714	0.0101	0.0000	0.0000	0.0101	0.0101
2011	0.8141	0.0319	0.0000	0.0000	0.0319	0.0319
2012	1.3569	0.0572	0.0000	0.0000	0.0572	0.0572
2013	1.8996	0.0836	0.0000	0.0000	0.0836	0.0836
2014	2.4424	0.1120	0.0000	0.0000	0.1120	0.1120
2015	2.9851	0.1441	0.0000	0.0000	0.1441	0.1441
2016	3.5279	0.1778	0.0000	0.0000	0.1778	0.1778
2017	4.0706	0.2174	0.0000	0.0000	0.2174	0.2174
2018	4.6134	0.2552	0.0000	0.0000	0.2552	0.2552
2019	5.1561	0.3046	0.0000	0.0000	0.3046	0.3046
NOMINAL	27.1376	1.3939	0.0000	0.0000	1.3939	1.3939
NPV		0.8646	0.0000	0.0000	0.8646	0.8646

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM. Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTILI	TY PROGR.	AM COSTS	& REBATE	S		<	PARTIC	CIPATING C	USTOMER C	COSTS & BE	NEFITS		*******			>
			TOTAL			TOTAL	PARTIC.	PARTIC.	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC	INC.	INC.	EFFECT.
	UTIL.	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC.	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST.	- FUEL	NONFUEL	INC.
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	0.0690	0.0000	0 0690	0.9340	0.0000	0.9340	2.4920	0.0000	2.4920	0.2608	0.0088	0.0161	0.0248	0.0000	0.0000	0.0000	0 0000
2011	0 0 707	0.0000	0.0707	0.9340	0.0000	0.9340	2.5543	0.0000	2.5543	0.7824	0.0285	0 0492	0.0778	0.0000	0.0000	0 0000	0.0000
2012	0 0725	0.0000	0.0725	0.9340	0.0000	0.9340	2 6182	0.0000	2,6182	1.3040	0.0513	0.0839	0.1351	0.0000	0.0000	0.0000	0.0000
2013	0.0743	0.0000	0.0743	0.9340	0.0000	0.9340	2.6836	0.0000	2.6836	1.8255	0.0740	0.1200	0.1940	0.0000	0.0000	0.0000	0 0000
2014	0.0762	0.0000	0.0762	0.9340	0.000	0.9340	2.7507	0.0000	2.7507	2.3471	0.0973	0.1577	0.2550	0.0000	0.0000	0.0000	0.0000
2015	0.0781	0.0000	0.0781	0 9340	0.0000	0.9340	2.8195	0.0000	2.8195	2,8687	0.1244	0.1970	0.3215	0.0000	0.0000	0.0000	0.0000
2016	0.0800	0.0000	0.0800	0.9340	0.0000	0.9340	2.8900	0.0000	2.8900	3 3903	0.1519	0.2380	0.3900	0.0000	0 0000	0.0000	0.0000
2017	0.0820	0.0000	0.0820	0.9340	0 0000	0.9340	2.9622	0.0000	2.9622	3.9119	0.1828	0.2807	0.4635	0.0000	0.0000	0.0000	0.0000
2018	0.0841	0.0000	0.0841	0 9340	0.0000	0.9340	3.0363	0.0000	3.0363	4.4335	0.2154	0.3252	0.5406	0.0000	0.0000	0.0000	0.0000
2019	0 0862	0.0000	0.0862	0,9340	0.0000	0 9340	3.1122	0.0000	3.1122	4,9550	0.2545	0 3715	0.6260	0.0000	0.0000	0.0000	0.0000
material description		, ,				t constant of physics v	without a security		to to some beauty		man or consumer streams						
NOMINAL	0.7733	0.0000	0 7733	9.3401	0.0000	9.3401	27.9188	0 0000	27.9188	26.0792	1.1890	1.8394	3.0284	0.0000	0.0000	0.0000	0.0000
\$/D3/	0.5617	0.0000	0.5517	/ 9/09	0.0000	C 7607	10.0107	0.0000	10.0104		0.7.00	1.1510	1.0044			* * * * * * * * * * * * * * * * * * * *	
NPV	0.5517	0 0000	0 5517	6.7687	0.0000	6.7687	19,9196	0 0000	19.9196		0.7402	1.1542	1.8944		0.0000	0.0000	0.0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.069	2.492	0.000	2.561	0.000	0.000	0.010	0.000	0.010	(2.551)	(2.551)
2011	0.000	0.071	2.554	0.000	2.625	0.000	0.000	0.032	0.000	0.032	(2.593)	(4.952)
2012	0.000	0.073	2.618	0.000	2.691	0.000	0.000	0.057	0.000	0.057	(2.634)	(7.210)
2013	0.000	0.074	2.684	0.000	2.758	0.000	0.000	0.084	0.000	0.084	(2.674)	(9.333)
2014	0.000	0.076	2.751	0.000	2.827	0.000	0.000	0.112	0.000	0.112	(2.715)	(11.328)
2015	0.000	0.078	2.819	0.000	2.898	0.000	0.000	0.144	0.000	0.144	(2.753)	(13.202)
2016	0.000	0.080	2.890	0.000	2.970	0.000	0.000	0.178	0.000	0.178	(2.792)	(14.962)
2017	0.000	0.082	2.962	0.000	3.044	0.000	0.000	0.217	0.000	0.217	(2.827)	(16.611)
2018	0.000	0.084	3.036	0.000	3.120	0.172	0.000	0.255	0.000	0.427	(2.693)	(18.066)
2019	0.000	0.086	3.112	0.000	3.198	0.177	0.000	0.305	0.000	0.482	(2.717)	(19.425)
NOMINAL	0.000	0.773	27.919	0.000	28.692	0.349	0.000	1.394	0.000	Ĩ.743	(26.949)	
NPV	0.000	0.552	19.920	0.000	20.471	0.181	0.000	0.865	0.000	1.046	(19.425)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.05

PARTICIPANT COSTS AND BENEFITS PROGRAM; Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
	SAVINGS IN					CUSTOMER	CUSTOMER				CUMULATIVE	CUMULATIVE	CUMULATIVE	Benefit
	PARTICIPANTS	TAX	UTILITY	OTHER	TOTAL	EQUIPMENT	0 & M	OTHER	TOTAL	NET	DISCOUNTED	DISCOUNTED	DISCOUNTED	to Cost
	BILL.	CREDITS	REBATES	BENEFITS	BENEFITS	COSTS	COSTS	COSTS	COSTS	BENEFITS	NET BENEFITS	BENEFITS	COSTS	Ratio
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
2010	0.025	0.748	0 934	0.000	1.706	2.492	0,000	0.000	2.492	(0.786)	(0.786)	2	2	0.68
2011	0.078	0.748	0.934	0.000	1.759	2.554	0.000	0.000	2.554	(0.795)	(1.522)	3	5	0.69
2012	0.135	0 748	0.934	0.000	1.817	2.618	0,000	0.000	2.618	(0.801)	(2.209)	5	7	0.69
2013	0.194	0.748	0.934	0.000	1.876	2,684	0.000	0.000	2.684	(0.808)	(2.850)	6	9	0,69
2014	0.255	0.748	0.934	0.000	1.937	2.751	0.000	0.000	2.751	(0.814)	(3.448)	8	11	0.69
2015	0.321	0.748	0.934	0.000	2.003	2.819	0.000	0.000	2.819	(0.816)	(4.004)	9	13	0.70
2016	0,390	9,748	0.934	0.000	2.072	2.890	0.000	0.000	2.890	(0.818)	(4.520)	10	15	0.70
2017	0 463	0.748	0.934	0.000	2.145	2.962	0.000	0.000	2.962	(0.817)	(4.997)	12	17	0.70
2018	0.541	0.748	0,934	0.000	2.222	3.036	0 000	0.000	3.036	(0.814)	(5,436)	13	18	0.70
2019	0.626	0.748	0.934	0.000	2,308	3.112	0.000	0.000	3 112	(0.805)	(5.839)	14	20	0.71
NOMINAL	[~] 3 028	7.476	9.340	0.000	19.844	27.919	0.000	0 000	27.919	(8.974)				
NPV	1.894	5 418	6,769	0.000	14.081	19,920	0.000	0.000	19.920	(5.839)				

RATE IMPACT TEST PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.069	0.934	0.025	0.000	1.028	0.010	0.000	0.000	0.000	0.010	(1.018)	(1.018)
2011	0.000	0.071	0.934	0.078	0.000	1.083	0.032	0.000	0.000	0.000	0.032	(1.051)	(1.991)
2012	0.000	0.073	0.934	0.135	0.000	1.142	0.057	0.000	0.000	0.000	0.057	(1.085)	(2.920)
2013	0.000	0.074	0.934	0.194	0.000	1.202	0.084	0.000	0.000	0.000	0.084	(I.119)	(3.808)
2014	0.000	0.076	0.934	0.255	0.000	1.265	0.112	0.000	0.000	0.000	0.112	(1.153)	(4.656)
2015	0.000	0.078	0.934	0.321	0.000	1.334	0.144	0.000	0.000	0.000	0.144	(1.189)	(5.466)
2016	0.000	0.080	0.934	0.390	0.000	1.404	0.178	0.000	0.000	0.000	0.178	(1.226)	(6.238)
2017	0.000	0.082	0.934	0.463	0.000	1.480	0.217	0.000	0.000	0.000	0.217	(1.262)	(6.975)
2018	0.000	0.084	0.934	0.541	0.000	1.559	0.427	0.000	0.000	0.000	0.427	(1.132)	(7,586)
2019	0.000	0.086	0.934	0.626	0.000	1.646	0.482	0.000	0.000	0.000	0.482	(1.165)	(8.169)
NOMINAL	0.000	0.773	9.340	3.028	0.000	13.142	1.743	0.000	0.000	0.000	1.743	(11.399)	Topical and Assessment of Assessment Street,
NPV	0.000	0.552	6.769	1.894	0.000	9.215	1.046	0.000	0.000	0.000	1.046	(8.169)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.11

Commercial Ceiling Insulation Rebates

PSC FORM CE L1 PAGE 1 OF 1 Run Date: 3/29/2010 8:40 AM

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

1. PROGRAM DEMAND SAVINGS AND LINE LOSSES		IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS	
(1) CUSTOMER KW REDUCTION AT THE METER (2) GENERATOR KW REDUCTION PER CUSTOMER (3) KW LINE LOSS PERCENTAGE (4) GENERATION KWH REDUCTION PER CUSTOMER (5) KWH LINE LOSS PERCENTAGE (6) GROUP LINE LOSS MULTIPLIER (7) CUSTOMER KWH PROGRAM INCREASE AT METER (8)* CUSTOMER KWH REDUCTION AT METER	0.17 KW /CUST 0.18 KW GEN/CUST 3.9 % 586.9 KWH/CUST/YR 3.9 % 10000 0.0 KWH/CUST/YR 564.0 KWH/CUST/YR	(1) BASE YEAR (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT (3) IN-SERVICE YEAR FOR AVOIDED T & D (4) BASE YEAR AVOIDED GENERATING UNIT COST (5) BASE YEAR AVOIDED TRANSMISSION COST (6) BASE YEAR DISTRIBUTION COST (7) GEN, TRAN, & DIST COST ESCALATION RATE (8) GENERATOR FIXED O & M COST (9) GENERATOR FIXED O & M COST (10) TRANSMISSION FIXED O & M COST (11) DISTRIBUTION FIXED O & M COST (12) T&D FIXED O&M ESCALATION RATE	10.74022 \$/KW/YR 2.5 % 0 \$/KW/YR 0 \$/KW/YR
(1) STUDY PERIOD FOR CONSERVATION PROGRAM (2) GENERATOR ECONOMIC LIFE (3) T & D ECONOMIC LIFE (4) K FACTOR FOR GENERATION (5) K FACTOR FOR T & D (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	10 YEARS 20 YEARS 20 YEARS 0.22 0.00	(13) AVOIDED GEN UNIT VARIABLE O & M COSTS (14) GENERATOR VARIABLE, O&M COST ESCALATION RATE (15) GENERATOR CAPACITY FACTOR (16) AVOIDED GENERATING UNIT FUEL COST (17) AVOIDED GEN UNIT FUEL ESCALATION RATE (18)* AVOIDED PURCHASE CAPACITY COST PER KW (19)* CAPACITY COST ESCALATION RATE	0 CENTS/KWH
(1)** UTILITY NONRECURRING COST PER CUSTOMER (2)** UTILITY RECURRING COST PER CUSTOMER	65.17 S/CUST 0.00 S/CUST/YR	V. NON-FUEL ENERGY AND DEMAND CHARGES	nerv Province of the second
(3) UTILITY COST ESCALATION RATE (4) CUSTOMER EQUIPMENT COST (5) CUSTOMER EQUIPMENT ESCALATION RATE (6) CUSTOMER O & M COST (7) CUSTOMER O & M ESCALATION RATE (8)* CUSTOMER TAX CREDIT PER INSTALLATION (9)* CUSTOMER TAX CREDIT ESCALATION RATE (10)* INCREASED SUPPLY COSTS (11)* SUPPLY COSTS ESCALATION RATE (12)* UTILITY DISCOUNT RATE (13)* UTILITY AFUDC RATE (14)* UTILITY REDATE INCENTIVE ESCALATIONENTIVE (15)* UTILITY REBATE INCENTIVE ESCAL RATE	2.5 % 576.45 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 270.00 \$/CUST 2.5 % 0.00 \$/CUST/YR 2.5 % 8.00 % 0.00 % 100.00 \$/CUST/YR 0.00 \$/CUST 0.00 \$/CUST/YR 0.00 \$/CUST	(1) NON-FUEL COST IN CUSTOMER BILL	2.0 % 7 98 \$/KW/MO 2.5 %
(10) OTHER FREDATE/INCENTIVE ESCAL KATE	U.U %	Trike Program Version Number: 1,03	

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

PSC FORM CE 1 2 PAGE 1 OF 1 Run Date: 3/29/2010 8:40 AM

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(9)	(8)	(7)	(6)	(5)	(4)	(3)	(2)	(1)
					UTILITY			
					AVERAGE			
PROGRAM	PROGRAM		INCREASED	AVOIDED	SYSTEM	ADJUSTED	CUMULATIVE	
KWH	KW	REPLACEMENT	MARGINAL	MARGINAL	FUEL	CUMULATIVE	TOTAL	
EFFECTIVENESS	EFFECTIVENESS	FUEL COST	FUEL COST	FUEL COST	COSTS	PARTICIPATING	PARTICIPATING	
FACTOR	FACTOR	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	CUSTOMERS	CUSTOMERS	YEAR
I	1	3.36	3.87	3.73	3.36	7	7	2010
I	}	3.65	3 99	3,92	3.65	14	14	2011
1	1	3.93	4.24	4.21	3.93	21	21	2012
ī	Į.	4.05	4.47	4,40	4.05	28	28	2013
1	1	4.14	4.65	4.59	4.14	35	35	2014
i	1	4,34	4,96	4.83	4 34	42	42	2015
1	1	4.48	5 20	5 04	4.48	49	49	2016
1	1	4.67	5.60	5.34	4.67	56	56	2017
1	ì	4.85	5.91	5 53	4.86	63	63	2018
1	1	5.06	5.58	5.91	514	70	70	2019

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1) (2)		(3)	(4)			
	< FORM	1 2.3>	< FOR	M 2.4>	< FOR	M 2.5>	
	Total Reso	urce Test	Participar	nts Test	Rate Imp	act Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS	
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	
			-				
2010	0.0	0.0	0.0	0.0	0.0	0.0	
2011	0.0	0.0	0.0	0.0	0.0	0.0	
2012	0.0	0.0	0.0	0.0	0.0	0.0	
2013	0.0	0.0	0.0	0.0	0.0	0.0	
2014	0.0	0.0	0.0	0.0	0.0	0.0	
2015	0.0	0.0	0.0	0.0	0.0	0.0	
2016	0.0	0.0	0.0	0.0	0.0	0.0	
2017	0.0	0.0	0.0	0.0	0.0	0.0	
2018	0.0	0.0	0.0	0.0	0.0	0.0	
2019	0.0	0.0	0.0	0.0	0.0	0.0	

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	NO. YEARS	PLANT	CUMULATIVE			CUMULATIVE	CUMULATIVE	YEARLY	INCREMENTAL	CUMULATIVE
	BEFORE	ESCALATION	ESCALATION	YEARLY	ANNUAL	AVERAGE	SPENDING	TOTAL	YEAR-END	YEAR-END
	INSERVICE	RATE	FACTOR	EXPENDITURE	SPENDING	SPENDING	WITH AFUDC	AFUDC	BOOK VALUE	BOOK VALUE
YEAR		(%)		(%)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)	(\$/KW)
****	****	***		****		-	***	www.mig.g.us	etitor grade	
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0,00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0,00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
					er blumen dygg				*******	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Energy Efficiency Ceiling Insulation

* UNIT SIZE OF AVOIDED GENERATION UNIT = 11 kW

* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

713	نقد ما م	7 8 5	(0.1)4	73 3			**		
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	1.3695	14.9886	0.0000	0.0000	0.8537	0.7268	0.0000	1.4964
2019	0.0212	. 1.3725	14.9886	0.0000	0.0000	0.9252	0.7580	0.0000	1.5398
NOMINAL		2.7420	29.9772	0.0000	0.0000	1.7790	1.4848	0.0000	3.0361
NPV		1.4265		0.0000	0.0000	0 9241	0.7719	0.0000	1.5787
NPV		1.4265		0.0000	0.0000	0.9241	0.7719	0.0000	1.5

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Energy Efficiency Ceiling Insulation

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	AVOIDED	AVOIDED		AVOIDED	AVOIDED	mom.r	nn o an 111
	TRANSMISSION		TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
	CAPACITY	O&M	TRANSMISSION	CAPACITY	O&M	DISTRIBUTION	FUEL
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.076577
2011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.241748
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.432596
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.632522
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.847629
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.090897
2016	0.00000	0.00000	0.000000	0.000000	0.000000	0.000000	1.346120
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.645650
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.931767
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.305390
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.550896
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.544342

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	2.0541	0.0766	0.0000	0.0000	0.0766	0.0766
2011	6.1623	0.2417	0.0000	0.0000	0.2417	0.2417
2012	10.2706	0.4326	0.0000	0.0000	0.4326	0.4326
2013	14.3788	0.6325	0.0000	0.0000	0.6325	0.6325
2014	18.4870	0.8476	0.0000	0.0000	0.8476	0.8476
2015	22.5952	1.0909	0.0000	0.0000	1.0909	1.0909
2016	26,7034	1.3461	0.0000	0.0000	1.3461	1.3461
2017	30.8117	1.6457	0.0000	0.0000	1.6457	1.6457
2018	34.9199	1.9318	0.0000	0.0000	1.9318	1.9318
2019	39.0281	2.3054	0.0000	0.0000	2.3054	2.3054
NOMINAL	205.4110	10.5509	0.0000	0.0000	10.5509	10.5509
NPV		6.5443	0.0000	0.0000	6.5443	6.5443

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM; Commercial Energy Efficiency Ceiling Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	TY PROGRA	AM COSTS	& REBATE	S		<	PARTIC	CIPATING C	USTOMER (COSTS & BE	NEFITS			~~~~		·>
			TOTAL			TOTAL	PARTIC.	PARTIC	TOTAL	REDUCT.	RED.	RED.	EFFECT.	INC.	INC.	INC.	EFFECT.
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN	REV.	REV.	REV.	IN	REV.	REV.	REVENUE
	NONREC	RECUR	PGM	NONREC.	RECUR.	INCENT.	EQUIP	0 & M	CUST	CUST.	- FUEL	NONFUEL	REDUCT.	CUST	- FUEL	NONFUEL	INC
	COSTS	COSTS	COSTS	REBATES	REBATES	COSTS	COSTS	COSTS	COSTS	KWH	PORTION	PORTION	IN BILL	KWH	PORTION	PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	0.4562	0.0000	0 4562	0.7000	0.0000	0.7000	4.0352	0.0000	4.0352	1.9740	0.0664	0.1291	0.1955	0.0000	0.0000	0.000	0,0000
2011	0.4676	0 0000	0.4676	0.7000	0.0000	0.7000	4.1360	0.0000	4.1360	5.9220	0.2160	0.3960	0.6120	0 0000	0.0000	0.0000	0.0000
2012	0 4793	0.0000	0.4793	0.7000	0.0000	0.7000	4.2394	0.0000	4.2394	9.8700	0.3881	0,6747	1.0628	0.0000	0.0000	0.0000	0 0000
2013	0.4913	0,0000	0 4913	0.7000	0.0000	0.7000	4.3454	0.0000	4.3454	13 8180	0.5602	0.9657	1.5259	0.0000	0.0000	0.0000	0.0000
2014	0.5035	0.0000	0.5035	0 7000	0.0000	0.7000	4.4541	0.0000	4.4541	17.7660	0.7364	1.2692	2.0056	0.0000	0.0000	0 0000	0.0000
2015	0.5161	0.0000	0,5161	0.7000	0 0000	0.7000	4.5654	0 0000	4.5654	21.7140	0.9418	1 5858	2,5277	0.0000	0.0000	0 0000	0.000
2016	0.5290	0.0000	0.5290	0.7000	0.0000	0.7000	4 6795	0 0000	4.6795	25.6620	1.1501	1 9159	3 0661	0.0000	0.0000	0.0000	0 0000
2017	0.5423	0 0000	0.5423	0.7000	0.0000	0.7000	4 7965	0.0000	4,7965	29 6100	1.3834	2.2600	3.6434	0 0000	0.0000	0,0000	0 0000
2018	0.5558	0.0000	0.5558	0.7000	0.0000	0.7000	4.9164	0.0000	4.9164	33 5580	1,6307	2.6185	4 2492	0.0000	0.0000	0.0000	0 0000
2019	0.5697	0.0000	0.5697	0 7000	0.0000	0.7000	5.0393	0.0000	5.0393	37.5060	1.9267	2.9918	4.9185	0.0000	0.0000	0.0000	0.0000
NOMINAL	5.1108	0.0000	5.1108	7.0000	0.0000	7 0000	45.2073	0.0000	45.2073	197,4000	8.9998	14,8068	23 8066	0.0000	0.0000	0.0000	0.0000
NPV	3 6465	0.0000	3.6465	5 0728	0.0000	5 0728	32.2547	0.0000	32.2547		5.6029	9.2904	14.8933		0.0000	0.0000	0 0000

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13) CUMULATIVE
	INCREASED	UTILITY	PARTICIPANT			AVOIDED	AVOIDED	PROGRAM				DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T & D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
<u> </u>												
2010	0.000	0.456	4.035	0.000	4.491	0.000	0.000	0.077	0.000	0.077	(4.415)	(4.415)
2011	0.000	0.468	4.136	0.000	4.604	0.000	0.000	0.242	0.000	0.242	(4.362)	(8.454)
2012	0.000	0.479	4.239	0.000	4.719	0.000	0.000	0.433	0.000	0.433	(4.286)	(12.128)
2013	0.000	0.491	4.345	0.000	4.837	0.000	0.000	0.633	0.000	0.633	(4.204)	(15.466)
2014	0.000	0.504	4.454	0.000	4.958	0.000	0.000	0.848	0.000	0.848	(4.110)	(18.487)
2015	0.000	0.516	4.565	0.000	5.082	0.000	0.000	1.091	0.000	1.091	(3.991)	(21.202)
2016	0.000	0.529	4.680	0.000	5.209	0.000	0.000	1,346	0.000	1.346	(3.862)	(23.636)
2017	0.000	0.542	4.797	0.000	5.339	0.000	0.000	1,646	0.000	1,646	(3.693)	(25.791)
2018	0.000	0.556	4.916	0.000	5.472	1.496	0.000	1.932	0.000	3.428	(2.044)	(26.896)
2019	0.000	0.570	5.039	0.000	5.609	1.540	0.000	2.305	0.000	3.845	(1.764)	(27.778)
NOMINAL	0.000	5.111	45.207	0.000	50.318	3.036	0.000	10.551	0.000	13.587	(36.731)	
NPV	0.000	3.646	32.255	0.000	35.901	1,579	0.000	6.544	0.000	8.123	(27.778)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.23

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(1)	(2) SAVINGS IN PARTICIPANTS BILL	(3) TAX CREDITS	(4) UTILITY REBATES	OTHER BENEFITS	(6) TOTAL BENEFITS	•			(10) TOTAL COSTS	(11) NET	(12) CUMULATIVE DISCOUNTED	DISCOUNTED	CUMULATIVE DISCOUNTED	Benefit to Cost
YEAR	\$(000)		\$(000)	\$(000)	\$(000)	COSTS \$(000)	COSTS \$(000)	\$(000)		BENEFITS \$(000)	NET BENEFITS \$(000)	BENEFITS \$(000)		Ratio
TEAN	3(000)	3(000)	\$(000)	\$(000)	3(000)	\$(000)	2(000)	\$(000)	3(000)	\$(000)	#(000)	\$(000)	\$(000)	
2010	0.196	1.890	0 700	0 000	2.786	4.035	0.000	0.000	4.035	(1.250)	(1.250)	3	4	0 69
2011	0.612	1.937	0 700	0.000	3.249	4.136	0.000	0.000	4.136	(0.887)	(2.071)	6	8	0.74
2012	1 063	1 986	0.700	0.000	3,748	4.239	0.000	0.000	4.239	(0.491)	(2.492)	9	11	0.78
2013	1.526	2.035	0,700	0.000	4.261	4.345	0.000	0.000	4.345	(0.084)	(2.558)	12	15	0.83
2014	2.006	2.086	0.760	0.000	4.792	4,454	0.000	0.000	4.454	0.338	(2 310)	16	18	0.87
2015	2 528	2.138	0.700	0.000	5,366	4.565	0.000	0.000	4.565	0.801	(1.765)	20	21	0.92
2016	3 066	2 192	0.700	0.000	5.958	4 680	0.000	0.000	4.680	1.278	(0.960)	23	24	0.96
2017	3 643	2.247	0 700	0.000	6.590	4.797	0.000	0.000	4.797	1.793	0.087	27	27	1.00
2018	4 249	2.303	0.700	0 000	7.252	4.916	0.000	0.000	4.916	2.336	1.349	31	30	1.05
2019	4 918	2.360	0.700	0.000	7.979	5.039	0.000	0,000	5.039	2,939	2.819	35	32	1.09
NOMINAL	23.807	21.174	7.000	0.000	51 981	45.207	0 000	0.000	45.207	6.774				
NPV	14.893	15.108	5.073	0.000	35.074	32.255	0.000	0.000	32.255	2 819				

In-service year of generation unit
Discount rate
Benefit/Cost Ratio:

2018
8,00%
1,09

RATE IMPACT TEST PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(T)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET	(14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED				BENEFITS	DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.456	0.700	0.196	0.000	1.352	0.077	0.000	0.000	0.000	0.077	(1.275)	(1.275)
2011	0,000	0,468	0.700	0.612	0.000	1.780	0.242	0,000	0.000	0.000	0.242	(1.538)	(2.699)
2012	0.000	0.479	0.700	1.063	0.000	2.242	0.433	0.000	0.000	0,000	0.433	(1.810)	(4.250)
2013	0.000	0.491	0.700	1.526	0.000	2.717	0.633	0.000	0.000	0.000	0.633	(2.085)	(5.905)
2014	0.000	0.504	0.700	2.006	0.000	3.209	0.848	0.000	0.000	0.000	0.848	(2.361)	(7.641)
2015	0.000	0.516	0.700	2.528	0.000	3.744	1.091	0.000	0,000	0.000	1.091	(2.653)	(9.447)
2016	0.000	0.529	0.700	3.066	0.000	4.295	1.346	0.000	0.000	0.000	1.346	(2.949)	(11.305)
2017	0.000	0.542	0.700	3.643	0.000	4.886	1,646	0.000	. 0.000	0.000	1.646	(3.240)	(13.195)
2018	0.000	0.556	0.700	4.249	0.000	5.505	3.428	0.000	0.000	0.000	3.428	(2.077)	(14.317)
2019	0.000	0.570	0.700	4.918	0.000	6.188	3.845	0.000	0.000	0.000	3.845	(2.343)	(15.490)
NOMINAL	0.000	5.111	7.000	23.807	0.000	35.917	13.587	0.000	0,000	0.000	13.587	(22.330)	e register e dessaté page per se come
NPV	0.000	3.646	5.073	14.893	0.000	23.613	8.123	0.000	0.000	0.000	8.123	(15.490)	

Discount rate: 8.00%
Benefit / Cost Ratio [col (12) / col (7)]: 0.34

Commercial Cool/Reflective Roofs Rebates

PROGRAM: Commercial Energy Efficiency Cool Roof

1 PROGRAM DEMAND SAVINGS AND LINE LOSSES	IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS
(1) CUSTOMER KW REDUCTION AT THE METER 55.37 KW /CUST (2) GENERATOR KW REDUCTION PER CUSTOMER 57.62 KW GEN/CUST (3) KW LINE LOSS PERCENTAGE 3.9 % (4) GENERATION KWH REDUCTION PER CUSTOMER 135,385.5 KWH/CUST/YR (5) KWH LINE LOSS PERCENTAGE 3.9 % (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 130,105.5 KWH/CUST/YR	(1) BASE YEAR
II. ECONOMIC LIFE AND K FACTORS 10 YEARS (2) GENERATOR ECONOMIC LIFE 20 YEARS (3) T & D ECONOMIC LIFE 20 YEARS (4) K FACTOR FOR GENERATION 0.22 (5) K FACTOR FOR T & D 0 00 (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1) 1	(12) T&D FIXED O&M ESCALATION RATE 0 % (13) AVOIDED GEN UNIT VARIABLE O & M COSTS 0 CENTS/KWH (14) GENERATOR VARIABLE O&M COST ESCALATION RATE 2.5 % (15) GENERATOR CAPACITY FACTOR 15 % (16) AVOIDED GENERATING UNIT FUEL COST 3.363149 CENTS/KWH (17) AVOIDED GEN UNIT FUEL ESCALATION RATE 2.5 % (18)* AVOIDED PURCHASE CAPACITY COST PER KW 0 \$KKW/YR (19)* CAPACITY COST ESCALATION RATE 2.5 %
UTILITY AND CUSTOMER COSTS	V. NON-FUEL ENERGY AND DEMAND CHARGES (1) NON-FUEL COST IN CUSTOMER BILL 3586 CENTS/KWH (2) NON-FUEL ESCALATION RATE 20 % (3) CUSTOMER DEMAND CHARGE PER KW 7.98 \$/KW/MO (4) DEMAND CHARGE ESCALATION RATE 25 % (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL 10
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE 00 %	* FIRE Program Version Number: 1.03

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

^{**} NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

PSC FORM CE 1.2 PAGE 1 OF 1 Run Date: 3/30/2010 10:43 AM

PROGRAM. Commercial Energy Efficiency Cool Roof

* Avoided Generation Unit: 7FA CT
* Program Generation Equivilency Factor: 1.00

(1)	(2)	(3)	(4) UTILITY AVERAGE	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE	ADJUSTED	SYSTEM	AVOIDED	INCREASED		PROGRAM	PROGRAM
	TOTAL	CUMULATIVE	FUEL	MARGINAL	MARGINAL	REPLACEMENT	KW	KWH
	PARTICIPATING	PARTICIPATING	COSTS	FUEL COST	FUEL COST	FUEL COST	EFFECTIVENESS	EFFECTIVENESS
YEAR	CUSTOMERS	CUSTOMERS	(C/KWH)	(C/KWH)	(C/KWH)	(C/KWH)	FACTOR	FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	ŧ
2011	14	14	3.65	3.92	3.99	3,65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	i	1
2015	42	42	4.34	4.83	4.96	4,34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5 53	5.91	4.85	1	1
2019	70	70	5.14	5,91	5.58	5,06	1	i

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	< FORM	2.3>	< FOR	M 2.4>	< FOR	M 2.5>
	Total Reso	urce Test	Participar	nts Test	Rate Impa	act Test
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
***	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
2010	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0	0.0	0.0
2017	0.0	0.0	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT PLANT: 2018 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0,00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200,0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00	2.22		0.00	0.00	3.40

				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06 AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS PROGRAM: Commercial Energy Efficiency Cool Roof

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3,630 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

44 .					- 45			44.5	(=)
(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
		AVOIDED	AVOIDED	AVOIDED	AVOIDED	AVOIDED		AVOIDED	
	VALUE OF	GEN UNIT	ANNUAL	UNIT	GEN UNIT	GEN UNIT		PURCHASED	AVOIDED
	DEFERRAL	CAPACITY	UNIT	FIXED	VARIABLE	FUEL	REPLACEMENT	CAPACITY	GEN UNIT
	FACTOR	COST	KWH GEN	O&M COST	O&M COST	COST	FUEL COST	COSTS	BENEFITS
Year		\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.0000	0.0000	0.0000	0.0000	0.0000	0000,0	0.0000	0.0000	0,0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0212	435.7870	4,769.6559	0.0000	0.0000	271.6718	231.2899	0.0000	476.1689
2019	0.0212	436.7617	4,769.6559	0.0000	0.0000	294,4309	241.2045	0.0000	489.9881
NOMINAL	/440	872.5487	9,539.3118	0,0000	0.0000	566.1026	472.4944	0.0000	966.1570
		5. 2.3 101	. gu w / sw # # W	3.0000	3.000	2001020	,,	3.0000	,0012010
NPV		453.9318		0.0000	0.0000	294.0645	245.6210	0.000	502.3753

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS PROGRAM: Commercial Energy Efficiency Cool Roof

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

(1)	(2)	(3)	(4)	(5) AVOIDED	(6) AVOIDED	(7)	(8)
	AVOIDED TRANSMISSION	AVOIDED TRANSMISSION	TOTAL AVOIDED	DISTRIBUTION	DISTRIBUTION	TOTAL AVOIDED	PROGRAM
		O&M			O&M	DISTRIBUTION	FUEL
	CAPACITY		TRANSMISSION	CAPACITY			
	COST	COST	COST	COST	COST	COST	SAVINGS
Year	\$(000)	(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.665103
2011	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	55.767328
2012	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	99.792670
2013	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	145.912426
2014	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	195.533928
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	251.651905
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	310.527685
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	379.624395
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	445.626869
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	531.815324
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2,433.917632
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1,509.671670

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: DSM PROGRAM FUEL SAVINGS PROGRAM: Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION		INCREASE		NET	
	IN KWH	AVOIDED	IN KWH	INCREASED	AVOIDED	EFFECTIVE
	GENERATION	MARGINAL	GENERATION	MARGINAL	PROGRAM	PROGRAM
	NET NEW CUST	FUEL COST -	NET NEW CUST	FUEL COST -	FUEL	FUEL
	KWH	REDUCED KWH	KWH	INCREASE KWH	SAVINGS	SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	473.8493	17.6651	0.0000	0.0000	17.6651	17.6651
2011	1,421.5480	55.7673	0.0000	0.0000	55.7673	55.7673
2012	2,369.2467	99.7927	0.0000	0.0000	99.7927	99.7927
2013	3,316.9453	145.9124	0.0000	0.0000	145.9124	145.9124
2014	4,264.6440	195.5339	0.0000	0.0000	195.5339	195.5339
2015	5,212.3427	251.6519	0.0000	0.0000	251.6519	251.6519
2016	6,160.0414	310.5277	0.0000	0.0000	310.5277	310.5277
2017	7,107.7400	379.6244	0.0000	0.0000	379,6244	379.6244
2018	8,055.4387	445.6269	0.0000	0.0000	445.6269	445.6269
2019	9,003.1374	531.8153	0.0000	0.0000	531.8153	531.8153
NAS TRIAT	47 204 0225	2 422 0156	0.0000	0.000	0.433.0156	2 422 0187
NOMINAL	47,384.9335	2,433.9176	0.0000	0.0000	2,433.9176	2,433.9176
NPV		1,509.6717	0.0000	0.0000	1,509.6717	1,509.6717

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN PROGRAM; Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	< UTIL	ITY PROGE	RAM COSTS	& REBATE	S	>	<	PART	ICIPATING (CUSTOMER	COSTS & BI	ENEFITS	·*				>
			TOT 41			TOT 41	BARTIC	B + DTG	*****	DEDICT	nco	BED	TEEECT	D.I.C.	INC.	INC.	EFFECT.
	EXTRAK	2.00037	TOTAL	* 175*1		TOTAL		PARTIC.	TOTAL	REDUCT.		RED.		INC. IN			REVENUE
	UTIL	UTIL	UTIL	UTIL	UTIL	REBATE/	CUST	CUST	PARTIC.	IN		REV.	REV.		REV.		
	NONREC	RECUR		NONREC.	RECUR.	INCENT.	EQUIP	0 & M		CUST.		NONFUEL	REDUCT.	CUST.		NONFUEL	INC.
	COSTS	COSTS		REBATES		COSTS		COSTS								PORTION	IN BILL
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)	(000)	\$(000)		\$(000)
2010	120.5018	0,0000	120.5018	30 2170	0.0000	30.2170	411,1567	0.0000	411,1567	455.3692	15.3147	34.8959	50.2107	0.0000	0.0000	0.0000	0 0000
2011	123.5144	0.0000	123 5144	30.2170	0.0000	30.2170	421.4356	0.0000	421,4356	1,366.1076	49.8262	107.0600	156.8862	0.0000	0.0000	0.0000	0.0000
2012	126 6022	0.0000	126,6022	30.2170	0.0000	30,2170	431.9715	00000	431.9715	2,276,8461	89.5250	182.4778	272.0028	0.0000	0 0000	0.0000	0.0000
2013	129,7673	0.0000	129.7673	30 2170	0.0000	30.2170	442,7708	0.0000	442,7708	3,187.5845	129.2364	261.2610	390,4973	0.0000	0.0000	0.0000	0.0000
2014	133 0115	0 0000	133.0115	30.2170	0.0000	30.2170	453,8401	0.0000	453.8401	4,098.3229	169.8665	343,5248	513 3913	0.0000	0.0000	0.0000	0.0000
2015	136 3368	0.0000	136.3368	30.2170	0.0000	30.2170	465,1861	0.0000	465,1861	5,009,0613	217.2605	429,3881	646.6486	0.0000	0.0000	0.0000	0.0000
2016	139.7452	0.0000	139,7452	30 2170	0.0000	30,2170	476.8157	0.0000	476.8157	5.919.7997	265.3106	518.9732	784,2839	0.0000	0,0000	0.0000	0.0000
2017		0.0000	143,2388	30.2170	0.0000	30.2170	488.7361	0.0000	488.7361	6,830,5382	319,1245	612,4064	931.5309	0 0000	0.0000	0.0000	0 0000
2018		0.0000	146.8198	30.2170	0.0000	30.2170	500.9545	0.0000	500.9545	7,741.2766	376.1785	709,8177		0.0000	0.0000	0 0000	0.0000
2019		0.0000	150 4903	30 2170	0.0000	30.2170	513,4784	0.0000	513.4784	8.652.0150	444.4594		1.255.8006	0.0000	0.0000	0.0000	0.0000
2017	(30,4303	0.0000	120 4902	30 2170	0.0000	30.2170	313,4764	0.0000	313.4704	6,032.0130	777.7227	011.5412	1,255.0000	0.0000	0.0000	0,0000	0,0000
NOMBLAL	1.350 0280	0.0000	1.750,0300	203 1407	0.0000	202 (507	1 606 1464		4 606 3484	45 526 0011	3036 1034	4 011 1461	4 007 7404	0.0000	0 0000	0.0000	0.000
NUMINAL	1,330 0280	ט טטטט	1,350.0280	302.1697	0.0000	302.1097	4,606 3454	0.0000	4,000.3434	45,536.9211	2,070 1024	4,011.1401	0,067,4484	0.0000	0 0000	0.0000	0.0000
NPV	963.2238	0.0000	963.2238	218.9790	0.0000	218 0700	3,286,5551	0.0000	3,286 5551		1 202 4008	2,516,3429	2 9/10 9729		0.0000	0.0000	0.0000
MLA	202.4430	0.0000	703.4436	210.9790	0.0000	210,9790	3,200,223	0.0000	3,200 3331		1,474.4900	4,210,3429	3,000.0330		0.0000	U.UUUU	U.UUUU

^{*} SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS PROGRAM: Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED	UTILITY	PARTICIPANT		•	AVOIDED	AVOIDED	PROGRAM				CUMULATIVE DISCOUNTED
	SUPPLY	PROGRAM	PROGRAM	OTHER	TOTAL	GEN UNIT	T&D	FUEL	OTHER	TOTAL	NET	NET
	COSTS	COSTS	COSTS	COSTS	COSTS	BENEFITS	BENEFITS	SAVINGS	BENEFITS	BENEFITS	BENEFITS	BENEFITS
VEAD												
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	120.502	411.157	0.000	531.659	0.000	0.000	17.665	0.000	17.665	(513.993)	(513.993)
2011	0.000	123.514	421,436	0.000	544,950	0.000	0.000	55.767	0.000	55.767	(489.183)	(966.940)
2012	0.000	126,602	431,971	0.000	558.574	0.000	0.000	99.793	0.000	99.793	(458.781)	(1,360.271)
2013	0.000	129.767	442,771	0.000	572,538	0.000	0.000	145.912	0.000	145.912	(426.626)	(1,698.940)
2014	0.000	133.011	453.840	0.000	586,852	0.000	0.000	195.534	0.000	195,534	(391.318)	(1,986.570)
2015	0.000	136.337	465.186	0.000	601.523	0.000	0.000	251.652	0.000	251.652	(349.871)	(2,224.687)
2016	0.000	139.745	476.816	0.000	616.561	0.000	0.000	310.528	0.000	310.528	(306.033)	(2,417.540)
2017	0.000	143.239	488.736	0.000	631.975	0.000	0.000	379.624	0.000	379.624	(252.351)	(2,564.784)
2018	0.000	146.820	500.955	0.000	647.774	476.169	0.000	445.627	0.000	921.796	274.021	(2,416.738)
2019	0.000	150.490	513.478	0.000	663.969	489.988	0.000	531.815	0.000	1,021.803	357.835	(2,237.732)
NOMINAL	0.000	1,350.028	4,606.345	0.000	5,956.373	966.157	0.000	2,433.918	0.000	3,400.075	(2,556.299)	•
NPV	0.000	963.224	3,286.555	0.000	4,249.779	502.375	0.000	1,509.672	0.000	2,012.047	(2,237.732)	

Discount Rate:

8.00%

Benefit/Cost Ratio [col (11) / col (6)]:

0.47

PARTICIPANT COSTS AND BENEFITS PROGRAM: Commercial Energy Efficiency Cool Roof

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(600)	(4) UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	TOTAL COSTS	NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)			Benefit to Cost Ratio
2010	50.211	10.500	30.217	0.000	90,928	411.157	0.000	0.000	411.157	(320,229)	(320.229)	91	411	0.22
2011	156,886	10.500	30,217	0.000	197.603	421.436	0.000	0.000	421,436	(223.832)	(527.481)	274	801	0.34
2012	272,003	10.500	30 217	0.000	312,720	431,971	0.000	0.000	431.971	(119.252)	(629.721)	542	1,172	0.46
2013	390,497	10,500	30.217	0.000	431.214	442.771	0.000	0.000	442.771	(11.556)	(638 894)	884	1,523	0.58
2014	513 391	10 500	30.217	0.000	554,108	453.840	0.000	0.000	453.840	100.268	(565,194)	1,292	1,857	0.70
2015	646.649	10.500	30.217	0.000	687,366	465.186	0.000	0.000	465,186	222.180	(413.983)	1,759	2,173	0.81
2016	784.284	10.500	30.217	0.000	825.001	476.816	0.000	0.000	476.816	348.185	(194.567)	2,279	2,474	0.92
2017	931.531	10.500	30.217	0.000	972.248	488.736	0.000	0.000	488 736	483.512	87.558	2,847	2,759	1.03
2018	1,085.996	10.500	30.217	0.000	1,126.713	500 955	0.000	0.000	500.955	625,759	425,635	3,455	3,030	1.14
2019	1,255,801	10.509	30.217	0.000	1,296.518	513.478	0.000	0.000	513.478	783.039	817.350	4,104	3,287	1,25
NOMINAL	6.087.248	105.000	302 170	0.000	6,494.418	4,606 345	0.000	0.000	4,606.345	1,888.073				
NPV	3 808 834	76 092	218.979	0.000	4.103 905	3.286.555	0.000	0.000	3 286 555	817.350				

RATE IMPACT TEST PROGRAM: Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) AVOIDED	(9)	(10)	(11)	(12)	(13) NET ((14) CUMULATIVE
	INCREASED	UTILITY					GEN UNIT	AVOIDED					DISCOUNTED
	SUPPLY	PROGRAM		REVENUE	OTHER	TOTAL	& FUEL	T & D	REVENUE	OTHER	TOTAL	TO ALL	NET
	COSTS	COSTS	INCENTIVES	LOSSES	COSTS	COSTS	BENEFITS	BENEFITS	GAINS	BENEFITS	BENEFITS	CUSTOMERS	BENEFIT
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$ (000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	120.502	30.217	50.211	0.000	200.929	17.665	0.000	0.000	0.000	17.665	(183.264)	(183.264)
2011	0.000	123.514	30.217	156.886	0.000	310.617	55.767	0.000	0.000	0.000	55.767	(254.850)	(419.237)
2012	0.000	126.602	30.217	272.003	0.000	428.822	99.793	0.000	0.000	0.000	99.793	(329.029)	(701.326)
2013	0.000	129.767	30.217	390.497	0.000	550,482	145.912	0.000	0.000	0.000	145.912	(404.569)	(1,022.486)
2014	0.000	133.011	30.217	513.391	0.000	676.620	195.534	0.000	0.000	0.000	195.534	(481.086)	(1,376.099)
2015	0.000	136,337	30.217	646.649	0.000	813.202	251.652	0.000	0.000	0.000	251.652	(561.550)	(1,758.281)
2016	0.000	139.745	30,217	784.284	0.000	954.246	310.528	0.000	0.000	0.000	310.528	(643.718)	(2.163.932)
2017	0.000	143.239	30.217	931.531	0.000	1,104.987	379.624	0.000	0.000	0.000	379.624	(725.362)	(2,587.174)
2018	0.000	146.820	30.217	1,085.996	0.000	1,263.033	921.796	0.000	0.000	0.000	921.796	(341.237)	(2,771.534)
2019	0.000	150.490	30.217	1,255.801	0.000	1,436.508	1,021.803	0.000	0.000	0.000	1,021.803	(414.704)	(2,978.990)
NOMINAL	0.000	1,350.028	302.170	6,087.248	0.000	7,739.446	3,400.075	0.000	0.000	0.000	3,400.075	(4,339.372)	man management of the second o
NPV	0.000	963,224	218.979	3,808.834	0.000	4,991.037	2,012.047	0.000	0.000	0.000	2,012.047	(2,978.990)	

Discount rate: 8.00%

Benefit / Cost Ratio [col (12) / col (7)]:

0.40