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March 16, 2015

Ms. Carlotta Stauffer, Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee FL 32399-0850

Dear Ms. Stauffer:

RE: Gulf Power Company's Demand-Side Management Plan

Attached for official filing is the Petition for Approval of Proposed Demand-Side Management Plan by Gulf Power Company and the 2015 Demand-Side Management Plan pursuant to Rule 25-17.0021(4), F.A.C., and Order No. PSC-14-0696-FOF-EU.

Sincerely,

Robert L. McGee, Jr.

Regulatory and Pricing Manager

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Attachments

cc: Florida Public Service Commission

Lee Eng Tan, Sr Attorney, Office of the General Counsel (5 copies)

Beggs & Lane

Jeffrey A. Stone, Esq.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Approval of Demand-Side	Docket No.:	
Management Plan of Gulf Power Company	Filed: March 16, 2015	
/		

GULF POWER COMPANY'S PETITION FOR APPROVAL OF PROPOSED DEMAND-SIDE MANAGEMENT PLAN

GULF POWER COMPANY ("Gulf Power," "Gulf," or "the Company"), by and through its undersigned counsel and pursuant to section 366.82, Florida Statutes, Rules 25-17.0021 and 28-106.201, Florida Administrative Code ("F.A.C.") and Order No. PSC-14-0696-FOF-EU, petitions the Florida Public Service Commission ("Commission") for approval of its Demand-Side Management ("DSM") Plan filed herewith and for authorization to recover reasonable and prudent expenditures associated with the implementation of such Plan through the Energy Conservation Cost Recovery ("ECCR") clause. As grounds for the relief requested by this petition, the Company respectfully states as follows:

1. Notices and communications with respect to this petition should be addressed to:

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Pensacola, Florida
32591-2950
(850) 432-2451
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2. Gulf Power Company is an investor-owned electric utility with corporate headquarters located at One Energy Place, Pensacola, Florida. The Company owns, maintains and operates an electric generation, transmission and distribution system within the state of

Florida through which it provides retail electric service to customers. Gulf is subject to the Florida Energy Efficiency and Conservation Act ("FEECA") and it recovers certain costs associated with its conservation activities through an ECCR clause that is subject to the Commission's jurisdiction.

- The agency affected by this petition is the Florida Public Service Commission,
 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850.
- 4. This petition is not a petition addressing an agency decision which has already been made. Therefore, Gulf cannot state how it received notice of an agency action, facts that warrant reversal of an agency proposed action, or rules or statutes that require reversal or modification of any agency's proposed action. This is a petition seeking a proposed agency action, and the facts, rules and statutes that warrant such proposed action are set forth herein.
- 5. Gulf knows of no material facts in dispute regarding the relief requested herein.

 The ultimate issue to be decided by the Commission is whether to approve Gulf's proposed DSM Plan and allow recovery of costs associated therewith to be incurred through the ECCR.
- 6. Gulf Power currently has a DSM Plan which was approved by the Commission through Order No. PSC-11-0114-PAA-EG. On December 16, 2014, the Commission issued Order No. PSC-14-0696-FOF-EU (the "Goals Order") approving new DSM goals for Gulf Power. Pursuant to Rule 25-17.0021(4), F.A.C., Gulf Power is required to submit a new DSM Plan designed to meet the goals in accordance with the Goals Order within 90 days of the issuance of the Goals Order.
- 7. Gulf Power, through this petition, formally files a Plan that is designed to achieve the numeric goals (on an annual and cumulative basis) approved by the Commission in the Goals Order. In the Goals Order, the Commission approved DSM goals for Gulf which are based upon a combination of measures which pass both the Rate Impact Measure ("RIM") and Participant's test. In doing so, the Commission appropriately recognized that goals based upon the RIM and

Participant's tests eliminate cross-subsidies and allow for maximum participation by customers while keeping rates equitable. Goals Order at p. 40. The Commission further recognized that these goals were significantly lower than the FEECA utilities' existing DSM Goals and reasoned that this reduction was appropriate in light of various changed market conditions that have decreased the potential for cost-effective demand-side management in Florida. Goals Order at p. 33. Such changed market conditions include decreased utility load forecasts, more stringent building codes and appliance efficiency standards, and decreased avoided costs for both fuel and generation.

8. As a consequence of the reduction in the level of Gulf Power's DSM Goals, Gulf has re-designed aspects of its DSM Plan to meet the goals while still offering tangible and meaningful DSM opportunities for all of its customers. Tables depicting the revisions to Gulf Power's existing DSM Plan are set forth on pages 1-4 and 1-5 of the Plan. One notable addition to Gulf's proposed DSM Plan is an enhanced focus on low income customers. In addition to maintaining its current Community Energy Saver program which provides direct installation of an array of short-payback measures for low income customers at no cost, Gulf Power proposes to expand its energy efficiency educational efforts for low income customers. Specifically, the Company proposes an expansion of current relationships with various low income assistance organizations that provide services within Gulf's service area. Gulf Power will provide these organizations with educational materials that focus on basic energy efficiency awareness, as well as the benefits of low-cost, no-cost, and two-year payback measures and equipment. The educational materials will be made available for distribution to all qualifying individuals and families at the point of need and/or initial contact with these third-party low income service providers. Gulf will also work with these organizations to provide training to agency clients on understanding payback and making sound choices when considering energy-related purchases.

- 9. In addition to expanding its low income offerings, Gulf is also proposing a new pilot program which combines a residential time of use rate (Rate Schedule "RSTOU") with a demand responsive programmable thermostat. This pilot program will provide a sampling of residential customers the opportunity to use customer owned equipment to automatically respond to and take advantage of a variable pricing structure with a critical peak credit component. Much like Gulf's existing Rate Schedule RSVP, the variable pricing structure for Rate Schedule RSTOU will be implemented through Gulf's ECCR factor. This pricing structure will enable customers to save money by shifting energy purchases to a lower priced period while providing peak demand reduction during high and critical periods. A detailed description of the pilot program is set forth on pages 3-4 through 3-7 of the Plan. A copy of Rate Schedule RSTOU is attached to this petition as Exhibit "A." A revised version of Rate Schedule ECC which includes factors for Rate Schedule RSTOU is attached to this petition as Exhibit "B."
- Administrative Code, and FEECA while yielding measurable results. The Plan details the programs Gulf intends to utilize to meet its numeric conservation goals and is made a part hereof by reference. Gulf intends to file program participation standards for administrative approval by Commission Staff within 30 days of the issuance of an order approving its DSM Plan. The Company submits that its proposed DSM Plan should be approved and the Commission should authorize recovery of the reasonable and prudent expenditures associated with the Company's DSM Plan through the ECCR clause, subject to the ongoing review and approval of the Commission in conjunction therewith.
- 11. In order to provide clarity and certainty for Gulf Power's customers, trade allies and field representatives, Gulf Power further proposes to terminate existing DSM programs which are not included in the proposed DSM Plan effective June 30, 2015, or 30 days from Commission approval of Gulf's proposed DSM Plan, whichever occurs later

WHEREFORE, Gulf Power requests that: (i) the Commission approve the Company's proposed DSM Plan and associated Tariff additions and revisions which accompany this petition and authorize Gulf Power to recover reasonable and prudent expenditures associated with the implementation of the Company's proposed DSM Plan through the ECCR clause, subject to the ongoing review and approval of the Commission in conjunction therewith; and (ii) the Commission authorize the Company to terminate existing DSM programs which are not included in the proposed DSM Plan effective June 30, 2015, or 30 days from Commission approval of Gulf's proposed DSM Plan, whichever occurs later.

Respectfully submitted this 16th day of March, 2015.

JEFFREY A. STONE

Florida Bar No. 325953

RUSSELL A. BADDERS

Florida Bar No. 007455

STEVEN R. GRIFFIN Florida Bar No. 0627569

Beggs & Lane

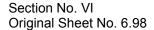
P.O. Box 12950

Pensacola, FL 32591

(850) 432-2451

Attorneys for Gulf Power Company

Exhibit "A"





Rate Schedule RSTOU RESIDENTIAL SERVICE – TIME-OF-USE Limited Availability Experimental Rate

PAGE	EFFECTIVE DATE
1 of 3	

AVAILABILITY:

Available to customers eligible for Rate Schedule RS (Residential Service). Availability is further limited to those customers selected by Gulf Power which are willing to participate in, and which meet the standards of the Company's RSTOU pilot rate study.

Service under this rate schedule shall terminate on December 31, 2017 unless extended by order of the Florida Public Service Commission.

APPLICABILITY:

Applicable as an alternative to Rate Schedule RS for service used for domestic purposes and electric vehicle charging at an individually metered dwelling unit suitable for year-round family occupancy containing full kitchen facilities. Service provided hereunder shall not be shared with or resold to others.

CHARACTER OF SERVICE:

Available for single-phase service from local distribution lines of the Company's system at nominal secondary voltage of 120/240 volts. Service shall be metered through one metering device capable of measuring electrical consumption during the various times each energy-demand charge is in effect.

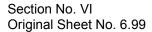
RATES:

Base Charge: 62¢ per day

Energy-Demand Charge:

On-Peak Period 4.585¢ per kWh

Off-Peak Period 4.585¢ per kWh





PAGE	EFFECTIVE DATE
2 of 3	

(Continued from Rate Schedule RSTOU, Sheet No. 6.98)

DETERMINATION OF THE ON-PEAK PERIOD:

The on-peak period for calendar months May through October is defined as being those hours between 1:00 p.m. and 6:00 p.m. Central Daylight Time/Central Standard Time, Monday through Friday.

The on-peak period for calendar months November through April is defined as being those hours between 6:00 a.m. and 10:00 a.m. Central Daylight Time/Central Standard Time, Monday through Friday.

DETERMINATION OF THE OFF-PEAK PERIOD:

All hours not included above and all hours of the observed holidays of New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day are in the off-peak period.

MINIMUM BILL:

In consideration of the readiness of the Company to furnish such service, no monthly bill will be rendered for less than the Base Charge.

CRITICAL PEAK CREDIT:

Customers who install an approved demand response compatible thermostat will be eligible to receive a credit for each critical peak event called by Gulf Power. Participation by the customer during the critical peak event is voluntary, and the customer may override the critical peak event at any time. If the customer does not override the thermostat's automated response, the customer will receive the critical peak credit. The critical peak period shall be determined at the sole discretion of Gulf Power. Each customer will be notified by electronic signal at least one-half hour before the start of the critical peak period. The credit shall not reduce the bill below the Minimum Bill as stated above



Section No. VI Original Sheet No. 6.100

PAGE	EFFECTIVE DATE
3 of 3	

(Continued from Rate Schedule RSTOU, Sheet No. 6.99)

DEPOSIT:

A deposit amounting to twice the estimated average monthly bill may be required before service is connected at designated premises. The deposit may be applied to any final bills against the Customer for service.

TERM OF SERVICE:

Service under this schedule shall be for a period not less than one year.

TAX ADJUSTMENT:

See Sheet No. 6.37

FRANCHISE FEE BILLING:

See Sheet No. 6.37

FUEL CHARGE:

See Sheet No. 6.34

PURCHASED POWER CAPACITY COST:

See Sheet No. 6.35

ENVIRONMENTAL COST:

See Sheet No. 6.36

ENERGY CONSERVATION:

See Sheet No. 6.38

GROSS RECEIPTS TAX ADJUSTMENT:

See Sheet No. 6.37

PAYMENT OF BILLS:

See Sheet No. 6.37

Service under this rate schedule is subject to Rules and Regulations of the Company and the Florida Public Service Commission.

Exhibit "B"



A SOUTHERN COMPANY

Section No. VI
Twenty-SecondThird Revised Sheet No. 6.38
Canceling Twenty-FirstSecond Revised Sheet No. 6.38

RATE SCHEDULE ECC COST RECOVERY CLAUSE ENERGY CONSERVATION

PAGE	EFFECTIVE DATE
1 of 1	January 1, 2015

APPLICABILITY:

Applicable to the monthly rate of each filed retail rate schedule under which a Customer receives service.

DETERMINATION OF ENERGY CONSERVATION COST RECOVERY CLAUSE ADJUSTMENT:

Bills should be decreased or increased by an adjustment calculated in accordance with the formula and procedure specified by the Florida Public Service Commission designed to reflect the recovery of conservation related expenditures by the Company.

Each rate schedule shall be increased or decreased to the nearest .001 cents for each kWh of sales to reflect the recovery of conservation related expenditures by the Company. The Company shall record both projected and actual expenses and revenues associated with the implementation of the Company's Energy Conservation Plan as authorized by the Commission. The total cost recovery adjustment per kWh applicable to energy delivered will include, when applicable, a true-up with interest to prior actual costs which will be determined in accordance with the formula and procedures specified by the Florida Public Service Commission and is subject to Commission approval. Such increase or decrease shall be adjusted for taxes which are based upon revenues. The procedure for the review, approval, recovery and recording of such costs and revenues is set forth in Commission Rule 25-17.015, F.A.C.

Energy Conservation Cost Recovery Clause factors are shown below:

	Energy Conservation Cost
Rate Schedule	Recovery Factor ¢/kWh
RS	0.259
RSVP Tier 1	(3.000)
RSVP Tier 2	(1.621)
RSVP Tier 3	6.270
RSVP Tier 4	60.757
RSTOU On-Peak	<u> 18.500</u>
RSTOU Off-Peak	(3.150)
RSTOU Critical Peak Credit	\$5.00 per Event
GS	0.254
GSD, GSDT, GSTOU	0.249
LP, LPT	0.240
PX, PXT, RTP, SBS	0.235
OS-I/II	0.224
OS-III	0.242

Service under this rate schedule is subject to Rules and Regulations of the Company and the Florida Public Service Commission.



2015 Demand-Side

Management Plan



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Introduction

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

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

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

In response to the Goals Order, Gulf petitions the FPSC for approval of this Demand-Side

Management (DSM) Plan as described herein and for authorization for Gulf to recover through its

Energy Conservation Cost Recovery (ECCR) clause reasonable and prudent expenditures

associated with implementation of these programs. The following report contains Gulf Power's

2015 Demand-Side Management Plan and is organized into four (4) sections:

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

Section 2 contains the actual DSM Plan and is sub-divided into Residential,

Commercial/Industrial, and Renewable Program sections. The Plan includes 11 programs, encompassing multiple measures. Each proposed program contains a description and participation projections. Program standards will be filed upon approval of the Plan.

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

2015 Demand-Side Management Plan



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



Section 1: Executive Summary

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

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



Program Summaries

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

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

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



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

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

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



Residential Programs

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



Commercial Programs

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

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



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

			Residentia	al					
	Savings at the Generator								
	DSM Plan DSM Plan DSM Plan DSM Plan DSM Plan								
	Annual	Cumulative	Annual	Cumulative	Annual	Cumulative			
	GWh	GWh	Winter MW	Winter MW	Summer MW	Summer MW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2015	5.5	5.5	3.6	3.6	4.8	4.8			
2016	5.5	11.0	3.5	7.1	4.7	9.5			
2017	6.1	17.0	3.6	10.8	5.0	14.5			
2018	7.1	24.2	3.8	14.6	5.5	20.0			
2019	8.2	32.4	5.3	19.9	6.0	26.1			
2020	9.3	41.6	6.4	26.2	6.8	32.9			
2021	10.1	51.8	7.4	33.6	7.5	40.4			
2022	10.9	62.6	8.3	41.9	8.2	48.6			
2023	11.5	74.1	9.3	51.2	8.8	57.4			
2024	12.0	86.1	10.3	61.5	9.3	66.7			

	Commercial/Industrial							
	Savings at the Generator							
	DSM Plan DSM Plan DSM Plan DSM Plan DSM Plan DSM Annual Cumulative Annual Cumulative Annual Cumu GWh GWh Winter MW Winter MW Summer MW S							
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2015	2.0	2.0	0.1	0.1	0.9	0.9		
2016	2.1	4.1	0.1	0.2	1.0	1.9		
2017	2.2	6.3	0.2	0.4	1.0	3.0		
2018	2.3	8.6	0.2	0.5	1.1	4.0		
2019	2.3	10.9	0.2	0.7	1.1	5.1		
2020	2.5	13.4	0.2	1.0	1.2	6.3		
2021	2.7	16.2	0.3	1.2	1.3	7.6		
2022	3.0	19.1	0.3	1.5	1.4	9.0		
2023	3.2	22.4	0.3	1.8	1.5	10.5		
2024	3.5	25.8	0.4	2.2	1.6	12.2		



Section 2: 2015 Demand-Side Management Plan

Residential Conservation Programs

Residential Energy Audit and Education

Program Start Date: 2010

Program Description

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

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

Individual Measures

Energy Audit

The Energy Audit program provides customers an assessment of their home energy usage and energy savings opportunities. Customers may choose to have a Gulf Power representative conduct an on-site audit of their home, or they may opt to participate in either a mail-in or online, interactive version of the audit. As part of both the new and existing home audit processes, the customer is provided with specific whole-house recommendations including available incentives and other alternatives to facilitate implementation. In addition, each customer participating in the new home pre-construction audit is also provided with a whole-house heat

2-1



gain and heat loss calculation in accordance with the Air Conditioning Contractors of America's "Manual J" procedures in order to properly size and maximize the efficiency of the HVAC system.

This measure is required under FPSC Rule 25-17.003.

School-based Awareness and Education

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

Gulf will continue to promote the ENERGY STAR Save 10% Challenge, a national call-to-action to improve the energy efficiency of America's commercial and industrial buildings by 10 percent or more. With nearly 200 public schools in Gulf's service area, there is great value in increasing



the awareness of energy conservation among staff and students. Gulf will encourage schools to create Energy Teams at a target group of elementary schools which have implemented Gulf's Energy Education curricula, and will challenge the school staff and students to reduce energy use through low-cost measures and behavioral changes.

Community Awareness and Education

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

Low Income

Gulf Power will continue and expand its longstanding energy efficiency outreach efforts to the low-income customer segment. This outreach will entail an expansion of current partnerships with the various low-income assistance agencies and organizations that already exist within Gulf's service area. Gulf Power will provide educational materials that focus on basic energy efficiency awareness, as well as the benefits of low-cost, no-cost, and two-year payback measures and equipment. Gulf Power will also provide educational resources to increase awareness of solar and other renewable energy opportunities in low-income applications. These educational materials will be made available to all partner organizations and agencies who service the low-income customer segment for distribution to all qualifying individuals and families at the point of



need and/or initial contact with these third-party low-income service providers. Gulf will also work with partner agencies to provide training to agency clients on understanding payback and making sound choices when considering energy-related purchases.

Trade-Ally Education

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

Program Benefits and Cost

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

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



Monitoring and Evaluation

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



Residential Energy Audit

			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0

	At the Generator							
	Per	Per	Per	Total	Total	Total		
	Customer	Customer	Customer	Annual	Annual	Annual		
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2015	0	0	0	0	0	0		
2016	0	0	0	0	0	0		
2017	0	0	0	0	0	0		
2018	0	0	0	0	0	0		
2019	0	0	0	0	0	0		
2020	0	0	0	0	0	0		
2021	0	0	0	0	0	0		
2022	0	0	0	0	0	0		
2023	0	0	0	0	0	0		
2024	0	0	0	0	0	0		

	Customers and Participation Rates								
		Total	Annual	Cumulative	Cumulative				
	Total	Number of	Number of	Penetration	Number of				
	Number of	Eligible	Program	Level	Program				
Year	Customers	Customers	Participants	%	Participants				
2015	392,015	390,238	8,400	2.2%	8,400				
2016	397,625	395,848	8,400	4.2%	16,800				
2017	404,186	402,409	8,400	6.3%	25,200				
2018	410,463	408,686	8,400	8.2%	33,600				
2019	416,121	414,344	8,400	10.1%	42,000				
2020	421,420	419,643	8,400	12.0%	50,400				
2021	425,977	424,200	8,400	13.9%	58,800				
2022	429,938	428,161	8,400	15.7%	67,200				
2023	433,642	431,865	8,400	17.5%	75,600				
2024	436,925	435,148	8,400	19.3%	84,000				

2015 Demand-Side Management Plan

GULF POWER

Community Energy Saver Program

Program Start Date:

2010

Program Description

Since energy expenses are often a higher percentage of their household income, the Community

Energy Saver Program will assist low-income families in addressing energy costs through

increased awareness and installation of efficiency measures. Low-income customers present

unique challenges for adoption of energy efficiency measures because of the greater burden posed

to this customer segment by the initial cost of energy efficient equipment as well as a lack of

awareness of energy efficiency opportunities.

The Community Energy Saver Program will implement a comprehensive package of short

payback electric conservation measures at no cost to the customer. In addition to direct

installation of the conservation measures, the program will educate families on energy efficiency

techniques and behavioral changes to help these customers control their energy use and reduce

their monthly energy bill.

Gulf Power and the program administrator will identify customer neighborhoods or geographical

areas to employ a door-to-door implementation strategy with a coinciding informational and

educational communications campaign. This program also will leverage relationships with local

weatherization agencies and low-income housing providers to gain additional efficiency measure

installations.

Program goals include:

Increasing customer awareness of the amount of energy consumed and energy efficiency

opportunities;

Reducing energy use and costs on monthly utility bills;

• Installing energy efficiency items to improve comfort and reduce energy use; and

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Identifying customer needs that might be met by other programs and leveraging
opportunities with other providers such as the Low Income Home Energy Assistance
Program (LIHEAP) and Weatherization Assistance Program (WAP).

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

Individual Program Measures:

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

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



Program Benefits and Cost Effectiveness

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

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

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

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

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

Monitoring and Evaluation

Gulf Power, or its designated program contractor, will monitor and evaluate program performance and progress toward goal achievement on a continual basis. Participating customer

2015 Demand-Side Management Plan



information will be recorded in the program reporting and tracking database. In addition, all participants will be subject to verification to validate information including, but not limited to:

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

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

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

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

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



Residential Community Energy Saver

			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	769	0.11	0.05	1,922,500	276	121
2016	769	0.11	0.05	1,922,500	276	121
2017	769	0.11	0.05	1,922,500	276	121
2018	769	0.11	0.05	1,922,500	276	121
2019	769	0.11	0.05	1,922,500	276	121
2020	769	0.11	0.05	1,922,500	276	121
2021	769	0.11	0.05	1,922,500	276	121
2022	769	0.11	0.05	1,922,500	276	121
2023	769	0.11	0.05	1,922,500	276	121
2024	769	0.11	0.05	1,922,500	276	121

			At the Generato	r		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	810	0.14	0.06	2,024,393	340	149
2016	810	0.14	0.06	2,024,393	340	149
2017	810	0.14	0.06	2,024,393	340	149
2018	810	0.14	0.06	2,024,393	340	149
2019	810	0.14	0.06	2,024,393	340	149
2020	810	0.14	0.06	2,024,393	340	149
2021	810	0.14	0.06	2,024,393	340	149
2022	810	0.14	0.06	2,024,393	340	149
2023	810	0.14	0.06	2,024,393	340	149
2024	810	0.14	0.06	2,024,393	340	149

	Customers and Participation Rates							
		Total	Annual	Cumulative	Cumulative			
	Total	Number of	Number of	Penetration	Number of			
	Number of	Eligible	Program	Level	Program			
Year	Customers	Customers	Participants	%	Participants			
2015	374,936	130,627	2,500	1.9%	2,500			
2016	377,336	131,467	2,500	3.8%	5,000			
2017	381,544	132,939	2,500	5.6%	7,500			
2018	388,378	135,331	2,500	7.4%	10,000			
2019	396,913	138,319	2,500	9.0%	12,500			
2020	405,062	141,171	2,500	10.6%	15,000			
2021	413,491	144,121	2,500	12.1%	17,500			
2022	421,774	147,020	2,500	13.6%	20,000			
2023	430,056	149,919	2,500	15.0%	22,500			
2024	438,190	152,766	2,500	16.4%	25,000			

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Residential Custom Incentive Program

Program Start Date: 2010

Program Description

to overcome this barrier.

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

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

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2015 Demand-Side Management Plan



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

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

Individual Measures

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

Program Benefits and Cost Effectiveness

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

Monitoring and Evaluation

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

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

Participation Projections

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



		Residen	tial Custom	Incentive		
			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	•••	•••	•••	0	0	0
2016	•••	•••	•••	0	0	0
2017	•••	•••	•••	0	0	0
2018	•••	•••	•••	0	0	0
2019	•••	•••	•••	0	0	0
2020	•••	•••	•••	0	0	0
2021		•••	•••	0	0	0
2022		•••	•••	0	0	0
2023		•••	•••	0	0	0
2024	•••	•••		0	0	0

At the Generator								
	Per	Per	Per	Total	Total	Total		
	Customer	Customer	Customer	Annual	Annual	Annual		
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2015	•••			0	0	0		
2016	•••	•••		0	0	0		
2017	•••			0	0	0		
2018	•••	•••		0	0	0		
2019	•••	•••		0	0	0		
2020	•••	•••		0	0	0		
2021	•••	•••		0	0	0		
2022	•••	•••		0	0	0		
2023	•••	•••		0	0	0		
2024	•••			0	0	0		

	Customers and Participation Rates								
		Total	Annual	Cumulative	Cumulative				
	Total	Number of	Number of	Penetration	Number of				
	Number of	Eligible	Program	Level	Program				
Year	Customers	Customers	Participants	%	Participants				
2015	392,015	390,238		•••	•••				
2016	397,625	395,848	•••	•••	•••				
2017	404,186	402,409	•••	•••	•••				
2018	410,463	408,686		•••	•••				
2019	416,121	414,344		•••	•••				
2020	421,420	419,643		•••	•••				
2021	425,977	424,200		•••	•••				
2022	429,938	428,161		•••	•••				
2023	433,642	431,865	•••	•••	•••				
2024	436,925	435,148		•••	•••				

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HVAC Efficiency Improvement Program

Program Start Date: 2010

Program Description

The Heating, Ventilation and Air Conditioning (HVAC) Efficiency Improvement program is

designed to increase energy efficiency and improve HVAC cooling and heating system

performance for both new and existing single-family, multi-family and permanently anchored

manufactured homes. Since as much as half of the energy used in a home goes to cooling and

heating, customers can save energy and money by installing an efficient system.

Individual Measures

HVAC Maintenance – This measure offers basic re-commissioning at a reduced cost to the

customer. This measure is designed to aid participating contractors in diagnosing the

performance of the HVAC cooling system with the support of an independent computerized

quality control process. These diagnoses include refrigerant level, evaporator airflow, refrigerant

metering performance, and condenser performance. Based on the results, the best course of

action to bring the system to its full efficiency will be attempted. Incentives up to 90 % of the

cost to bring the system to its full efficiency will be realized by the customer through reduced

pricing by participating contractors.

HVAC Quality Installation – This measure offers an incentive to encourage the proper

refrigerant charge and airflow of HVAC systems by commissioning new system installations in

new and existing homes with the support of an independent computerized quality control process.

This process includes an analysis of the refrigerant level, evaporator airflow, refrigerant metering

performance, and condenser performance to insure that the system is operating at its designed

efficiency level.



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

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

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

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

Program Benefits and Cost Effectiveness

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

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

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



Monitoring and Evaluation

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

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

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

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

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

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

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



			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	607	0.07	0.24	485,600	54	189
2016	607	0.07	0.24	728,400	82	283
2017	607	0.07	0.24	1,214,000	136	472
2018	607	0.07	0.24	1,942,400	218	755
2019	607	0.07	0.24	2,063,800	231	802
2020	607	0.07	0.24	2,306,600	258	897
2021	607	0.07	0.24	2,549,400	286	991
2022	607	0.07	0.24	2,792,200	313	1,086
2023	607	0.07	0.24	2,943,950	330	1,145
2024	607	0.07	0.24	3,035,000	340	1,180

			At the Generate	or		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	639	0.08	0.29	511,337	67	233
2016	639	0.08	0.29	767,005	101	349
2017	639	0.08	0.29	1,278,342	168	581
2018	639	0.08	0.29	2,045,347	268	930
2019	639	0.08	0.29	2,173,181	285	988
2020	639	0.08	0.29	2,428,850	318	1,105
2021	639	0.08	0.29	2,684,518	352	1,221
2022	639	0.08	0.29	2,940,187	385	1,337
2023	639	0.08	0.29	3,099,979	406	1,410
2024	639	0.08	0.29	3,195,855	419	1,453

		Custome	rs and Participa	tion Rates	·
		Total	Annual	Cumulative	Cumulative
	Total	Number of	Number of	Penetration	Number of
	Number of	Eligible	Program	Level	Program
Year	Customers	Customers	Participants	%	Participants
2015	392,015	390,238	800	0.2%	800
2016	397,625	395,848	1,200	0.5%	2,000
2017	404,186	402,409	2,000	1.0%	4,000
2018	410,463	408,686	3,200	1.8%	7,200
2019	416,121	414,344	3,400	2.6%	10,600
2020	421,420	419,643	3,800	3.4%	14,400
2021	425,977	424,200	4,200	4.4%	18,600
2022	429,938	428,161	4,600	5.4%	23,200
2023	433,642	431,865	4,850	6.5%	28,050
2024	436,925	435,148	5,000	7.6%	33,050

451

451

451

451

451

451

2019

2020

2021

2022

2023

2024



613

788

875

875

875

875

			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	451	0.08	0.18	902,000	166	350
2016	451	0.08	0.18	902,000	166	350
2017	451	0.08	0.18	902,000	166	350
2018	451	0.08	0.18	1,127,500	208	438

0.18

0.18

0.18

0.18

0.18

0.18

1,578,500

2,029,500

2,255,000

2,255,000

2,255,000

2,255,000

291

374

415

415

415

415

0.08

0.08

0.08

0.08

0.08

0.08

Residential Quality Installation

			At the Generate	or		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	475	0.10	0.22	949,806	204	431
2016	475	0.10	0.22	949,806	204	431
2017	475	0.10	0.22	949,806	204	431
2018	475	0.10	0.22	1,187,258	256	539
2019	475	0.10	0.22	1,662,161	358	754
2020	475	0.10	0.22	2,137,064	460	970
2021	475	0.10	0.22	2,374,515	511	1,078
2022	475	0.10	0.22	2,374,515	511	1,078
2023	475	0.10	0.22	2,374,515	511	1,078
2024	475	0.10	0.22	2,374,515	511	1,078

	Customers and Participation Rates									
		Total	Annual	Cumulative	Cumulative					
	Total	Number of	Number of	Penetration	Number of					
	Number of	Eligible	Program	Level	Program					
Year	Customers	Customers	Participants	%	Participants					
2015	392,015	390,238	2,000	0.5%	2,000					
2016	397,625	395,848	2,000	1.0%	4,000					
2017	404,186	402,409	2,000	1.5%	6,000					
2018	410,463	408,686	2,500	2.1%	8,500					
2019	416,121	414,344	3,500	2.9%	12,000					
2020	421,420	419,643	4,500	3.9%	16,500					
2021	425,977	424,200	5,000	5.1%	21,500					
2022	429,938	428,161	5,000	6.2%	26,500					
2023	433,642	431,865	5,000	7.3%	31,500					
2024	436,925	435,148	5,000	8.4%	36,500					



		Resi	dential Duct I	Repair		
				_		
			1			
			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	303	1.11	0.15	151,500	555	74
2016	303	1.11	0.15	151,500	555	74
2017	303	1.11	0.15	151,500	555	74
2018	303	1.11	0.15	151,500	555	74
2019	303	1.11	0.15	454,500	1,665	222
2020	303	1.11	0.15	606,000	2,220	296
2021	303	1.11	0.15	757,500	2,775	370
2022	303	1.11	0.15	909,000	3,330	444
2023	303	1.11	0.15	1,060,500	3,885	518
2024	303	1.11	0.15	1,212,000	4,440	592
			At the Generator	r		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction

	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	319	1.37	0.18	159,530	684	91
2016	319	1.37	0.18	159,530	684	91
2017	319	1.37	0.18	159,530	684	91
2018	319	1.37	0.18	159,530	684	91
2019	319	1.37	0.18	478,589	2,051	273
2020	319	1.37	0.18	638,118	2,734	365
2021	319	1.37	0.18	797,648	3,418	456
2022	319	1.37	0.18	957,177	4,101	547
2023	319	1.37	0.18	1,116,707	4,785	638
2024	319	1.37	0.18	1,276,236	5,469	729

		Custome	rs and Participa	tion Rates	
		Total	Annual	Cumulative	Cumulative
	Total	Number of	Number of	Penetration	Number of
	Number of	Eligible	Program	Level	Program
Year	Customers	Customers	Participants	%	Participants
2015	392,015	390,238	500	0.1%	500
2016	397,625	395,848	500	0.3%	1,000
2017	404,186	402,409	500	0.4%	1,500
2018	410,463	408,686	500	0.5%	2,000
2019	416,121	414,344	1,500	0.8%	3,500
2020	421,420	419,643	2,000	1.3%	5,500
2021	425,977	424,200	2,500	1.9%	8,000
2022	429,938	428,161	3,000	2.6%	11,000
2023	433,642	431,865	3,500	3.4%	14,500
2024	436,925	435,148	4,000	4.3%	18,500

A SOUTHERN COMPANY

Residential Building Efficiency Program

Program Start Date: 2015

Program Description

The Residential Building Efficiency Program is designed as an umbrella efficiency program for

existing and new residential customers to encourage the installation of eligible equipment and

materials as a means of reducing energy and demand. The goal of the program is to increase

awareness and customer demand for energy saving measures; increase availability and market

penetration; and contribute toward long-term energy savings and peak demand reductions.

Individual Measures

High Performance Window

The High Performance Window measure will provide residential customers with incentives to

install high efficiency windows in existing or new residential applications. The objective of the

measure is to reduce solar heat gain into a home which, in turn, leads to reduced HVAC loads and

operating costs. In new home construction, reduced HVAC loads may also result in the

installation of lower capacity HVAC equipment with the resulting potential for additional energy,

demand and cost benefits.

This program includes high efficiency replacement windows for use in existing homes

when the customer is considering removing old, inefficient, or otherwise defective

windows.

This program includes the installation of new high efficiency windows in new residential

construction.

As a means of increasing program adoption, an incentive of up to \$.50 per square foot of total

window assembly area will be offered directly to the customer. This incentive will be limited to

no more than 50% of the estimated incremental cost of installing higher efficiency windows.



Reflective Roof

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

ENERGY STAR Window A/C

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

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

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



Program Benefits and Cost Effectiveness

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

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

Maximum incentive cost per participant:

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

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

Monitoring and Evaluation

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



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

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

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

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

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

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



Residential High Performan	ce Window
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At the Meter											
	Per	Per	Per	Total	Total	Total					
	Customer	Customer	Customer	Annual	Annual	Annual					
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW					
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction					
2015	391	0.24	0.21	97,750	61	52					
2016	391	0.24	0.21	136,850	85	73					
2017	391	0.24	0.21	175,950	109	94					
2018	391	0.24	0.21	195,500	121	104					
2019	391	0.24	0.21	234,600	145	125					
2020	391	0.24	0.21	273,700	169	146					
2021	391	0.24	0.21	312,800	194	166					
2022	391	0.24	0.21	391,000	242	208					
2023	391	0.24	0.21	469,200	290	250					
2024	391	0.24	0.21	547,400	339	291					

			At the Generate)r		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	412	0.30	0.26	102,931	75	64
2016	412	0.30	0.26	144,103	104	90
2017	412	0.30	0.26	185,275	134	115
2018	412	0.30	0.26	205,862	149	128
2019	412	0.30	0.26	247,034	179	154
2020	412	0.30	0.26	288,206	209	179
2021	412	0.30	0.26	329,378	238	205
2022	412	0.30	0.26	411,723	298	256
2023	412	0.30	0.26	494,068	358	307
2024	412	0.30	0.26	576,412	417	359
				-		

	Customers and Participation Rates									
		Total	Annual	Annual Cumulative Cumul						
	Total	Number of	Number of	Penetration	Number of					
	Number of	Eligible	Program	Level	Program					
Year	Customers	Customers	Participants	%	Participants					
2015	392,015	390,238	250	0.1%	250					
2016	397,625	395,848	350	0.2%	600					
2017	404,186	402,409	450	0.3%	1,050					
2018	410,463	408,686	500	0.4%	1,550					
2019	416,121	414,344	600	0.5%	2,150					
2020	421,420	419,643	700	0.7%	2,850					
2021	425,977	424,200	800	0.9%	3,650					
2022	429,938	428,161	1,000	1.1%	4,650					
2023	433,642	431,865	1,200	1.4%	5,850					
2024	436,925	435,148	1,400	1.7%	7,250					



		Reside	ntial Reflecti	ve Roof		
			At the Meter			
	Per Customer	Per Customer	Per Customer	Total Annual	Total Annual	Total Annual
Year	kWh Reduction	Winter kW Reduction	Summer kW Reduction	kWh Reduction	Winter kW Reduction	Summer kV Reduction
2015	1.029	()	0.41	102,900	0	41
2016	1,029	0	0.41	154,350	0	62
2017	1,029	0	0.41	205,800	0	82
2018	1,029	0	0.41	257,250	0	103
2019	1,029	0	0.41	308,700	0	123
2020	1,029	0	0.41	360,150	0	144
2021	1,029	0	0.41	411,600	0	164
2022	1,029	0	0.41	514,500	0	205
			0.41	C17 400	0	246
2023	1,029	0	0.41	617,400	U	240

	Per	Per			At the Generator											
		1 61	Per	Total	Total	Total										
	Customer	Customer	Customer	Annual	Annual	Annual										
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW										
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction										
2015	1,084	0	0.50	108,354	0	50										
2016	1,084	0	0.50	162,531	0	76										
2017	1,084	0	0.50	216,707	0	101										
2018	1,084	0	0.50	270,884	0	126										
2019	1,084	0 0.50 325,061	325,061	0	151											
2020	1,084	0	0.50	379,238	0	177										
2021	1,084	0	0.50	433,415	0	202										
2022	1,084	0	0.50	541,769	0	252										
2023	1,084	0	0.50	650,122	0	303										
2024	1,084	0	0.50	758,476	0	353										

		Custome	rs and Participa	tion Rates	
		Total	Annual	Cumulative	Cumulative
	Total	Number of	Number of	Penetration	Number of
	Number of	Eligible	Program	Level	Program
Year	Customers	Customers	Participants	%	Participants
2015	392,015	390,238	100	0.0%	100
2016	397,625	395,848	150	0.1%	250
2017	404,186	402,409	200	0.1%	450
2018	410,463	408,686	250	0.2%	700
2019	416,121	414,344	300	0.2%	1,000
2020	421,420	419,643	350	0.3%	1,350
2021	425,977	424,200	400	0.4%	1,750
2022	429,938	428,161	500	0.5%	2,250
2023	433,642	431,865	600	0.7%	2,850
2024	436,925	435,148	700	0.8%	3,550



Residential Energy St	tar Window	A/C
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			At the Meter			
	Per	Per Per Per Total Total				
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	82	0	0.04	16,400	0	9
2016	82	0	0.04	16,400	0	9
2017	82	0	0.04	16,400	0	9
2018	82	0	0.04	16,400	0	9
2019	82	0	0.04	16,400	0	9
2020	82	0	0.04	16,400	0	9
2021	82	0	0.04	16,400	0	9
2022	82	0	0.04	16,400	0	9
2023	82	0	0.04	16,400	0	9
2024	82	0	0.04	16,400	0	9

	At the Generator										
	Per	Per	Per	Total	Total	Total					
	Customer	Customer	Customer	Annual	Annual	Annual					
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW					
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction					
2015	86	0	0.05	17,269	0	11					
2016	86	0	0.05	17,269	0	11					
2017	86	0	0.05	17,269	0	11					
2018	86	0	0.05	17,269	0	11					
2019	86	0	0.05	17,269	0	11					
2020	86	0	0.05	17,269	0	11					
2021	86	0	0.05	17,269	0	11					
2022	86	0	0.05	17,269	0	11					
2023	86	0	0.05	17,269	0	11					
2024	86	0	0.05	17,269	0	11					

	Customers and Participation Rates									
		Total	Annual	Cumulative	Cumulative					
	Total	Number of	Number of	Penetration	Number of					
	Number of	Eligible	Program	Level	Program					
Year	Customers	Customers	Participants	%	Participants					
2015	392,015	390,238	200	0.1%	200					
2016	397,625	395,848	200	0.1%	400					
2017	404,186	402,409	200	0.1%	600					
2018	410,463	408,686	200	0.2%	800					
2019	416,121	414,344	200	0.2%	1,000					
2020	421,420	419,643	200	0.3%	1,200					
2021	425,977	424,200	200	0.3%	1,400					
2022	429,938	428,161	200	0.4%	1,600					
2023	433,642	431,865	200	0.4%	1,800					
2024	436,925	435,148	200	0.5%	2,000					

GULF POWER

Energy Select

Program Start Date:

1995

Program Description

The Energy Select Program is designed to increase the efficiency of energy consumption on Gulf

Power's system. The program is an interactive energy management system that allows residential

customers to program their central heating and cooling system, electric water heater and pool

pump, if applicable, to automatically respond to varying prices of electricity depending upon the

time of day, day of week and season. These prices are in relation to the Company's cost of

producing or purchasing energy. Energy Select consists of four elements -- a price-responsive

programmable thermostat and timers for a water heater and pool pump, a rate featuring four

prices for electricity, a communications gateway and an online programming portal. These

elements work together to enable customers to choose their own level of comfort and savings.

With this program, customers can save money by programming the largest portion of their energy

purchases to occur in the lower price periods, while providing peak demand reduction benefits

during the high and critical peak price periods.

Individual Program Measures:

The primary features of this program offering are the following:

Equipment

• Programmable Communicating Thermostat (PCT)

• Load Control Relays (Water Heater, Pool Pump)

Communication Gateway

These premise-mounted devices allow the customer to program and control the

temperature set points and equipment run times for the major energy using appliances in



their home. This automated technology provides automatic response to pricing signals depending on the customer's unique energy purchasing desires. These systems offer conservation of energy, as well as the ability to take advantage of lower cost periods when demand for electricity is not high.

Rate

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

Communication

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

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

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

Program Benefits and Cost Effectiveness

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



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

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

Monitoring and Evaluation

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

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

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

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



Customer KWh Winter kW Summer kW kWh Winter kW kWh Winter kW Summer kW kWh Winter kW Summer kW kWh							
Customer kWh Customer Winter kW Customer kW Summer kW Annual kWh Annual Winter kW Summer kW Summer kWh KWh Winter kW Summer kWh Summer kWh <t< th=""><th></th><th></th><th></th><th>At the Meter</th><th></th><th></th><th></th></t<>				At the Meter			
Year Reduction Red		Per	Per	Per	Total	Total	Total
Year Reduction Reduction Reduction Reduction Reduction 2015 735 1.07 1.80 1,176,000 1,712 2,88 2016 735 1.07 1.80 1,176,000 1,712 2,88 2017 735 1.07 1.80 1,176,000 1,712 2,88 2018 735 1.07 1.80 1,176,000 1,712 2,88 2019 735 1.07 1.80 1,176,000 1,712 2,88 2020 735 1.07 1.80 1,286,250 1,873 3,15 2021 735 1.07 1.80 1,396,500 2,033 3,42 2022 735 1.07 1.80 1,506,750 2,194 3,69 2023 735 1.07 1.80 1,617,000 2,354 3,96 2024 735 1.07 1.80 1,727,250 2,515 4,23 2024 735 1.07 1.		Customer	Customer	Customer	Annual	Annual	Annual
2015		kWh	Winter kW	Summer kW	kWh	Winter kW	Summer k
2016	Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2017	2015	735	1.07	1.80	1,176,000	1,712	2,880
2018 735 1.07 1.80 1,176,000 1,712 2,88 2019 735 1.07 1.80 1,176,000 1,712 2,88 2020 735 1.07 1.80 1,286,250 1,873 3,15 2021 735 1.07 1.80 1,396,500 2,033 3,42 2022 735 1.07 1.80 1,506,750 2,194 3,69 2023 735 1.07 1.80 1,617,000 2,354 3,96 2024 735 1.07 1.80 1,727,250 2,515 4,23 At the Generator Ever Per Per Per Total Total Annual Annual kWh Winter kW Summer kW kWh Winter kW Summer kW Winter kW Summer kW Year Reduction	2016	735	1.07	1.80	1,176,000	1,712	2,880
2019 735 1.07 1.80 1,176,000 1,712 2,88 2020 735 1.07 1.80 1,286,250 1,873 3,15 2021 735 1.07 1.80 1,396,500 2,033 3,42 2022 735 1.07 1.80 1,506,750 2,194 3,69 2023 735 1.07 1.80 1,617,000 2,354 3,96 2024 735 1.07 1.80 1,727,250 2,515 4,23 At the Generator Customer Per Per Total Total Annual Meduction Reduction Reduction </td <td>2017</td> <td>735</td> <td>1.07</td> <td>1.80</td> <td>1,176,000</td> <td>1,712</td> <td>2,880</td>	2017	735	1.07	1.80	1,176,000	1,712	2,880
2020 735 1.07 1.80 1,286,250 1,873 3,15 2021 735 1.07 1.80 1,396,500 2,033 3,42 2022 735 1.07 1.80 1,506,750 2,194 3,69 2023 735 1.07 1.80 1,617,000 2,354 3,96 2024 735 1.07 1.80 1,727,250 2,515 4,23 At the Generator Customer Customer Annual Annual </td <td>2018</td> <td>735</td> <td>1.07</td> <td>1.80</td> <td>1,176,000</td> <td>1,712</td> <td>2,880</td>	2018	735	1.07	1.80	1,176,000	1,712	2,880
Total Total Total Total Total Total Total Total Annual	2019	735	1.07	1.80	1,176,000	1,712	2,880
Total Total Total Total Total Total Annual Annual	2020	735	1.07	1.80	1,286,250	1,873	3,150
Total Total Total Total Annual Annua	2021	735	1.07	1.80	1,396,500	2,033	3,420
At the Generator At the Generator Per Per Per Total Total Annual Annual </td <td>2022</td> <td>735</td> <td>1.07</td> <td>1.80</td> <td>1,506,750</td> <td>2,194</td> <td>3,690</td>	2022	735	1.07	1.80	1,506,750	2,194	3,690
At the Generator Per Per Per Total Total Annual Annual Customer Customer Customer Reduction	2023	735	1.07	1.80	1,617,000	2,354	3,960
Per Per Per Total Total Total Customer Customer Customer Annual Annual Annual kWh Winter kW Summer kW kWh Winter kW Summer Year Reduction Reduction Reduction Reduction Reduction 2015 774 1.32 2.22 1,238,328 2,109 3,54 2016 774 1.32 2.22 1,238,328 2,109 3,54 2017 774 1.32 2.22 1,238,328 2,109 3,54 2018 774 1.32 2.22 1,238,328 2,109 3,54 2019 774 1.32 2.22 1,238,328 2,109 3,54 2019 774 1.32 2.22 1,238,328 2,109 3,54 2019 774 1.32 2.22 1,238,328 2,109 3,54 2020 774 1.32 2.22 1,354,421 2	2024	735	1.07	1.80	1,727,250	2,515	4,230
Customer Customer Customer Annual Anual Anual Anual Annual Annual Annual Annu							
Year Reduction Reduction Reduction Reduction Reduction 2015 774 1.32 2.22 1,238,328 2,109 3,54 2016 774 1.32 2.22 1,238,328 2,109 3,54 2017 774 1.32 2.22 1,238,328 2,109 3,54 2018 774 1.32 2.22 1,238,328 2,109 3,54 2019 774 1.32 2.22 1,238,328 2,109 3,54 2020 774 1.32 2.22 1,238,328 2,109 3,54 2020 774 1.32 2.22 1,354,421 2,306 3,88 2021 774 1.32 2.22 1,470,515 2,504 4,21 2022 774 1.32 2.22 1,586,608 2,702 4,54 2023 774 1.32 2.22 1,702,701 2,899 4,87		Per	Per	Per	Total	Total	Total
Year Reduction Reduction Reduction Reduction Reduction 2015 774 1.32 2.22 1,238,328 2,109 3,54 2016 774 1.32 2.22 1,238,328 2,109 3,54 2017 774 1.32 2.22 1,238,328 2,109 3,54 2018 774 1.32 2.22 1,238,328 2,109 3,54 2019 774 1.32 2.22 1,238,328 2,109 3,54 2020 774 1.32 2.22 1,238,328 2,109 3,54 2020 774 1.32 2.22 1,354,421 2,306 3,88 2021 774 1.32 2.22 1,470,515 2,504 4,21 2022 774 1.32 2.22 1,586,608 2,702 4,54 2023 774 1.32 2.22 1,702,701 2,899 4,87							Total Annual
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2021 774 1.32 2.22 1,470,515 2,504 4,21 2022 774 1.32 2.22 1,586,608 2,702 4,54 2023 774 1.32 2.22 1,702,701 2,899 4,87	2015 2016 2017	Customer kWh Reduction 774 774	Customer Winter kW Reduction 1.32 1.32 1.32	Customer Summer kW Reduction 2.22 2.22 2.22	Annual kWh Reduction 1,238,328 1,238,328 1,238,328	Annual Winter kW Reduction 2,109 2,109 2,109	Annual Summer k' Reduction 3,547 3,547
2022 774 1.32 2.22 1,586,608 2,702 4,54 2023 774 1.32 2.22 1,702,701 2,899 4,87	2015 2016 2017 2018	Customer k Wh Reduction 774 774 774 774	Customer Winter kW Reduction 1.32 1.32 1.32 1.32 1.32	Customer Summer kW Reduction 2.22 2.22 2.22 2.22 2.22	Annual kWh Reduction 1,238,328 1,238,328 1,238,328 1,238,328	Annual Winter kW Reduction 2,109 2,109 2,109 2,109 2,109	Annual Summer k' Reduction 3,547 3,547 3,547
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	2015 2016 2017 2018 2019 2020 2021 2022	Customer k Wh Reduction 774 774 774 774 774 774 774 774 774	Customer Winter kW Reduction 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.3	Customer Summer kW Reduction 2.22 2.22 2.22 2.22 2.22 2.22 2.22 2.	Annual kWh Reduction 1,238,328 1,238,328 1,238,328 1,238,328 1,238,328 1,354,421 1,470,515 1,586,608	Annual Winter kW Reduction 2,109 2,109 2,109 2,109 2,109 2,109 2,306 2,504 2,702	Annual Summer k Reduction 3,547 3,547 3,547 3,547 3,547 3,880 4,212
	2015 2016 2017 2018 2019 2020 2021 2022 2023	Customer k Wh Reduction 774 774 774 774 774 774 774 774 774 77	Customer Winter kW Reduction 1.32 1.32 1.32 1.32 1.32 1.32 1.32 1.3	Customer Summer kW Reduction 2.22 2.22 2.22 2.22 2.22 2.22 2.22 2.	Annual kWh Reduction 1,238,328 1,238,328 1,238,328 1,238,328 1,238,328 1,354,421 1,470,515 1,586,608 1,702,701	Annual Winter kW Reduction 2,109 2,109 2,109 2,109 2,109 2,109 2,306 2,504 2,702 2,899	Annual Summer k Reductio 3,547 3,547 3,547 3,547 3,547 3,880 4,212 4,545

	Customers and Participation Rates							
		Total	Annual	Cumulative	Cumulative			
	Total	Number of	Number of	Penetration	Number of			
	Number of	Eligible	Program	Level	Program			
Year	Customers	Customers	Participants	%	Participants			
2015	392,015	390,238	1,600	0.4%	1,600			
2016	397,625	395,848	1,600	0.8%	3,200			
2017	404,186	402,409	1,600	1.2%	4,800			
2018	410,463	408,686	1,600	1.6%	6,400			
2019	416,121	414,344	1,600	1.9%	8,000			
2020	421,420	419,643	1,750	2.3%	9,750			
2021	425,977	424,200	1,900	2.7%	11,650			
2022	429,938	428,161	2,050	3.2%	13,700			
2023	433,642	431,865	2,200	3.7%	15,900			
2024	436,925	435,148	2,350	4.2%	18,250			



Commercial/Industrial Conservation Programs

Commercial/Industrial Audit

Program Start Date: 1981

Program Description

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

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

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

Energy Analysis Audit

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

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



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

Technical Assistance Audit

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



Commercial/Industrial Energy Ar	alvsis Program
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			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0

			At the Generato	r		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0

		Custome	rs and Participa	tion Rates	
		Total	Annual	Cumulative	Cumulative
	Total	Number of	Number of	Penetration	Number of
	Number of	Eligible	Program	Level	Program
Year	Customers	Customers	Participants	%	Participants
2015	55,525	47,673	500	1.0%	500
2016	55,992	48,140	500	2.1%	1,000
2017	56,539	48,687	500	3.1%	1,500
2018	57,062	49,210	500	4.1%	2,000
2019	57,534	49,682	500	5.0%	2,500
2020	57,975	50,123	500	6.0%	3,000
2021	58,355	50,503	500	6.9%	3,500
2022	58,683	50,831	500	7.9%	4,000
2023	58,992	51,140	500	8.8%	4,500
2024	59,264	51,412	500	9.7%	5,000

A SOUTHERN COMPANY

Commercial HVAC Retrocommissioning Program

Program Start Date: 2010

Program Description

The Commercial HVAC Retrocommissioning Program offers basic retrocommissioning at a

reduced cost for qualifying installations of existing commercial and industrial customers. It is

designed to diagnose the performance of the HVAC cooling unit(s) operating in commercial

buildings with the support of an independent computerized quality control process. These

diagnoses include refrigerant level, evaporator airflow, refrigerant metering performance, and

condenser performance. Based on the results, the best course of action to bring the cooling

system to its full efficiency will be attempted. Incentives up to 70% of the cost to bring the

system to its full efficiency will be realized by the customer through reduced pricing by

participating contractors. The program includes air cooled and water cooled equipment –

identified as A/C, heat pump, direct expansion (DX) or geothermal cooling and heating.

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

Standards.

Program Benefits and Cost Effectiveness

The following kW demand and kWh energy saving evaluations were developed using a variety of

sources including: measure savings data from the Itron study; computer-based engineering

modeling software; and actual program performance data gathered by Gulf Power or its energy

efficiency program contractors. Evaluation results are shown for RIM, TRC, and PT, and are

based on the incentive levels identified below.

Maximum incentive cost per participant: \$100.



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

Monitoring and Evaluation

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

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

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

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

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

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



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



Commercial HVAC Retrocommissioning

			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	965	0.00	0.30	241,250	0	75
2016	965	0.00	0.30	241,250	0	75
2017	965	0.00	0.30	241,250	0	75
2018	965	0.00	0.30	241,250	0	75
2019	965	0.00	0.30	241,250	0	75
2020	965	0.00	0.30	241,250	0	75
2021	965	0.00	0.30	265,375	0	83
2022	965	0.00	0.30	313,625	0	98
2023	965	0.00	0.30	337,750	0	105
2024	965	0.00	0.30	361,875	0	113

			At the Generato	r		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	1,016	0.00	0.37	254,036	0	92
2016	1,016	0.00	0.37	254,036	0	92
2017	1,016	0.00	0.37	254,036	0	92
2018	1,016	0.00	0.37	254,036	0	92
2019	1,016	0.00	0.37	254,036	0	92
2020	1,016	0.00	0.37	254,036	0	92
2021	1,016	0.00	0.37	279,440	0	102
2022	1,016	0.00	0.37	330,247	0	120
2023	1,016	0.00	0.37	355,651	0	129
2024	1,016	0.00	0.37	381,054	0	139

		Custome	rs and Participa	tion Rates	
		Total	Annual	Cumulative	Cumulative
	Total	Number of	Number of	Penetration	Number of
	Number of	Eligible	Program	Level	Program
Year	Customers	Customers	Participants	%	Participants
2015	55,525	47,673	250	0.5%	250
2016	55,992	48,140	250	1.0%	500
2017	56,539	48,687	250	1.5%	750
2018	57,062	49,210	250	2.0%	1,000
2019	57,534	49,682	250	2.5%	1,250
2020	57,975	50,123	250	3.0%	1,500
2021	58,355	50,503	275	3.5%	1,775
2022	58,683	50,831	325	4.1%	2,100
2023	58,992	51,140	350	4.8%	2,450
2024	59,264	51,412	375	5.5%	2,825

A SOUTHERN COMPANY

Commercial Building Efficiency Program

Program Start Date: 2010

Program Description

The Commercial Building Efficiency Program is designed as an umbrella efficiency program for

existing commercial and industrial customers to encourage the installation of eligible high-

efficiency equipment as a means of reducing energy and demand. The goal of the program is to

increase awareness and customer demand for high-efficiency, energy-saving equipment; increase

availability and market penetration of energy efficient equipment; and contribute toward long-

term energy savings and peak demand reductions.

The most common critical areas in commercial buildings that affect summer peak demand are the

thermal efficiency of the building and HVAC equipment efficiency. The Commercial Building

Efficiency Program provides requirements for these areas that exceed the Florida Model Energy

code standards, and if adhered to, will help reduce energy consumption and peak kW demand.

To increase customer participation in this program, incentives will be provided to offset the

incremental cost of high efficiency equipment. The program includes equipment with easily

calculated savings and provides a straightforward and simple method for customers to participate.

Individual Measures

Geothermal Heat Pump

The Geothermal Heat Pump measure is designed to encourage commercial and industrial (C/I)

customers to invest in more efficient HVAC equipment. Installing high efficiency HVAC

systems reduces operating costs. The program includes water cooled equipment, identified as

geothermal heat pumps, that provide cooling plus heating. Incentives will be provided for up to

33% of the incremental cost of installing geothermal heat pump systems.



Ceiling/Roof Insulation

The Ceiling/Roof Insulation measure offers an incentive designed to encourage C/I customers to increase existing ceiling or roof insulation above conditioned spaces in respective facilities.

Increased insulation reduces heat loss and heat gain from both conductive and convective means, and as a result, lowers sizing requirements and operating costs of HVAC equipment. Incentives will be provided for up to 50% of the incremental cost of installing higher efficiency insulation.

Reflective Roof

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

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

Program Benefits and Cost Effectiveness

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



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

Monitoring and Evaluation

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

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

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

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

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

- Number of completed qualifying installations;
- Total amount of incentive payments made;
- Number of disqualified installations;



 Number, make and model of the most commonly installed qualifying equipment and/or material for each measure.

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



C	ommercial	Geother	rmal H	eat Pm	mn
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At the Meter								
	Per	Per	Per	Total	Total	Total		
	Customer	Customer	Customer	Annual	Annual	Annual		
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2015	685	0.27	0.29	82,200	32	35		
2016	685	0.27	0.29	85,625	34	36		
2017	685	0.27	0.29	89,050	35	38		
2018	685	0.27	0.29	95,900	38	41		
2019	685	0.27	0.29	102,750	41	44		
2020	685	0.27	0.29	137,000	54	58		
2021	685	0.27	0.29	143,850	57	61		
2022	685	0.27	0.29	154,125	61	65		
2023	685	0.27	0.29	157,550	62	67		
2024	685	0.27	0.29	160,975	63	68		

	At the Generator								
	Per	Per	Per	Total	Total	Total			
	Customer	Customer	Customer	Annual	Annual	Annual			
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2015	721	0.33	0.36	86,557	40	43			
2016	721	0.33	0.36	90,163	42	45			
2017	721	0.33	0.36	93,770	43	46			
2018	721	0.33	0.36	100,983	47	50			
2019	721	0.33	0.36	108,196	50	54			
2020	721	0.33	0.36	144,261	67	71			
2021	721	0.33	0.36	151,474	70	75			
2022	721	0.33	0.36	162,294	75	80			
2023	721	0.33	0.36	165,900	76	82			
2024	721	0.33	0.36	169,507	78	84			

	Customers and Participation Rates								
		Total	Annual	Cumulative	Cumulative				
	Total	Number of	Number of	Penetration	Number of				
	Number of	Eligible	Program	Level	Program				
Year	Customers	Customers	Participants*	%	Participants*				
2015	55,525	47,673	120	N/A	120				
2016	55,992	48,140	125	N/A	245				
2017	56,539	48,687	130	N/A	375				
2018	57,062	49,210	140	N/A	515				
2019	57,534	49,682	150	N/A	665				
2020	57,975	50,123	200	N/A	865				
2021	58,355	50,503	210	N/A	1,075				
2022	58,683	50,831	225	N/A	1,300				
2023	58,992	51,140	230	N/A	1,530				
2024	59,264	51,412	235	N/A	1,765				
*Tons of Ge	othermal HVAC ins	stalled							



		Commercia	al Ceiling/Ro	of Insulation	ı	
			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer kWh	Customer Winter kW	Customer Summer kW	Annual kWh	Annual Winter kW	Annual Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	0.748	0.00012	0.00046	168,300	27	104
2016	0.748	0.00012	0.00046	187,000	30	115
2017	0.748	0.00012	0.00046	205,700	33	127
2018	0.748	0.00012	0.00046	224,400	36	138
2019	0.748	0.00012	0.00046	299,200	48	184
2020	0.748	0.00012	0.00046	299,200	48	184
2021	0.748	0.00012	0.00046	336,600	54	207
2022	0.748	0.00012	0.00046	374,000	60	230
2023	0.748	0.00012	0.00046	411,400	66	253
2024	0.748	0.00012	0.00046	448,800	72	276

	At the Generator								
	Per	Per	Per	Total	Total	Total			
	Customer	Customer	Customer	Annual	Annual	Annual			
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2015	0.8	0.00015	0.00057	177,220	33	127			
2016	0.8	0.00015	0.00057	196,911	37	142			
2017	0.8	0.00015	0.00057	216,602	41	156			
2018	0.8	0.00015	0.00057	236,293	44	170			
2019	0.8	0.00015	0.00057	315,058	59	227			
2020	0.8	0.00015	0.00057	315,058	59	227			
2021	0.8	0.00015	0.00057	354,440	67	255			
2022	0.8	0.00015	0.00057	393,822	74	283			
2023	0.8	0.00015	0.00057	433,204	81	312			
2024	0.8	0.00015	0.00057	472,586	89	340			
				-					

	Customers and Participation Rates							
		Total	Annual	Cumulative	Cumulative			
	Total	Number of	Number of	Penetration	Number of			
	Number of	Eligible	Program	Level	Program			
Year	Customers	Customers	Participants*	%	Participants*			
2015	55,525	47,673	225,000	N/A	225,000			
2016	55,992	48,140	250,000	N/A	475,000			
2017	56,539	48,687	275,000	N/A	750,000			
2018	57,062	49,210	300,000	N/A	1,050,000			
2019	57,534	49,682	400,000	N/A	1,450,000			
2020	57,975	50,123	400,000	N/A	1,850,000			
2021	58,355	50,503	450,000	N/A	2,300,000			
2022	58,683	50,831	500,000	N/A	2,800,000			
2023	58,992	51,140	550,000	N/A	3,350,000			
2024	59,264	51,412	600,000	N/A	3,950,000			
sq. ft. of ins	sulation installed							



		Commo	ercial Reflect	tive Roof		
			1.17 3.7.1			
			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	1.72	0	0.00067	1,376,000	0	536
2016	1.72	0	0.00067	1,376,000	0	536
2017	1.72	0	0.00067	1,376,000	0	536
2018	1.72	0	0.00067	1,376,000	0	536
2019	1.72	0	0.00067	1,376,000	0	536
2020	1.72	0	0.00067	1,462,000	0	570
2021	1.72	0	0.00067	1,548,000	0	603
2022	1.72	0	0.00067	1,634,000	0	637
2023	1.72	0	0.00067	1,720,000	0	670
2024	1.72	0	0.00067	1,806,000	0	704

	At the Generator								
	Per	Per	Per	Total	Total	Total			
	Customer	Customer	Customer	Annual	Annual	Annual			
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW			
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction			
2015	1.81	0	0.0008	1,448,928	0	660			
2016	1.81	0	0.0008	1,448,928	0	660			
2017	1.81	0	0.0008	1,448,928	0	660			
2018	1.81	0	0.0008	1,448,928	0	660			
2019	1.81	0	0.0008	1,448,928	0	660			
2020	1.81	0	0.0008	1,539,486	0	701			
2021	1.81	0	0.0008	1,630,044	0	743			
2022	1.81	0	0.0008	1,720,602	0	784			
2023	1.81	0	0.0008	1,811,160	0	825			
2024	1.81	0	0.0008	1,901,718	0	866			

		Custome	Customers and Participation Rates								
		Total	Annual	Cumulative	Cumulative						
	Total	Number of	Number of	Penetration	Number of						
	Number of	Eligible	Program	Level	Program						
Year	Customers	Customers	Participants*	%	Participants*						
2015	55,525	47,673	800,000	N/A	800,000						
2016	55,992	48,140	800,000	N/A	1,600,000						
2017	56,539	48,687	800,000	N/A	2,400,000						
2018	57,062	49,210	800,000	N/A	3,200,000						
2019	57,534	49,682	800,000	N/A	4,000,000						
2020	57,975	50,123	850,000	N/A	4,850,000						
2021	58,355	50,503	900,000	N/A	5,750,000						
2022	58,683	50,831	950,000	N/A	6,700,000						
2023	58,992	51,140	1,000,000	N/A	7,700,000						
2024	59,264	51,412	1,050,000	N/A	8,750,000						

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Commercial/Industrial Custom Incentive

Program Start Date: 2000

Program Description

The Commercial/Industrial Custom Incentive program is designed to establish the capability and

process to offer advanced energy services and energy efficient end-use equipment to

Commercial/Industrial customers. Specifically, the types of projects covered under this program

would be demand reduction or efficiency improvement retrofits that are beyond the scope of other

programs included in this Plan.

Examples of custom projects may include, but not be limited to, installation of Variable

Frequency Drive (VFD) Controls, Energy Management Systems (EMS), chiller efficiency

upgrades, desiccant and mechanical dehumidification systems, and more complex building

retrocommissioning.

The Commercial/Industrial Custom Incentive program will be administered in three phases: (1)

the audit; (2) the proposal; and (3) design/construction. The energy audit will be conducted under

the existing FPSC approved audit program. Once the customer accepts audit recommendations,

Gulf Power will develop a scope and incentive proposal for the project. Any incentive associated

with this program will be provided upon successful installation and verification of the energy

saving measures associated with the project.

The level of incentives contemplated under this program is limited to any combination of

monetary or technical assistance that brings the project payback to no less than two years.

Program Benefits and Cost Effectiveness

The TAA provides specific recommendations on energy conservation opportunities for the

customer. Due to the customized nature of this program, benefits are determined on a case by



case basis. Each project will be evaluated to ensure cost effectiveness in accordance with Commission requirements.

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

Monitoring and Evaluation

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



	(Commercial/	Industrial Cu	stom Incenti	ive	
			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	•••	•••	•••	0	0	0
2016	•••	•••	•••	100,000	33	33
2017	•••	•••	•••	200,000	65	65
2018	•••	•••	•••	200,000	65	65
2019	•••	•••	•••	200,000	65	65
2020	•••	•••	•••	250,000	82	82
2021	•••	•••	•••	300,000	98	98
2022	•••	•••	•••	350,000	114	114
2023	•••	•••	•••	425,000	139	139
2024	•••	•••	•••	500,000	163	163

At the Generator								
	Per	Per	Per	Total	Total	Total		
	Customer	Customer	Customer	Annual	Annual	Annual		
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kV		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2015	•••	•••		0	0	0		
2016	•••	•••		105,300	40	40		
2017	•••	•••		210,600	80	80		
2018	•••			210,600	80	80		
2019	•••	•••		210,600	80	80		
2020	•••	•••		263,250	100	100		
2021	•••	•••		315,900	121	121		
2022	•••	•••		368,550	141	141		
2023	•••			447,525	171	171		
2024	•••			526,500	201	201		

	Customers and Participation Rates							
		Total	Annual	Cumulative	Cumulative			
	Total	Number of	Number of	Penetration	Number of			
	Number of	Eligible	Program	Level	Program			
Year	Customers	Customers	Participants	%	Participants			
2015	55,525	47,673	•••					
2016	55,992	48,140	•••		•••			
2017	56,539	48,687	•••		•••			
2018	57,062	49,210	•••	•••	•••			
2019	57,534	49,682	•••	•••	•••			
2020	57,975	50,123	•••	•••	•••			
2021	58,355	50,503	•••	•••	•••			
2022	58,683	50,831	•••		•••			
2023	58,992	51,140	•••		•••			
2024	59,264	51,412	•••	•••	•••			

A SOUTHERN COMPANY

Renewable Energy Pilot Programs

Program Start Date: 2011

Program Description

These programs are part of a five year pilot program approved by the Commission in Order No.

PSC-10-0608-PAA-EG. The first four years of the five year pilot were completed under the 2010

DSM Plan. The programs described herein are offered only during 2015, the last year of the five

year pilot.

These programs include providing capital to supplement deployment of PV systems up to 10 kW

in public education facilities, offering PV rebates, solar thermal water heating (STWH) rebates

and facilitating the installation of STWH systems in low-income housing units.

Individual Measures

Solar for Schools: Gulf Power's Solar for Schools program will provide capital funding to

supplement deployment of PV systems up to 10 kW in qualifying public education facilities

served by Gulf Power. As partnership opportunities are made available, Gulf intends to leverage

other program resources such as those provided under the Florida Solar Energy Center's (FSEC)

E-Shelter program to expand the reach of the program. Gulf's program will also offer

educational benefits by providing resources to enable the data collected from the installed

systems to be used in the schools' energy curriculum.

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

Standards.

Solar Thermal Water Heating: Gulf Power's Solar Thermal Water Heating Program will

provide Gulf Power residential customers up to a \$1,000 incentive to install certified STWH

systems. The STWH systems to be installed will offer customers an opportunity to reduce their



hot water energy needs otherwise served by natural gas or electric resistance heating. The systems operate in conjunction with a back-up natural gas or electric resistance source of hot water to ensure an uninterrupted supply of hot water to the customer.

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

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

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

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

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

Program Administration

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



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

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

Monitoring and Evaluation

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

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

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

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

2015 Demand-Side Management Plan



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



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			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	1,906	0.25	0.25	95,300	13	13
2016	1,906	0.25	0.25	0	0	0
2017	1,906	0.25	0.25	0	0	0
2018	1,906	0.25	0.25	0	0	0
2019	1,906	0.25	0.25	0	0	0
2020	1,906	0.25	0.25	0	0	0
2021	1,906	0.25	0.25	0	0	0
2022	1,906	0.25	0.25	0	0	0
2023	1,906	0.25	0.25	0	0	0
2024	1,906	0.25	0.25	0	0	0

			At the Generato	r				
	Per	Per	Per	Total	Total	Total		
	Customer	Customer	Customer	Annual	Annual	Annual		
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW		
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction		
2015	2,007	0.31	0.31	100,351	15	15		
2016	2,007	0.31	0.31	0	0	0		
2017	2,007	0.31	0.31	0	0	0		
2018	2,007	0.31	7 0.31	0.31 0.31	0.31	0	0	0
2019	2,007	0.31	0.31	0	0	0		
2020	2,007	0.31	0.31	0	0	0		
2021	2,007	0.31	0.31	0	0	0		
2022	2,007	0.31	0.31	0	0	0		
2023	2,007	0.31	0.31	0	0	0		
2024	2,007	0.31	0.31	0	0	0		

		Custome	rs and Participa	tion Rates	·
		Total	Annual	Cumulative	Cumulative
	Total	Number of	Number of	Penetration	Number of
	Number of	Eligible	Program	Level	Program
Year	Customers	Customers	Participants	%	Participants
2015	392,015	390,238	50	0.0%	50
2016	397,625	395,848	0	0.0%	50
2017	404,186	402,409	0	0.0%	50
2018	410,463	408,686	0	0.0%	50
2019	416,121	414,344	0	0.0%	50
2020	421,420	419,643	0	0.0%	50
2021	425,977	424,200	0	0.0%	50
2022	429,938	428,161	0	0.0%	50
2023	433,642	431,865	0	0.0%	50
2024	436,925	435,148	0	0.0%	50



		Res	sidential Sola	r PV		
			At the Meter	·		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	6,388	1.50	3.00	287,460	68	135
2016	6,388	1.50	3.00	0	0	0
2017	6,388	1.50	3.00	0	0	0
2018	6,388	1.50	3.00	0	0	0
2019	6,388	1.50	3.00	0	0	0
2020	6,388	1.50	3.00	0	0	0
2021	6,388	1.50	3.00	0	0	0
2022	6,388	1.50	3.00	0	0	0
2023	6,388	1.50	3.00	0	0	0
2024	6,388	1.50	3.00	0	0	0

		At the Generato	r		
Per	Per	Per	Total	Total	Total
Customer	Customer	Customer	Annual	Annual	Annual
kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
6,727	1.85	3.69	302,695	83	166
6,727	1.85	3.69	0	0	0
6,727 1.85	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
6,727	1.85	3.69	0	0	0
	Customer k Wh Reduction 6,727 6,727 6,727 6,727 6,727 6,727 6,727 6,727 6,727 6,727	Per Per Customer Customer kWh Winter kW Reduction Reduction 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85 6,727 1.85	Per Per Per Customer Customer Customer kWh Winter kW Summer kW Reduction Reduction Reduction 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69 6,727 1.85 3.69	Customer Customer Customer Annual kWh Winter kW Summer kW kWh Reduction Reduction Reduction 6,727 1.85 3.69 302,695 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0 6,727 1.85 3.69 0	Per Customer Per Customer Total Customer Total Annual Annual Annual Annual Annual Annual Auxonal Aux

		Custome	rs and Participa	tion Rates	·		
		Total	Annual	Cumulative	Cumulative		
	Total	Number of	Number of Penetration		Number of Penetration		Number of
	Number of	Eligible	Program	Level	Program		
Year	Customers	Customers	Participants	%	Participants		
2015	392,015	390,238	45	0.01%	45		
2016	397,625	395,848	0	0.01%	45		
2017	404,186	402,409	0	0.01%	45		
2018	410,463	408,686	0	0.01%	45		
2019	416,121	414,344	0	0.01%	45		
2020	421,420	419,643	0	0.01%	45		
2021	425,977	424,200	0	0.01%	45		
2022	429,938	428,161	0	0.01%	45		
2023	433,642	431,865	0	0.01%	45		
2024	436,925	435,148	0	0.01%	45		



		Con	nmercial Sol	ar PV		
			At the Meter			
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	6,388	1.50	3.00	38,328	9	18
2016	6,388	1.50	3.00	0	0	0
2017	6,388	1.50	3.00	0	0	0
2018	6,388	1.50	3.00	0	0	0
2019	6,388	1.50	3.00	0	0	0
2020	6,388	1.50	3.00	0	0	0
2021	6,388	1.50	3.00	0	0	0
2022	6,388	1.50	3.00	0	0	0
2023	6,388	1.50	3.00	0	0	0
2024	6,388	1.50	3.00	0	0	0

			At the Generato	r		
	Per	Per	Per	Total	Total	Total
	Customer	Customer	Customer	Annual	Annual	Annual
	kWh	Winter kW	Summer kW	kWh	Winter kW	Summer kW
Year	Reduction	Reduction	Reduction	Reduction	Reduction	Reduction
2015	6,727	1.85	3.69	40,359	11	22
2016	6,727	1.85	3.69	0	0	0
2017	6,727	1.85	3.69	0	0	0
2018	6,727	1.85	3.69	0	0	0
2019	6,727	1.85	3.69	0	0	0
2020	6,727	1.85	3.69	0	0	0
2021	6,727	1.85	3.69	0	0	0
2022	6,727	1.85	3.69	0	0	0
2023	6,727	1.85	3.69	0	0	0
2024	6,727	1.85	3.69	0	0	0

	Customers and Participation Rates									
		Total	Annual	Cumulative	Cumulative					
	Total	Number of Penetration		Number of Penetration		Number of Penetration		Number of Penetration		
	Number of	Eligible	Program	Level	Program					
Year	Customers	Customers	Participants	%	Participants					
2015	374,936	373,219	6	0.00%	6					
2016	377,336	375,619	0	0.00%	6					
2017	381,544	379,827	0	0.00%	6					
2018	388,378	386,661	0	0.00%	6					
2019	396,913	395,196	0	0.00%	6					
2020	405,062	403,345	0	0.00%	6					
2021	413,491	411,774	0	0.00%	6					
2022	421,774	420,057	0	0.00%	6					
2023	430,056	428,339	0	0.00%	6					
2024	438,190	436,473	0	0.00%	6					



Section 3: Conservation Demonstration and Development

Program Description

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

The CDD program is designed to serve as an umbrella program for the identification, evaluation, demonstration, data collection and development of new or emerging end-use technologies.

Unlike most of Gulf Power Company's conservation programs, which focus on specific end-uses, the CDD program addresses a wide variety of energy applications. This program also includes on-going end-use research necessary to support energy and demand savings associated with new or emerging technologies.

Monitoring and Evaluation

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



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

Program Benefits and Cost

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

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

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

Participation Standards

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



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

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

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



Residential Service Time of Use Rate Pilot

Program Start Date: 2015

Program Description

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

2015 Demand-Side Management Plan

A SOUTHERN COMPANY

Based on Gulf Power's prior experience with time of use rates and customer feedback the

Company selected a simple two tiered solution. This rate will encompass a "High" tier and a

"Low" tier option with a critical peak credit component. The rate is structured for the customer to

have the opportunity to pay a lower price for electricity 85 percent of the time. This should

improve the customer's willingness to shift load due to the simplicity of the options.

The proposed pilot rate structure will be described in the Residential Service Time of Use

(RSTOU) tariff sheet.

Gulf Power will manage this project utilizing a project schedule to ensure the major milestones

are met. Project milestones:

• Customer acquisition and pilot setup -- 6 months

• Pilot monitoring phase -- at least 1 year

• Analyzing data and produce reports -- 3 months

• Finalize next steps for program extension or deletion. In the absence of a program

extension, the pilot will end on the date referenced in RSTOU tariff sheet

This pilot program will provide the customer with a demand responsive programmable

thermostat. Total costs of the pilot are expected to be no more than \$408,000 and are proposed in

addition to the currently approved \$250,000 annual recovery for the CDD program.

• Monitoring and evaluation costs: \$66,000

• Pilot Surveying costs: \$36,000

Marketing material costs: \$15,000

• Thermostat costs: \$80,000

Program management costs: \$150,000

• Gulf Power labor costs: \$61,000

3-5



Program Benefits and Cost Effectiveness

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

Monitoring and Evaluation

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

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

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

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

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



• Savings on power bill

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

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

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



Section 4: Cost-Effectiveness Results

The following charts are cost-effectiveness results for each of the programs and measures contained in the DSM Plan. Each report includes results of the TRC test, the RIM test, and the PT.

RESIDENTIAL CONSERVATION PROGRAMS

Community Energy Saver	4-4
HVAC Maintenance	4-8
HVAC Quality Installation	4-12
HVAC Duct Repair	4-16
Res. Building Efficiency – High Performance Window	
Res. Building Efficiency – Reflective Roof	
Res. Building Efficiency – ES Window A/C Unit	4-28
Energy Select	4-32
COMMERCIAL / INDUSTRIAL CONSERVATION PROGRAMS	
HVAC Retrocommissioning	4-36
Commercial Building Eff. – Geothermal	4-40
Commercial Building Eff. – Ceiling Insulation	4-44
Commercial Building Eff. – Reflective Roof	
<i>5</i>	



Input Assumptions

Development of the DSM Plan was based on the same input assumptions and methodology utilized in the 2014 goal setting process, updated only for Gulf's most current rates and avoided cost projections. The demand and energy savings values used in development of the DSM programs contained herein are based on the values used in the goals evaluation. Although the cost-effectiveness of all measures decreased with the use of Gulf's most current avoided cost projections, the programs included in this DSM Plan are designed to meet the achievable potential that was determined to be cost-effective during the 2014 goal setting process. The table below details the input assumption comparison between the 2014 goals evaluation and 2015 DSM plan evaluation:





2014 Goals Evaluation					2015 Plan Evaluation					
Assumptions Used running the Cost Effectiven	ess T	ests for Goa	I		Assumptions Used running the Cost Effectiveness Tests for Plan					
Avoided Unit					Avoided Unit					
Type of Unit		1 CC			Type of Unit		1 CT			
Size of Unit (MW)		750			Size of Unit (MW)		349			
In-Service Year		2023			In-Service Year		2023			
Planned Reserve Margin		15%			Planned Reserve Margin		15%			
Energy and Demand Charges by Rate					Energy and Demand Charges by Rate					
G, G ,			Max	Peak	<i>o, o ,</i>			Max	Peak	
	No	n-Fuel Base	Demand	Demand		No	n-Fuel Base	Demand	Demand	
Residential	\$	0.06534	N/A	N/A	Residential	\$	0.06869	N/A	N/A	
Commercial & Industrial					Commercial & Industrial					
GS	\$	0.05493	N/A	N/A	GS	\$	0.07094	N/A	N/A	
GSD	\$	0.03346	\$ 5.95	N/A	GSD	\$	0.03632	\$ 6.39	N/A	
LP	\$	0.02472	\$ 10.01	N/A	LP	\$	0.02160	\$ 13.27	N/A	
PX	\$	0.02000	\$ 9.44	N/A	PX	\$	0.02067	\$ 10.10	N/A	
LPT	\$	0.02472	\$ 2.00	\$ 8.04	LPT	\$	0.02160	\$ 4.47	\$ 8.89	
PXT	\$	0.01996	\$ 0.78	\$ 8.76	PXT	\$	0.02067	\$ 0.83	\$ 9.37	
General Assumptions					General Assumptions					
General Rate of Inflation		1.9%			General Rate of Inflation		1.8%			
System Planning Reserve Margin		15%			System Planning Reserve Margin		15%			
KW Line Loss Percentage		8.8%			KW Line Loss Percentage		7.1%			
kWh Line Loss Percentage		10.5%			kWh Line Loss Percentage		5.3%			
Group Line Loss Multiplier		1.0015			Group Line Loss Multiplier		1.0015			
Generator Economic Life		40	Years		Generator Economic Life		40	Years		
T&D Economic Life		35	Years		T&D Economic Life		35	Years		
K-Factor for Generation		1.4384			K-Factor for Generation		1.4331			
K-Factor for T&D		1.4350			K-Factor for T&D		1.4298			
Gulf's Most Current Discount Rate		7.921%			Gulf's Most Current Discount Rate		7.850%			
Gulf's Most Current AFUDC Rate		7.650%			Gulf's Most Current AFUDC Rate		6.260%			
Incremental Generation & Purchased Capacity					Incremental Generation & Purchased Capacity					
Base Year Incremental Generating Unit Cost	\$	845.28	\$/KW		Base Year Incremental Generating Unit Cost	\$	851.95	\$/KW		
Generation Cost Escalation Rate		1.90%			Generation Cost Escalation Rate		1.80%			
Generator Fixed O&M Cost	\$	18.37	\$/KW/Yr		Generator Fixed O&M Cost	\$	17.89	\$/KW/Yr		
Generator Fixed O&M Escalation Rate		1.973%			Generator Fixed O&M Escalation Rate		1.959%			
Incremental Gen & Pur Cap Capacity Factor		49.97%			Incremental Gen & Pur Cap Capacity Factor		9.43%			
Incremental Generating Unit Fuel Cost	\$	0.04097	\$/kWh		Incremental Generating Unit Fuel Cost	\$	0.03713	\$/kWh		
Incremental Gen Unit Fuel Escalation Rate		4.52%			Incremental Gen Unit Fuel Escalation Rate		5.10%			
Incremental Purchase Capacity Cost per KW	\$	1.115	\$/KW/Yr		Incremental Purchase Capacity Cost per KW	\$	0.470	\$/KW/Yr		
Capacity Cost Escalation Rate		17.78%			Capacity Cost Escalation Rate		21.61%			
Transmission and Distribution Costs					Transmission and Distribution Costs					
Base Year Incremental Transmission Cost	\$	223.90	\$/KW		Base Year Incremental Transmission Cost	\$	302.35	\$/KW		
Base Year Distribution Cost	\$	150.83	\$/KW		Base Year Distribution Cost	\$	154.39	\$/KW		
Transmission & Distribution Cost Escalation Ra	tε	1.90%			Transmission & Distribution Cost Escalation Rat	E	1.80%			
Transmission Fixed O&M Cost	\$		\$/KW/Yr		Transmission Fixed O&M Cost	\$		\$/KW/Yr		
Distribution Fixed O&M Cost	\$		\$/KW/Yr		Distribution Fixed O&M Cost	\$		\$/KW/Yr		
T&D Fixed O&M Escalation Rate		1.90%			T&D Fixed O&M Escalation Rate		1.80%			

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Res Low-Income

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	-0.05 kW/Cus	П
(2) Change in Peak kW per Customer at generator	-0.06 kW Gen/Cus	
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator	(810) kWh/Cus/Yr	
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter	(769) kWh/Cus/Yr	
* (8) Change in Winter kW per Cust at meter	-0.11 kW/Cus	
II. Economic Life and K-Factors		
(1) DSM Program Study Period	30 Years	-]
(2) Economic Life of Incremental Generation	40 Years	
(3) Economic Life of Incremental T&D	35 Years	
(4) K-Factor for Generation	<u>1.4331</u>	
(5) K-Factor for T&D	1. <u>429</u> 8	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	<u> </u>	
III I I I I I I I I I I I I I I I I I		
III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer	\$200.00 \$/Cus	\dashv
(2) Utility Recurring Cost Per Customer	\$0.00 \$/Cus/Year	
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$55.00 \$/Cus	
(5) Customer Equipment Cost Escalation Rate	0.00%	
(6) Customer O&M Cost	\$0.00 \$/Cus/Year	
(7) Customer O&M Cost Escalation Rate	1.80%	
* (8) Customer Tax Credit Per Installation	\$0.00 \$/Cus	
* (9) Customer Tax Credit Escalation Rate	1.80%	
* (10) Change in Supply Costs	\$0.00 \$/Cus/Year	
* (11) Supply Costs Escalation Rate	1.80%	
* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive	\$55.00 \$/Cus	
* (15) Utility Recurring Rebate/Incentive	\$0.00 \$/Cus/Year	
* (16) Utility Rebate/Incentive Escalation Rate	0.00%	
7.7 2. 9 11 11 11 11 11 11 11 11 11 11 11 11 1		

IV.	Incremental	Generation,	Transmission,	& Distribution	Costs
	(1) Base Year	r			2014

2014
2023 **
2015
1.95 \$/kW
2.35 \$/kW
4.39 \$/kW
80%
7.89 \$/kW/Yr
96%
6.68 \$/kW/Yr
4.74 \$/kW/Yr
80%
.000 \$/kW/Yr
00%
43%
371_\$/kWh
10%
0.47 \$/KW/YR
61%

V. (1) Non-Fuel Cost In Customer Bill (Base Year)

(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.06</u> 87_\$/kWh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$0.0000 \$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	0 kW/Mo.

Summary Results for This Analysis

Juniury Hours	10.10		
	TRC	Participants'	RIM
NPV Benefits(\$000s)	\$15,355	\$26,058	\$15,355
NPV Costs (\$000s)	\$4,307	\$929	\$29,436
NPV Net Benefits (\$000s)	\$11,048	\$25,129	(\$14,080)
Benefit: Cost Ratio	3.565	28.052	0.522



 $^{^{\}star}$ Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

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Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in					Incremental	Incremental	Incremental			Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$500	\$138	\$0	\$0	\$0	(\$9)	(\$81)	\$638	\$90	(\$548)	(\$508
2016	\$0	\$500	\$138	\$0	\$0	\$0	(\$17)	(\$184)	\$638	\$202	(\$436)	(\$883
2017	\$0	\$500	\$138	\$0	\$0	\$0	(\$27)	(\$302)	\$638	\$328	(\$309)	(\$1,129
2018	\$0	\$500	\$138	\$0	\$0	\$0	(\$36)	(\$419)	\$638	\$455	(\$182)	(\$1,264
2019	\$0	\$500	\$138	\$0	\$0	\$0	(\$46)	(\$553)	\$638	\$599	(\$39)	(\$1,290
2020	\$0	\$500	\$138	\$0	\$0	\$0	(\$56)	(\$705)	\$638	\$761	\$124	(\$1,212
2021	\$0	\$500	\$138	\$0	\$0	\$0	(\$67)	(\$880)	\$638	\$947	\$309	(\$1,029
2022	\$0	\$500	\$138	\$0	\$0	\$0	(\$78)	(\$1,068)	\$638	\$1,145	\$508	(\$752
2023	\$0	\$500	\$138	\$0	\$0	(\$154)	(\$89)	(\$1,286)	\$638	\$1,528	\$891	(\$301
2024	\$0	\$500	\$138	\$0	\$0	(\$174)	(\$101)	(\$1,430)	\$638	\$1,704	\$1,067	\$200
2025	\$0	\$0	\$0	\$0	\$0	(\$177)	(\$102)	(\$1,495)	\$0	\$1,774	\$1,774	\$973
2026	\$0	\$0	\$0	\$0	\$0	(\$180)	(\$104)	(\$1,557)	\$0	\$1,842	\$1,842	\$1,717
2027	\$0	\$0	\$0	\$0	\$0	(\$184)	(\$106)	(\$1,629)	\$0	\$1,918	\$1,918	\$2,435
2028	\$0	\$0	\$0	\$0	\$0	(\$187)	(\$108)	(\$1,725)	\$0	\$2,020	\$2,020	\$3,136
2029	\$0	\$0	\$0	\$0	\$0	(\$190)	(\$110)	(\$1,790)	\$0	\$2,090	\$2,090	\$3,809
2030	\$0	\$0	\$0	\$0	\$0	(\$194)	(\$112)	(\$1,882)	\$0	\$2,188	\$2,188	\$4,462
2031	\$0	\$0	\$0	\$0	\$0	(\$198)	(\$114)	(\$1,954)	\$0	\$2,266	\$2,266	\$5,089
2032	\$0	\$0	\$0	\$0	\$0	(\$201)	(\$116)	(\$2,033)	\$0	\$2,351	\$2,351	\$5,692
2033	\$0	\$0	\$0	\$0	\$0	(\$205)	(\$118)	(\$2,137)	\$0	\$2,460	\$2,460	\$6,277
2034	\$0	\$0	\$0	\$0	\$0	(\$209)	(\$120)	(\$2,239)	\$0	\$2,568	\$2,568	\$6,844
2035	\$0	\$0	\$0	\$0	\$0	(\$213)	(\$122)	(\$2,321)	\$0	\$2,656	\$2,656	\$7,387
2036	\$0	\$0	\$0	\$0	\$0	(\$217)	(\$125)	(\$2,414)	\$0	\$2,755	\$2,755	\$7,910
2037	\$0	\$0	\$0	\$0	\$0	(\$221)	(\$127)	(\$2,494)	\$0	\$2,841	\$2,841	\$8,409
2038 2039	\$0	\$0	\$0	\$0	\$0	(\$225)	(\$129)	(\$2,597)	\$0	\$2,951	\$2,951	\$8,890
	\$0	\$0 \$0	\$0	\$0	\$0	(\$229)	(\$131)	(\$2,720)	\$0	\$3,080	\$3,080	\$9,356 \$9,801
2040 2041	\$0	\$0 \$0	\$0 \$0	\$0	\$0 \$0	(\$233)	(\$134)	(\$2,811)	\$0 \$0	\$3,177	\$3,177	
2041	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$237) (\$241)	(\$136)	(\$2,969) (\$3,054)	\$0 \$0	\$3,343 \$3,433	\$3,343 \$3,433	\$10,236 \$10,650
2042	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0		(\$139)		\$0 \$0	\$3,433 \$3,568	\$3,433 \$3,568	\$11,048
2043	Φ0	\$0	Φ0	φυ	φυ	(\$246)	(\$141)	(\$3,181)	\$0	φ3,300	φ3,500	\$11,040

Nominal	\$5,000	\$1,375			(\$4,312)	(\$2,819)	(\$49,909)	\$6,375	\$57,040	\$50,665	
NPV	\$3,377.872	\$928.915	\$0.000	\$0.000	(\$1,077.944)	(\$841.255)	(\$13,435.912)	\$4,306.787	\$15,355.111	\$11,048.324	
Discount Rate =	7.85%			<u> </u>					<u> </u>		<u> </u>
Benefit/Cost Ratio =	3.57										



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Participants' Cost-Effectiveness Measure

Year 2014 2015 2016 2017 2018	Customer Equip Costs (\$000s) \$138 \$138 \$138 \$138 \$138 \$138	Customer O&M Costs (\$000s) \$0 \$0 \$0 \$0	Other Costs (\$000s) \$0 \$0 \$0	Other Benefits (\$000s) \$0 \$0	Change in Participants' Electric Bills (\$000s)	Tax Credits (\$000s)	Utility Paid Rebates & Incentives (\$000s)	Total Costs	Total Benefits	Total Net Benefits	Cumulative Discounted Net Benefits
2014 2015 2016 2017 2018	\$000s) \$0 \$138 \$138 \$138 \$138 \$138 \$138	O&M Costs (\$000s) \$0 \$0 \$0 \$0	Costs (\$000s) \$0 \$0 \$0	\$000s) \$0	Electric Bills (\$000s)	Credits (\$000s)	Incentives	Costs	Benefits		
2014 2015 2016 2017 2018	\$000s) \$0 \$138 \$138 \$138 \$138 \$138	\$000s) \$0 \$0 \$0 \$0	(\$000s) \$0 \$0 \$0	(\$000s) \$0 \$0	(\$000s)	(\$000s)				Benefits	Net Benefits
2014 2015 2016 2017 2018	\$0 \$138 \$138 \$138 \$138 \$138	\$0 \$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0			(\$000c)				
2015 2016 2017 2018	\$138 \$138 \$138 \$138 \$138	\$0 \$0 \$0	\$0 \$0	\$0	\$0		(\$0005)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2016 2017 2018	\$138 \$138 \$138 \$138	\$0 \$0	\$0			\$0	\$0	\$0	\$0	\$0	\$0
2017 2018	\$138 \$138 \$138	\$0	\$0		(\$221)	\$0	\$138	\$138	\$358	\$221	\$205
2018	\$138 \$138			\$0	(\$462)	\$0	\$138	\$138	\$599	\$462	\$602
	\$138	\$0	\$0	\$0	(\$712)	\$0	\$138	\$138	\$850	\$712	\$1,169
			\$0	\$0	(\$975)	\$0	\$138	\$138	\$1,112	\$975	\$1,889
2019	\$138	\$0	\$0	\$0	(\$1,247)	\$0	\$138	\$138	\$1,384	\$1,247	\$2,744
2020		\$0	\$0	\$0	(\$1,542)	\$0	\$138	\$138	\$1,679	\$1,542	\$3,723
2021	\$138	\$0	\$0	\$0	(\$1,834)	\$0	\$138	\$138	\$1,971	\$1,834	\$4,804
2022	\$138	\$0	\$0	\$0	(\$2,123)	\$0	\$138	\$138	\$2,260	\$2,123	\$5,964
2023	\$138	\$0	\$0	\$0	(\$2,459)	\$0	\$138	\$138	\$2,596	\$2,459	\$7,209
2024	\$138	\$0	\$0	\$0	(\$2,806)	\$0	\$138	\$138	\$2,943	\$2,806	\$8,527
2025	\$0	\$0	\$0	\$0	(\$2,907)	\$0	\$0	\$0	\$2,907	\$2,907	\$9,793
2026	\$0	\$0	\$0	\$0	(\$3,000)	\$0	\$0	\$0	\$3,000	\$3,000	\$11,005
2027	\$0	\$0	\$0	\$0	(\$3,094)	\$0	\$0	\$0	\$3,094	\$3,094	\$12,163
2028	\$0	\$0	\$0	\$0	(\$3,199)	\$0	\$0	\$0	\$3,199	\$3,199	\$13,273
2029	\$0	\$0	\$0	\$0	(\$3,305)	\$0	\$0	\$0	\$3,305	\$3,305	\$14,337
2030 2031	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$3,421)	\$0 \$0	\$0 \$0	\$0 \$0	\$3,421 \$3,520	\$3,421	\$15,358 \$16,332
2031	\$0 \$0	\$0 \$0			(\$3,520) (\$3,641)	\$0 \$0	\$0 \$0	\$0 \$0	\$3,520 \$3,641	\$3,520 \$3,641	\$10,332 \$17,266
2032	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0			\$0 \$0	\$0 \$0			\$17,260 \$18,160
2033	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$3,758) (\$3,863)	\$0 \$0	\$0 \$0	\$0 \$0	\$3,758 \$3,863	\$3,758 \$3,863	\$19,013
2034	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$3,988)	\$0	\$0 \$0	\$0 \$0	\$3,988	\$3,988	\$19,828
2036	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$4,102)	\$0	\$0 \$0	\$0 \$0	\$4,102	\$4,102	\$20,606
2037	\$0	\$0	\$0	\$0	(\$4,209)	\$0	\$0	\$0	\$4,209	\$4,209	\$21,346
2038	\$0	\$0	\$0	\$0	(\$4,344)	\$0	\$0	\$0	\$4,344	\$4,344	\$22,055
2039	\$0	\$0	\$0	\$0	(\$4,471)	\$0	\$0	\$0	\$4,471	\$4,471	\$22,731
2040	\$0	\$0	\$0	\$0	(\$4,574)	\$0	\$0	\$0	\$4,574	\$4,574	\$23,372
2041	\$0	\$0	\$0	\$0	(\$4,732)	\$0	\$0	\$0	\$4,732	\$4,732	\$23,987
2042	\$0	\$0	\$0	\$0	(\$4,863)	\$0	\$0	\$0	\$4,863	\$4,863	\$24,573
2043	\$0	\$0	\$0	\$0	(\$4,976)	\$0	\$0	\$0	\$4,976	\$4,976	\$25,129
	\$1,375 \$861 nt Rate =	\$0 7.85% 28.05	\$0	\$0	(\$88,343) (\$25,129)	\$0	\$1,375 \$929	\$1,375 \$928.915	\$89,718 \$26,057.646	\$88,343 \$25,129	



Filename:

Res Low-Income

Ratepayers' Impact Cost-Effectiveness Measure Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

Change in Utility's Electric Program Rebates & Electric Coasts Cap Costs C	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bestric Program Rebailes R	<u> </u>									10		12		
Supply Code			•	•					Other	Other	Total	Total		
Year 19000 1900														
2014 50.00 \$50.0	Year													
2016 \$0.000 \$500.000 \$137.500 \$600.000 \$137.500 \$600.000 \$137.500 \$600.000 \$137.500 \$600.000 \$137.500 \$600.000 \$137.500 \$600.000 \$137.500 \$600.000 \$100.000 \$600.000 \$100.000	2014												\$0.000	
2016 \$0.000 \$50.0000 \$137.500 \$491.6869 \$0.0000 \$177.500	2015	\$0.000	\$500.000		(\$220.674)		(\$8.562)					\$89.793		(\$712.454
2017 \$0.000 \$500.000 \$137.500 \$137.500 \$177.000 \$137.500 \$177.000 \$137.500 \$177.000														
2019 \$ 0.00 \$ 550.00 \$ 137.500 \$ 6374.622 \$ 50.00 \$ 636.133 \$ (\$448.996) \$ 63.00 \$ 50.00 \$ 51.612.122 \$ 456.5122 \$ (\$1.175.000) \$ (\$3.153.256) \$ (\$1.541.546) \$ 50.000 \$ (\$5.61.68) \$ (\$70.4344) \$ 50.00 \$ 50.00 \$ 52.775.064 \$ 770.142 \$ (\$1.477.942) \$ (\$4.693.103) \$ (\$1.22.246) \$ (\$1.	2017		\$500.000			\$0.000			\$0.000	\$0.000		\$328.337		
2019 \$0.000 \$500.000 \$1375.000 \$13175.00 \$1314.545 \$1.0000 \$4517.000 \$1517.0	2018													(\$3,153.251)
2020 \$0.000 \$500.000 \$1375.000 \$1375.000 \$1375.000 \$1383.587 \$0.0000 \$500.000 \$1375.000 \$1383.587 \$0.0000 \$1375.000 \$1383.587 \$0.0000 \$1375.000 \$1383.587 \$0.0000 \$1375.000 \$1383.587 \$0.0000 \$1375.	2019	\$0.000	\$500.000	\$137.500	(\$1,246.737)	\$0.000	(\$45.979)	(\$552.967)	\$0.000	\$0.000	\$1,884.237	\$598.946	(\$1,285.291)	(\$4,034.103)
2021 \$0.000 \$500.000 \$137.500 (\$1.53.587) \$0.000 \$60.000 \$137.500 (\$1.52.417) \$0.000 \$0.000 \$2.760.424 \$1.760 \$1.46.459 \$1.46.	2020	\$0.000	\$500.000	\$137.500	(\$1,541.554)	\$0.000	(\$56.168)	(\$704.944)	\$0.000	\$0.000	\$2,179.054	\$761.112		(\$4,935.133)
2024 \$0,000 \$50,000 \$137.500 (\$2,486.98) (\$17.58.86) (\$88.884) (\$1,265.92) \$0,000 \$0,000 \$3.000 \$3.061.93 \$1,264.92 (\$1,677.00) (\$7,509.98) \$2025 \$0,000 \$0,000 \$50,000 \$2,280.736 (\$1,770.82) \$10,000 \$0,000 \$0,000 \$3.000 \$3.000 \$0,000 \$3.000	2021	\$0.000	\$500.000	\$137.500	(\$1,833.587)	\$0.000	(\$66.709)	(\$880.167)	\$0.000	\$0.000	\$2,471.087	\$946.875	(\$1,524.211)	(\$5,833.196)
2024 \$0,000 \$50,000 \$137.500 (\$2,486.83) (\$15,386) (\$18,884) (\$1,286.823) \$0,000 \$0,000 \$3,000 \$3,006 \$13,175.830 (\$1,789.18) (\$3,528.422 \$1,704.06) \$1,779.822 \$1,704.06 \$1,789.18) (\$3,286.422 \$1,704.06) \$1,779.822 \$1,704.06 \$1,789.18) (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,704.06) \$1,709.18] (\$3,286.422 \$1,709.06) \$1,709.18] (\$3,286.422 \$1,709.18] (2022	\$0.000	\$500.000	\$137.500	(\$2,122.924)	\$0.000	(\$77.611)	(\$1,067.848)	\$0.000	\$0.000	\$2,760.424	\$1,145.459	(\$1,614.965)	(\$6,715.473)
2024 \$0.000 \$50.000 \$50.000 \$3.000 \$2.90 276 \$177.50 \$2.804 \$171.00.507 \$137.504 \$2.804 \$171.00.507 \$137.75 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.774.00 \$1.30.506 \$1.83.20 \$1.00.507 \$1.00	2023	\$0.000	\$500.000	\$137.500	(\$2,458.693)	(\$153.685)			\$0.000	\$0.000	\$3,096.193	\$1,528.492		(\$7,509.590)
2026 \$0,000 \$0,000 \$0,000 \$3,	2024	\$0.000	\$500.000	\$137.500	(\$2,805.738)	(\$173.894)	(\$100.537)	(\$1,429.619)	\$0.000	\$0.000	\$3,443.238	\$1,704.050	(\$1,739.188)	(\$8,326.452)
2027 \$0.000 \$0.000 \$0.000 \$3.0	2025	\$0.000	\$0.000	\$0.000	(\$2,907.276)	(\$177.082)	(\$102.347)	(\$1,494.781)	\$0.000	\$0.000	\$2,907.276	\$1,774.210	(\$1,133.066)	(\$8,819.895)
2027 \$0.000 \$0.000 \$0.000 \$3.0	2026	\$0.000	\$0.000	\$0.000					\$0.000					(\$9,287.876)
2028 \$0.000 \$0.000 \$0.000 \$3.000 \$3.198.760 \$(\$187.037) \$(\$107.974) \$(\$17.84.986) \$0.000 \$3.000	2027													(\$9,727.949)
2029 \$0.000 \$0.000 \$0.000 \$3.000 \$(3.304.912) \$(\$190.475) \$(\$10.9317) \$(\$1.789.759) \$0.000 \$0.000 \$0.000 \$3.401.763 \$(\$1.22.855) \$(\$1.088.154)	2028	\$0.000	\$0.000						\$0.000					(\$10,137.180)
2031 \$0,000 \$0,000 \$0,000 \$0,000 \$3,519,554 \$2,266,950 \$1,253,603 \$1,1243,009 \$2032 \$0,000 \$0,000 \$0,000 \$3,641,419 \$2,305,645 \$2,266,950 \$1,253,603 \$1,1243,009 \$2033 \$0,000 \$0,000 \$0,000 \$3,000 \$0,000 \$3,000 \$3,000 \$0,000 \$3,000 \$3,000 \$0,000 \$3,000 \$3,000 \$0,000 \$3,	2029	\$0.000	\$0.000	\$0.000					\$0.000					(\$10,528.195)
2032 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$3,641.419 \$2,350.561 \$3,200.57 \$3,11.74.293 2033 \$0,000 \$0,000 \$0,000 \$0,000 \$3,	2030	\$0.000	\$0.000	\$0.000	(\$3,420.783)	(\$193.988)	(\$111.896)	(\$1,882.034)	\$0.000	\$0.000	\$3,420.783	\$2,187.918	(\$1,232.865)	(\$10,896.154)
2033 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$3,757.699] \$2.460.414 \$0,000 \$0,000 \$3,757.699] \$2.460.414 \$1,252.265] \$11,882.938 \$2034 \$5,000 \$3,00	2031	\$0.000	\$0.000	\$0.000	(\$3,519.554)	(\$197.564)	(\$113.910)	(\$1,954.477)	\$0.000	\$0.000	\$3,519.554	\$2,265.950	(\$1,253.603)	(\$11,243.069)
2034 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$3,862,844 \$2,567.851 \$1,294.993) \$121,188.613 \$2035 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$1,375.000 \$0,100 \$122,395 \$0,100 \$0,100 \$0,000 \$	2032	\$0.000	\$0.000	\$0.000	(\$3,641.419)	(\$201.203)	(\$115.960)	(\$2,033.398)	\$0.000	\$0.000	\$3,641.419	\$2,350.561	(\$1,290.857)	(\$11,574.293)
2035 \$ 0,000 \$	2033	\$0.000	\$0.000	\$0.000	(\$3,757.699)	(\$204.922)	(\$118.048)	(\$2,137.444)	\$0.000	\$0.000	\$3,757.699	\$2,460.414	(\$1,297.285)	(\$11,882.938)
2036 \$0.000 \$0.0	2034	\$0.000	\$0.000	\$0.000	(\$3,862.844)	(\$208.722)	(\$120.173)	(\$2,238.956)	\$0.000	\$0.000	\$3,862.844	\$2,567.851	(\$1,294.993)	(\$12,168.613)
2037 \$0,000 \$0,0	2035	\$0.000	\$0.000	\$0.000	(\$3,987.781)	(\$212.590)	(\$122.336)	(\$2,320.776)	\$0.000	\$0.000	\$3,987.781	\$2,655.702	(\$1,332.080)	(\$12,441.080)
2038 \$0.000 \$0.0	2036	\$0.000	\$0.000	\$0.000	(\$4,101.715)	(\$216.570)	(\$124.538)	(\$2,413.903)	\$0.000	\$0.000	\$4,101.715	\$2,755.011	(\$1,346.704)	(\$12,696.489)
2039 \$0.000 \$0.0	2037	\$0.000	\$0.000	\$0.000	(\$4,209.030)	(\$220.516)	(\$126.779)	(\$2,494.168)	\$0.000	\$0.000	\$4,209.030	\$2,841.464	(\$1,367.566)	(\$12,936.977)
2040 \$0.000 \$0.000 \$0.000 \$0.000 \$4.573.843 \$3.177.164 \$5.000.00 \$0.000 \$4.573.843 \$3.177.164 \$5.000.00 \$0.000 \$0.000 \$4.573.843 \$3.177.164 \$5.000.00 \$0.000 \$0.000 \$4.573.843 \$3.177.164 \$5.000.00 \$0.000 \$0	2038	\$0.000	\$0.000	\$0.000	(\$4,344.134)	(\$224.533)	(\$129.061)	(\$2,597.451)	\$0.000	\$0.000	\$4,344.134	\$2,951.046	(\$1,393.088)	(\$13,164.122)
2041 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$4,731.706 \$3.342.551 \$1,389.155 \$237.010 \$136.157 \$2,969.384 \$0.000 \$0.000 \$4,731.706 \$3,342.551 \$1,429.151 \$1,375.806 \$2042 \$0.000 \$0.000 \$0.000 \$4,862.590 \$3,433.499 \$1,429.151 \$1,389.23.042 \$0.000 \$0.000 \$0.000 \$0.000 \$4,862.590 \$3,433.499 \$1,429.151 \$1,389.23.042 \$0.000 \$0.000 \$0.000 \$0.000 \$4,975.864 \$0.000 \$0.000 \$4,975.864 \$0.000 \$1,408.263 \$1,40	2039	\$0.000	\$0.000	\$0.000	(\$4,470.791)	(\$228.608)	(\$131.385)	(\$2,719.512)	\$0.000	\$0.000	\$4,470.791	\$3,079.505	(\$1,391.286)	(\$13,374.462)
2042 \$0.000 \$0.0	2040	\$0.000	\$0.000	\$0.000	(\$4,573.843)	(\$232.772)	(\$133.749)	(\$2,810.642)	\$0.000	\$0.000	\$4,573.843	\$3,177.164	(\$1,396.680)	(\$13,570.248)
2043 \$0.000 \$0.0	2041	\$0.000	\$0.000	\$0.000	(\$4,731.706)	(\$237.010)	(\$136.157)	(\$2,969.384)	\$0.000	\$0.000	\$4,731.706	\$3,342.551	(\$1,389.155)	(\$13,750.806)
Nominal \$5,000.000 \$1,375.000 (\$88,343.016) (\$4,312.175) (\$2,818.831) (\$49,909.110) \$94,718.016 \$57,040.117 (\$37,677.899) NPV \$3,377.872 \$928.915 (\$25,128.731) (\$1,077.944) (\$841.255) (\$13,435.912) \$0.000 \$0.000 \$29,435.518 \$15,355.111 (\$14,080.407) Discount Rate = 7.85%	2042	\$0.000	\$0.000	\$0.000	(\$4,862.590)	(\$241.326)	(\$138.608)	(\$3,053.506)	\$0.000	\$0.000	\$4,862.590	\$3,433.439	(\$1,429.151)	(\$13,923.042)
NPV \$3,377.872 \$928.915 (\$25,128.731) (\$1,077.944) (\$841.255) (\$13,435.912) \$0.000 \$0.000 \$29,435.518 \$15,355.111 (\$14,080.407) Discount Rate = 7.85%	2043	\$0.000	\$0.000	\$0.000	(\$4,975.864)	(\$245.674)	(\$141.103)	(\$3,180.825)	\$0.000	\$0.000	\$4,975.864	\$3,567.602	(\$1,408.263)	(\$14,080.407)
NPV \$3,377.872 \$928.915 (\$25,128.731) (\$1,077.944) (\$841.255) (\$13,435.912) \$0.000 \$0.000 \$29,435.518 \$15,355.111 (\$14,080.407) Discount Rate = 7.85%														
	NPV		\$3,377.872						\$0.000	\$0.000				
Benefit/Cost Ratio = 0.52														
	Benefit/	Cost Ratio =	0.52											

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PSC Form CE 1.1

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Filename:

Res HVAC Tune-up

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	-0.24	kW/Cus
(2) Change in Peak kW per Customer at generator	-0.29	kW Gen/Cus
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator	(639)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter	(607)	kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	-0.07	kW/Cus
II. Economic Life and K-Factors		
(1) DSM Program Study Period		Years
(2) Economic Life of Incremental Generation		Years
(3) Economic Life of Incremental T&D		Years
(4) K-Factor for Generation	1.4331	
(5) K-Factor for T&D	1. <u>429</u> 8	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
III. Utility & Customer Costs		
(1) Utility Nonrecurring Cost Per Customer	\$125.00	\$/Cus
(2) Utility Recurring Cost Per Customer		\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	ψ/ Οα3/ 1 Cα1
(4) Customer Equipment Cost	\$200.00	\$/Cus
(5) Customer Equipment Cost Escalation Rate	0.00%	ψ/ Οα3
(6) Customer O&M Cost		\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1.80%	ψ/ Οα3/ Τ CαΙ
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%	ψ/ Οα3
* (10) Change in Supply Costs		\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%	φ, οασ, ι σαι
* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive	\$100.00	
* (15) Utility Recurring Rebate/Incentive		\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	0.00%	ψ/ Ous/ i cai
(10) Guinty Repate/incentive Escalation Rate	0.00%	

IV. Incremental Generation, Transmission, & Distrib	ution Costs	
(1) Base Year	<u>2</u> 014	
(2) In-Service Year For Incremental Generation	2023 **	
(3) In-Service Year For Incremental T & D	2015_	
(4) Base Year Incremental Generation Cost	<u>\$8</u> 51. <u>95</u> \$/kW	
(5) Base Year Incremental Transmission Cost	\$3 <u>02.</u> 35_\$/kW	
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW	
(7) Gen, Tran, & Dist Cost Escalation Rate	1.80%	
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr	
(9) Generator Fixed O&M Escalation Rate	<u>1.9</u> 6%_	
(10) Transmission Fixed O & M Cost	\$6. <u>68</u>	
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr	
(12) T&D Fixed O&M Escalation Rate	1.80%	
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00_\$/kW/Yr	
(14) Incre Gen Variable O&M Cost Esc Rate	0.0 <u>0</u> %	
(15) Incremental Gen Capacity Factor	9.43%	
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 71_\$/kWh	
(17) Incremental Gen Unit Fuel Esc_Rate	5.10%	
(18) Incremental Purchased Capacity Cost	\$0.47_\$/KW/YR	
(19) Incremental Capacity Cost Esc Rate	21.61%	
		
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0	
		
V. (1) Non-Fuel Cost In Customer Bill (Base Year)		
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0. <u>06</u> 87_\$/kWh	
(2) Non-Fuel Escalation Rate	Per Table	
(3) Customer Demand Charge Per kW (Base Year)	\$0. <u>00</u> 00_\$/kW/Mo	
(4) Demand Charge Escalation Rate	Per Table	
* (5)Average Annual Change in Monthly Billing kW	0 kW/Mo.	

Benefit:Cost Ratio

Summary Results for This Analysis							
	TRC	Participants'	RIM				
NPV Benefits(\$000s)	\$24,925	\$26,060	\$24,925				
NPV Costs (\$000s)	\$6,588	\$4,054	\$28,594				
NPV Net Benefits (\$000s)	\$18,337	\$22,006	(\$3,668)				

3.783



0.872

6.428

^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in					Incremental	Incremental	Incremental			Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$100	\$160	\$0	\$0	\$0	(\$13)	(\$21)	\$260	\$34	(\$226)	(\$210)
2016	\$0	\$150	\$240	\$0	\$0	\$0	(\$34)	(\$58)	\$390	\$92	(\$298)	(\$466)
2017	\$0	\$250	\$400	\$0	\$0	\$0	(\$69)	(\$127)	\$650	\$196	(\$454)	(\$827)
2018	\$0	\$400	\$640	\$0	\$0	\$0	(\$127)	(\$238)	\$1,040	\$365	(\$675)	(\$1,326)
2019	\$0	\$425	\$680	\$0	\$0	\$0	(\$191)	(\$370)	\$1,105	\$561	(\$544)	(\$1,699)
2020	\$0	\$475	\$760	\$0	\$0	\$0	(\$263)	(\$534)	\$1,235	\$798	(\$437)	(\$1,977)
2021	\$0	\$525	\$840	\$0	\$0	\$0	(\$346)	(\$738)	\$1,365	\$1,085	(\$280)	(\$2,142)
2022	\$0	\$575	\$920	\$0	\$0	\$0	(\$440)	(\$978)	\$1,495	\$1,418	(\$77)	(\$2,184)
2023	\$0	\$606	\$970	\$0	\$0	(\$936)	(\$541)	(\$1,265)	\$1,576	\$2,743	\$1,167	(\$1,593)
2024	\$0	\$625	\$1,000	\$0	\$0	(\$1,123)	(\$649)	(\$1,492)	\$1,625	\$3,264	\$1,639	(\$823)
2025	\$0	\$0	\$0	\$0	\$0	(\$1,144)	(\$661)	(\$1,560)	\$0	\$3,365	\$3,365	\$642
2026	\$0	\$0	\$0	\$0	\$0	(\$1,165)	(\$673)	(\$1,625)	\$0	\$3,463	\$3,463	\$2,040
2027	\$0	\$0	\$0	\$0	\$0	(\$1,186)	(\$685)	(\$1,699)	\$0	\$3,571	\$3,571	\$3,377
2028	\$0	\$0	\$0	\$0	\$0	(\$1,208)	(\$697)	(\$1,800)	\$0	\$3,706	\$3,706	\$4,664
2029	\$0	\$0	\$0	\$0	\$0	(\$1,230)	(\$710)	(\$1,868)	\$0	\$3,808	\$3,808	\$5,889
2030	\$0	\$0	\$0	\$0	\$0	(\$1,253)	(\$723)	(\$1,964)	\$0	\$3,940	\$3,940	\$7,065
2031	\$0	\$0	\$0	\$0	\$0	(\$1,276)	(\$736)	(\$2,040)	\$0	\$4,051	\$4,051	\$8,186
2032	\$0	\$0	\$0	\$0	\$0	(\$1,300)	(\$749)	(\$2,122)	\$0	\$4,171	\$4,171	\$9,257
2033	\$0	\$0	\$0	\$0	\$0	(\$1,324)	(\$763)	(\$2,230)	\$0	\$4,317	\$4,317	\$10,284
2034	\$0	\$0	\$0	\$0	\$0	(\$1,348)	(\$776)	(\$2,336)	\$0	\$4,461	\$4,461	\$11,268
2035	\$0	\$0	\$0	\$0	\$0	(\$1,373)	(\$790)	(\$2,422)	\$0	\$4,585	\$4,585	\$12,205
2036	\$0	\$0	\$0	\$0	\$0	(\$1,399)	(\$804)	(\$2,519)	\$0	\$4,722	\$4,722	\$13,101
2037	\$0	\$0	\$0	\$0	\$0	(\$1,424)	(\$819)	(\$2,603)	\$0	\$4,846	\$4,846	\$13,953
2038	\$0	\$0	\$0	\$0	\$0	(\$1,450)	(\$834)	(\$2,710)	\$0	\$4,994	\$4,994	\$14,768
2039	\$0	\$0	\$0	\$0	\$0	(\$1,477)	(\$849)	(\$2,838)	\$0	\$5,163	\$5,163	\$15,548
2040	\$0	\$0	\$0	\$0	\$0	(\$1,504)	(\$864)	(\$2,933)	\$0	\$5,300	\$5,300	\$16,291
2041	\$0	\$0	\$0	\$0	\$0	(\$1,531)	(\$880)	(\$3,099)	\$0	\$5,509	\$5,509	\$17,007
2042	\$0	\$0	\$0	\$0	\$0	(\$1,559)	(\$895)	(\$3,186)	\$0	\$5,641	\$5,641	\$17,687
2043	\$0	\$0	\$0	\$0	\$0	(\$1,587)	(\$911)	(\$3,319)	\$0	\$5,818	\$5,818	\$18,337
Nominal		\$4,131	\$6,610			(\$27,798)	(\$17,494)	(\$50,694)	\$10,741	\$95,986	\$85,245	
NPV		\$2,533.830	\$4,054.127	\$0.000	\$0.000	(\$6,934.284)	(\$4,931.321)	(\$13,059.494)	\$6,587.957	\$24,925.099	\$18,337.142	
	ount Rate =	7.85%	ψ 1,00 1.121	ψυ.υυυ	ψυ.υυυ	(\$0,00 1.204)	(\$1,001.021)	(\$10,000.104)	30,007.007	ŢZ 1,020.000	Ţ10,007.11FZ	
	it/Cost Ratio =	3.78										
		0.70										



Filename: Res HVAC Tune-up

Participants' Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12
		• .			Change in	_	Utility Paid			Total	Cumulative
	Customer Equip Costs	Customer O&M Costs	Other Costs	Other Benefits	Participants' Electric Bills	Tax Credits	Rebates & Incentives	Total Costs	Total Benefits	Net Benefits	Discounted Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$160	\$0	\$0	\$0	(\$56)	\$0	\$80	\$160	\$136	(\$24)	(\$22)
2016	\$240	\$0	\$0	\$0	(\$146)	\$0	\$120	\$240	\$266	\$26	(\$0)
2017	\$400	\$0	\$0	\$0	(\$300)	\$0	\$200	\$400	\$500	\$100	\$79
2018	\$640	\$0	\$0	\$0	(\$554)	\$0	\$320	\$640	\$874	\$234	\$252
2019	\$680	\$0	\$0	\$0	(\$835)	\$0	\$340	\$680	\$1,175	\$495	\$591
2020	\$760	\$0	\$0	\$0	(\$1,168)	\$0	\$380	\$760	\$1,548	\$788	\$1,092
2021	\$840	\$0	\$0	\$0	(\$1,538)	\$0	\$420	\$840	\$1,958	\$1,118	\$1,751
2022	\$920	\$0	\$0	\$0	(\$1,944)	\$0	\$460	\$920	\$2,404	\$1,484	\$2,561
2023	\$970	\$0	\$0	\$0	(\$2,419)	\$0	\$485	\$970	\$2,904	\$1,934	\$3,541
2024	\$1,000	\$0	\$0	\$0	(\$2,928)	\$0	\$500	\$1,000	\$3,428	\$2,428	\$4,681
2025	\$0	\$0	\$0	\$0	(\$3,034)	\$0	\$0	\$0	\$3,034	\$3,034	\$6,003
2026	\$0	\$0	\$0	\$0	(\$3,131)	\$0	\$0	\$0	\$3,131	\$3,131	\$7,267
2027	\$0	\$0	\$0	\$0	(\$3,228)	\$0	\$0	\$0	\$3,228	\$3,228	\$8,476
2028	\$0	\$0	\$0	\$0	(\$3,338)	\$0	\$0	\$0	\$3,338	\$3,338	\$9,634
2029	\$0	\$0	\$0	\$0	(\$3,449)	\$0	\$0	\$0	\$3,449	\$3,449	\$10,744
2030	\$0	\$0	\$0	\$0	(\$3,570)	\$0	\$0	\$0	\$3,570	\$3,570	\$11,810
2031	\$0	\$0	\$0	\$0	(\$3,673)	\$0	\$0	\$0	\$3,673	\$3,673	\$12,826
2032	\$0	\$0	\$0	\$0	(\$3,800)	\$0	\$0	\$0	\$3,800	\$3,800	\$13,801
2033 2034	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$3,921) (\$4,031)	\$0 ©0	\$0 \$0	\$0 \$0	\$3,921 \$4,031	\$3,921 \$4,031	\$14,734 \$15,623
2034	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$4,031)	\$0 \$0	\$0 \$0	\$0 \$0	\$4,031 \$4,161	\$4,031 \$4,161	\$15,623 \$16,474
2036	\$0	\$0 \$0	\$0	\$0 \$0	(\$4,280)	\$0	\$0	\$0 \$0	\$4,280	\$4,280	\$10,474 \$17,286
2037	\$0	\$0	\$0	\$0	(\$4,392)	\$0	\$0	\$0	\$4,392	\$4,392	\$18,059
2038	\$0	\$0	\$0	\$0	(\$4,533)	\$0	\$0	\$0	\$4,533	\$4,533	\$18,798
2039	\$0	\$0	\$0	\$0	(\$4,665)	\$0	\$0	\$0	\$4,665	\$4,665	\$19,503
2040	\$0	\$0	\$0	\$0	(\$4,773)	\$0	\$0	\$0	\$4,773	\$4,773	\$20,172
2041	\$0	\$0	\$0	\$0	(\$4,938)	\$0	\$0	\$0	\$4,938	\$4,938	\$20,814
2042	\$0	\$0	\$0	\$0	(\$5,074)	\$0	\$0	\$0	\$5,074	\$5,074	\$21,425
2043	\$0	\$0	\$0	\$0	(\$5,192)	\$0	\$0	\$0	\$5,192	\$5,192	\$22,006
	\$6,610 \$3,759 nt Rate =	\$0 7.85% 6.43	\$0	\$0	(\$89,070) (\$24,033)	\$0	\$3,305 \$2,027	\$6,610 \$4,054.127	\$92,375 \$26,059.722	\$85,765 \$22,006	





Filename: Res HVAC Tune-up

Ratepayers' Impact Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental					Total Net	Cumulative
	Electric	Program	Rebates &	Electric	Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
	Supply Costs	Costs	Incentives	Revenues	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
2015	\$0.000	\$100.000	\$80.000	(\$55.740)	\$0.000	(\$13.388)	(\$20.518)	\$0.000	\$0.000	\$235.740	\$33.906	(\$201.834)	(\$187.143)
2016	\$0.000	\$150.000	\$120.000	(\$145.761)	\$0.000	(\$34.072)	(\$58.169)	\$0.000	\$0.000	\$415.761	\$92.241	(\$323.520)	(\$465.282)
2017	\$0.000	\$250.000	\$200.000	(\$299.741)	\$0.000	(\$69.371)	(\$127.017)	\$0.000	\$0.000	\$749.741	\$196.388	(\$553.354)	(\$906.388)
2018	\$0.000	\$400.000	\$320.000	(\$553.900)	\$0.000	(\$127.115)	(\$238.121)	\$0.000	\$0.000	\$1,273.900	\$365.237	(\$908.663)	(\$1,578.008)
2019	\$0.000	\$425.000	\$340.000	(\$834.513)	\$0.000	(\$190.511)	(\$370.133)	\$0.000	\$0.000	\$1,599.513	\$560.643	(\$1,038.870)	(\$2,289.979)
2020 2021	\$0.000 \$0.000	\$475.000 \$525.000	\$380.000 \$420.000	(\$1,168.133) (\$1,538.292)	\$0.000 \$0.000	(\$263.466) (\$346.435)	(\$534.181) (\$738.418)	\$0.000 \$0.000	\$0.000 \$0.000	\$2,023.133 \$2,483.292	\$797.646 \$1,084.853	(\$1,225.486) (\$1,398.439)	(\$3,068.714) (\$3,892.672)
2021	\$0.000	\$575.000	\$460.000	(\$1,943.814)	\$0.000	(\$439.891)	(\$977.755)	\$0.000	\$0.000	\$2,463.292	\$1,417.645	(\$1,561.169)	(\$4,745.559)
2022	\$0.000	\$606.250	\$485.000	(\$2,419.452)	(\$936.154)	(\$541.424)	(\$1,265.400)	\$0.000	\$0.000	\$3,510.702	\$2,742.978	(\$767.724)	(\$5,134.449)
2023	\$0.000	\$625.000	\$500.000	(\$2,927.796)	(\$1,123.260)	(\$649.417)	(\$1,491.812)	\$0.000	\$0.000	\$4,052.796	\$3,264.489	(\$788.307)	(\$5,504.701)
2025	\$0.000	\$0.000	\$0.000	(\$3,033.752)	(\$1,143.855)	(\$661.107)	(\$1,559.809)	\$0.000	\$0.000	\$3,033.752	\$3,364.771	\$331.019	(\$5,360.544)
2026	\$0.000	\$0.000	\$0.000	(\$3,131.009)	(\$1,164.913)	(\$673.007)	(\$1,624.728)	\$0.000	\$0.000	\$3,131.009	\$3,462.648	\$331.639	(\$5,226.629)
2027	\$0.000	\$0.000	\$0.000	(\$3,228.225)	(\$1,186.346)	(\$685.121)	(\$1,699.373)	\$0.000	\$0.000	\$3,228.225	\$3,570.840	\$342.615	(\$5,098.352)
2028	\$0.000	\$0.000	\$0.000	(\$3,337.917)	(\$1,208.160)	(\$697.453)	(\$1,799.976)	\$0.000	\$0.000	\$3,337.917	\$3,705.590	\$367.673	(\$4,970.713)
2029	\$0.000	\$0.000	\$0.000	(\$3,448.686)	(\$1,230.363)	(\$710.007)	(\$1,867.620)	\$0.000	\$0.000	\$3,448.686	\$3,807.990	\$359.304	(\$4,855.058)
2030	\$0.000	\$0.000	\$0.000	(\$3,569.598)	(\$1,253.058)	(\$722.788)	(\$1,963.909)	\$0.000	\$0.000	\$3,569.598	\$3,939.754	\$370.156	(\$4,744.582)
2031	\$0.000	\$0.000	\$0.000	(\$3,672.666)	(\$1,276.156)	(\$735.798)	(\$2,039.503)	\$0.000	\$0.000	\$3,672.666	\$4,051.456	\$378.791	(\$4,639.757)
2032	\$0.000	\$0.000	\$0.000	(\$3,799.832)	(\$1,299.665)	(\$749.042)	(\$2,121.857)	\$0.000	\$0.000	\$3,799.832	\$4,170.564	\$370.732	(\$4,544.631)
2033	\$0.000	\$0.000	\$0.000	(\$3,921.171)	(\$1,323.689)	(\$762.525)	(\$2,230.430)	\$0.000	\$0.000	\$3,921.171	\$4,316.643	\$395.472	(\$4,450.541)
2034	\$0.000	\$0.000	\$0.000	(\$4,030.891)	(\$1,348.235)	(\$776.250)	(\$2,336.358)	\$0.000	\$0.000	\$4,030.891	\$4,460.843	\$429.952	(\$4,355.694)
2035	\$0.000	\$0.000	\$0.000	(\$4,161.263)	(\$1,373.215)	(\$790.223)	(\$2,421.737)	\$0.000	\$0.000	\$4,161.263	\$4,585.176	\$423.913	(\$4,268.986)
2036	\$0.000	\$0.000	\$0.000	(\$4,280.153)	(\$1,398.927)	(\$804.447)	(\$2,518.915)	\$0.000	\$0.000	\$4,280.153	\$4,722.289	\$442.136	(\$4,185.133)
2037	\$0.000	\$0.000	\$0.000	(\$4,392.136)	(\$1,424.416)	(\$818.927)	(\$2,602.673)	\$0.000	\$0.000	\$4,392.136	\$4,846.016	\$453.879	(\$4,105.317)
2038	\$0.000	\$0.000	\$0.000	(\$4,533.118)	(\$1,450.365)	(\$833.668)	(\$2,710.448)	\$0.000	\$0.000	\$4,533.118	\$4,994.481	\$461.363	(\$4,030.091)
2039	\$0.000	\$0.000	\$0.000	(\$4,665.285)	(\$1,476.686)	(\$848.674)	(\$2,837.820)	\$0.000	\$0.000	\$4,665.285	\$5,163.180	\$497.895	(\$3,954.818)
2040	\$0.000	\$0.000	\$0.000	(\$4,772.820)	(\$1,503.580)	(\$863.950)	(\$2,932.915)	\$0.000	\$0.000	\$4,772.820	\$5,300.444	\$527.624	(\$3,880.856)
2041	\$0.000	\$0.000	\$0.000	(\$4,937.551)	(\$1,530.959)	(\$879.501)	(\$3,098.562)	\$0.000	\$0.000	\$4,937.551	\$5,509.022	\$571.471	(\$3,806.578)
2042	\$0.000	\$0.000	\$0.000	(\$5,074.128)	(\$1,558.834)	(\$895.332)	(\$3,186.343)	\$0.000	\$0.000	\$5,074.128	\$5,640.508	\$566.380	(\$3,738.320)
2043	\$0.000	\$0.000	\$0.000	(\$5,192.331)	(\$1,586.924)	(\$911.448)	(\$3,319.201)	\$0.000	\$0.000	\$5,192.331	\$5,817.573	\$625.242	(\$3,668.452)
Nominal		\$4,131.250	\$3,305.000	(\$89,069.673)	(\$27,797.761)	(\$17,494.356)	(\$50,693.697)	<u> </u>		\$96,505.923	\$95,985.814	(\$520.109)	
NPV		\$2,533.830	\$2,027.064	(\$24,032.658)	(\$6,934.284)	(\$4,931.321)	(\$13,059.494)	\$0.000	\$0.000	\$28,593.551	\$24,925.099	(\$3,668.452)	
	unt Rate =	7.85%											
Benefit/	Cost Ratio =	0.87											



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Res QI

INPUT DATA -- PART 1

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	-0.18	kW/Cus
(2) Change in Peak kW per Customer at generator	-0.22	kW Gen/Cus
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator		kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter		kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter		kW/Cus
(6) Change in Winter KW per Cust at meter	-0.08	KW/Cus
H. Francis I.V. and K.Fratana		
II. Economic Life and K-Factors		V
(1) DSM Program Study Period		Years
(2) Economic Life of Incremental Generation		Years
(3) Economic Life of Incremental T&D		Years
(4) K-Factor for Generation	<u>1.4331</u>	
(5) K-Factor for T&D	1.4298	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
III. Utility & Customer Costs		
(1) Utility Nonrecurring Cost Per Customer	<u>\$125.00</u>	\$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00	\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$100.00	\$/Cus
(5) Customer Equpiment Cost Escalation Rate	0.00%	
(6) Customer O&M Cost		\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1.80%	4, 5 3.5, 1 5 3.
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%	φ/οαο
* (10) Change in Supply Costs		\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%	φ/Cus/ i eai
* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive	\$7 <u>5.0</u> 0	
* (15) Utility Recurring Rebate/Incentive		\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	0.00%	

V. Incremental Generation, Transmission, & Distribu	ition Costs	
(1) Base Year	2014_	
(2) In-Service Year For Incremental Generation	2023 **	
(3) In-Service Year For Incremental T & D	2015	
(4) Base Year Incremental Generation Cost	\$851.95 \$/kW	
(5) Base Year Incremental Transmission Cost	\$302.35 \$/kW	
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW	
(7) Gen, Tran, & Dist Cost Escalation Rate	1.80%	
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr	
(9) Generator Fixed O&M Escalation Rate	1.96%	
(10) Transmission Fixed O & M Cost	\$6.68 \$/kW/Yr	
(11) Distribution Fixed O & M Cost	\$4.74 \$/kW/Yr	
(12) T&D Fixed O&M Escalation Rate	1.80%	
(13) Incremental Gen Variable O & M Costs	\$0.000 \$/kW/Yr	
(14) Incre Gen Variable O&M Cost Esc Rate	0.00%	
(15) Incremental Gen Capacity Factor	9.43%	
(16) Incremental Generating Unit Fuel Cost	\$0.0371_\$/kWh	
(17) Incremental Gen Unit Fuel Esc Rate	5.10%	
(18) Incremental Purchased Capacity Cost	\$0.47 \$/KW/YR	
(19) Incremental Capacity Cost Esc Rate	<u>2</u> 1.6 <u>1%</u>	
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0	
. (1) Non-Fuel Cost In Customer Bill (Base Year)		
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.06</u> 87_\$/kWh	
(2) Non-Fuel Escalation Rate	Per Table	
(2) Contains Demand Charas Dev LW (Base Vees)	## 0000 ## NA/AA	

(1) Non-Fuel Cost in Customer Bill (Base Year)	\$0 <u>.06</u> 87_\$/kvvh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$0.0000 \$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	0 kW/Mo.
 .	-

	TRC	Participants'	RIM
NPV Benefits(\$000s)	\$20,669	\$21,779	\$20,669
NPV Costs (\$000s)	\$5,137	\$2,283	\$24,633
NPV Net Benefits (\$000s)	\$15,531	\$19,496	(\$3,965)
Benefit:Cost Ratio	4.023	9.539	0.839



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

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Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in					Incremental	Incremental	Incremental			Total	Cumulative
1	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$250	\$200	\$0	\$0	\$0	(\$25)	(\$38)	\$450	\$63	(\$387)	(\$359)
2016	\$0	\$250	\$200	\$0	\$0	\$0	(\$51)	(\$86)	\$450	\$137	(\$313)	(\$628)
2017	\$0	\$250	\$200	\$0	\$0	\$0	(\$77)	(\$142)	\$450	\$219	(\$231)	(\$812)
2018	\$0	\$313	\$250	\$0	\$0	\$0	(\$111)	(\$209)	\$563	\$320	(\$242)	(\$992)
2019	\$0	\$438	\$350	\$0	\$0	\$0	(\$160)	(\$311)	\$788	\$471	(\$316)	(\$1,208)
2020	\$0	\$563	\$450	\$0	\$0	\$0	(\$224)	(\$455)	\$1,013	\$679	(\$334)	(\$1,420)
2021	\$0	\$625	\$500	\$0	\$0	\$0	(\$297)	(\$634)	\$1,125	\$931	(\$194)	(\$1,535)
2022	\$0	\$625	\$500	\$0	\$0	\$0	(\$373)	(\$830)	\$1,125	\$1,202	\$77	(\$1,492)
2023	\$0	\$625	\$500	\$0	\$0	(\$780)	(\$451)	(\$1,056)	\$1,125	\$2,286	\$1,161	(\$904)
2024	\$0	\$625	\$500	\$0	\$0	(\$920)	(\$532)	(\$1,224)	\$1,125	\$2,676	\$1,551	(\$176)
2025	\$0	\$0	\$0	\$0	\$0	(\$937)	(\$541)	(\$1,280)	\$0	\$2,758	\$2,758	\$1,025
2026	\$0	\$0	\$0	\$0	\$0	(\$954)	(\$551)	(\$1,333)	\$0	\$2,838	\$2,838	\$2,171
2027	\$0	\$0	\$0	\$0	\$0	(\$972)	(\$561)	(\$1,394)	\$0	\$2,927	\$2,927	\$3,267
2028	\$0	\$0	\$0	\$0	\$0	(\$989)	(\$571)	(\$1,477)	\$0	\$3,038	\$3,038	\$4,322
2029	\$0	\$0	\$0	\$0	\$0	(\$1,008)	(\$581)	(\$1,532)	\$0	\$3,122	\$3,122	\$5,327
2030	\$0	\$0	\$0	\$0	\$0	(\$1,026)	(\$592)	(\$1,612)	\$0	\$3,230	\$3,230	\$6,291
2031	\$0	\$0	\$0	\$0	\$0	(\$1,045)	(\$603)	(\$1,674)	\$0	\$3,321	\$3,321	\$7,210
2032	\$0	\$0	\$0	\$0	\$0	(\$1,064)	(\$613)	(\$1,741)	\$0	\$3,419	\$3,419	\$8,087
2033	\$0	\$0	\$0	\$0	\$0	(\$1,084)	(\$624)	(\$1,830)	\$0	\$3,539	\$3,539	\$8,929
2034	\$0	\$0	\$0	\$0	\$0	(\$1,104)	(\$636)	(\$1,917)	\$0	\$3,657	\$3,657	\$9,736
2035	\$0	\$0	\$0	\$0	\$0	(\$1,125)	(\$647)	(\$1,987)	\$0	\$3,759	\$3,759	\$10,504
2036	\$0	\$0	\$0	\$0	\$0	(\$1,146)	(\$659)	(\$2,067)	\$0	\$3,871	\$3,871	\$11,239
2037	\$0	\$0	\$0	\$0	\$0	(\$1,166)	(\$671)	(\$2,136)	\$0	\$3,973	\$3,973	\$11,937
2038	\$0	\$0	\$0	\$0	\$0	(\$1,188)	(\$683)	(\$2,224)	\$0	\$4,095	\$4,095	\$12,605
2039	\$0	\$0	\$0	\$0	\$0	(\$1,209)	(\$695)	(\$2,329)	\$0	\$4,233	\$4,233	\$13,245
2040	\$0	\$0	\$0	\$0	\$0	(\$1,231)	(\$708)	(\$2,407)	\$0	\$4,345	\$4,345	\$13,854
2041	\$0	\$0	\$0	\$0	\$0	(\$1,254)	(\$720)	(\$2,543)	\$0	\$4,517	\$4,517	\$14,441
2042	\$0	\$0	\$0	\$0	\$0	(\$1,277)	(\$733)	(\$2,615)	\$0	\$4,624	\$4,624	\$14,998
2043	\$0	\$0	\$0	\$0	\$0	(\$1,300)	(\$746)	(\$2,724)	\$0	\$4,770	\$4,770	\$15,531
	ount Rate = t/Cost Ratio =	\$4,563 \$2,854.112 7.85% 4.02	\$3,650 \$2,283.290	\$0.000	\$0.000	(\$22,777) (\$5,685.245)	(\$14,436) (\$4,118.397)	(\$41,805) (\$10,865.013)	\$8,213 \$5,137.402	\$79,018 \$20,668.654	\$70,806 \$15,531.252	



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Participants' Cost-Effectiveness Measure

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

1	2	3	4	5	6	7	8	9	10	11	12
					Change in		Utility Paid			Total	Cumulative
	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$200	\$0	\$0	\$0	(\$104)	\$0	\$150	\$200	\$254	\$54	\$50
2016	\$200	\$0	\$0	\$0	(\$217)	\$0	\$150	\$200	\$367	\$167	\$193
2017	\$200	\$0	\$0	\$0	(\$334)	\$0	\$150	\$200	\$484	\$284	\$419
2018	\$250	\$0	\$0	\$0	(\$486)	\$0	\$188	\$250	\$673	\$423	\$732
2019	\$350	\$0	\$0	\$0	(\$702)	\$0	\$263	\$350	\$964	\$614	\$1,153
2020	\$450	\$0	\$0	\$0	(\$994)	\$0	\$338	\$450	\$1,332	\$882	\$1,714
2021	\$500	\$0	\$0	\$0	(\$1,321)	\$0	\$375	\$500	\$1,696	\$1,196	\$2,419
2022	\$500	\$0	\$0	\$0	(\$1,650)	\$0	\$375	\$500	\$2,025	\$1,525	\$3,252
2023	\$500	\$0	\$0	\$0	(\$2,019)	\$0	\$375	\$500	\$2,394	\$1,894	\$4,211
2024	\$500	\$0	\$0	\$0	(\$2,402)	\$0	\$375	\$500	\$2,777	\$2,277	\$5,280
2025	\$0	\$0	\$0	\$0	(\$2,489)	\$0	\$0	\$0	\$2,489	\$2,489	\$6,365
2026	\$0	\$0	\$0	\$0	(\$2,569)	\$0	\$0	\$0	\$2,569	\$2,569	\$7,402
2027	\$0	\$0	\$0	\$0	(\$2,649)	\$0	\$0	\$0	\$2,649	\$2,649	\$8,394
2028	\$0	\$0	\$0	\$0	(\$2,739)	\$0	\$0	\$0	\$2,739	\$2,739	\$9,345
2029	\$0	\$0	\$0	\$0	(\$2,830)	\$0	\$0	\$0	\$2,830	\$2,830	\$10,255
2030	\$0	\$0	\$0	\$0	(\$2,929)	\$0	\$0	\$0	\$2,929	\$2,929	\$11,130
2031	\$0	\$0	\$0	\$0	(\$3,014)	\$0	\$0	\$0	\$3,014	\$3,014	\$11,964
2032	\$0	\$0	\$0	\$0	(\$3,118)	\$0	\$0	\$0	\$3,118	\$3,118	\$12,764
2033	\$0	\$0	\$0	\$0	(\$3,218)	\$0	\$0	\$0	\$3,218	\$3,218	\$13,529
2034	\$0	\$0	\$0	\$0	(\$3,308)	\$0	\$0	\$0	\$3,308	\$3,308	\$14,259
2035	\$0	\$0	\$0	\$0	(\$3,415)	\$0	\$0	\$0	\$3,415	\$3,415	\$14,957
2036	\$0	\$0	\$0	\$0	(\$3,512)	\$0	\$0	\$0	\$3,512	\$3,512	\$15,623
2037	\$0	\$0	\$0	\$0	(\$3,604)	\$0	\$0	\$0	\$3,604	\$3,604	\$16,257
2038	\$0	\$0	\$0	\$0	(\$3,720)	\$0	\$0	\$0	\$3,720	\$3,720	\$16,864
2039	\$0	\$0	\$0	\$0	(\$3,828)	\$0	\$0	\$0	\$3,828	\$3,828	\$17,442
2040	\$0	\$0	\$0	\$0	(\$3,916)	\$0	\$0	\$0	\$3,916	\$3,916	\$17,991
2041	\$0	\$0	\$0	\$0	(\$4,052)	\$0	\$0	\$0	\$4,052	\$4,052	\$18,518
2042	\$0	\$0	\$0	\$0	(\$4,164)	\$0	\$0	\$0	\$4,164	\$4,164	\$19,020
2043	\$0	\$0	\$0	\$0	(\$4,261)	\$0	\$0	\$0	\$4,261	\$4,261	\$19,496

(\$73,561) (\$20,067)

\$0

\$0

\$2,738 \$1,712

\$3,650 \$76,299 \$2,283.290 \$21,779.174

\$72,649

\$19,496

Nominal	\$3,650	
NPV	\$2,117	\$0
Discount F	7.85%	
Benefit/Cost	9.54	



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Ratepayers' Impact Cost-Effectiveness Measure

Cost-Effectiveness	Analysis per Pula	25-17 008 Florida	Administrative Code
Cost-Ellectiveness	Analysis ber Kule	: Z3-17.000 FIORIUZ	I Administrative Code

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental	<u> </u>				Total Net	Cumulative
	Electric	Program	Rebates &	Electric	Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
	Supply Costs	Costs	Incentives	Revenues	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
2015	\$0.000	\$250.000	\$150.000	(\$103.536)	\$0.000	(\$24.819)	(\$38.112)	\$0.000	\$0.000	\$503.536	\$62.931	(\$440.605)	(\$408.536)
2016	\$0.000	\$250.000	\$150.000	(\$216.601)	\$0.000	(\$50.531)	(\$86.439)	\$0.000	\$0.000	\$616.601	\$136.970	(\$479.631)	(\$820.887)
2017	\$0.000	\$250.000	\$150.000	(\$334.061)	\$0.000	(\$77.161)	(\$141.560)	\$0.000	\$0.000	\$734.061	\$218.720	(\$515.341)	(\$1,231.691)
2018	\$0.000	\$312.500	\$187.500	(\$485.854)	\$0.000	(\$111.278)	(\$208.868)	\$0.000	\$0.000	\$985.854	\$320.147	(\$665.707)	(\$1,723.735)
2019	\$0.000	\$437.500	\$262.500	(\$701.934)	\$0.000	(\$159.927)	(\$311.330)	\$0.000	\$0.000	\$1,401.934	\$471.256	(\$930.678)	(\$2,361.559)
2020	\$0.000	\$562.500	\$337.500	(\$994.492)	\$0.000	(\$223.857)	(\$454.776)	\$0.000	\$0.000	\$1,894.492	\$678.633	(\$1,215.859)	(\$3,134.176)
2021	\$0.000	\$625.000	\$375.000	(\$1,321.150)	\$0.000	(\$296.943)	(\$634.184)	\$0.000	\$0.000	\$2,321.150	\$931.128	(\$1,390.022)	(\$3,953.175)
2022	\$0.000	\$625.000	\$375.000	(\$1,649.683)	\$0.000	(\$372.588)	(\$829.804)	\$0.000	\$0.000	\$2,649.683	\$1,202.392	(\$1,447.291)	(\$4,743.849)
2023	\$0.000	\$625.000	\$375.000	(\$2,018.750)	(\$779.562)	(\$450.860)	(\$1,055.828)	\$0.000	\$0.000	\$3,018.750	\$2,286.250	(\$732.499)	(\$5,114.896)
2024	\$0.000	\$625.000	\$375.000	(\$2,402.426)	(\$919.873)	(\$531.828)	(\$1,224.118)	\$0.000	\$0.000	\$3,402.426	\$2,675.819	(\$726.607)	(\$5,456.169)
2025	\$0.000	\$0.000	\$0.000	(\$2,489.369)	(\$936.738)	(\$541.401)	(\$1,279.914)	\$0.000	\$0.000	\$2,489.369	\$2,758.053	\$268.684	(\$5,339.158)
2026	\$0.000	\$0.000	\$0.000	(\$2,569.174)	(\$953.984)	(\$551.146)	(\$1,333.183)	\$0.000	\$0.000	\$2,569.174	\$2,838.314	\$269.139	(\$5,230.481)
2027	\$0.000	\$0.000	\$0.000	(\$2,648.946)	(\$971.536)	(\$561.067)	(\$1,394.434)	\$0.000	\$0.000	\$2,648.946	\$2,927.037	\$278.091	(\$5,126.362)
2028	\$0.000	\$0.000	\$0.000	(\$2,738.954)	(\$989.400)	(\$571.166)	(\$1,476.985)	\$0.000	\$0.000	\$2,738.954	\$3,037.551	\$298.597	(\$5,022.703)
2029	\$0.000	\$0.000	\$0.000	(\$2,829.847)	(\$1,007.583)	(\$581.447)	(\$1,532.490)	\$0.000	\$0.000	\$2,829.847	\$3,121.520	\$291.673	(\$4,928.817)
2030	\$0.000	\$0.000	\$0.000	(\$2,929.062)	(\$1,026.168)	(\$591.913)	(\$1,611.501)	\$0.000	\$0.000	\$2,929.062	\$3,229.582	\$300.521	(\$4,839.124)
2031	\$0.000	\$0.000	\$0.000	(\$3,013.635)	(\$1,045.084)	(\$602.568)	(\$1,673.530)	\$0.000	\$0.000	\$3,013.635	\$3,321.182	\$307.547	(\$4,754.015)
2032	\$0.000	\$0.000	\$0.000	(\$3,117.983)	(\$1,064.336)	(\$613.414)	(\$1,741.107)	\$0.000	\$0.000	\$3,117.983	\$3,418.857	\$300.874	(\$4,676.813)
2033	\$0.000	\$0.000	\$0.000	(\$3,217.548)	(\$1,084.010)	(\$624.455)	(\$1,830.197)	\$0.000	\$0.000	\$3,217.548	\$3,538.662	\$321.114	(\$4,600.415)
2034	\$0.000	\$0.000	\$0.000	(\$3,307.579)	(\$1,104.112)	(\$635.696)	(\$1,917.117)	\$0.000	\$0.000	\$3,307.579	\$3,656.924	\$349.345	(\$4,523.350)
2035	\$0.000	\$0.000	\$0.000	(\$3,414.557)	(\$1,124.569)	(\$647.138)	(\$1,987.176)	\$0.000	\$0.000	\$3,414.557	\$3,758.883	\$344.326	(\$4,452.920)
2036	\$0.000	\$0.000	\$0.000	(\$3,512.113)	(\$1,145.625)	(\$658.787)	(\$2,066.916)	\$0.000	\$0.000	\$3,512.113	\$3,871.328	\$359.214	(\$4,384.794)
2037	\$0.000	\$0.000	\$0.000	(\$3,604.002)	(\$1,166.499)	(\$670.645)	(\$2,135.644)	\$0.000	\$0.000	\$3,604.002	\$3,972.788	\$368.785	(\$4,319.942)
2038	\$0.000	\$0.000	\$0.000	(\$3,719.686)	(\$1,187.750)	(\$682.716)	(\$2,224.080)	\$0.000	\$0.000	\$3,719.686	\$4,094.546	\$374.860	(\$4,258.821)
2039	\$0.000	\$0.000	\$0.000	(\$3,828.136)	(\$1,209.305)	(\$695.005)	(\$2,328.596)	\$0.000	\$0.000	\$3,828.136	\$4,232.905	\$404.769	(\$4,197.626)
2040	\$0.000	\$0.000	\$0.000	(\$3,916.376)	(\$1,231.329)	(\$707.515)	(\$2,406.626)	\$0.000	\$0.000	\$3,916.376	\$4,345.470	\$429.095	(\$4,137.476)
2041	\$0.000	\$0.000	\$0.000	(\$4,051.546)	(\$1,253.750)	(\$720.251)	(\$2,542.549)	\$0.000	\$0.000	\$4,051.546	\$4,516.550	\$465.004	(\$4,077.036)
2042	\$0.000	\$0.000	\$0.000	(\$4,163.616)	(\$1,276.578)	(\$733.215)	(\$2,614.579)	\$0.000	\$0.000	\$4,163.616	\$4,624.372	\$460.755	(\$4,021.508)
2043	\$0.000	\$0.000	\$0.000	(\$4,260.608)	(\$1,299.581)	(\$746.413)	(\$2,723.597)	\$0.000	\$0.000	\$4,260.608	\$4,769.591	\$508.983	(\$3,964.632)
	unt Rate =	\$4,562.500 \$2,854.112 7.85%	\$2,737.500 \$1,712.467	(\$73,561.226) (\$20,066.707)	(\$22,777.372) (\$5,685.245)	(\$14,435.751) (\$4,118.397)	(\$41,805.239) (\$10,865.013)	\$0.000	\$0.000	\$80,861.226 \$24,633.286	\$79,018.362 \$20,668.654	(\$1,842.864) (\$3,964.632)	
Benefit/	Cost Ratio =	0.84											



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Res Duct Sealing

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

I. Program Demand Impacts and Line Losses	
(1) Change in Peak kW Customer at meter	-0.15 kW/Cus
(2) Change in Peak kW per Customer at generator	-0.18 kW Gen/Cus
(3) kW Line Loss Percentage	7.12%
(4) Change in KWh per Customer at generator	(319) kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%
(6) Group Line Loss Multiplier	1.0015
(7) Annual Change in Customer kWh at Meter	(303) kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	-1.11 kW/Cus
<u> </u>	
II. Economic Life and K-Factors	
(1) DSM Program Study Period	<u>30</u> Years
(2) Economic Life of Incremental Generation	40 Years
(3) Economic Life of Incremental T&D	35 Years
(4) K-Factor for Generation	<u>1.4331</u>
(5) K-Factor for T&D	1. <u>429</u> 8
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1
III. Utility & Customer Costs	
(1) Utility Nonrecurring Cost Per Customer	\$125.00 \$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00 \$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%
(4) Customer Equipment Cost	\$450.00 \$/Cus
(5) Customer Equipment Cost Escalation Rate	0.00%
(6) Customer O&M Cost	\$0.00 \$/Cus/Year
(7) Customer O&M Cost Escalation Rate	
	1.80%
* (8) Customer Tax Credit Per Installation	\$0.00\$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%
* (10) Change in Supply Costs	\$0.00\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%
* (12) Utility Discount Rate	7 <u>.85</u> %
* (13) Utility AFUDC Rate	<u>6</u> .26 <u>%</u>
* (14) Utility Nonrecurring Rebate/Incentive	\$15 <u>0.0</u> 0 \$/Cus
* (15) Utility Recurring Rebate/Incentive	\$0.00_ \$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	0.00%
	

IV. Incremental Generation, Transmission, & Distrib	oution Costs	
(1) Base Year	2014	-
(2) In-Service Year For Incremental Generation	2023 **	
(3) In-Service Year For Incremental T & D	2015_	
(4) Base Year Incremental Generation Cost	<u>\$8</u> 51. <u>95</u> \$/kW	
(5) Base Year Incremental Transmission Cost	\$3 <u>02</u> .35_\$/kW	
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW	
(7) Gen, Tran, & Dist Cost Escalation Rate	<u> </u>	
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr	
(9) Generator Fixed O&M Escalation Rate	<u>1.9</u> 6%_	
(10) Transmission Fixed O & M Cost	\$6. <u>68</u> \$/kW/Yr	
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr	
(12) T&D_Fixed O&M Escalation Rate	1.8 <u>0%</u>	
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00_\$/kW/Yr	
(14) Incre Gen Variable O&M Cost Esc Rate	0.0 <u>0%</u>	
(1 <u>5) Incremental Gen Capacity Factor</u>	9.43%	
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 71\$/kWh	
(17) Incremental Gen Unit Fuel Esc Rate	5.1 <u>0%</u>	
(18) Incremental Purchased Capacity Cost	\$0.47_\$/KW/YR	
(19) Incremental Capacity Cost Esc Rate	<u>2</u> 1.6 <u>1%</u>	
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0	
V. (1) Non-Fuel Cost In Customer Bill (Base Year)		
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.06</u> 87_\$/kWh	
(2) Non-Fuel Escalation Rate	Per Table	
(3) Customer Demand Charge Per kW (Base Year)	\$0 <u>.00</u> 00\$/kW/Mo	
(4) Demand Charge Escalation Rate	Per Table	
* (5)Average Annual Change in Monthly Billing kW	0_kW/Mo.	

Summary Results for This Analysis

_	<u>TRC</u>	Participants'	RIM
NPV Benefits(\$000s)	\$7,545	\$7,980	\$7,545
NPV Costs (\$000s)	\$6,166	\$4,826	\$9,321
NPV Net Benefits (\$000s)	\$1,378	\$3,155	(\$1,776)
Benefit:Cost Ratio	1.224	1.654	0.809



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Filename:

Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in	J	7	<u> </u>	U	Incremental	Incremental	Incremental	10		Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
V	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
Year 2014	(\$000S) \$0	(\$000 s)	(\$000S)	(\$000 s)	\$0008)	(\$000\$)	(\$0008)	\$0008)	\$0008)	\$000S)	(\$000s) \$0	(\$000s) \$0
2015	\$0	\$63	\$225	\$0	\$0	\$0	(\$5)	(\$6)	\$288	\$12	(\$276)	(\$256)
2016	\$0	\$63	\$225	\$0	\$0	\$0	(\$11)	(\$15)	\$288	\$25	(\$262)	(\$481)
2017	\$0	\$63	\$225	\$0	\$0	\$0	(\$16)	(\$24)	\$288	\$40	(\$247)	(\$679)
2018	\$0	\$63	\$225	\$0	\$0	\$0	(\$22)	(\$33)	\$288	\$55	(\$232)	(\$850)
2019	\$0	\$188	\$675	\$0	\$0	\$0	(\$39)	(\$61)	\$863	\$100	(\$762)	(\$1,372)
2020	\$0	\$250	\$900	\$0	\$0	\$0	(\$63)	(\$102)	\$1,150	\$165	(\$985)	(\$1,998)
2021	\$0	\$313	\$1,125	\$0	\$0	\$0	(\$93)	(\$159)	\$1,438	\$252	(\$1,186)	(\$2,697)
2022	\$0	\$375	\$1,350	\$0	\$0	\$0	(\$131)	(\$231)	\$1,725	\$362	(\$1,363)	(\$3,441)
2023	\$0	\$438	\$1,575	\$0	\$0	(\$303)	(\$176)	(\$327)	\$2,013	\$806	(\$1,207)	(\$4,053)
2024	\$0	\$500	\$1,800	\$0	\$0	(\$394)	(\$228)	(\$417)	\$2,300	\$1,039	(\$1,261)	(\$4,645)
2025	\$0	\$0	\$0	\$0	\$0	(\$402)	(\$232)	(\$436)	\$0	\$1,069	\$1,069	(\$4,179)
2026	\$0	\$0	\$0	\$0	\$0	(\$409)	(\$236)	(\$454)	\$0	\$1,099	\$1,099	(\$3,735)
2027	\$0	\$0	\$0	\$0	\$0	(\$416)	(\$241)	(\$475)	\$0	\$1,132	\$1,132	(\$3,312)
2028	\$0	\$0	\$0	\$0	\$0	(\$424)	(\$245)	(\$503)	\$0	\$1,172	\$1,172	(\$2,905)
2029	\$0	\$0	\$0	\$0	\$0	(\$432)	(\$249)	(\$522)	\$0	\$1,203	\$1,203	(\$2,518)
2030	\$0	\$0	\$0	\$0	\$0	(\$440)	(\$254)	(\$549)	\$0	\$1,242	\$1,242	(\$2,147)
2031	\$0	\$0	\$0	\$0	\$0	(\$448)	(\$258)	(\$570)	\$0	\$1,276	\$1,276	(\$1,794)
2032	\$0	\$0	\$0	\$0	\$0	(\$456)	(\$263)	(\$593)	\$0	\$1,312	\$1,312	(\$1,457)
2033	\$0	\$0	\$0	\$0	\$0	(\$465)	(\$268)	(\$623)	\$0	\$1,356	\$1,356	(\$1,135)
2034	\$0	\$0	\$0	\$0	\$0	(\$473)	(\$272)	(\$653)	\$0	\$1,399	\$1,399	(\$826)
2035	\$0	\$0	\$0	\$0	\$0	(\$482)	(\$277)	(\$677)	\$0	\$1,436	\$1,436	(\$532)
2036	\$0	\$0	\$0	\$0	\$0	(\$491)	(\$282)	(\$704)	\$0	\$1,477	\$1,477	(\$252)
2037	\$0	\$0	\$0	\$0	\$0	(\$500)	(\$287)	(\$727)	\$0	\$1,515	\$1,515	\$14
2038	\$0	\$0	\$0	\$0	\$0	(\$509)	(\$293)	(\$757)	\$0	\$1,559	\$1,559	\$268
2039	\$0	\$0	\$0	\$0	\$0	(\$518)	(\$298)	(\$793)	\$0	\$1,609	\$1,609	\$512
2040	\$0	\$0	\$0	\$0	\$0	(\$528)	(\$303)	(\$820)	\$0	\$1,651	\$1,651	\$743
2041	\$0	\$0	\$0	\$0	\$0	(\$537)	(\$309)	(\$866)	\$0	\$1,712	\$1,712	\$966
2042	\$0	\$0	\$0	\$0	\$0	(\$547)	(\$314)	(\$890)	\$0	\$1,752	\$1,752	\$1,177
2043	\$0	\$0	\$0	\$0	\$0	(\$557)	(\$320)	(\$927)	\$0	\$1,804	\$1,804	\$1,378
2043	ΦΟ	Φυ	φυ	φυ	φυ	(\$337)	(\$320)	(\$927)	ΦΟ	φ1,004	\$1,004	\$1,376
Nominal		\$2,313	\$8,325			(\$9,733)	(\$5,987)	(\$13,912)	\$10,638	\$29,632	\$18,994	
NPV		\$1,340.511	\$4,825.839	\$0.000	\$0.000	(\$2,421.439)	(\$1,633.122)	(\$3,490.185)	\$6,166.350	\$7,544.746	\$1,378.396	
	ount Rate =	7.85%	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			(* ,)	(, , , , , , , , , , , , , , , , , , ,	(*-//		, ,,		
	t/Cost Ratio =	1.22										
Denen		1.22	ļi									



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Res Duct Sealing

Participants' Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12
					Change in		Utility Paid			Total	Cumulative
	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$225	\$0	\$0	\$0	(\$17)	\$0	\$75	\$225	\$92	(\$133)	(\$123
2016	\$225	\$0	\$0	\$0	(\$36)	\$0	\$75	\$225	\$111	(\$114)	(\$221)
2017	\$225	\$0	\$0	\$0	(\$56)	\$0	\$75	\$225	\$131	(\$94)	(\$295
2018	\$225	\$0	\$0	\$0	(\$77)	\$0	\$75	\$225	\$152	(\$73)	(\$350
2019	\$675	\$0	\$0	\$0	(\$138)	\$0	\$225	\$675	\$363	(\$312)	(\$564
2020	\$900	\$0	\$0	\$0	(\$223)	\$0	\$300	\$900	\$523	(\$377)	(\$803)
2021	\$1,125	\$0	\$0	\$0	(\$330)	\$0	\$375	\$1,125	\$705	(\$420)	(\$1,051)
2022	\$1,350	\$0	\$0	\$0	(\$460)	\$0	\$450	\$1,350	\$910	(\$440)	(\$1,291)
2023	\$1,575	\$0	\$0	\$0	(\$624)	\$0	\$525	\$1,575	\$1,149	(\$426)	(\$1,507)
2024	\$1,800	\$0	\$0	\$0	(\$818)	\$0	\$600	\$1,800	\$1,418	(\$382)	(\$1,686)
2025	\$0	\$0	\$0	\$0	(\$848)	\$0	\$0	\$0	\$848	\$848	(\$1,317
2026	\$0	\$0	\$0	\$0	(\$875)	\$0	\$0	\$0	\$875	\$875	(\$964)
2027	\$0	\$0	\$0	\$0	(\$902)	\$0	\$0	\$0	\$902	\$902	(\$626
2028	\$0	\$0	\$0	\$0	(\$933)	\$0	\$0	\$0	\$933	\$933	(\$302
2029	\$0	\$0	\$0	\$0	(\$964)	\$0	\$0	\$0	\$964	\$964	\$8
2030	\$0	\$0	\$0	\$0	(\$997)	\$0	\$0	\$0	\$997	\$997	\$306
2031	\$0	\$0	\$0	\$0	(\$1,026)	\$0	\$0	\$0	\$1,026	\$1,026	\$590
2032	\$0	\$0	\$0	\$0	(\$1,062)	\$0	\$0	\$0	\$1,062	\$1,062	\$862
2033	\$0	\$0	\$0	\$0	(\$1,096)	\$0	\$0	\$0	\$1,096	\$1,096	\$1,123
2034	\$0	\$0	\$0	\$0	(\$1,126)	\$0	\$0	\$0	\$1,126	\$1,126	\$1,371
2035	\$0	\$0	\$0	\$0	(\$1,163)	\$0	\$0	\$0	\$1,163	\$1,163	\$1,609
2036	\$0	\$0	\$0	\$0	(\$1,196)	\$0	\$0	\$0	\$1,196	\$1,196	\$1,836
2037	\$0	\$0	\$0	\$0	(\$1,227)	\$0	\$0	\$0	\$1,227	\$1,227	\$2,052
2038	\$0	\$0	\$0	\$0	(\$1,267)	\$0	\$0	\$0	\$1,267	\$1,267	\$2,258
2039	\$0	\$0	\$0	\$0	(\$1,304)	\$0	\$0	\$0	\$1,304	\$1,304	\$2,455
2040	\$0	\$0	\$0	\$0	(\$1,334)	\$0	\$0	\$0	\$1,334	\$1,334	\$2,642
2041	\$0	\$0	\$0	\$0	(\$1,380)	\$0	\$0	\$0	\$1,380	\$1,380	\$2,822
2042	\$0	\$0	\$0	\$0	(\$1,418)	\$0	\$0	\$0	\$1,418	\$1,418	\$2,992
2043	\$0	\$0	\$0	\$0	(\$1,451)	\$0	\$0	\$0	\$1,451	\$1,451	\$3,155
	\$8,325 \$4,475 Int Rate = Cost Ratio =	\$0 7.85% 1.65	\$0	\$0	(\$24,346) (\$6,372)	\$0	\$2,775 \$1,609	\$8,325 \$4,825.839	\$27,121 \$7,980.381	\$18,796 \$3,155	



Ratepayers' Impact Cost-Effectiveness Measure

1 2 Change in Electric Supply Cos (\$000s) 2014 \$0.00 2015 \$0.00 2017 \$0.00 2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2022 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00 2027 \$0.00 2027 \$0.00	Program Costs (\$000s) (\$0.000 \$0.000	4 Willity Paid Rebates & Incentives (\$000) \$75.000 \$75.000 \$75.000 \$75.000 \$75.000 \$300.000 \$3350.000 \$3450.000 \$450.000 \$600.000 \$0.000 \$0.000 \$0.000	\$0.000 (\$17.390) (\$36.380) (\$56.109) (\$76.804) (\$137.546) (\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	6 Incremental Generation Cap Costs (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	7 Incremental T&D Cap Costs (\$000s) \$0.000 (\$5.247) (\$10.684) (\$16.314) (\$22.143) (\$33.443) (\$93.443) (\$130.79) (\$175.518)	8 Incremental Prog Induced Fuel Costs (\$000s) \$0.000 (\$6.401) (\$14.518) (\$23.776) (\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	9 Other Costs (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	0ther Benefits (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	11 Total Costs (\$000s) \$0.000 \$154.890 \$173.880 \$193.609 \$214.304 \$550.046 \$772.713	12 Total Benefits (\$000s) \$0.000 \$11.649 \$25.202 \$40.090 \$55.161 \$100.455 \$164.952	13 Total Net Benefits to All Customers (\$000s) (\$143.241) (\$148.678) (\$153.519) (\$159.142) (\$449.592) (\$607.761)	14 Cumulative Discounted Net Benefits (\$000s) \$0.000 (\$132.815) (\$260.638) (\$383.016) (\$500.642) (\$808.762) (\$1,194.964)
Supply Cos	Program Costs (\$000s) (\$0.000 \$0.000	Rebates & Incentives (\$000s) \$0.000 \$75.000 \$75.000 \$75.000 \$75.000 \$375.000 \$325.000 \$325.000 \$325.000 \$525.000 \$600.000 \$0.000 \$0.000 \$0.000	Electric Revenues (\$000) \$0.000 \$17.390) (\$36.380) (\$56.109) (\$76.804) (\$137.546) (\$222.713) (\$30.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	Generation Cap Costs (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	T&D Cap Costs (\$000s) \$0.000 (\$5.247) (\$10.684) (\$16.314) (\$22.143) (\$33.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	Prog Induced Fuel Costs (\$000s) \$0.000 (\$6.401) (\$14.518) (\$23.776) (\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	Costs (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	Costs (\$000s) \$0.000 \$154.890 \$173.880 \$193.609 \$214.304 \$550.046 \$772.713	\$0.000 \$11.649 \$25.202 \$40.090 \$55.161 \$100.455	\$0.000 (\$143.241) (\$148.678) (\$153.519) (\$159.142) (\$449.592)	Discounted Net Benefits (\$000s) \$0.000 (\$132.815) (\$260.638) (\$383.016) (\$500.642) (\$500.872)
Year (\$000s) 2014 \$0.00 2015 \$0.00 2016 \$0.00 2017 \$0.00 2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2025 \$0.00 2027 \$0.00	sts (\$000s) 000 \$0.000 000 \$62.500 000 \$62.500 000 \$62.500 000 \$62.500 000 \$312.500 000 \$314.500 000 \$375.000 000 \$437.500 000 \$500.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	Incentives (\$000s) (\$000s) (\$0.000 (\$75.000 (\$75.000 (\$75.000 (\$75.000 (\$25.000 (\$300.000 (\$3375.000 (\$450.000 (\$600.000 (\$0.0	Revenues (5000) \$0.000 (\$17.390) (\$36.380) (\$56.109) (\$76.804) (\$137.546) (\$22.713) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	Cap Costs (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	Cap Costs (\$000s) \$0.000 (\$5.247) (\$10.684) (\$16.314) (\$22.143) (\$33.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	Fuel Costs (\$000s) \$0.000 (\$6.401) (\$14.518) (\$23.776) (\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	Costs (\$000s) \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	Costs (\$000s) \$0.000 \$154.890 \$173.880 \$193.609 \$214.304 \$550.046 \$772.713	\$0.000 \$11.649 \$25.202 \$40.090 \$55.161 \$100.455	\$0.000 (\$143.241) (\$148.678) (\$153.519) (\$159.142) (\$449.592)	Net Benefits (\$000s) \$0.000 (\$132.815) (\$260.638) (\$383.016) (\$500.642) (\$808.762)
Year (\$000s) 2014 \$0.00 2015 \$0.00 2016 \$0.00 2017 \$0.00 2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2022 \$0.00 2022 \$0.00 2022 \$0.00 2022 \$0.00 2022 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2025 \$0.00 2027 \$0.00	(\$000s) 000 \$0.000 000 \$62.500 000 \$62.500 000 \$62.500 000 \$62.500 000 \$187.500 000 \$312.500 000 \$375.000 000 \$437.500 000 \$50.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$0.000 \$75.000 \$75.000 \$75.000 \$75.000 \$75.000 \$225.000 \$300.000 \$375.000 \$450.000 \$525.000 \$0.000	\$000) \$0.000 (\$17.390) (\$36.380) (\$56.109) (\$76.804) (\$137.546) (\$222.713) (\$30.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$303.481) \$394.303	\$0.000 \$5.247) (\$10.684) (\$16.314) (\$22.143) (\$39.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	\$0.000 \$0.000 (\$6.401) (\$14.518) (\$23.776) (\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$154.890 \$173.880 \$193.609 \$214.304 \$550.046 \$772.713	\$0.000 \$11.649 \$25.202 \$40.090 \$55.161 \$100.455	\$0.000 (\$143.241) (\$148.678) (\$153.519) (\$159.142) (\$449.592)	\$0.000 (\$132.815) (\$260.638) (\$383.016) (\$500.642) (\$808.762)
2014 \$0.00 2015 \$0.00 2016 \$0.00 2017 \$0.00 2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2024 \$0.00 2025 \$0.00 2025 \$0.00 2027 \$0.00	000 \$0.000 \$0.000 \$62.500 000 \$62.500 000 \$62.500 000 \$62.500 000 \$187.500 000 \$375.000 000 \$437.500 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$0.000 \$75.000 \$75.000 \$75.000 \$75.000 \$225.000 \$300.000 \$375.000 \$450.000 \$600.000 \$0.000	\$0.000 (\$17.390) (\$36.380) (\$56.109) (\$76.804) (\$137.546) (\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.303.481) (\$394.303)	\$0.000 (\$5.247) (\$10.684) (\$16.314) (\$22.143) (\$39.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	(\$6.401) (\$14.518) (\$23.776) (\$33.016) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$154.890 \$173.880 \$193.609 \$214.304 \$550.046 \$772.713	\$0.000 \$11.649 \$25.202 \$40.090 \$55.161 \$100.455	(\$143.241) (\$148.678) (\$153.519) (\$159.142) (\$449.592)	\$0.000 (\$132.815) (\$260.638) (\$383.016) (\$500.642) (\$808.762)
2016 \$0.00 2017 \$0.00 2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$62.500 000 \$62.500 000 \$62.500 000 \$187.500 000 \$250.000 000 \$312.500 000 \$375.000 000 \$437.500 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$75.000 \$75.000 \$75.000 \$225.000 \$300.000 \$375.000 \$450.000 \$600.000 \$0.000	(\$36.380) (\$56.109) (\$76.804) (\$137.546) (\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 (\$303.481) (\$394.303)	(\$10.684) (\$16.314) (\$22.143) (\$39.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	(\$14.518) (\$23.776) (\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$173.880 \$193.609 \$214.304 \$550.046 \$772.713	\$25.202 \$40.090 \$55.161 \$100.455	(\$148.678) (\$153.519) (\$159.142) (\$449.592)	(\$260.638) (\$383.016) (\$500.642) (\$808.762)
2017 \$0.00 2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$62.500 000 \$62.500 000 \$187.500 000 \$250.000 000 \$375.000 000 \$375.000 000 \$500.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$75.000 \$75.000 \$25.000 \$300.000 \$375.000 \$450.000 \$600.000 \$0.000	(\$56.109) (\$76.804) (\$137.546) (\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 (\$303.481) (\$394.303)	(\$16.314) (\$22.143) (\$39.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	(\$23.776) (\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000 \$0.000	\$193.609 \$214.304 \$550.046 \$772.713	\$40.090 \$55.161 \$100.455	(\$153.519) (\$159.142) (\$449.592)	(\$383.016) (\$500.642) (\$808.762)
2018 \$0.00 2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$62.500 \$187.500 000 \$250.000 \$000 \$312.500 000 \$375.000 000 \$437.500 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$75.000 \$225.000 \$300.000 \$375.000 \$450.000 \$525.000 \$600.000 \$0.000	(\$76.804) (\$137.546) (\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 (\$303.481) (\$394.303)	(\$22.143) (\$39.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	(\$33.018) (\$61.006) (\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000 \$0.000	\$214.304 \$550.046 \$772.713	\$55.161 \$100.455	(\$159.142) (\$449.592)	(\$500.642) (\$808.762)
2019 \$0.00 2020 \$0.00 2021 \$0.00 2022 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$187.500 000 \$250.000 000 \$312.500 000 \$375.000 000 \$437.500 000 \$500.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$225.000 \$300.000 \$375.000 \$450.000 \$525.000 \$600.000 \$0.000	(\$137.546) (\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 \$0.000 (\$303.481) (\$394.303)	(\$39.449) (\$63.106) (\$93.443) (\$130.797) (\$175.518)	(\$61.006) (\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000 \$0.000	\$0.000 \$0.000	\$550.046 \$772.713	\$100.455	(\$449.592)	(\$808.762)
2020 \$0.00 2021 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	\$250.000 \$250.000 \$312.500 \$375.000 \$312.500 \$375.000 \$30.000 \$437.500 \$30.000 \$0.000	\$300.000 \$375.000 \$450.000 \$525.000 \$600.000 \$0.000	(\$222.713) (\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 \$0.000 (\$303.481) (\$394.303)	(\$63.106) (\$93.443) (\$130.797) (\$175.518)	(\$101.846) (\$158.538) (\$231.413)	\$0.000 \$0.000	\$0.000	\$772.713			
2021 \$0.00 2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$312.500 000 \$375.000 000 \$437.500 000 \$500.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$375.000 \$450.000 \$525.000 \$600.000 \$0.000	(\$330.270) (\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 \$0.000 (\$303.481) (\$394.303)	(\$93.443) (\$130.797) (\$175.518)	(\$158.538) (\$231.413)	\$0.000			\$164.952	(\$607.761)	(\$1 194 964)
2022 \$0.00 2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$375.000 000 \$437.500 000 \$500.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$450.000 \$525.000 \$600.000 \$0.000	(\$460.059) (\$624.318) (\$818.079) (\$847.685)	\$0.000 (\$303.481) (\$394.303)	(\$130.797) (\$175.518)	(\$231.413)		\$0,000	04.043.35			(ψ1,134.304)
2023 \$0.00 2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	000 \$437.500 000 \$500.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000 000 \$0.000	\$525.000 \$600.000 \$0.000 \$0.000	(\$624.318) (\$818.079) (\$847.685)	(\$303.481) (\$394.303)	(\$175.518)			ψ0.000	\$1,017.770	\$251.981	(\$765.789)	(\$1,646.165)
2024 \$0.00 2025 \$0.00 2026 \$0.00 2027 \$0.00	\$500.000 \$500.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$600.000 \$0.000 \$0.000	(\$818.079) (\$847.685)	(\$394.303)			\$0.000	\$0.000	\$1,285.059	\$362.211	(\$922.848)	(\$2,150.329)
2025 \$0.00 2026 \$0.00 2027 \$0.00	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000 \$0.000	(\$847.685)			(\$326.525)	\$0.000	\$0.000	\$1,586.818	\$805.525	(\$781.293)	(\$2,546.093)
2026 \$0.00 2027 \$0.00	\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000	\$0.000			(\$227.968)	(\$416.839)	\$0.000	\$0.000	\$1,918.079	\$1,039.110	(\$878.969)	(\$2,958.927)
2027 \$0.00	\$0.000 \$0.000 \$0.000 \$0.000		(Aca 1 c :	(\$401.533)	(\$232.071)	(\$435.839)	\$0.000	\$0.000	\$847.685	\$1,069.443	\$221.758	(\$2,862.353)
	\$0.000 \$0.000 \$0.000	\$0.000	(\$874.860)	(\$408.925)	(\$236.249)	(\$453.978)	\$0.000	\$0.000	\$874.860	\$1,099.152	\$224.292	(\$2,771.784)
2028 \$0.00	\$0.000		(\$902.024)	(\$416.449)	(\$240.501)	(\$474.835)	\$0.000	\$0.000	\$902.024	\$1,131.785	\$229.761	(\$2,685.760)
		\$0.000	(\$932.674)	(\$424.106)	(\$244.830)	(\$502.946)	\$0.000	\$0.000	\$932.674	\$1,171.882	\$239.208	(\$2,602.718)
2029 \$0.00		\$0.000	(\$963.625)	(\$431.900)	(\$249.237)	(\$521.846)	\$0.000	\$0.000	\$963.625	\$1,202.984	\$239.359	(\$2,525.672)
2030 \$0.00	000 \$0.000	\$0.000	(\$997.409)	(\$439.867)	(\$253.723)	(\$548.751)	\$0.000	\$0.000	\$997.409	\$1,242.341	\$244.932	(\$2,452.570)
2031 \$0.00	000 \$0.000	\$0.000	(\$1,026.208)	(\$447.975)	(\$258.290)	(\$569.874)	\$0.000	\$0.000	\$1,026.208	\$1,276.139	\$249.931	(\$2,383.405)
2032 \$0.00	000 \$0.000	\$0.000	(\$1,061.741)	(\$456.227)	(\$262.940)	(\$592.885)	\$0.000	\$0.000	\$1,061.741	\$1,312.052	\$250.311	(\$2,319.178)
2033 \$0.00	000 \$0.000	\$0.000	(\$1,095.645)	(\$464.661)	(\$267.673)	(\$623.222)	\$0.000	\$0.000	\$1,095.645	\$1,355.555	\$259.910	(\$2,257.341)
2034 \$0.00	000 \$0.000	\$0.000	(\$1,126.303)	(\$473.277)	(\$272.491)	(\$652.820)	\$0.000	\$0.000	\$1,126.303	\$1,398.588	\$272.285	(\$2,197.275)
2035 \$0.00		\$0.000	(\$1,162.731)	(\$482.046)	(\$277.396)	(\$676.677)	\$0.000	\$0.000	\$1,162.731	\$1,436.118	\$273.387	(\$2,141.356)
2036 \$0.00		\$0.000	(\$1,195.951)	(\$491.072)	(\$282.389)	(\$703.830)	\$0.000	\$0.000	\$1,195.951	\$1,477.290	\$281.339	(\$2,087.998)
2037 \$0.00		\$0.000	(\$1,227.241)	(\$500.019)	(\$287.472)	(\$727.233)	\$0.000	\$0.000	\$1,227.241	\$1,514.724	\$287.483	(\$2,037.444)
2038 \$0.00		\$0.000	(\$1,266.634)	(\$509.128)	(\$292.646)	(\$757.348)	\$0.000	\$0.000	\$1,266.634	\$1,559.122	\$292.488	(\$1,989.753)
2039 \$0.00		\$0.000	(\$1,303.564)	(\$518.368)	(\$297.914)	(\$792.938)	\$0.000	\$0.000	\$1,303.564	\$1,609.219	\$305.655	(\$1,943.543)
2040 \$0.00		\$0.000	(\$1,333.611)	(\$527.809)	(\$303.276)	(\$819.509)	\$0.000	\$0.000	\$1,333.611	\$1,650.594	\$316.982	(\$1,899.109)
2041 \$0.00		\$0.000	(\$1,379.640)	(\$537.420)	(\$308.735)	(\$865.794)	\$0.000	\$0.000	\$1,379.640	\$1,711.949	\$332.309	(\$1,855.916)
2042 \$0.00		\$0.000	(\$1,417.802)	(\$547.205)	(\$314.292)	(\$890.321)	\$0.000	\$0.000	\$1,417.802	\$1,751.818	\$334.016	(\$1,815.662)
2043 \$0.00	000 \$0.000	\$0.000	(\$1,450.830)	(\$557.065)	(\$319.950)	(\$927.444)	\$0.000	\$0.000	\$1,450.830	\$1,804.459	\$353.629	(\$1,776.146)
Nominal NPV Discount Rate = Benefit/Cost Ratio =	\$2,312.500 \$1,340.511 7.85% 0.81	\$2,775.000 \$1,608.613	(\$24,345.849) (\$6,371.768)	(\$9,732.836) (\$2,421.439)	(\$5,986.746) (\$1,633.122)	(\$13,911.969) (\$3,490.185)	\$0.000	\$0.000	\$29,433.349 \$9,320.892	\$29,631.552 \$7,544.746	\$198.203 (\$1,776.146)	

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Run Date:

11:05 AM Filename: ligh Performance Window

INPUT DATA -- PART 1

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	-0.21	kW/Cus
(2) Change in Peak kW per Customer at generator	-0.26	kW Gen/Cus
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator	(412)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter	(391)	kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	-0.24	kW/Cus
II. Economic Life and K-Factors		
(1) DSM Program Study Period		Years
(2) Economic Life of Incremental Generation		Years
(3) Economic Life of Incremental T&D		Years
(4) K-Factor for Generation	<u>1.4331</u>	
(5) K-Factor for T&D	1. <u>429</u> 8	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	_ <u> </u>	
III. Utility & Customer Costs		
(1) Utility Nonrecurring Cost Per Customer	\$50.00	\$/Cus
(2) Utility Recurring Cost Per Customer		\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$570.00	
(5) Customer Equpiment Cost Escalation Rate	0.00%	
(6) Customer O&M Cost		\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1.80%	*******
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%	*****
* (10) Change in Supply Costs		\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%	*******
* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive	\$143.00	\$/Cus
	<u> </u>	\$/Cus/Year
* (15) Utility Recurring Rebate/Incentive	\$0.00	ψ/ Ous/ i cai
* (15) Utility Recurring Rebate/Incentive * (16) Utility Rebate/Incentive Escalation Rate	0.00%	ψ/Ou3/ i cai

IV. Incremental Generation, Transmission, & Distribu	ition Costs
(1) Base Year	2014_
(2) In-Service Year For Incremental Generation	2023 **
(3) In-Service Year For Incremental T & D	2015
(4) Base Year Incremental Generation Cost	\$851.95 \$/kW
(5) Base Year Incremental Transmission Cost	\$302.35_\$/kW
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	1.80%_
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	<u>1.96%</u>
(10) Transmission Fixed O & M Cost	\$6. <u>68</u>
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr
(12) T&D_Fixed O&M Escalation Rate	1.8 <u>0%</u>
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00_\$/kW/Yr
(1 <u>4) Incre Gen Variable O&M Cost Esc Rate</u>	0.0 <u>0%</u>
(15) Incremental Gen Capacity Factor	<u>9.43%</u>
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 71_\$/kWh
(17) Incremental Gen Unit Fuel Esc Rate	5.1 <u>0%</u>
(18) Incremental Purchased Capacity Cost	<u>\$0.</u> 47_\$/KW/YR
(19) Incremental Capacity Cost Esc Rate	<u>2</u> 1.6 <u>1%</u>
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0
V. (1) Non-Fuel Cost In Customer Bill (Base Year)	
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0.0687 \$/kWh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	<u>\$0.00</u> 00_\$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	0_kW/Mo.

Summary	Results for	or This	Analysis

Junior J. House	5.0		
	TRC	Participants'	RIM
NPV Benefits(\$000s)	\$4,105	\$3,989	\$4,105
NPV Costs (\$000s)	\$2,728	\$2,508	\$4,209
NPV Net Benefits (\$000s)	\$1,377	\$1,481	(\$104)
Benefit:Cost Ratio	1.505	1.590	0.975



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	da Administrativo	10	11	12	13
<u> </u>	Change in		-	<u> </u>		Incremental	Incremental	Incremental	10		Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$13	\$143	\$0	\$0	\$0	(\$4)	(\$4)	\$155	\$8	(\$147)	(\$136)
2016	\$0	\$18	\$200	\$0	\$0	\$0	(\$9)	(\$11)	\$217	\$20	(\$197)	(\$306)
2017	\$0	\$23	\$257	\$0	\$0	\$0	(\$16)	(\$21)	\$279	\$38	(\$241)	(\$498)
2018	\$0	\$25	\$285	\$0	\$0	\$0	(\$24)	(\$33)	\$310	\$57	(\$253)	(\$685)
2019	\$0	\$30	\$342	\$0	\$0	\$0	(\$34)	(\$48)	\$372	\$82	(\$290)	(\$883)
2020	\$0	\$35	\$399	\$0	\$0	\$0	(\$46)	(\$68)	\$434	\$114	(\$320)	(\$1,087)
2021	\$0	\$40	\$456	\$0	\$0	\$0	(\$60)	(\$93)	\$496	\$153	(\$343)	(\$1,289)
2022	\$0	\$50	\$570	\$0	\$0	\$0	(\$78)	(\$126)	\$620	\$204	(\$416)	(\$1,516)
2023	\$0	\$60	\$684	\$0	\$0	(\$172)	(\$100)	(\$170)	\$744	\$442	(\$302)	(\$1,669)
2024	\$0	\$70	\$798	\$0 \$0	\$0 ©0	(\$217)	(\$126)	(\$211)	\$868	\$554	(\$314)	(\$1,817)
2025	\$0	\$0	\$0	\$0	\$0	(\$221)	(\$128)	(\$220)	\$0	\$569	\$569	(\$1,569)
2026 2027	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$225) (\$229)	(\$130)	(\$230) (\$240)	\$0 \$0	\$585 \$602	\$585 \$602	(\$1,333) (\$1,107)
2027	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$229)	(\$132) (\$135)	(\$240) (\$254)	\$0 \$0	\$602 \$623	\$602 \$623	(\$1,107) (\$891)
2029	\$0 \$0	\$0	\$0	\$0 \$0	\$0 \$0	(\$238)		(\$264)	\$0 \$0	\$639	\$639	(\$685)
2029	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$242)	(\$137) (\$140)	(\$278)	\$0 \$0	\$660	\$660	(\$489)
2031	\$0	\$0	\$0	\$0	\$0	(\$247)	(\$140)	(\$288)	\$0	\$677	\$677	(\$301)
2032	\$0	\$0	\$0	\$0	\$0	(\$251)	(\$145)	(\$300)	\$0	\$696	\$696	(\$123)
2033	\$0	\$0	\$0	\$0	\$0	(\$256)	(\$147)	(\$315)	\$0	\$719	\$719	\$48
2034	\$0	\$0	\$0	\$0	\$0	(\$261)	(\$150)	(\$330)	\$0	\$741	\$741	\$212
2035	\$0	\$0	\$0	\$0	\$0	(\$265)	(\$153)	(\$342)	\$0	\$760	\$760	\$367
2036	\$0	\$0	\$0	\$0	\$0	(\$270)	(\$156)	(\$356)	\$0	\$782	\$782	\$516
2037	\$0	\$0	\$0	\$0	\$0	(\$275)	(\$158)	(\$368)	\$0	\$801	\$801	\$656
2038	\$0	\$0	\$0	\$0	\$0	(\$280)	(\$161)	(\$383)	\$0	\$825	\$825	\$791
2039	\$0	\$0	\$0	\$0	\$0	(\$285)	(\$164)	(\$401)	\$0	\$851	\$851	\$920
2040	\$0	\$0	\$0	\$0	\$0	(\$291)	(\$167)	(\$414)	\$0	\$872	\$872	\$1,042
2041	\$0	\$0	\$0	\$0	\$0	(\$296)	(\$170)	(\$438)	\$0	\$904	\$904	\$1,159
2042	\$0	\$0	\$0	\$0	\$0	(\$301)	(\$173)	(\$450)	\$0	\$925	\$925	\$1,271
2043	\$0	\$0	\$0	\$0	\$0	(\$307)	(\$176)	(\$469)	\$0	\$952	\$952	\$1,377
	ount Rate = t/Cost Ratio =	\$363 \$220.004 7.85% 1.50	\$4,133 \$2,508.050	\$0.000	\$0.000	(\$5,365) (\$1,336.145)	(\$3,361) (\$942.427)	(\$7,127) (\$1,826.598)	\$4,495 \$2,728.054	\$15,853 \$4,105.170	\$11,358 \$1,377.115	
Benefi	t/Cost Ratio =	1.50										



Run Date:

Participants' Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12
Year	Customer Equip Costs (\$000s)	Customer O&M Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Change in Participants' Electric Bills (\$000s)	Tax Credits (\$000s)	Utility Paid Rebates & Incentives (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Total Net Benefits (\$000s)	Cumulative Discounted Net Benefits (\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$143	\$0	\$0	\$0	(\$11)	\$0	\$36	\$143	\$47	(\$96)	(\$89)
2016	\$200	\$0	\$0	\$0	(\$28)	\$0	\$50	\$200	\$78	(\$121)	(\$193)
2017	\$257	\$0	\$0	\$0	(\$51)	\$0	\$64	\$257	\$115	(\$141)	(\$306)
2018	\$285	\$0	\$0	\$0	(\$77)	\$0	\$72	\$285	\$148	(\$137)	(\$407)
2019	\$342	\$0	\$0	\$0	(\$109)	\$0	\$86	\$342	\$195	(\$147)	(\$508)
2020	\$399	\$0	\$0	\$0	(\$149)	\$0	\$100	\$399	\$249	(\$150)	(\$603)
2021	\$456	\$0	\$0	\$0	(\$194)	\$0	\$114	\$456	\$309	(\$147)	(\$690)
2022	\$570	\$0	\$0	\$0	(\$251)	\$0	\$143	\$570	\$394	(\$176)	(\$786
2023	\$684	\$0	\$0	\$0	(\$325)	\$0	\$172	\$684	\$497	(\$187)	(\$881)
2024	\$798	\$0	\$0	\$0	(\$414)	\$0	\$200	\$798	\$614	(\$184)	(\$967)
2025	\$0	\$0	\$0	\$0	(\$429)	\$0	\$0	\$0	\$429	\$429	(\$780)
2026	\$0	\$0	\$0	\$0	(\$442)	\$0	\$0	\$0	\$442	\$442	(\$602)
2027 2028	\$0 ©0	\$0 ©0	\$0 \$0	\$0 \$0	(\$456)	\$0 \$0	\$0 ©0	\$0 ©0	\$456 \$472	\$456 \$472	(\$431)
	\$0	\$0	\$0	\$0	(\$472)	\$0	\$0	\$0			(\$267)
2029	\$0	\$0	\$0	\$0	(\$487)	\$0	\$0	\$0	\$487	\$487	(\$110)
2030 2031	\$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$504)	\$0 \$0	\$0 ©0	\$0	\$504 \$510	\$504	\$40
2031	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$519) (\$537)	\$0 \$0	\$0 \$0	\$0 \$0	\$519 \$537	\$519 \$537	\$184 \$322
2032	\$0 \$0			\$0	(\$554)	\$0			\$557 \$554	\$557 \$554	\$453
2033 2034	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$570)	\$0 \$0	\$0 \$0	\$0 \$0	\$570	\$570	\$579
2035	\$0	\$0 \$0	\$0	\$0	(\$588)	\$0 \$0	\$0	\$0	\$570 \$588	\$588	\$699
2036	\$0	\$0	\$0	\$0	(\$605)	\$0	\$0	\$0	\$605	\$605	\$814
2037	\$0	\$0	\$0	\$0	(\$621)	\$0	\$0	\$0	\$621	\$621	\$923
2038	\$0	\$0	\$0	\$0	(\$641)	\$0	\$0	\$0	\$641	\$641	\$1,028
2039	\$0	\$0	\$0	\$0	(\$659)	\$0	\$0	\$0	\$659	\$659	\$1,127
2040	\$0	\$0	\$0	\$0	(\$674)	\$0	\$0	\$0	\$674	\$674	\$1,222
2041	\$0	\$0	\$0	\$0	(\$698)	\$0	\$0	\$0	\$698	\$698	\$1,313
2042	\$0	\$0	\$0	\$0	(\$717)	\$0	\$0	\$0	\$717	\$717	\$1,399
2043	\$0	\$0	\$0	\$0	(\$734)	\$0	\$0	\$0	\$734	\$734	\$1,481
					W - 7						

Nominal NPV	\$4,133 \$2,326	\$0	\$0	\$0	(\$12,515) (\$3,360)	\$0	\$1,037 \$629	\$4,133 \$2,508.050	\$13,552 \$3,988.962	\$9,419 \$1,481	
Discount I Benefit/Cos		7.85% 1.59			, , , , , , , , , , , , , , , , , , ,						



Ratepayers' Impact Cost-Effectiveness Measure

	2	3	4	5	6	7	8	9	10	11	12	13	14
	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental					Total Net	Cumulative
	Electric	Program	Rebates &	Electric	Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
	Supply Costs	Costs	Incentives	Revenues	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.00
2015	\$0.000	\$12.500	\$35.750	(\$11.220)	\$0.000	(\$3.687)	(\$4.130)	\$0.000	\$0.000	\$59.470	\$7.818	(\$51.653)	(\$47.89
2016	\$0.000	\$17.500	\$50.050	(\$28.168)	\$0.000	(\$9.009)	(\$11.241)	\$0.000	\$0.000	\$95.718	\$20.250	(\$75.468)	(\$112.77
2017	\$0.000	\$22.500	\$64.350	(\$50.683)	\$0.000	(\$16.049)	(\$21.477)	\$0.000	\$0.000	\$137.533	\$37.527	(\$100.007)	(\$192.49
2018	\$0.000	\$25.000	\$71.500	(\$76.810)	\$0.000	(\$24.118)	(\$33.021)	\$0.000	\$0.000	\$173.310	\$57.139	(\$116.171)	(\$278.36
2019	\$0.000	\$30.000	\$85.800	(\$109.032)	\$0.000	(\$34.057)	(\$48.359)	\$0.000	\$0.000	\$224.832	\$82.416	(\$142.416)	(\$375.96
2020	\$0.000	\$35.000	\$100.100	(\$148.923)	\$0.000	(\$45.958)	(\$68.102)	\$0.000	\$0.000	\$284.023	\$114.059	(\$169.964)	(\$483.96
2021	\$0.000	\$40.000	\$114.400	(\$194.449)	\$0.000	(\$59.917)	(\$93.340)	\$0.000	\$0.000	\$348.849	\$153.258	(\$195.591)	(\$599.20
2022	\$0.000	\$50.000	\$143.000	(\$250.962)	\$0.000	(\$77.707)	(\$126.236)	\$0.000	\$0.000	\$443.962	\$203.943	(\$240.019)	(\$730.33
2023	\$0.000	\$60.000	\$171.600	(\$325.033)	(\$172.076)	(\$99.520)	(\$169.996)	\$0.000	\$0.000	\$556.633	\$441.593	(\$115.041)	(\$788.60
2024	\$0.000	\$70.000	\$200.200	(\$413.709)	(\$217.169)	(\$125.557)	(\$210.799)	\$0.000	\$0.000	\$683.909	\$553.525	(\$130.384)	(\$849.84
2025	\$0.000	\$0.000	\$0.000	(\$428.681)	(\$221.151)	(\$127.817)	(\$220.407)	\$0.000	\$0.000	\$428.681	\$569.376	\$140.694	(\$788.5
2026	\$0.000	\$0.000	\$0.000	(\$442.424)	(\$225.222)	(\$130.118)	(\$229.581)	\$0.000	\$0.000	\$442.424	\$584.921	\$142.497	(\$731.03
2027	\$0.000	\$0.000	\$0.000	(\$456.161)	(\$229.366)	(\$132.460)	(\$240.128)	\$0.000	\$0.000	\$456.161	\$601.955	\$145.793	(\$676.4
2028	\$0.000	\$0.000	\$0.000	(\$471.661)	(\$233.584)	(\$134.844)	(\$254.344)	\$0.000	\$0.000	\$471.661	\$622.772	\$151.111	(\$623.9
2029	\$0.000	\$0.000	\$0.000	(\$487.313)	(\$237.876)	(\$137.272)	(\$263.902)	\$0.000	\$0.000	\$487.313	\$639.050	\$151.737	(\$575.1
2030	\$0.000	\$0.000	\$0.000	(\$504.399)	(\$242.264)	(\$139.743)	(\$277.508)	\$0.000	\$0.000	\$504.399	\$659.515	\$155.116	(\$528.8
2031	\$0.000	\$0.000	\$0.000	(\$518.963)	(\$246.730)	(\$142.258)	(\$288.190)	\$0.000	\$0.000	\$518.963	\$677.178	\$158.215	(\$485.0
2032	\$0.000	\$0.000	\$0.000	(\$536.932)	(\$251.275)	(\$144.819)	(\$299.827)	\$0.000	\$0.000	\$536.932	\$695.921	\$158.989	(\$444.2
2033	\$0.000	\$0.000	\$0.000	(\$554.077)	(\$255.920)	(\$147.425)	(\$315.169)	\$0.000	\$0.000	\$554.077	\$718.514	\$164.436	(\$405.1
2034	\$0.000	\$0.000	\$0.000	(\$569.581)	(\$260.665)	(\$150.079)	(\$330.137)	\$0.000	\$0.000	\$569.581	\$740.881	\$171.300	(\$367.3
2035	\$0.000	\$0.000	\$0.000	(\$588.003)	(\$265.495)	(\$152.780)	(\$342.201)	\$0.000	\$0.000	\$588.003	\$760.477	\$172.473	(\$332.0
2036	\$0.000	\$0.000	\$0.000	(\$604.803)	(\$270.466)	(\$155.530)	(\$355.933)	\$0.000	\$0.000	\$604.803	\$781.929	\$177.127	(\$298.4
2037	\$0.000	\$0.000	\$0.000	(\$620.627)	(\$275.394)	(\$158.330)	(\$367.768)	\$0.000	\$0.000	\$620.627	\$801.492	\$180.866	(\$266.68
2038	\$0.000	\$0.000	\$0.000	(\$640.548)	(\$280.411)	(\$161.180)	(\$382.997)	\$0.000	\$0.000	\$640.548	\$824.588	\$184.040	(\$236.6
2039	\$0.000	\$0.000	\$0.000	(\$659.224)	(\$285.500)	(\$164.081)	(\$400.995)	\$0.000	\$0.000	\$659.224	\$850.577	\$191.353	(\$207.7
2040	\$0.000	\$0.000	\$0.000	(\$674.419)	(\$290.700)	(\$167.035)	(\$414.433)	\$0.000	\$0.000	\$674.419	\$872.167	\$197.748	(\$180.0
2041	\$0.000	\$0.000	\$0.000	(\$697.696)	(\$295.993)	(\$170.041)	(\$437.839)	\$0.000	\$0.000	\$697.696	\$903.874	\$206.178	(\$153.2
2042	\$0.000	\$0.000	\$0.000	(\$716.995)	(\$301.382)	(\$173.102)	(\$450.243)	\$0.000	\$0.000	\$716.995	\$924.727	\$207.732	(\$128.19
2043	\$0.000	\$0.000	\$0.000	(\$733.697)	(\$306.813)	(\$176.218)	(\$469.017)	\$0.000	\$0.000	\$733.697	\$952.047	\$218.350	(\$103.7

Nominal	\$362.500	\$1,036.750	(\$12,515.195)	(\$5,365.454)	(\$3,360.712)	(\$7,127.321)			\$13,914.445	\$15,853.487	\$1,939.042	
NPV	\$220.004	\$629.213	(\$3,359.749)	(\$1,336.145)	(\$942.427)	(\$1,826.598)	\$0.000	\$0.000	\$4,208.966	\$4,105.170	(\$103.796)	
Discount Rate =	7.85%											
Benefit/Cost Ratio =	0.98											



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Filename:

Reflective Roof

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	-0.41	kW/Cus
(2) Change in Peak kW per Customer at generator	-0.51	kW Gen/Cus
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator	(1,084)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter	(1,029)	kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	0.00	kW/Cus
II. Economic Life and K-Factors		
(1) DSM Program Study Period	30	Years
(2) Economic Life of Incremental Generation	40	Years
(3) Economic Life of Incremental T&D	35	Years
(4) K-Factor for Generation	1.4331	
(5) K-Factor for T&D	1.4298	
* (6) Switch: Rev Reg (0) or Val-of-Def (1)	<u> </u>	
III. Utility & Customer Costs		
(1) Utility Nonrecurring Cost Per Customer	<u>\$25.0</u> 0	\$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00	\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$ <u>53</u> 1.00	\$/Cus
(5) Customer Equpiment Cost Escalation Rate	0.00%	
(6) Customer O&M Cost	\$0.00	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1.80%	
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%	
* (10) Change in Supply Costs	\$0.00	\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%	
* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive	\$400.00	\$/Cus
* (15) Utility Recurring Rebate/Incentive	\$0.00	\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	0.00%	

14. Inciental deliciation, manaimasion, a Distribu	11011 00313	
(1) Base Year	2014_	
(2) In-Service Year For Incremental Generation	2023 **	
(3) In-Service Year For Incremental T & D	2015	
(4) Base Year Incremental Generation Cost	\$851.95 \$/kW	
(5) Base Year Incremental Transmission Cost	\$302.35_\$/kW	
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW	
(7) Gen, Tran, & Dist Cost Escalation Rate	1.80%_	
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr	
(9) Generator Fixed O&M Escalation Rate	1.96%	
(10) Transmission Fixed O & M Cost	\$6. <u>68</u>	
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr	
(12) T&D_Fixed O&M Escalation Rate	1.80%	
(13) Incremental Gen Variable O & M Costs	<u>\$0.0</u> 00_\$/kW/Yr	
(14) Incre Gen Variable O&M Cost Esc Rate	0.00%	
(15) Incremental Gen Capacity Factor	9.4 <u>3%</u>	
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 71_\$/kWh	
(17) Incremental Gen Unit Fuel Esc_Rate	5.10%	
(18) Incremental Purchased Capacity Cost	\$0.47_\$/KW/YR	
(19) Incremental Capacity Cost Esc Rate	21.61%	
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0	
V. (1) Non-Fuel Cost In Customer Bill (Base Year)		
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.06</u> 87_\$/kWh	
(2) Non-Fuel Escalation Rate	Per Table	
(3) Customer Demand Charge Per kW (Base Year)	\$0 <u>.00</u> 00\$/kW/Mo	
(4) Demand Charge Escalation Rate	Per Table	
* (5)Average Annual Change in Monthly Billing kW	0_kW/Mo.	

IV. Incremental Generation, Transmission, & Distribution Costs

Summary	/ Results	for This	Analysis

	TRC	Participants'	RIM
NPV Benefits(\$000s)	\$4,530	\$5,149	\$4,530
NPV Costs (\$000s)	\$1,187	\$1,134	\$5,203
NPV Net Benefits (\$000s)	\$3,342	\$4,015	(\$673)
Benefit:Cost Ratio	3.815	4.541	0.871



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

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Total Resource Cost-Effectiveness Measure

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

1	2	3	4	5	6	7	8	9	10	11	12	13
- '-	Change in	J		J	U	Incremental	Incremental	Incremental	10		Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
		Program Costs		Costs	Benefits		Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	Supply Costs (\$000s)	(\$000s)	Program Costs (\$000s)	(\$000s)	(\$000s)	Cap Costs (\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$3	\$53	\$0	\$0	\$0	(\$3)	(\$4)	\$56	\$7	(\$48)	(\$45)
2016	\$0	\$4	\$80	\$0	\$0	\$0	(\$7)	(\$12)	\$83	\$20	(\$64)	(\$100)
2017	\$0	\$5	\$106	\$0	\$0	\$0	(\$14)	(\$24)	\$111	\$38	(\$73)	(\$158)
2018	\$0	\$6	\$133	\$0	\$0	\$0	(\$21)	(\$39)	\$139	\$61	(\$78)	(\$216)
2019	\$0	\$8	\$159	\$0	\$0	\$0	(\$31)	(\$59)	\$167	\$90	(\$76)	(\$268)
2020	\$0	\$9	\$186	\$0	\$0	\$0	(\$43)	(\$85)	\$195	\$128	(\$67)	(\$311)
2021	\$0	\$10	\$212	\$0	\$0	\$0	(\$57)	(\$118)	\$222	\$174	(\$48)	(\$339)
2022	\$0	\$13	\$266	\$0	\$0	\$0	(\$74)	(\$161)	\$278	\$235	(\$43)	(\$363)
2023	\$0	\$15	\$319	\$0	\$0	(\$165)	(\$96)	(\$218)	\$334	\$479	\$145	(\$289)
2024	\$0	\$18	\$372	\$0	\$0	(\$210)	(\$121)	(\$272)	\$389	\$602	\$213	(\$189)
2025	\$0	\$0	\$0	\$0	\$0	(\$213)	(\$123)	(\$284)	\$0	\$621	\$621	\$81
2026	\$0	\$0	\$0	\$0	\$0	(\$217)	(\$126)	(\$296)	\$0	\$639	\$639	\$339
2027	\$0	\$0	\$0	\$0	\$0	(\$221)	(\$128)	(\$309)	\$0	\$659	\$659	\$586
2028	\$0	\$0	\$0	\$0	\$0	(\$225)	(\$130)	(\$328)	\$0	\$683	\$683	\$823
2029	\$0	\$0	\$0	\$0	\$0	(\$230)	(\$132)	(\$340)	\$0	\$702	\$702	\$1,049
2030	\$0	\$0	\$0	\$0	\$0	(\$234)	(\$135)	(\$358)	\$0	\$726	\$726	\$1,266
2031	\$0	\$0	\$0	\$0	\$0	(\$238)	(\$137)	(\$371)	\$0	\$747	\$747	\$1,473
2032	\$0	\$0	\$0	\$0	\$0	(\$243)	(\$140)	(\$386)	\$0	\$769	\$769	\$1,670
2033	\$0	\$0	\$0	\$0	\$0	(\$247)	(\$142)	(\$406)	\$0	\$795	\$795	\$1,859
2034	\$0	\$0	\$0	\$0	\$0	(\$252)	(\$145)	(\$425)	\$0	\$822	\$822	\$2,041
2035	\$0	\$0	\$0	\$0	\$0	(\$256)	(\$147)	(\$441)	\$0	\$845	\$845	\$2,213
2036	\$0	\$0	\$0	\$0	\$0	(\$261)	(\$150)	(\$459)	\$0	\$870	\$870	\$2,378
2037	\$0	\$0	\$0	\$0	\$0	(\$266)	(\$153)	(\$474)	\$0	\$893	\$893	\$2,535
2038	\$0	\$0	\$0	\$0	\$0	(\$271)	(\$156)	(\$494)	\$0	\$920	\$920	\$2,685
2039	\$0	\$0	\$0	\$0	\$0	(\$276)	(\$158)	(\$517)	\$0	\$951	\$951	\$2,829
2040	\$0	\$0	\$0	\$0	\$0	(\$281)	(\$161)	(\$534)	\$0	\$976	\$976	\$2,966
2041	\$0	\$0	\$0	\$0	\$0	(\$286)	(\$164)	(\$564)	\$0	\$1,014	\$1,014	\$3,097
2042	\$0	\$0	\$0	\$0	\$0	(\$291)	(\$167)	(\$580)	\$0	\$1,038	\$1,038	\$3,223
2043	\$0	\$0	\$0	\$0	\$0	(\$296)	(\$170)	(\$604)	\$0	\$1,071	\$1,071	\$3,342
Nominal NPV	ount Rate =	\$89 \$53.386 7.85%	\$1,885 \$1,133.920	\$0.000	\$0.000	(\$5,178) (\$1,289.203)	(\$3,232) (\$901.533)	(\$9,163) (\$2,338.810)	\$1,974 \$1,187.306	\$17,573 \$4,529.546	\$15,599 \$3,342.240	
Disc	ount nate -	7.0070										

Benefit/Cost Ratio = 3.81



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Participants' Cost-Effectiveness Measure

Customer Customer Other Other Participants' Tax Rebates & Total Total Net D	12
Customer Equip Costs Customer Call M Costs Costs Equip Costs Call M	ımulative
Vear Equip Costs (\$500s) Costs (\$500s) Costs (\$500s) Credits (\$500s) Incentives (\$500s) Costs (\$500s) Benefits (\$500s) No 2014 \$0	scounted
Year \$\begin{array}{ c c c c c c c c c c c c c c c c c c c	t Benefits
2015 \$53 \$0 \$0 \$0 \$0 \$0 \$12 \$0 \$40 \$53 \$52 \$11 2017 \$106 \$0 \$0 \$0 \$0 \$0 \$0 \$50 \$50 \$51 2018 \$133 \$0 \$0 \$0 \$0 \$0 \$0 \$51 2019 \$159 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	(\$000s)
2016	\$0
2017 \$106	(\$1
2018	\$8
2019	\$33
2020 \$186 \$0 \$0 \$0 \$0 \$0 \$186 \$0 \$140 \$186 \$326 \$140 2021 \$212 \$0 \$0 \$0 \$0 \$3245 \$0 \$160 \$212 \$405 \$193 2022 \$266 \$0 \$0 \$0 \$0 \$320 \$0 \$200 \$226 \$520 \$254 2023 \$319 \$0 \$0 \$0 \$320 \$0 \$240 \$319 \$657 \$338 2024 \$372 \$0 \$0 \$0 \$5533 \$0 \$280 \$372 \$813 \$441 2025 \$0 \$0 \$0 \$0 \$552 \$0 \$0 \$0 \$552 2026 \$0 \$0 \$0 \$0 \$0 \$552 \$0 \$0 \$0 \$552 2027 \$0 \$0 \$0 \$0 \$0 \$5570 \$0 \$0 \$5570 2027 \$0 \$0 \$0 \$0 \$0 \$5588 \$588 2028 \$0 \$0 \$0 \$0 \$0 \$0 \$5588 \$568 2029 \$0 \$0 \$0 \$0 \$0 \$0 \$5660 2031 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$76
2021 \$212 \$0 \$0 \$0 \$0 \$0 \$245 \$0 \$0 \$160 \$212 \$405 \$193 2022 \$266 \$0 \$0 \$0 \$0 \$0 \$200 \$266 \$520 \$254 2023 \$319 \$0 \$0 \$0 \$0 \$0 \$200 \$266 \$520 \$254 2023 \$319 \$0 \$0 \$0 \$0 \$0 \$240 \$319 \$657 \$338 2024 \$372 \$0 \$0 \$0 \$0 \$533 \$0 \$280 \$372 \$813 \$441 2025 \$0 \$0 \$0 \$0 \$0 \$0 \$552 \$0 \$0 \$0 \$552 2026 \$0 \$0 \$0 \$0 \$0 \$5570 \$570 2027 \$0 \$0 \$0 \$0 \$0 \$0 \$5570 \$570 2027 \$0 \$0 \$0 \$0 \$0 \$5570 \$570 2028 \$0 \$0 \$0 \$0 \$0 \$0 \$588 \$0 \$0 \$50 \$588 2028 \$0 \$0 \$0 \$0 \$0 \$0 \$6608 2029 \$0 \$0 \$0 \$0 \$0 \$0 \$6608 2029 \$0 \$0 \$0 \$0 \$0 \$0 \$6608 2030 \$0 \$0 \$0 \$0 \$0 \$0 \$6600 2031 \$0 \$0 \$0 \$0 \$0 \$0 \$6690 2032 \$0 \$0 \$0 \$0 \$0 \$0 \$6690 2032 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$141
2022 \$266 \$0 \$0 \$0 \$0 \$3200 \$200 \$266 \$520 \$254	\$230
2023 \$319 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$343
2024 \$372 \$0 \$0 \$0 \$0 \$533) \$0 \$280 \$372 \$813 \$441 2025 \$0 \$0 \$0 \$0 \$0 \$552 \$0 \$0 \$0 2026 \$0 \$0 \$0 \$0 \$0 \$5570 \$570 2027 \$0 \$0 \$0 \$0 \$0 \$588 \$0 \$0 \$570 2027 \$0 \$0 \$0 \$0 \$0 \$588 \$0 \$0 \$570 2028 \$0 \$0 \$0 \$0 \$0 \$0 \$588 2028 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	\$482
2025 \$0	\$654
2026 \$0	\$861
2027 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$588 \$588 \$2028 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$1,101 \$1,332
2028 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$608 \$608 2029 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$628 \$628 2030 \$0 \$0 \$0 \$0 \$0 \$0 \$650 \$660 2031 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$669 \$669 2032 \$0 \$0 \$0 \$0 \$0 \$0 \$669 \$669 2033 \$0 \$0 \$0 \$0 \$0 \$0 \$669 \$692 \$692 \$692 \$692 \$692 \$692 \$602 \$0 \$0 \$669 <th>\$1,332 \$1,552</th>	\$1,332 \$1,552
2029 \$0	\$1,763
2030 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$650 \$650 \$650 \$650 \$650 \$650 \$650 \$650 \$650 \$669 \$662 \$662 \$662 \$662 \$662 \$662 \$669 \$669 \$669 \$669 \$669 \$669 \$669 \$6758 \$690 \$60 \$6758 \$6788	\$1,765
2031 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$669 \$669 \$0 \$0 \$669 \$6744 \$60 \$60 \$60 \$6734 <t< th=""><th>\$2,159</th></t<>	\$2,159
2032 \$0 \$0 \$0 \$0 \$692 \$0 \$0 \$692 \$692 2033 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$714 \$714 2034 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$734 \$734 2035 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$758 \$758 2036 \$0 \$0 \$0 \$0 \$0 \$0 \$779 \$779 2037 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 2038 \$0 \$0 \$0 \$0 \$0 \$0 \$825 \$825 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$849 \$849 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$869 2041 \$0 \$0 \$0	\$2,344
2033 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$14 \$714 2034 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$734 \$734 2035 \$0 \$0 \$0 \$0 \$0 \$0 \$758 \$758 2036 \$0 \$0 \$0 \$0 \$0 \$0 \$779 \$779 2037 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 2038 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$825 \$825 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$849 \$49 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$869 2041 \$0 \$0 \$0 \$0 \$0 \$0 <t< th=""><th>\$2,521</th></t<>	\$2,521
2034 \$0 \$0 \$0 \$0 \$0 \$0 \$734 \$734 2035 \$0 \$0 \$0 \$0 \$0 \$0 \$758 \$758 2036 \$0 \$0 \$0 \$0 \$0 \$0 \$779 \$779 2037 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 2038 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 \$800 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$825 \$825 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$849 2041 \$0 \$0 \$0 \$0 \$0 \$0 \$899 \$899 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$2,691
2036 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$779 \$779 2037 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 2038 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$825 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$849 \$849 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$869 2041 \$0 \$0 \$0 \$0 \$0 \$0 \$899 \$899 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$2,853
2037 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$800 \$800 \$800 2038 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25 \$825 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$849 \$849 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$869 2041 \$0 \$0 \$0 \$0 \$0 \$899 \$899 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$3,008
2038 \$0 \$0 \$0 \$0 \$825 \$825 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$849 \$849 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$869 2041 \$0 \$0 \$0 \$0 \$0 \$0 \$899 \$899 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$3,156
2039 \$0 \$0 \$0 \$0 \$849 \$849 2040 \$0 \$0 \$0 \$0 \$0 \$0 \$869 2041 \$0 \$0 \$0 \$0 \$0 \$0 \$869 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$924	\$3,297
2040 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$869 \$869 2041 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$899 \$899 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$3,431
2041 \$0 \$0 \$0 \$0 \$899 \$899 2042 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$3,560
2042 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$924 \$924	\$3,682 \$3,798
	\$3,790 \$3,910
20-0 40 40 40 40 40 40 40 40 40 40 40 40 40	\$4,015
	ψ4,013
Nominal \$1,885 (\$16,079) \$1,420 \$1,885 \$17,499 \$15,614 NPV \$1,051 \$0 \$0 \$4,295) \$0 \$854 \$1,133,920 \$5,149,333 \$4,015	
Discount Rate = 7.85%	
Benefit/Cost Ratio = 4.54	



Filename:

Reflective Roof

Ratepayers' Impact Cost-Effectiveness Measure

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

(\$5,177.819)

(\$1,289.203)

(\$3,232.352)

(\$901.533)

Electric Program Supply Costs	1 2	3	4	5	6	7	8	9	10	11	12	13	14
Supply Costs Costs Incentives Revenues Cap Costs C	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental					Total Net	Cumulative
(\$0008) (\$0000) \$0000 \$0000 \$0000 \$0000 \$0.000 </th <th>Electric</th> <th>Program</th> <th>Rebates &</th> <th></th> <th>Generation</th> <th>T&D</th> <th>Prog Induced</th> <th>Other</th> <th>Other</th> <th>Total</th> <th>Total</th> <th>Benefits to</th> <th>Discounted</th>	Electric	Program	Rebates &		Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
\$0.000 \$0	Supply Costs	Costs					Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
\$0.000 \$2.500 \$40.000 (\$11.811) \$0.000 (\$2.907) (\$4.348) \$0.000 \$0.000 \$54.311 \$7.255 (\$47.056) \$0.000 \$50.000 \$57.000 \$50.000 \$57.000 \$50.000 \$57.000 \$50.000 \$57.000 \$50.000 \$57.000 \$50.000			(\$UUUS)	(\$000)									
\$0.000 \$3.760 \$60.000 \$5.000 \$80.000 \$7.164 \$0.000 \$7.164 \$0.000 \$13.558 \$0.000 \$0.000 \$0.000 \$142.164 \$37.782 \$(\$74.912)\$ \$0.000 \$5.000 \$8.250 \$100.000 \$91.290 \$0.000 \$(\$31.558) \$0.000 \$0.000 \$142.164 \$37.782 \$(\$104.383)\$ \$0.000 \$7.500 \$120.000 \$(\$91.290) \$0.000 \$(\$21.470) \$(\$39.246) \$0.000 \$0.000 \$142.164 \$37.782 \$(\$104.383)\$ \$0.000 \$7.500 \$120.000 \$(\$13.558) \$100.000 \$(\$13.558) \$0.000 \$0.000 \$197.540 \$60.716 \$(\$136.824)\$ \$0.000 \$7.500 \$120.000 \$(\$13.5461) \$0.000 \$(\$31.224) \$(\$59.194) \$0.000 \$0.000 \$260.961 \$90.418 \$(\$170.543)\$ \$0.000 \$7.500 \$100.000 \$100.000 \$100.000 \$246.552) \$0.0000 \$(\$642.911) \$(\$94.896) \$0.0000 \$0.000 \$334.398 \$127.807 \$(\$205.591)\$ \$0.0000 \$11.500 \$160.000 \$(\$245.352) \$0.0000 \$(\$56.626) \$(\$117.775) \$0.000 \$0.000 \$314.258 \$174.402 \$(\$240.951)\$ \$0.0000 \$15.000 \$0.1000 \$160.000 \$(\$416.731) \$(\$165.246) \$(\$95.570) \$(\$217.956) \$0.0000 \$0.000 \$632.077 \$234.866 \$(\$297.211)\$ \$0.0000 \$17.500 \$240.000 \$(\$416.731) \$(\$165.246) \$(\$95.570) \$(\$217.956) \$0.0000 \$0.000 \$670.7121 \$478.771 \$(\$192.960)\$ \$0.0000 \$0.000 \$													\$0.000
\$0.000 \$5.000 \$80.000 \$5.000 \$81.000 \$57.164 \$0.000 \$13.558] \$(\$24.244) \$0.000 \$0.000 \$142.164 \$37.782 \$(\$14.383)\$ \$0.000 \$7.500 \$120.000 \$(\$13.461) \$0.000 \$(\$21.476) \$(\$39.246) \$0.000 \$0.000 \$10.000 \$176.000 \$10.000\$ \$0.000 \$1.000 \$160.000 \$(\$45.342) \$0.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000\$ \$0.000 \$1.000 \$160.000 \$(\$45.342) \$0.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000\$ \$0.000 \$1.000 \$160.000 \$(\$45.352) \$0.000 \$0.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000\$ \$0.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000 \$1.000\$ \$0.000 \$1.000													(\$43.631)
\$0.000 \$8.250 \$100.000 \$91.290) \$0.000 \$21.470 \$39.246) \$0.000 \$0.000 \$197.540 \$80.716 \$136.824) \$0.000 \$7.500 \$120.000 \$13.461) \$0.000 \$31.224 \$1000 \$1.241 \$10000 \$1.241 \$1000 \$1.241 \$10000 \$1.241 \$10000 \$1.241 \$1000 \$1.241 \$													(\$108.035)
\$0.000 \$7.500 \$120.000 (\$133.461) \$0.000 (\$341.224) (\$59.194) \$0.000 \$0.000 \$260.961 \$90.418 (\$170.543) \$0.000 \$10.000 \$10.000 \$160.000 (\$145.648) \$0.000 (\$44.911) (\$84.896) \$0.000 \$0.000 \$3415.352 \$174.402 (\$240.951) \$0.000 \$10.000 \$10.000 \$150.000 \$10.000 \$150.000 \$245.352) \$0.000 (\$56.626) (\$117.775) \$0.000 \$0.000 \$3415.352 \$174.402 (\$240.951) \$0.000 \$115.500 \$200.000 (\$3415.577) \$0.000 (\$74.116) (\$160.750) \$0.000 \$0.000 \$30.000 \$415.352 \$174.402 \$234.066 (\$297.211) \$0.000 \$150.000 \$175.000 \$240.000 (\$416.731) (\$165.246) (\$95.570) \$0.000 \$0.000 \$0.000 \$517.731 \$234.866 (\$297.211) \$0.000 \$17.500 \$240.000 (\$416.731) (\$165.246) (\$95.570) \$0.000 \$0.000 \$0.000 \$517.731 \$234.866 (\$297.211) \$0.000 \$17.500 \$240.000 (\$533.119) (\$209.609) (\$121.186) (\$271.642) \$0.000 \$0.000 \$871.731 \$478.771 (\$192.960) \$0.000													(\$191.244)
\$0.000 \$8.750 \$140.000 \$1656.48] \$0.000 \$42.911) \$\text{\$(\$246.951)}\$\$ \$0.000 \$10.000 \$160.000 \$245.352] \$0.000 \$56.66) \$(\$17.775) \$0.000 \$0.000 \$345.352 \$174.402 \$(\$240.951)\$\$ \$0.000 \$12.500 \$200.000 \$319.577 \$0.000 \$74.116) \$(\$160.750) \$0.000 \$0.000 \$532.077 \$234.866 \$(\$297.211)\$\$ \$0.000 \$15.000 \$240.000 \$(\$416.731) \$(\$165.246) \$(\$95.570) \$(\$217.955) \$0.000 \$0.000 \$571.731 \$478.771 \$(\$192.960)\$\$ \$0.000 \$17.500 \$220.000 \$(\$533.119) \$(\$209.600) \$(\$121.186) \$(\$271.642) \$0.000 \$0.000 \$571.731 \$478.771 \$(\$192.960)\$\$ \$0.000 \$0.000 \$0.000 \$50.000 \$(\$553.119) \$(\$209.600) \$(\$121.186) \$(\$271.642) \$0.000 \$0.000 \$5830.619 \$602.437 \$(\$228.182) \$(\$123.452) \$(\$123.367) \$(\$228.4024) \$0.000 \$0.000 \$582.413 \$620.843 \$68.430 \$(\$30.000) \$0.000 \$0.000 \$557.0122 \$(\$321.3861) \$(\$127.381) \$(\$127.381) \$(\$127.889) \$(\$309.437) \$0.000 \$0.000 \$567.0122 \$668.814 \$68.692 \$(\$30.000) \$0.000 \$0.000 \$0.000 \$6607.798] \$(\$2225.452) \$(\$130.150) \$(\$327.756) \$0.0000 \$0.000 \$567.983 \$683.357 \$75.559 \$(\$0.000) \$0.000 \$0.000 \$0.000 \$667.988] \$(\$225.452) \$(\$130.150) \$(\$327.756) \$0.000 \$0.000 \$627.988 \$702.160 \$74.193 \$0.000 \$0.000 \$0.000 \$627.988 \$702.160 \$74.193 \$0.000 \$0.000 \$0.000 \$627.988 \$702.160 \$74.193 \$0.000 \$0.000 \$0.000 \$6607.798 \$686.752 \$(\$238.140) \$(\$137.305) \$(\$317.371) \$0.000 \$0.000 \$688.752 \$76.816 \$70.842 \$0.000 \$0.000 \$0.000 \$0.000 \$668.752 \$(\$338.340) \$(\$134.877) \$(\$357.666) \$0.000 \$0.000 \$649.984 \$726.313 \$76.329 \$0.000 \$0.000 \$0.000 \$660.752 \$(\$687.752) \$(\$242.257) \$(\$137.777) \$(\$366.367) \$0.000 \$0.000 \$779.766.671 \$76.671 \$76.673 \$0.000 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759 \$881.437 \$0.000 \$0.000 \$779.759													(\$292.375)
\$0.000 \$10.000 \$16.0000 \$240.000 \$346.352) \$0.000 \$366.626) \$(\$117.775) \$0.000 \$0.000 \$415.352 \$174.402 \$(\$240.951)\$ \$0.000 \$12.500 \$200.000 \$319.577) \$0.000 \$(\$74.116) \$(\$160.750) \$0.000 \$0.000 \$532.077 \$234.866 \$(\$297.211)\$ \$0.000 \$15.000 \$240.000 \$240.000 \$240.000 \$240.000 \$240.000 \$15.000 \$0.000 \$0.000 \$671.731 \$478.771 \$182.960)\$ \$0.000 \$17.500 \$280.000 \$533.119 \$209.609 \$(\$121.186) \$(\$271.642) \$0.000 \$0.000 \$830.619 \$602.437 \$(\$228.182) \$(\$280.000 \$0.000 \$0.000 \$0.000 \$0.000 \$552.413 \$620.843 \$88.430 \$(\$280.809) \$(\$121.186) \$(\$271.642) \$0.000 \$0.000 \$552.413 \$620.843 \$88.430 \$(\$280.809) \$(\$121.186) \$(\$271.642) \$0.000 \$0.000 \$552.413 \$620.843 \$88.430 \$(\$280.809) \$(\$121.186) \$(\$271.642) \$0.000 \$0.000 \$552.413 \$620.843 \$88.430 \$(\$280.000) \$0.000 \$0.000 \$0.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$550.000 \$0.000 \$500.000 \$0.000 \$607.798 \$683.357 \$75.559 \$0.000 \$0.000 \$0.000 \$0.000 \$667.798 \$683.357 \$75.559 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$667.798 \$683.357 \$75.559 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$668.752 \$(\$233.830) \$(\$132.483) \$(\$340.073) \$0.000 \$0.000 \$667.968 \$702.160 \$74.193 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$668.752 \$(\$233.810) \$(\$137.305) \$(\$357.056) \$0.000 \$0.000 \$668.752 \$746.816 \$76.329 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$668.752 \$(\$238.140) \$137.305 \$(\$371.371) \$0.000 \$0.000 \$689.94 \$726.313 \$76.329 \$0.000 \$0.00													(\$409.253)
\$0.000 \$12.500 \$200.000 (\$319.577) \$0.000 (\$74.116) (\$165.750) \$0.000 \$0.000 \$532.077 \$234.866 (\$297.211) \$0.000 \$15.000 \$240.000 (\$416.731) (\$165.246) (\$95.570) (\$217.955) \$0.000 \$0.000 \$671.731 \$478.771 (\$192.960) \$0.000 \$17.500 \$280.000 \$0.000 \$532.077 \$234.866 (\$297.211) \$0.000 \$17.500 \$280.000 \$0.000 \$532.077 \$280.000 \$0.000 \$532.077 \$228.000 \$0.000 \$17.500 \$280.000 \$0.000													(\$540.532) (\$682.499)
\$0.000 \$15.000 \$240.000 (\$416.731) (\$165.246) (\$95.570) (\$217.955) \$0.000 \$0.000 \$671.731 \$478.771 (\$192.960) \$0.000 \$17.500 \$280.000 (\$532.413) (\$209.609) (\$121.186) (\$271.642) \$0.000 \$0.000 \$830.619 \$602.437 (\$228.182) (\$209.000) \$0.000 \$,									
\$0.000 \$17.500 \$280.000 (\$533.119) (\$209.609) (\$121.186) (\$271.642) \$0.000 \$0.000 \$830.619 \$602.437 (\$228.182) (\$10.000 \$													(\$844.870)
\$0.000 \$0.000 \$0.000 \$0.000 \$552.413) (\$213.452) (\$123.367) (\$284.024) \$0.000 \$0.000 \$552.413 \$620.843 \$68.430 (\$20.000 \$0.000 \$0.000 \$0.000 \$0.000 \$570.122 \$638.814 \$68.692 \$0.000 \$0.000 \$0.000 \$0.000 \$570.122 \$638.814 \$68.692 \$0.000 \$0.000 \$570.122 \$638.814 \$68.692 \$0.000 \$0.000 \$0.000 \$570.122 \$638.814 \$68.692 \$0.000 \$0.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$50.000 \$60.0													(\$942.614)
\$0.000 \$0.000 \$0.000 \$0.000 \$570.122) \$217.381) \$125.588) \$129.588] \$129.588] \$10.000 \$0.000 \$570.122 \$638.814 \$68.692 \$0.000 \$0.000 \$0.000 \$587.824 \$656.667 \$70.842 \$0.000 \$0.000 \$0.000 \$587.824 \$656.667 \$70.842 \$0.000													(\$1,049.786)
\$0.000 \$0													(\$1,019.985)
\$0.000 \$0													(\$992.248) (\$965.724)
\$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$649.984) \$(\$229.595) \$(\$132.493) \$(\$340.073) \$0.000 \$0.000 \$627.968 \$702.160 \$74.193 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$649.984 \$726.313 \$76.329 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$649.984 \$726.313 \$76.329 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$689.994 \$726.313 \$76.329 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$689.994 \$726.313 \$76.329 \$0.000 \$													(\$939.493)
\$0.000 \$0.000 \$0.000 \$0.000 \$649.994) (\$233.830) (\$134.877) (\$357.606) \$0.000 \$0.000 \$649.984 \$726.313 \$76.329 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$668.752 \$746.816 \$78.064 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$776.763 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$776.763 \$0.000 \$													(\$915.611)
\$0.000 \$0													(\$892.830)
\$0.000 \$0													(\$871.227)
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													(\$687.157)
							***						(\$673.173)

(\$9,163.082)

(\$2,338.810)

\$0.000

\$0.000

\$17,587.877 \$17,573.253

\$4,529.546

\$5,202.719

(\$14.624)

(\$673.173)

Nominal	\$88.750	\$1,420.000	(\$16,079.127)
NPV	\$53.386	\$854.177	(\$4,295.157)
Discount Rate =	7.85%		
Benefit/Cost Ratio =	0.87		



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Filename: HE Room AC Weighted EER

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

I. Program Demand Impacts and Line Losses	
(1) Change in Peak kW Customer at meter	-0.04 kW/Cus
(2) Change in Peak kW per Customer at generator	-0.05 kW Gen/Cus
(3) kW Line Loss Percentage	7.12%
(4) Change in KWh per Customer at generator	(86) kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%
(6) Group Line Loss Multiplier	1.0015
(7) Annual Change in Customer kWh at Meter	(82) kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	0.00 kW/Cus
II. Economic Life and K-Factors	
(1) DSM Program Study Period	<u>30</u> Years
(2) Economic Life of Incremental Generation	40 Years
(3) Economic Life of Incremental T&D	<u>35</u> Years
(4) K-Factor for Generation	<u>1.4331</u>
(5) K-Factor for T&D	1.4298
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1
III. Utility & Customer Costs	
(1) Utility Nonrecurring Cost Per Customer	\$1 <u>0.0</u> 0 \$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00 \$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%
(4) Customer Equipment Cost	\$44.00 \$/Cus
(5) Customer Equpiment Cost Escalation Rate	0.00%
(6) Customer O&M Cost	\$0.00 \$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1.80%
* (8) Customer Tax Credit Per Installation	\$0.00 \$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%
* (10) Change in Supply Costs	\$0.00 \$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%
* (12) Utility Discount Rate	7.85%
* (13) Utility AFUDC Rate	6.26%
	\$25.00 \$/Cus
* (14) Utility Nonrecurring Rebate/Incentive	
* (14) Utility Nonrecurring Rebate/Incentive	\$0.00 \$/Cus/Year
* (14) Utility Nonrecurring Rebate/Incentive * (15) Utility Recurring Rebate/Incentive * (16) Utility Rebate/Incentive Escalation Rate	\$0.00 \$/Cus/Year 0.00%

(1) Base Year	2014_
(2) In-Service Year For Incremental Generation	2023 **
(3) In-Service Year For Incremental T & D	
(4) Base Year Incremental Generation Cost	<u>\$8</u> 51. <u>95</u> \$/kW
(5) Base Year Incremental Transmission Cost	\$302.35_\$/kW
(6) Base Year Incremental Distribution Cost	<u>\$1</u> 54. <u>39</u> \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	<u> </u>
(8) Generator Fixed O & M Cost	\$17. <u>89</u> \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	<u> </u>
(10) Transmission Fixed O & M Cost	\$6. <u>68</u> \$/kW/Yr
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr
(12) T&D_Fixed O&M Escalation Rate	1.8 <u>0%</u>
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00_\$/kW/Yr
(1 <u>4) Incre Gen Variable O&M Cost Esc Rate</u>	0.0 <u>0</u> %
(15) Incremental Gen Capacity Factor	<u>9.43%</u>
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 71_\$/kWh
(1 <u>7)</u> Incremental Gen Unit Fuel Esc_Rate	5.1 <u>0%</u>
(18) Incremental Purchased Capacity Cost	<u>\$0.</u> 47_\$/KW/YR
(19) Incremental Capacity Cost Esc Rate	<u>2</u> 1.6 <u>1%</u>
Stop Revenue Loss at In-Service Year? (Y=1, N=0) <u> </u>

IV. Incremental Generation, Transmission, & Distribution Costs

V. (1) Non-Fuel Cost In Customer Bill (Base Year)

(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0.0687_\$/kWh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$0.0000 \$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	0 kW/Mo.

Summary Results for This Analysis

Cummary recount			
	TRC	Participants'	RIM
NPV Benefits(\$000s)	\$251	\$248	\$251
NPV Costs (\$000s)	\$73	\$59	\$262
NPV Net Benefits (\$000s)	\$178	\$189	(\$10)
Benefit:Cost Ratio	3.444	4.174	0.960



^{*} Supplemental information.

 $[\]ensuremath{^{**}}$ The relevant avoidable generation unit is a combined cycle unit.

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Total Resource Cost-Effectiveness Measure

The component Change in Electric Change in El
Figure F
Name
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2015 S0 S2 S9 S0 S0 S0 S0 S1 (S1) S11 S1 (S9) (S9)
2016 \$0
2017 SO S2 S9 SO SO SO (S2) (S3) S11 S4 (S6) (S21)
2018 \$0 \$2 \$9 \$0 \$0 \$0 \$0 \$0 \$0 \$0
2019 \$0
2020 \$0 \$2 \$9 \$0 \$0 \$0 \$0 \$0 \$0 \$0
2021 \$0
2022 \$0
2023 \$0 \$2 \$9 \$0 \$0 (\$11) (\$6) (\$11) \$11 \$28 \$17 (\$15) 2024 \$0 \$2 \$9 \$0 \$0 (\$12) (\$7) (\$12) \$111 \$32 \$21 (\$5) 2025 \$0 \$0 \$0 \$0 \$0 \$13) (\$77) (\$13) \$0 \$33 \$33 \$93 2026 \$0 \$0 \$0 \$0 \$0 \$0 \$33 \$34 \$34 \$223 2027 \$0 \$0 \$0 \$0 \$0 \$13) (\$8) (\$14) \$0 \$34 \$34 \$23 2028 \$0 \$0 \$0 \$0 \$0 \$0 \$36 \$36 \$34 \$23 2029 \$0 \$0 \$0 \$0 \$0 \$513 \$89 \$315 \$0 \$36 \$36 \$44 2030 \$0 \$0 \$0
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2037 \$0 \$0 \$0 \$0 \$0 \$0 \$16 \$(\$9) \$(\$21) \$0 \$46 \$46 \$137 2038 \$0 \$0 \$0 \$0 \$(\$16) \$(\$9) \$(\$22) \$0 \$47 \$47 \$145 2039 \$0 \$0 \$0 \$0 \$0 \$(\$16) \$(\$9) \$(\$23) \$0 \$49 \$49 \$152 2040 \$0 \$0 \$0 \$0 \$(\$17) \$(\$10) \$(\$24) \$0 \$50 \$50 \$159 2041 \$0 \$0 \$0 \$0 \$(\$17) \$(\$10) \$(\$25) \$0 \$52 \$52 \$162 2042 \$0 \$0 \$0 \$0 \$(\$17) \$(\$10) \$(\$26) \$0 \$53 \$53 \$172
2038 \$0 \$0 \$0 \$0 \$0 \$16 \$9 \$22 \$0 \$47 \$47 \$145 2039 \$0 \$0 \$0 \$0 \$0 \$0 \$49 \$49 \$152 2040 \$0 \$0 \$0 \$0 \$0 \$150 \$50 \$50 \$159 2041 \$0 \$0 \$0 \$0 \$0 \$170 \$10 \$24 \$0 \$50 \$50 \$159 2042 \$0 \$0 \$0 \$0 \$170 \$10 \$26 \$0 \$53 \$53 \$172
2039 \$0 \$0 \$0 \$0 \$0 \$16 \$9 \$23 \$0 \$49 \$49 \$152 2040 \$0 \$0 \$0 \$0 \$0 \$17 \$10 \$24 \$0 \$50 \$50 \$159 2041 \$0 \$0 \$0 \$0 \$17 \$10 \$24 \$0 \$52 \$52 \$166 2042 \$0 \$0 \$0 \$0 \$17 \$10 \$26 \$0 \$53 \$53 \$172
2040 \$0 \$0 \$0 \$0 \$0 \$10 \$150 \$50 \$50 \$50 \$159 2041 \$0 \$0 \$0 \$0 \$0 \$170 \$100 \$25 \$0 \$52 \$52 \$166 2042 \$0 \$0 \$0 \$0 \$170 \$100 \$260 \$0 \$53 \$53 \$172
2041 \$0 \$0 \$0 \$0 \$0 \$(\$17) \$(\$10) \$(\$25) \$0 \$52 \$52 \$166 2042 \$0 \$0 \$0 \$0 \$(\$17) \$(\$10) \$(\$26) \$0 \$53 \$53 \$172
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Nominal \$20 \$88 (\$307) (\$201) (\$426) \$108 \$934 \$826
· · · · · · · · · · · · · · · · · · ·
NPV \$13.511 \$59.451 \$0.000 \$0.000 (\$76.773) (\$59.915) (\$114.616) \$72.962 \$251.304 \$178.342
NPV \$13.511 \$59.451 \$0.000 \$0.000 (\$76.773) (\$59.915) (\$114.616) \$72.962 \$251.304 \$178.342 Discount Rate = 7.85% Benefit/Cost Ratio = 3.44 3.44



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Participants' Cost-Effectiveness Measure

1	2	3	4	5	6 6	7	8	9	10	11	12
					Change in		Utility Paid			Total	Cumulative
	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$9	\$0	\$0	\$0	(\$2)	\$0	\$5	\$9	\$7	(\$2)	(\$2
2016	\$9	\$0	\$0	\$0	(\$4)	\$0	\$5	\$9	\$9	\$0	(\$2
2017	\$9	\$0	\$0	\$0	(\$6)	\$0	\$5	\$9	\$11	\$2	\$0
2018	\$9	\$0	\$0	\$0	(\$8)	\$0	\$5	\$9	\$13	\$5	\$3
2019	\$9	\$0	\$0	\$0	(\$11)	\$0	\$5	\$9	\$16	\$7	\$8
2020	\$9	\$0	\$0	\$0	(\$13)	\$0	\$5	\$9	\$18	\$9	\$14
2021	\$9	\$0	\$0	\$0	(\$16)	\$0	\$5	\$9	\$21	\$12	\$21
2022	\$9	\$0	\$0	\$0	(\$18)	\$0	\$5	\$9	\$23	\$14	\$29
2023	\$9	\$0	\$0	\$0	(\$21)	\$0	\$5	\$9	\$26	\$17	\$38
2024	\$9	\$0	\$0	\$0	(\$24)	\$0	\$5	\$9	\$29	\$20	\$47
2025	\$0	\$0	\$0	\$0	(\$25)	\$0	\$0	\$0	\$25	\$25	\$58
2026	\$0	\$0	\$0	\$0	(\$26)	\$0	\$0	\$0	\$26	\$26	\$68
2027	\$0	\$0 ©0	\$0 \$0	\$0 \$0	(\$26)	\$0 \$0	\$0 \$0	\$0 ©0	\$26	\$26	\$78
2028	\$0 ©0	\$0	\$0 \$0	\$0 \$0	(\$27)	\$0 \$0	\$0	\$0 ©0	\$27	\$27	\$88 \$97
2029	\$0	\$0	\$0	\$0	(\$28)	\$0 \$0	\$0	\$0	\$28	\$28	\$97 \$105
2030 2031	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$29) (\$30)	\$0 \$0	\$0 \$0	\$0 \$0	\$29 \$30	\$29 \$30	\$105 \$114
2031	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$30)	\$0 \$0	\$0 \$0	\$0 \$0	\$30 \$31	\$30 \$31	\$114
2032	\$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$32)	\$0	\$0	\$0 \$0	\$32	\$32	\$129
2033	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$32)	\$0 \$0	\$0 \$0	\$0 \$0	\$32 \$33	\$32 \$33	\$137
2034	\$0	\$0	\$0 \$0	\$0	(\$34)	\$0 \$0	\$0	\$0	\$34	\$34	\$137
2036	\$0 \$0	\$0 \$0	\$0	\$0	(\$35)	\$0	\$0	\$0	\$35	\$35	\$150
2037	\$0	\$0	\$0	\$0	(\$36)	\$0	\$0	\$0	\$36	\$36	\$156
2038	\$0	\$0	\$0	\$0	(\$37)	\$0	\$0	\$0	\$37	\$37	\$162
2039	\$0	\$0	\$0	\$0	(\$38)	\$0	\$0	\$0	\$38	\$38	\$168
2040	\$0	\$0	\$0	\$0	(\$39)	\$0	\$0	\$0	\$39	\$39	\$174
2041	\$0	\$0	\$0	\$0	(\$40)	\$0	\$0	\$0	\$40	\$40	\$179
2042	\$0	\$0	\$0	\$0	(\$41)	\$0	\$0	\$0	\$41	\$41	\$184
2043	\$0	\$0	\$0	\$0	(\$42)	\$0	\$0	\$0	\$42	\$42	\$189
l											
l											
l											
Nominal	\$88	4.5			(\$754)		\$50	\$88	\$804	\$716	
NPV	\$55	\$0	\$0	\$0	(\$214)	\$0	\$34	\$59.451	\$248.141	\$189	
	int Rate =	7.85%									
Benefit/0	Cost Ratio =	4.17									



Ratepayers' Impact Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Year	Change in Electric Supply Costs (\$000s)	Utility's Program Costs (\$000s)	Utility Paid Rebates & Incentives (\$000s)	Change in Electric Revenues (\$000)	Incremental Generation Cap Costs (\$000s)	Incremental T&D Cap Costs (\$000s)	Incremental Prog Induced Fuel Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Total Net Benefits to All Customers (\$000s)	Cumulative Discounted Net Benefits (\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.00
2015	\$0.000	\$2.000	\$5.000	(\$1.882)	\$0.000	(\$0.610)	(\$0.693)	\$0.000	\$0.000	\$8.882	\$1.303	(\$7.580)	(\$7.02)
2016	\$0.000	\$2.000	\$5.000	(\$3.938)	\$0.000	(\$1.242)	(\$1.572)	\$0.000	\$0.000	\$10.938	\$2.813	(\$8.125)	(\$14.01
2017	\$0.000	\$2.000	\$5.000	(\$6.074)	\$0.000	(\$1.896)	(\$2.574)	\$0.000	\$0.000	\$13.074	\$4.470	(\$8.604)	(\$20.87)
2018	\$0.000	\$2.000	\$5.000	(\$8.314)	\$0.000	(\$2.573)	(\$3.574)	\$0.000	\$0.000	\$15.314	\$6.148	(\$9.166)	(\$27.64
2019	\$0.000	\$2.000	\$5.000	(\$10.635)	\$0.000	(\$3.275)	(\$4.717)	\$0.000	\$0.000	\$17.635	\$7.992	(\$9.644)	(\$34.25
2020	\$0.000	\$2.000	\$5.000	(\$13.150)	\$0.000	(\$4.000)	(\$6.014)	\$0.000	\$0.000	\$20.150	\$10.014	(\$10.136)	(\$40.69)
2021	\$0.000	\$2.000	\$5.000	(\$15.642)	\$0.000	(\$4.751)	(\$7.508)	\$0.000	\$0.000	\$22.642	\$12.259	(\$10.382)	(\$46.81
2022	\$0.000	\$2.000	\$5.000	(\$18.110)	\$0.000	(\$5.528)	(\$9.109)	\$0.000	\$0.000	\$25.110	\$14.637	(\$10.473)	(\$52.53
2023	\$0.000	\$2.000	\$5.000	(\$20.974)	(\$10.946)	(\$6.330)	(\$10.970)	\$0.000	\$0.000	\$27.974	\$28.246	\$0.272	(\$52.39
2024	\$0.000	\$2.000	\$5.000	(\$23.935)	(\$12.385)	(\$7.160)	(\$12.195)	\$0.000	\$0.000	\$30.935	\$31.741	\$0.806	(\$52.02)
2025	\$0.000	\$0.000	\$0.000	(\$24.801)	(\$12.612)	(\$7.289)	(\$12.751)	\$0.000	\$0.000	\$24.801	\$32.653	\$7.852	(\$48.60)
2026	\$0.000	\$0.000	\$0.000	(\$25.596)	(\$12.844)	(\$7.421)	(\$13.282)	\$0.000	\$0.000	\$25.596	\$33.547	\$7.951	(\$45.38
2027	\$0.000	\$0.000	\$0.000	(\$26.390)	(\$13.081)	(\$7.554)	(\$13.892)	\$0.000	\$0.000	\$26.390	\$34.527	\$8.136	(\$42.34
2028	\$0.000	\$0.000	\$0.000	(\$27.287)	(\$13.321)	(\$7.690)	(\$14.715)	\$0.000	\$0.000	\$27.287	\$35.726	\$8.439	(\$39.41
2029	\$0.000	\$0.000	\$0.000	(\$28.193)	(\$13.566)	(\$7.828)	(\$15.268)	\$0.000	\$0.000	\$28.193	\$36.662	\$8.469	(\$36.68
2030	\$0.000	\$0.000	\$0.000	(\$29.181)	(\$13.816)	(\$7.969)	(\$16.055)	\$0.000	\$0.000	\$29.181	\$37.840	\$8.659	(\$34.10
2031	\$0.000	\$0.000	\$0.000	(\$30.024)	(\$14.071)	(\$8.113)	(\$16.673)	\$0.000	\$0.000	\$30.024	\$38.856	\$8.833	(\$31.65
2032	\$0.000	\$0.000	\$0.000	(\$31.063)	(\$14.330)	(\$8.259)	(\$17.346)	\$0.000	\$0.000	\$31.063	\$39.935	\$8.872	(\$29.38
2033	\$0.000	\$0.000	\$0.000	(\$32.055)	(\$14.595)	(\$8.408)	(\$18.234)	\$0.000	\$0.000	\$32.055	\$41.236	\$9.181	(\$27.19
2034	\$0.000	\$0.000	\$0.000	(\$32.952)	(\$14.866)	(\$8.559)	(\$19.100)	\$0.000	\$0.000	\$32.952	\$42.524	\$9.572	(\$25.08)
2035	\$0.000	\$0.000	\$0.000	(\$34.018)	(\$15.141)	(\$8.713)	(\$19.798)	\$0.000	\$0.000	\$34.018	\$43.651	\$9.633	(\$23.11)
2036	\$0.000	\$0.000	\$0.000	(\$34.990)	(\$15.424)	(\$8.870)	(\$20.592)	\$0.000	\$0.000	\$34.990	\$44.886	\$9.896	(\$21.23
2037	\$0.000	\$0.000	\$0.000	(\$35.905)	(\$15.706)	(\$9.029)	(\$21.277)	\$0.000	\$0.000	\$35.905	\$46.012	\$10.106	(\$19.46
2038	\$0.000	\$0.000	\$0.000	(\$37.058)	(\$15.992)	(\$9.192)	(\$22.158)	\$0.000	\$0.000	\$37.058	\$47.341	\$10.283	(\$17.78
2039	\$0.000	\$0.000	\$0.000	(\$38.138)	(\$16.282)	(\$9.357)	(\$23.199)	\$0.000	\$0.000	\$38.138	\$48.838	\$10.700	(\$16.16
2040	\$0.000	\$0.000	\$0.000	(\$39.017)	(\$16.578)	(\$9.526)	(\$23.976)	\$0.000	\$0.000	\$39.017	\$50.081	\$11.063	(\$14.61
2041	\$0.000	\$0.000	\$0.000	(\$40.364)	(\$16.880)	(\$9.697)	(\$25.331)	\$0.000	\$0.000	\$40.364	\$51.908	\$11.544	(\$13.11
2042	\$0.000	\$0.000	\$0.000	(\$41.481)	(\$17.188)	(\$9.872)	(\$26.048)	\$0.000	\$0.000	\$41.481	\$53.108	\$11.627	(\$11.71
2043	\$0.000	\$0.000	\$0.000	(\$42.447)	(\$17.497)	(\$10.050)	(\$27.134)	\$0.000	\$0.000	\$42.447	\$54.681	\$12.234	(\$10.34

Nominal	\$20.000	\$50.000	(\$753.615)	(\$307.120)	(\$200.761)	(\$425.753)			\$823.615	\$933.634	\$110.018	
NPV	\$13.511	\$33.779	(\$214.362)	(\$76.773)	(\$59.915)	(\$114.616)	\$0.000	\$0.000	\$261.652	\$251.304	(\$10.348)	
Discount Rate =	7.85%											
Benefit/Cost Ratio =	0.96											



PSC Form CE 1.1

Run Date:

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Filename:

Energy Select

INPUT DATA -- PART 1

I. Program Demand Impacts and Line Losses		IN
(1) Change in Peak kW Customer at meter	-1.80 kW/Cus	
(2) Change in Peak kW per Customer at generator	-2.22 kW Gen/Cus	
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator	(774) kWh/Cus/Yr	
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter	(735) kWh/Cus/Yr	
* (8) Change in Winter kW per Cust at meter	-1.07 kW/Cus	
II. Economic Life and K-Factors		_
(1) DSM Program Study Period	<u>30</u> Years	
(2) Economic Life of Incremental Generation	40 Years	
(3) Economic Life of Incremental T&D	<u>35</u> Years	
(4) K-Factor for Generation	<u>1.4331</u>	
(5) K-Factor for T&D	1.4298	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
	1	-
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer	111	-
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer	1	
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate	1 \$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00%	_ <u></u>
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost	1 \$0.00 \$/Cus \$0.00 \$/Cus/Year 000% \$0.00 \$/Cus	_ <u>.</u>
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus	- - <u>-</u>
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus	- <u>-</u>
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus 1.80%	
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year	<u>.</u>
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus	_ <u>'</u>
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year	- <u>-</u>
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & 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 Cost (6) Customer O&M Cost (7) Customer O&M Cost (7) Customer Tax Credit Per Installation * (8) Customer Tax Credit Escalation Rate * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80%	- - -
* (6) Switch: Rev Reg (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year	- - -
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & 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 Cost (6) Customer O&M Cost (7) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate * (13) Utility Discount Rate * (13) Utility AFUDC Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year	- - -
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & 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 Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate * (13) Utility Discount Rate * (14) Utility Nonrecurring Rebate/Incentive	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year	_ <u>.</u>
* (6) Switch: Rev Req (0) or Val-of-Def (1) III. Utility & 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 Cost (6) Customer O&M Cost (7) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate * (13) Utility Discount Rate * (13) Utility AFUDC Rate	\$0.00 \$/Cus \$0.00 \$/Cus/Year 0.00% \$0.00 \$/Cus 0.00% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year	_ <u>.</u>

IV. Incremental Generation, Transmission, & Distrib	oution Costs	
(1) Base Year	2014_	
(2) In-Service Year For Incremental Generation	2023 **	
(3) In-Service Year For Incremental T & D	2015	
(4) Base Year Incremental Generation Cost	<u>\$8</u> 51. <u>95</u> \$/kW	
(5) Base Year Incremental Transmission Cost	\$3 <u>02</u> .35_\$/kW	
(6) Base Year Incremental Distribution Cost	<u>\$154.39</u> \$/kW	
(7) Gen, Tran, & Dist Cost Escalation Rate	<u>1.8</u> 0%_	
(8) Generator Fixed O & M Cost	\$17. <u>89</u> \$/kW/Yr	
(9) Generator Fixed O&M Escalation Rate	1 <u>.9</u> 6%_	
(10) Transmission Fixed O & M Cost	\$6. <u>68</u> \$/kW/Yr	
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr	
(12) T&D_Fixed O&M Escalation Rate	1.8 <u>0%</u>	
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00\$/kW/Yr	
(1 <u>4) Incre Gen Variable O&M Cost Esc Rate</u>	0.00%	
(15) Incremental Gen Capacity Factor	<u>9.43%</u>	
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 71_\$/kWh	
(1 <u>7)</u> Incremental Gen Unit Fuel Esc_Rate	5.1 <u>0%</u>	
(18) Incremental Purchased Capacity Cost	<u>\$0.</u> 47_\$/KW/YR	
(19) Incremental Capacity Cost Esc Rate	<u>2</u> 1.6 <u>1%</u>	
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0	
Otop Nevertue 2033 at 111 Oct vide 1 Cat: (1=1, 14=0)		
V. (1) Non-Fuel Cost In Customer Bill (Base Year)		
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0.0687 \$/kWh	
(2) Non-Fuel Escalation Rate	Per Table	
(3) Customer Demand Charge Per kW (Base Year)	\$0.0000 \$/kW/Mo	
(4) Demand Charge Escalation Rate	Per Table	
* (5)Average Annual Change in Monthly Billing kW	0_kW/Mo.	

Summary	Results for	This /	Analysis

_	TRC	Participants'	RIM
NPV Benefits(\$000s)	\$45,6	559 \$18,867	\$45,659
NPV Costs (\$000s)	\$17,0	92 \$0	\$35,959
NPV Net Benefits (\$000s)	\$28,5	668 \$18,867	\$9,700
Benefit:Cost Ratio	2.6	99.900	1.270



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in	-	· ·	-	-	Incremental	Incremental	Incremental			Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$1,769	\$0	\$0	\$0	\$0	(\$204)	(\$50)	\$1,769	\$254	(\$1,515)	(\$1,405)
2016	\$0	\$1,787	\$0	\$0	\$0	\$0	(\$416)	(\$113)	\$1,787	\$528	(\$1,258)	(\$2,486)
2017	\$0	\$1,728	\$0	\$0	\$0	\$0	(\$635)	(\$185)	\$1,728	\$819	(\$909)	(\$3,211)
2018	\$0	\$1,753	\$0	\$0	\$0	\$0	(\$862)	(\$256)	\$1,753	\$1,118	(\$635)	(\$3,680)
2019	\$0	\$1,774	\$0	\$0	\$0	\$0	(\$1,097)	(\$338)	\$1,774	\$1,435	(\$339)	(\$3,913)
2020	\$0	\$1,795	\$0	\$0	\$0	\$0	(\$1,361)	(\$438)	\$1,795	\$1,799	\$3	(\$3,911)
2021	\$0	\$1,818	\$0	\$0	\$0	\$0	(\$1,655)	(\$560)	\$1,818	\$2,215	\$397	(\$3,677)
2022	\$0	\$1,842	\$0	\$0	\$0	\$0	(\$1,981)	(\$699)	\$1,842	\$2,680	\$839	(\$3,219)
2023	\$0	\$1,866	\$0	\$0	\$0	(\$4,047)	(\$2,341)	(\$869)	\$1,866	\$7,257	\$5,390	(\$488)
2024	\$0	\$1,886	\$0	\$0	\$0	(\$4,731)	(\$2,735)	(\$997)	\$1,886	\$8,463	\$6,577	\$2,601
2025	\$0	\$1,082	\$0	\$0	\$0	(\$4,577)	(\$2,645)	(\$991)	\$1,082	\$8,213	\$7,131	\$5,706
2026	\$0	\$1,081	\$0	\$0	\$0	(\$4,428)	(\$2,558)	(\$980)	\$1,081	\$7,966	\$6,885	\$8,487
2027	\$0	\$1,081	\$0	\$0	\$0	(\$4,284)	(\$2,474)	(\$974)	\$1,081	\$7,732	\$6,651	\$10,977
2028	\$0	\$1,081	\$0	\$0	\$0	(\$4,144)	(\$2,393)	(\$980)	\$1,081	\$7,517	\$6,436	\$13,211
2029	\$0	\$1,082	\$0	\$0	\$0	(\$4,010)	(\$2,314)	(\$966)	\$1,082	\$7,290	\$6,208	\$15,209
2030	\$0	\$1,083	\$0	\$0	\$0	(\$3,879)	(\$2,238)	(\$965)	\$1,083	\$7,082	\$5,999	\$17,000
2031	\$0	\$1,085	\$0	\$0	\$0	(\$3,753)	(\$2,164)	(\$952)	\$1,085	\$6,870	\$5,785	\$18,601
2032	\$0	\$1,086	\$0	\$0	\$0	(\$3,631)	(\$2,093)	(\$941)	\$1,086	\$6,666	\$5,579	\$20,032
2033	\$0	\$1,089	\$0	\$0	\$0	(\$3,514)	(\$2,024)	(\$940)	\$1,089	\$6,478	\$5,389	\$21,314
2034	\$0	\$1,091	\$0	\$0	\$0	(\$3,400)	(\$1,957)	(\$935)	\$1,091	\$6,293	\$5,201	\$22,462
2035	\$0	\$1,094	\$0	\$0	\$0	(\$3,290)	(\$1,893)	(\$921)	\$1,094	\$6,104	\$5,009	\$23,486
2036	\$0	\$1,098	\$0	\$0	\$0	(\$3,184)	(\$1,831)	(\$910)	\$1,098	\$5,925	\$4,827	\$24,402
2037	\$0	\$1,102	\$0	\$0	\$0	(\$3,080)	(\$1,771)	(\$893)	\$1,102	\$5,743	\$4,642	\$25,218
2038	\$0	\$1,102	\$0	\$0	\$0	(\$2,979)	(\$1,711)	(\$884)	\$1,102	\$5,575	\$4,469	\$25,946
2039	\$0	\$1,111	\$0	\$0	\$0	(\$2,881)	(\$1,656)	(\$879)	\$1,111	\$5,416	\$4,306	\$26,597
2040	\$0	\$1,116	\$0	\$0	\$0	(\$2,787)	(\$1,601)	(\$863)	\$1,116	\$5,252	\$4,136	\$27,177
2041	\$0	\$1,121	\$0	\$0	\$0	(\$2,696)	(\$1,549)	(\$866)	\$1,110	\$5,111	\$3,990	\$27,696
2042	\$0	\$1,127	\$0	\$0	\$0	(\$2,608)	(\$1,498)	(\$846)	\$1,127	\$4,952	\$3,825	\$28,157
2043	\$0	\$1,133	\$0	\$0	\$0	(\$2,522)	(\$1,449)	(\$837)	\$1,133	\$4,808	\$3,675	\$28,568
Nominal NPV		\$38,867 \$17,091.851	\$0.000	\$0.000	\$0.000	(\$74,424) (\$21,177.529)	(\$51,105) (\$17,581.088)	(\$22,031) (\$6,900.832)	\$38,867 \$17,091.851	\$147,561 \$45,659.449	\$108,693 \$28,567.598	
	ount Rate =	7.85%	ψ0.000	ψ0.000	ψ0.000	(ΨΕ1,177.029)	(ψ17,001.000)	(ψ0,300.332)	ψ.1,001.001	ψ 10,000. 14 3	φ=0,001.000	
	ount Rate = t/Cost Ratio =	7.85% 2.67										
Dellell	v COSL Natio =	2.07										



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Participants' Cost-Effectiveness Measure

1	2	3	4	5	6 Change in	7	8 Utility Paid	9	10	11 Total	12 Cumulative
Year	Customer Equip Costs (\$000s)	Customer O&M Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Participants' Electric Bills (\$000s)	Tax Credits (\$000s)	Rebates & Incentives (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Net Benefits (\$000s)	Discounted Net Benefits (\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$(
2015	\$0	\$0	\$0	\$0	(\$222)	\$0	\$0	\$0	\$222	\$222	\$20
2016	\$0	\$0	\$0	\$0	(\$457)	\$0	\$0	\$0	\$457	\$457	\$599
2017	\$0	\$0	\$0	\$0	(\$697)	\$0	\$0	\$0	\$697	\$697	\$1,15
2018	\$0	\$0	\$0	\$0	(\$945)	\$0	\$0	\$0	\$945	\$945	\$1,85
2019	\$0	\$0	\$0	\$0	(\$1,199)	\$0	\$0	\$0	\$1,199	\$1,199	\$2,67
2020	\$0	\$0	\$0	\$0	(\$1,489)	\$0	\$0	\$0	\$1,489	\$1,489	\$3,62
2021	\$0	\$0	\$0	\$0	(\$1,802)	\$0	\$0	\$0	\$1,802	\$1,802	\$4,68
2022	\$0	\$0	\$0	\$0	(\$2,137)	\$0	\$0	\$0	\$2,137	\$2,137	\$5,85
2023	\$0	\$0	\$0	\$0	(\$2,516)	\$0	\$0	\$0	\$2,516	\$2,516	\$7,12
2024	\$0	\$0	\$0	\$0	(\$2,924)	\$0	\$0	\$0	\$2,924	\$2,924	\$8,498
2025	\$0	\$0	\$0	\$0	(\$2,831)	\$0	\$0	\$0	\$2,831	\$2,831	\$9,73
2026	\$0	\$0	\$0	\$0	(\$2,733)	\$0	\$0	\$0	\$2,733	\$2,733	\$10,83
2027	\$0	\$0	\$0	\$0	(\$2,638)	\$0	\$0	\$0	\$2,638	\$2,638	\$11,82
2028	\$0	\$0	\$0	\$0	(\$2,552)	\$0	\$0	\$0	\$2,552	\$2,552	\$12,70
2029	\$0	\$0	\$0	\$0	(\$2,467)	\$0	\$0	\$0	\$2,467	\$2,467	\$13,50
2030	\$0	\$0	\$0	\$0	(\$2,389)	\$0	\$0	\$0	\$2,389	\$2,389	\$14,21
2031	\$0	\$0	\$0	\$0	(\$2,304)	\$0	\$0	\$0	\$2,304	\$2,304	\$14,85
2032	\$0	\$0	\$0	\$0	(\$2,231)	\$0	\$0	\$0	\$2,231	\$2,231	\$15,42
2033	\$0	\$0	\$0	\$0	(\$2,157)	\$0	\$0	\$0	\$2,157	\$2,157	\$15,939
2034	\$0	\$0	\$0	\$0	(\$2,079)	\$0	\$0	\$0	\$2,079	\$2,079	\$16,39
2035	\$0	\$0	\$0	\$0	(\$2,011)	\$0	\$0	\$0	\$2,011	\$2,011	\$16,80
2036	\$0	\$0	\$0	\$0	(\$1,940)	\$0	\$0	\$0	\$1,940	\$1,940	\$17,17
2037	\$0	\$0	\$0	\$0	(\$1,868)	\$0	\$0	\$0	\$1,868	\$1,868	\$17,50
2038	\$0	\$0	\$0	\$0	(\$1,808)	\$0	\$0	\$0	\$1,808	\$1,808	\$17,80
2039	\$0	\$0	\$0	\$0	(\$1,745)	\$0	\$0	\$0	\$1,745	\$1,745	\$18,06
2040	\$0	\$0	\$0	\$0	(\$1,677)	\$0	\$0	\$0	\$1,677	\$1,677	\$18,29
2041	\$0	\$0	\$0	\$0	(\$1,626)	\$0	\$0	\$0	\$1,626	\$1,626	\$18,510
2042	\$0	\$0	\$0	\$0	(\$1,568)	\$0	\$0	\$0	\$1,568	\$1,568	\$18,69
2043	\$0	\$0	\$0	\$0	(\$1,507)	\$0	\$0	\$0	\$1,507	\$1,507	\$18,86
Nominal NPV Discou	int Rate =	\$0 7.85% 99.90	\$0	\$0	(\$54,520) (\$18,867)	\$0	\$0	\$0.000	\$54,520 \$18,867.483	\$54,520 \$18,867	

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Ratepayers' Impact Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental					Total Net	Cumulative
	Electric	Program	Rebates &	Electric	Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
	Supply Costs	Costs	Incentives	Revenues	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
2015	\$0.000	\$1,768.987	\$0.000	(\$222.235)	\$0.000	(\$204.222)	(\$49.689)	\$0.000	\$0.000	\$1,991.222	\$253.911	(\$1,737.310)	(\$1,610.859)
2016	\$0.000	\$1,786.588	\$0.000	(\$456.894)	\$0.000	(\$415.796)	(\$112.697)	\$0.000	\$0.000	\$2,243.481	\$528.493	(\$1,714.988)	(\$3,085.281)
2017	\$0.000	\$1,728.317	\$0.000	(\$697.282)	\$0.000	(\$634.921)	(\$184.561)	\$0.000	\$0.000	\$2,425.600	\$819.482	(\$1,606.118)	(\$4,365.599)
2018	\$0.000	\$1,753.356	\$0.000	(\$945.172)	\$0.000	(\$861.800)	(\$256.297)	\$0.000	\$0.000	\$2,698.528	\$1,118.097	(\$1,580.431)	(\$5,533.743)
2019	\$0.000	\$1,773.920	\$0.000	(\$1,198.873)	\$0.000	(\$1,096.640)	(\$338.252)	\$0.000	\$0.000	\$2,972.794	\$1,434.892	(\$1,537.902)	(\$6,587.716)
2020	\$0.000	\$1,795.485	\$0.000	(\$1,489.375)	\$0.000	(\$1,360.588)	(\$437.954)	\$0.000	\$0.000	\$3,284.861	\$1,798.542	(\$1,486.318)	(\$7,532.197)
2021	\$0.000	\$1,818.057	\$0.000	(\$1,801.951)	\$0.000	(\$1,654.991)	(\$560.033)	\$0.000	\$0.000	\$3,620.008	\$2,215.024	(\$1,404.983)	(\$8,360.011)
2022	\$0.000	\$1,841.640	\$0.000	(\$2,136.969)	\$0.000	(\$1,981.244)	(\$699.135)	\$0.000	\$0.000	\$3,978.609	\$2,680.379	(\$1,298.229)	(\$9,069.250)
2023	\$0.000	\$1,866.239	\$0.000	(\$2,515.525)	(\$4,047.361)	(\$2,340.790)	(\$868.542)	\$0.000	\$0.000	\$4,381.764	\$7,256.692	\$2,874.928	(\$7,612.957)
2024	\$0.000	\$1,885.904	\$0.000	(\$2,924.221)	(\$4,730.774)	(\$2,735.117)	(\$997.480)	\$0.000	\$0.000	\$4,810.125	\$8,463.371	\$3,653.246	(\$5,897.101)
2025	\$0.000	\$1,082.006	\$0.000	(\$2,830.755)	(\$4,576.636)	(\$2,645.132)	(\$990.798)	\$0.000	\$0.000	\$3,912.762	\$8,212.566	\$4,299.804	(\$4,024.562)
2026	\$0.000	\$1,081.389	\$0.000	(\$2,733.424)	(\$4,427.848)	(\$2,558.107)	(\$980.433)	\$0.000	\$0.000	\$3,814.814	\$7,966.387	\$4,151.574	(\$2,348.171)
2027	\$0.000	\$1,081.201	\$0.000	(\$2,638.084)	(\$4,283.848)	(\$2,473.945)	(\$974.203)	\$0.000	\$0.000	\$3,719.285	\$7,731.997	\$4,012.712	(\$845.789)
2028	\$0.000	\$1,081.434	\$0.000	(\$2,551.606)	(\$4,144.488)	(\$2,392.552)	(\$980.282)	\$0.000	\$0.000	\$3,633.040	\$7,517.323	\$3,884.283	\$502.658
2029	\$0.000	\$1,082.083	\$0.000	(\$2,467.115)	(\$4,009.620)	(\$2,313.837)	(\$966.266)	\$0.000	\$0.000	\$3,549.198	\$7,289.723	\$3,740.525	\$1,706.683
2030 2031	\$0.000 \$0.000	\$1,083.143 \$1,084.609	\$0.000 \$0.000	(\$2,389.066)	(\$3,879.401)	(\$2,237.712)	(\$965.279)	\$0.000 \$0.000	\$0.000 \$0.000	\$3,472.209 \$3,388.327	\$7,082.393 \$6,869.770	\$3,610.183 \$3,481.443	\$2,784.171 \$3,747.607
2031	\$0.000	\$1,086.475	\$0.000	(\$2,303.719) (\$2,231.029)	(\$3,753.366) (\$3,631.384)	(\$2,164.091) (\$2,092.893)	(\$952.313) (\$941.228)	\$0.000	\$0.000	\$3,300.327	\$6,665.505	\$3,348.001	\$3,747.607 \$4,606.678
2032	\$0.000	\$1,088.740	\$0.000	(\$2,156.808)	(\$3,513.583)	(\$2,024.037)	(\$939.920)	\$0.000	\$0.000	\$3,245.548	\$6,477.540	\$3,231.992	\$5,375.621
2033	\$0.000	\$1,086.740	\$0.000	(\$2,079.205)	(\$3,399.801)	(\$1,957.446)	(\$935.331)	\$0.000	\$0.000	\$3,170.604	\$6,292.578	\$3,121.974	\$6,064.326
2035	\$0.000	\$1,094.450	\$0.000	(\$2,011.257)	(\$3,289.654)	(\$1,893.046)	(\$921.036)	\$0.000	\$0.000	\$3,105.708	\$6,103.736	\$2,998.029	\$6,677.551
2036	\$0.000	\$1,097.891	\$0.000	(\$1,940.201)	(\$3,183.685)	(\$1,830.765)	(\$910.095)	\$0.000	\$0.000	\$3,038.092	\$5,924.545	\$2,886.454	\$7,224.982
2037	\$0.000	\$1,101.719	\$0.000	(\$1,868.303)	(\$3,079.610)	(\$1,770.532)	(\$893.339)	\$0.000	\$0.000	\$2,970.022	\$5,743.482	\$2,773.460	\$7,712.697
2038	\$0.000	\$1,105.934	\$0.000	(\$1,807.660)	(\$2,978.927)	(\$1,712.282)	(\$883.816)	\$0.000	\$0.000	\$2,913.594	\$5,575.024	\$2,661.430	\$8,146.648
2039	\$0.000	\$1,110.535	\$0.000	(\$1,745.149)	(\$2,881.338)	(\$1,655.948)	(\$879.081)	\$0.000	\$0.000	\$2,855.684	\$5,416.367	\$2,560.683	\$8,533.781
2040	\$0.000	\$1,115.521	\$0.000	(\$1,676.600)	(\$2,787.123)	(\$1,601.467)	(\$863.112)	\$0.000	\$0.000	\$2,792.121	\$5,251.702	\$2,459.581	\$8,878.565
2041	\$0.000	\$1,120.892	\$0.000	(\$1,626.019)	(\$2,695.981)	(\$1,548.779)	(\$866.266)	\$0.000	\$0.000	\$2,746.910	\$5,111.026	\$2,364.116	\$9,185.845
2042	\$0.000	\$1,126.648	\$0.000	(\$1,568.322)	(\$2,607.814)	(\$1,497.824)	(\$846.267)	\$0.000	\$0.000	\$2,694.970	\$4,951.905	\$2,256.935	\$9,457.842
2043	\$0.000	\$1,132.790	\$0.000	(\$1,507.197)	(\$2,522.066)	(\$1,448.546)	(\$837.475)	\$0.000	\$0.000	\$2,639.987	\$4,808.087	\$2,168.100	\$9,700.115
	unt Rate = Cost Ratio =	\$38,867.355 \$17,091.851 7.85% 1.27	\$0.000	(\$54,520.017) (\$18,867.483)	(\$74,424.309) (\$21,177.529)	(\$51,105.048) (\$17,581.088)	(\$22,031.183) (\$6,900.832)	\$0.000	\$0.000	\$93,387.372 \$35,959.334	\$147,560.541 \$45,659.449	\$54,173.169 \$9,700.115	



PSC Form CE 1.1

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Filename: Comm. HVAC Tune-up

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

I. Program Demand Impacts and Line Losses	
(1) Change in Peak kW Customer at meter	-0.30 kW/Cus
(2) Change in Peak kW per Customer at generator	-0.37 kW Gen/Cus
(3) kW Line Loss Percentage	7.12%
(4) Change in KWh per Customer at generator	(1,016) kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%
(6) Group Line Loss Multiplier	1.0015
(7) Annual Change in Customer kWh at Meter	(965) kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	0.00 kW/Cus
<u> </u>	
II. Economic Life and K-Factors	
(1) DSM Program Study Period	30 Years
(2) Economic Life of Incremental Generation	40 Years
(3) Economic Life of Incremental T&D	35 Years
(4) K-Factor for Generation	1.4331
(5) K-Factor for T&D	1.4298
* (6) Switch: Rev Reg (0) or Val-of-Def (1)	1
III. Utility & Customer Costs	
III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer	\$125.00 \$/Cus
	\$125.00 \$/Cus \$0.00 \$/Cus/Year
(1) Utility Nonrecurring Cost Per Customer	
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer	\$0.00 \$/Cus/Year
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate	\$0.00 \$/Cus/Year 0.00%
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost	\$0.00\$/Cus/Year 0.00% \$312.00_\$/Cus
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00%
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80%
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80%
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% 7.85%
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost (7) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate * (13) Utility AFUDC Rate	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year 1.80% 7.85% 6.26%
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost (8) Customer Tax Credit Per Installation (9) Customer Tax Credit Escalation Rate (10) Change in Supply Costs (11) Supply Costs Escalation Rate (12) Utility Discount Rate (13) Utility AFUDC Rate (14) Utility Nonrecurring Rebate/Incentive	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% 5.26% \$100.00 \$/Cus
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost Escalation Rate * (8) Customer Tax Credit Per Installation * (9) Customer Tax Credit Escalation Rate * (10) Change in Supply Costs * (11) Supply Costs Escalation Rate * (12) Utility Discount Rate * (13) Utility AFUDC Rate * (14) Utility Nonrecurring Rebate/Incentive * (15) Utility Recurring Rebate/Incentive	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus/Year
(1) Utility Nonrecurring Cost Per Customer (2) Utility Recurring Cost Per Customer (3) Utility Cost Escalation Rate (4) Customer Equipment Cost (5) Customer Equipment Cost Escalation Rate (6) Customer O&M Cost (7) Customer O&M Cost (8) Customer Tax Credit Per Installation (9) Customer Tax Credit Escalation Rate (10) Change in Supply Costs (11) Supply Costs Escalation Rate (12) Utility Discount Rate (13) Utility AFUDC Rate (14) Utility Nonrecurring Rebate/Incentive	\$0.00 \$/Cus/Year 0.00% \$312.00 \$/Cus 0.00% \$0.00 \$/Cus/Year 1.80% \$0.00 \$/Cus 1.80% \$0.00 \$/Cus/Year 1.80% 5.26% \$100.00 \$/Cus

(2) In-Service Year For Incremental Generation 2023 *** (3) In-Service Year For Incremental T & D 2015 (4) Base Year Incremental Generation Cost \$851.95 \$/kW (5) Base Year Incremental Transmission Cost \$302.35 \$/kW (6) Base Year Incremental Distribution Cost \$154.39 \$/kW (7) Gen, Tran, & Dist Cost Escalation Rate 1.80% (8) Generator Fixed O & M Cost \$17.89 \$/kW/Yr
(4) Base Year Incremental Generation Cost \$851.95 \$/kW (5) Base Year Incremental Transmission Cost \$302.35 \$/kW (6) Base Year Incremental Distribution Cost \$154.39 \$/kW (7) Gen, Tran, & Dist Cost Escalation Rate 1.80% (8) Generator Fixed O & M Cost \$17.89 \$/kW/Yr
(5) Base Year Incremental Transmission Cost \$302.35 \$/kW (6) Base Year Incremental Distribution Cost \$154.39 \$/kW (7) Gen, Tran, & Dist Cost Escalation Rate 1.80% (8) Generator Fixed O & M Cost \$17.89 \$/kW/Yr
(6) Base Year Incremental Distribution Cost \$154.39 \$/kW (7) Gen, Tran, & Dist Cost Escalation Rate 1.80% (8) Generator Fixed O & M Cost \$17.89 \$/kW/Yr
(7) Gen, Tran, & Dist Cost Escalation Rate 1.80% (8) Generator Fixed O & M Cost \$17.89 \$/kW/Yr
(8) Generator Fixed O & M Cost \$17.89 \$/kW/Yr
· ·
(9) Generator Fixed O&M Escalation Rate 1.96%
(10) Transmission Fixed O & M Cost \$6.68 \$/kW/Yr
(11) Distribution Fixed O & M Cost \$4.74_ \$/kW/Yr
(1 <u>2)</u> T&D_Fixed O&M Escalation Rate1.80%
(13) Incremental Gen Variable O & M Costs \$0.000 \$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate0.00%
(15) Incremental Gen Capacity Factor 9.43%
(16) Incremental Generating Unit Fuel Cost\$0.0364_\$/kWh
(1 <u>7)</u> Inc <u>remental Gen</u> Un <u>it Fuel Esc</u> Rate5.12%
(18) Incremental Purchased Capacity Cost \$0.47_\$/KW/YR
(19) Incremental Capacity Cost Esc Rate21.61%
Stop Revenue Loss at In-Service Year? (Y=1, N=0)0
V. (1) Non-Fuel Cost In Customer Bill (Base Year)
(1) Non-Fuel Cost In Customer Bill (Base Year)\$0.0363_\$/kWh
(2) Non-Fuel Escalation Rate Per Table
(3) Customer Demand Charge Per kW (Base Year)\$6.3900 \$/kW/Mo
(4) Demand Charge Escalation Rate Per Table
* (5)Average Annual Change in Monthly Billing kW

IV. Incremental Generation, Transmission, & Distribution Costs

Summary Results for This Analysis

_	<u>TRC</u>	Participants'	RIM
NPV Benefits(\$000s)	\$3,153	\$3,230	\$3,153
NPV Costs (\$000s)	\$810	\$578	\$3,462
NPV Net Benefits (\$000s)	\$2,343	\$2,652	(\$309)
Benefit:Cost Ratio	3.891	5.585	0.911



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

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Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in	J		J	U	Incremental	Incremental	Incremental	10		Total	Cumulative
1	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
l .,	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$31	\$78	\$0	\$0	\$0	(\$5)	(\$10)	\$109	\$15	(\$94)	(\$87)
2016	\$0	\$31	\$78	\$0	\$0	\$0	(\$11)	(\$23)	\$109	\$33	(\$76)	(\$152)
2017	\$0	\$31	\$78	\$0	\$0	\$0	(\$17)	(\$37)	\$109	\$54	(\$56)	(\$197)
2018	\$0	\$31	\$78	\$0	\$0	\$0	(\$22)	(\$51)	\$109	\$74	(\$35)	(\$223)
2019	\$0	\$31	\$78	\$0	\$0	\$0	(\$29)	(\$68)	\$109	\$96	(\$13)	(\$232)
2020	\$0	\$31	\$78	\$0	\$0	\$0	(\$35)	(\$86)	\$109	\$121	\$12	(\$224)
2021	\$0	\$34	\$86	\$0	\$0	\$0	(\$42)	(\$109)	\$120	\$151	\$31	(\$206)
2022	\$0	\$41	\$101	\$0	\$0	\$0	(\$51)	(\$137)	\$142	\$188	\$46	(\$181)
2023	\$0	\$44	\$109	\$0	\$0	(\$104)	(\$60)	(\$171)	\$153	\$335	\$182	(\$89)
2024	\$0	\$47	\$117	\$0	\$0	(\$122)	(\$71)	(\$198)	\$164	\$390	\$227	\$17
2025	\$0	\$0	\$0	\$0	\$0	(\$124)	(\$72)		\$0	\$403	\$403	\$193
								(\$207)				
2026	\$0	\$0	\$0	\$0	\$0	(\$127)	(\$73)	(\$216)	\$0	\$416	\$416	\$361
2027	\$0	\$0	\$0	\$0	\$0	(\$129)	(\$74)	(\$226)	\$0	\$429	\$429	\$522
2028	\$0	\$0	\$0	\$0	\$0	(\$131)	(\$76)	(\$239)	\$0	\$447	\$447	\$677
2029	\$0	\$0	\$0	\$0	\$0	(\$134)	(\$77)	(\$248)	\$0	\$459	\$459	\$824
2030	\$0	\$0	\$0	\$0	\$0	(\$136)	(\$79)	(\$261)	\$0	\$476	\$476	\$967
2031	\$0	\$0	\$0	\$0	\$0	(\$139)	(\$80)	(\$272)	\$0	\$491	\$491	\$1,102
2032	\$0	\$0	\$0	\$0	\$0	(\$141)	(\$81)	(\$283)	\$0	\$506	\$506	\$1,232
2033	\$0	\$0	\$0	\$0	\$0	(\$144)	(\$83)	(\$298)	\$0	\$525	\$525	\$1,357
2034	\$0	\$0	\$0	\$0	\$0	(\$147)	(\$84)	(\$312)	\$0	\$543	\$543	\$1,477
2035	\$0	\$0	\$0	\$0	\$0	(\$149)	(\$86)	(\$323)	\$0	\$559	\$559	\$1,591
2036	\$0	\$0	\$0	\$0	\$0	(\$152)	(\$87)	(\$337)	\$0	\$576	\$576	\$1,700
2037	\$0	\$0	\$0	\$0	\$0	(\$155)	(\$89)	(\$349)	\$0	\$593	\$593	\$1,805
2038	\$0	\$0	\$0	\$0	\$0	(\$158)	(\$91)	(\$363)	\$0	\$611	\$611	\$1,904
2039	\$0	\$0	\$0 \$0	\$0 \$0	\$0		(\$92)	(\$380)	\$0 \$0	\$633	\$633	\$2,000
						(\$161)						
2040	\$0	\$0	\$0	\$0	\$0	(\$163)	(\$94)	(\$393)	\$0	\$650	\$650	\$2,091
2041	\$0	\$0	\$0	\$0	\$0	(\$166)	(\$96)	(\$415)	\$0	\$677	\$677	\$2,179
2042	\$0	\$0	\$0	\$0	\$0	(\$169)	(\$97)	(\$427)	\$0	\$693	\$693	\$2,263
2043	\$0	\$0	\$0	\$0	\$0	(\$173)	(\$99)	(\$445)	\$0	\$716	\$716	\$2,343
Nominal		\$353	\$881			(\$3,025)	(\$1,953)	(\$6,883)	\$1,235	\$11,861	\$10,626	_
NPV		\$231.751	\$578.449	\$0.000	\$0.000	(\$755.060)	(\$573.580)	(\$1,824.250)	\$810.200	\$3,152.890	\$2,342.690	
Disc	ount Rate =	7.85%										
	t/Cost Ratio =	3.89										
		0.00	•									



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Participants' Cost-Effectiveness Measure

1	2	3	4	5	eness Analysis 6	7	8	9	10	11	12
			-	<u> </u>	Change in		Utility Paid		10	Total	Cumulative
	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$78	\$0	\$0	\$0	(\$26)	\$0	\$25	\$78	\$51	(\$27)	(\$25
2016	\$78	\$0	\$0	\$0	(\$53)	\$0	\$25	\$78	\$78	\$0	(\$24
2017	\$78	\$0	\$0	\$0	(\$81)	\$0	\$25	\$78	\$106	\$28	(\$2
2018	\$78	\$0	\$0	\$0	(\$111)	\$0	\$25	\$78	\$136	\$58	\$41
2019	\$78	\$0	\$0	\$0	(\$144)	\$0	\$25	\$78	\$169	\$91	\$103
2020	\$78	\$0	\$0	\$0	(\$178)	\$0	\$25	\$78	\$203	\$125	\$183
2021	\$86	\$0	\$0	\$0	(\$215)	\$0	\$28	\$86	\$242	\$156	\$275
2022	\$101	\$0	\$0	\$0	(\$257)	\$0	\$33	\$101	\$290	\$188	\$378
2023	\$109	\$0	\$0	\$0	(\$308)	\$0	\$35	\$109	\$343	\$234	\$496
2024	\$117	\$0	\$0	\$0	(\$363)	\$0	\$38	\$117	\$401	\$284	\$629
2025	\$0	\$0	\$0	\$0	(\$370)	\$0	\$0	\$0	\$370	\$370	\$791
2026 2027	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$381) (\$391)	\$0 \$0	\$0 \$0	\$0 \$0	\$381 \$391	\$381 \$391	\$945 \$1,091
2027	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$400)	\$0 \$0	\$0 \$0	\$0 \$0	\$400	\$400	\$1,091
2029	\$0 \$0	\$0 \$0	\$0	\$0 \$0	(\$400)	\$0	\$0 \$0	\$0	\$411	\$411	\$1,362
2029	\$0 \$0	\$0 \$0	\$0	\$0 \$0	(\$422)	\$0 \$0	\$0 \$0	\$0 \$0	\$422	\$422	\$1,488
2031	\$0 \$0	\$0	\$0 \$0	\$0	(\$434)	\$0	\$0	\$0	\$434	\$434	\$1,608
2032	\$0	\$0	\$0	\$0	(\$444)	\$0	\$0	\$0	\$444	\$444	\$1,722
2033	\$0	\$0	\$0	\$0	(\$456)	\$0	\$0	\$0	\$456	\$456	\$1,831
2034	\$0	\$0	\$0	\$0	(\$468)	\$0	\$0	\$0	\$468	\$468	\$1,934
2035	\$0	\$0	\$0	\$0	(\$478)	\$0	\$0	\$0	\$478	\$478	\$2,032
2036	\$0	\$0	\$0	\$0	(\$490)	\$0	\$0	\$0	\$490	\$490	\$2,125
2037	\$0	\$0	\$0	\$0	(\$501)	\$0	\$0	\$0	\$501	\$501	\$2,213
2038	\$0	\$0	\$0	\$0	(\$510)	\$0	\$0	\$0	\$510	\$510	\$2,296
2039	\$0	\$0	\$0	\$0	(\$523)	\$0	\$0	\$0	\$523	\$523	\$2,375
2040	\$0	\$0	\$0	\$0	(\$535)	\$0	\$0	\$0	\$535	\$535	\$2,450
2041	\$0	\$0	\$0	\$0	(\$543)	\$0	\$0	\$0	\$543	\$543	\$2,521
2042	\$0	\$0	\$0	\$0	(\$559)	\$0	\$0	\$0	\$559	\$559	\$2,588
2043	\$0	\$0	\$0	\$0	(\$571)	\$0	\$0	\$0	\$571	\$571	\$2,652
Nominal	\$881				(\$10,626)		\$283	\$881	\$10,908	\$10,027	
NPV	\$536	\$0	\$0	\$0	(\$3,045)	\$0	\$185	\$578.449	\$3,230.402	\$2,652	
	nt Rate =	7.85%									
Benefit/C	Cost Ratio =	5.58									



Filename: Comm. HVAC Tune-up

Ratepayers' Impact Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental					Total Net	Cumulative
	Electric	Program	Rebates &	Electric	Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
	Supply Costs	Costs	Incentives	Revenues	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
2015	\$0.000	\$31.250	\$25.000	(\$26.332)	\$0.000	(\$5.322)	(\$9.969)	\$0.000	\$0.000	\$82.582	\$15.290	(\$67.292)	(\$62.394)
2016	\$0.000	\$31.250	\$25.000	(\$53.308)	\$0.000	(\$10.835)	(\$22.523)	\$0.000	\$0.000	\$109.558	\$33.358	(\$76.199)	(\$127.904)
2017	\$0.000	\$31.250	\$25.000	(\$80.921)	\$0.000	(\$16.545)	(\$36.989)	\$0.000	\$0.000	\$137.171	\$53.534	(\$83.637)	(\$194.576)
2018	\$0.000	\$31.250	\$25.000	(\$111.349)	\$0.000	(\$22.457)	(\$51.309)	\$0.000	\$0.000	\$167.599	\$73.766	(\$93.833)	(\$263.931)
2019	\$0.000	\$31.250	\$25.000	(\$144.001)	\$0.000	(\$28.576)	(\$67.787)	\$0.000	\$0.000	\$200.251	\$96.363	(\$103.887)	(\$335.128)
2020	\$0.000	\$31.250	\$25.000	(\$177.840)	\$0.000	(\$34.909)	(\$86.270)	\$0.000	\$0.000	\$234.090	\$121.178	(\$112.911)	(\$406.877)
2021	\$0.000	\$34.375	\$27.500	(\$214.599)	\$0.000	(\$42.052)	(\$109.023)	\$0.000	\$0.000	\$276.474	\$151.076	(\$125.398)	(\$480.762)
2022	\$0.000	\$40.625	\$32.500	(\$257.151)	\$0.000	(\$50.648)	(\$136.937)	\$0.000	\$0.000	\$330.276	\$187.585	(\$142.691)	(\$558.716)
2023	\$0.000	\$43.750	\$35.000	(\$308.221)	(\$104.007)	(\$60.153)	(\$170.843)	\$0.000	\$0.000	\$386.971	\$335.003	(\$51.968)	(\$585.040)
2024	\$0.000	\$46.875	\$37.500	(\$363.285)	(\$122.127)	(\$70.608)	(\$197.760)	\$0.000	\$0.000	\$447.660	\$390.495	(\$57.165)	(\$611.889)
2025	\$0.000	\$0.000	\$0.000	(\$370.410)	(\$124.366)	(\$71.879)	(\$206.977)	\$0.000	\$0.000	\$370.410	\$403.222	\$32.812	(\$597.600)
2026	\$0.000	\$0.000	\$0.000	(\$381.312)	(\$126.656)	(\$73.173)	(\$215.728)	\$0.000	\$0.000	\$381.312	\$415.557	\$34.245	(\$583.772)
2027	\$0.000	\$0.000	\$0.000	(\$390.878)	(\$128.986)	(\$74.490)	(\$225.634)	\$0.000	\$0.000	\$390.878	\$429.110	\$38.232	(\$569.457)
2028	\$0.000	\$0.000	\$0.000	(\$400.279)	(\$131.358)	(\$75.831)	(\$239.363)	\$0.000	\$0.000	\$400.279	\$446.552	\$46.273	(\$553.394)
2029	\$0.000	\$0.000	\$0.000	(\$411.211)	(\$133.772)	(\$77.196)	(\$248.495)	\$0.000	\$0.000	\$411.211	\$459.463	\$48.252	(\$537.862)
2030	\$0.000	\$0.000	\$0.000	(\$422.119)	(\$136.239)	(\$78.585)	(\$261.456)	\$0.000	\$0.000	\$422.119	\$476.280	\$54.161	(\$521.697)
2031	\$0.000	\$0.000	\$0.000	(\$434.228)	(\$138.751)	(\$80.000)	(\$272.012)	\$0.000	\$0.000	\$434.228	\$490.763	\$56.535	(\$506.052)
2032	\$0.000	\$0.000	\$0.000	(\$443.729)	(\$141.307)	(\$81.440)	(\$283.168)	\$0.000	\$0.000	\$443.729	\$505.914	\$62.185	(\$490.096)
2033	\$0.000	\$0.000	\$0.000	(\$456.316)	(\$143.919)	(\$82.906)	(\$297.691)	\$0.000	\$0.000	\$456.316	\$524.516	\$68.200	(\$473.870)
2034	\$0.000	\$0.000	\$0.000	(\$467.914)	(\$146.587)	(\$84.398)	(\$312.214)	\$0.000	\$0.000	\$467.914	\$543.199	\$75.285	(\$457.262)
2035	\$0.000	\$0.000	\$0.000	(\$477.731)	(\$149.303)	(\$85.917)	(\$323.490)	\$0.000	\$0.000	\$477.731	\$558.711	\$80.980	(\$440.698)
2036	\$0.000	\$0.000	\$0.000	(\$490.143)	(\$152.099)	(\$87.464)	(\$336.702)	\$0.000	\$0.000	\$490.143	\$576.264	\$86.121	(\$424.365)
2037	\$0.000	\$0.000	\$0.000	(\$500.777)	(\$154.870)	(\$89.038)	(\$348.608)	\$0.000	\$0.000	\$500.777	\$592.517	\$91.739	(\$408.233)
2038 2039	\$0.000 \$0.000	\$0.000 \$0.000	\$0.000 \$0.000	(\$510.248) (\$523.426)	(\$157.692)	(\$90.641) (\$92.272)	(\$362.859) (\$379.882)	\$0.000 \$0.000	\$0.000 \$0.000	\$510.248 \$523.426	\$611.191 \$632.707	\$100.943 \$109.281	(\$391.774) (\$375.252)
2039	\$0.000	\$0.000	\$0.000	(\$535.165)	(\$160.553) (\$163.477)	(\$93.933)	(\$379.662)	\$0.000	\$0.000	\$535.165	\$649.995	\$114.830	(\$359.155)
2040	\$0.000	\$0.000	\$0.000				***	\$0.000	\$0.000	\$543.307	\$677.088	\$133.782	(\$341.767)
2041	\$0.000	\$0.000	\$0.000	(\$543.307) (\$558.962)	(\$166.454) (\$169.485)	(\$95.624) (\$97.345)	(\$415.010) (\$426.538)	\$0.000	\$0.000	\$558.962	\$693.369	\$134.406	(\$325.569)
2042	\$0.000	\$0.000	\$0.000	(\$570.525)	(\$172.539)	(\$99.098)	(\$444.808)	\$0.000	\$0.000	\$570.525	\$716.445	\$145.920	(\$309.263)
2043	\$0.000	φυ.υυυ	\$0.000	(\$570.525)	(\$172.559)	(\$99.096)	(\$444.606)	φυ.υυυ	φυ.υυυ	φ5/0.525	\$7 10.445	\$145.920	(\$309.203)
Nominal NPV		\$353.125 \$231.751	\$282.500 \$185.400	(\$10,625.688) (\$3,045.001)	(\$3,024.548) (\$755.060)	(\$1,953.336) (\$573.580)	(\$6,882.630) (\$1,824.250)	\$0.000	\$0.000	\$11,261.313 \$3,462.153	\$11,860.514 \$3,152.890	\$599.201 (\$309.263)	
	unt Rate =	7.85%											
Benefit/	Cost Ratio =	0.91											



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Comm. Geothermal

INPUT DATA -- PART 1

Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code

(1) Base Year

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	-0.29	kW/Cus
(2) Change in Peak kW per Customer at generator	-0.36	kW Gen/Cus
(3) kW Line Loss Percentage	7.12%	
(4) Change in KWh per Customer at generator		kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%	
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter		kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter		kW/Cus
(6) Change in Willer KW per Cust at meter	-0.27	KW/Cus
II. Economic Life and K-Factors		
(1) DSM Program Study Period	20	Years
		Years
(2) Economic Life of Incremental Generation		
(3) Economic Life of Incremental T&D		Years
(4) K-Factor for Generation	1.4331	
(5) K <u>-Factor f</u> or <u>T&</u> D	1.4 <u>29</u> 8	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
III. Utility & Customer Costs		***
(1) Utility Nonrecurring Cost Per Customer	\$25 <u>0.0</u> 0	
(2) Utility Recurring Cost Per Customer		\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$1, <u>50</u> 0.00	\$/Cus
(5) Customer Equpiment Cost Escalation Rate	0.00%	
(6) Customer O&M Cost	(\$65.00)	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1.80%	
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	1.80%	
* (10) Change in Supply Costs		\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%	φ, σασ, 1 σα.
* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive		
	\$25 <u>0.0</u> 0	
* (15) Utility Recurring Rebate/Incentive		\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	0.00%	

<u>(i) 2000 iou:</u>		
(2) In-Service Year For Incremental Generation	2023 **	
(3) In-Service Year For Incremental T & D	2015_	
(4) Base Year Incremental Generation Cost	<u>\$8</u> 51.95 \$/kW	
(5) Base Year Incremental Transmission Cost	\$302.35_\$/kW	
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW	
(7) Gen, Tran, & Dist Cost Escalation Rate	1.80%	
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr	
(9) Generator Fixed O&M Escalation Rate	1.96%	
(10) Transmission Fixed O & M Cost	\$6.68 \$/kW/Yr	
(11) Distribution Fixed O & M Cost	\$4.74_\$/kW/Yr	
(12) T&D Fixed O&M Escalation Rate	1.80%	
(13) Incremental Gen Variable O & M Costs	\$0.000_\$/kW/Yr	
(14) Incre Gen Variable O&M Cost Esc Rate	0.00%	
(15) Incremental Gen Capacity Factor	9.43%	
(16) Incremental Generating Unit Fuel Cost	\$0.0364_\$/kWh	
(17) Incremental Gen Unit Fuel Esc Rate	5.12%	
(18) Incremental Purchased Capacity Cost	\$0.47 \$/KW/YR	
(19) Incremental Capacity Cost Esc Rate	21.61%	
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0	
 	=	
V. (1) Non-Fuel Cost In Customer Bill (Base Year)		
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.03</u> 63_\$/kWh	
(2) Non-Fuel Escalation Pate	Por Table	

(1) Non-Fuel Cost in Customer bill (base real)	ΦU.U3U3_ Φ/ΚΥΥΠ
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$6.3900_\$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	-0.29 kW/Mo.

IV. Incremental Generation, Transmission, & Distribution Costs

	This Analysis	This	for	Results	Summarv
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	<u>TRC</u>	Participants'	RIM
NPV Benefits(\$000s)	\$2,310	\$2,777	\$1,588
NPV Costs (\$000s)	\$1,612	\$1,694	\$1,973
NPV Net Benefits (\$000s)	\$698	\$1,083	(\$386)
Benefit:Cost Ratio	1.433	1.640	0.805
	•	<u> </u>	



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Total Resource Cost-Effectiveness Measure

	2	3	4	5	6		8	9	10	11	12	13
	Change in					Incremental	Incremental	Incremental			Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$(
2015	\$0	\$30	\$172	\$0	\$0	\$0	(\$2)	(\$3)	\$202	\$6	(\$196)	(\$182
2016	\$0	\$31	\$172 \$171	\$0 \$0	\$0	\$0 \$0	(\$5)	(\$8)	\$202	\$13	(\$189)	(\$345
2017	\$0 \$0	\$33	\$169	\$0 \$0	\$0	\$0	(\$8)		\$202	\$21	(\$181)	(\$489
								(\$13)				
2018	\$0	\$35	\$174	\$0	\$0	\$0	(\$11)	(\$19)	\$209	\$30	(\$179)	(\$621
2019	\$0	\$38	\$178	\$0	\$0	\$0	(\$15)	(\$26)	\$215	\$40	(\$175)	(\$741
2020	\$0	\$50	\$237	\$0	\$0	\$0	(\$19)	(\$35)	\$287	\$55	(\$233)	(\$889)
2021	\$0	\$53	\$236	\$0	\$0	\$0	(\$25)	(\$47)	\$288	\$71	(\$217)	(\$1,017
2022	\$0	\$56	\$240	\$0	\$0	\$0	(\$30)	(\$60)	\$296	\$90	(\$206)	(\$1,129
2023	\$0	\$58	\$228	\$0	\$0	(\$63)	(\$36)	(\$76)	\$286	\$175	(\$111)	(\$1,185
2024	\$0	\$59	\$215	\$0	\$0	(\$74)	(\$43)	(\$88)	\$274	\$204	(\$70)	(\$1,218
2025	\$0	\$0	(\$140)	\$0	\$0	(\$75)	(\$43)	(\$92)	\$0	\$350	\$350	(\$1,066
2026	\$0	\$0	(\$142)	\$0	\$0	(\$76)	(\$44)	(\$96)	\$0	\$358	\$358	(\$921
2027	\$0	\$0	(\$145)	\$0	\$0	(\$78)	(\$45)	(\$100)	\$0	\$368	\$368	(\$783
2028	\$0	\$0	(\$147)	\$0	\$0	(\$79)	(\$46)	(\$106)	\$0	\$378	\$378	(\$652
2029	\$0	\$0	(\$150)	\$0	\$0	(\$81)	(\$47)	(\$110)	\$0	\$387	\$387	(\$527
2030	\$0	\$0	(\$153)	\$0	\$0	(\$82)	(\$47)	(\$116)	\$0	\$398	\$398	(\$408
2031	\$0	\$0	(\$155)	\$0	\$0	(\$84)	(\$48)	(\$121)	\$0	\$408	\$408	(\$296
2032	\$0	\$0	(\$158)	\$0	\$0	(\$85)	(\$49)	(\$126)	\$0	\$418	\$418	(\$188
2033	\$0	\$0	(\$161)	\$0	\$0	(\$87)	(\$50)	(\$132)	\$0	\$430	\$430	(\$86
2034	\$0	\$0	(\$164)	\$0	\$0	(\$88)	(\$51)	(\$138)	\$0	\$442	\$442	\$11
2035	\$0	\$0	(\$167)	\$0	\$0	(\$90)	(\$52)	(\$143)	\$0	\$452	\$452	\$104
2036	\$0	\$0	(\$170)	\$0	\$0	(\$92)	(\$53)	(\$149)	\$0	\$464	\$464	\$192
2037	\$0	\$0	(\$173)	\$0 \$0	\$0	(\$93)	(\$54)	(\$155)	\$0	\$475	\$475	\$275
2037	\$0	\$0	(\$173)	\$0 \$0	\$0 \$0	(\$95)	(\$55)		\$0 \$0	\$487	\$487	\$355
2039	\$0 \$0	\$0 \$0	(\$176)	\$0 \$0	\$0 \$0	(\$97)	(\$56)	(\$161) (\$168)	\$0 \$0	\$500	\$500	\$430 \$430
2040	\$0	\$0	(\$182)	\$0	\$0	(\$99)	(\$57)	(\$174)	\$0	\$512	\$512	\$502
2041	\$0	\$0	(\$186)	\$0	\$0	(\$100)	(\$58)	(\$184)	\$0	\$528	\$528	\$571
2042	\$0	\$0	(\$189)	\$0	\$0	(\$102)	(\$59)	(\$189)	\$0	\$539	\$539	\$636
2043	\$0	\$0	(\$192)	\$0	\$0	(\$104)	(\$60)	(\$197)	\$0	\$554	\$554	\$698
lominal		\$441	(\$1,108)			(\$1,825)	(\$1,167)	(\$3,032)	\$2,462	\$9,154	\$6,692	
NPV	ount Rate =	\$282.316 7.85%	\$607.784	\$0.000	\$0.000	(\$455.717)	(\$337.537)	(\$794.551)	\$1,611.985	\$2,309.690	\$697.705	





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Participants' Cost-Effectiveness Measure

1	2	3	4	5	eness Analysis 6	7 7	8	9	10	11	12
<u> </u>	۷	3	4	<u> </u>	Change in	· · ·	Utility Paid	9	10	Total	Cumulative
	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$180	(\$8)	\$0	\$0	(\$10)	\$0	\$30	\$180	\$48	(\$132)	(\$123)
2016	\$188	(\$17)	\$0	\$0	(\$20)	\$0	\$31	\$188	\$68	(\$120)	(\$226)
2017	\$195	(\$26)	\$0	\$0	(\$31)	\$0	\$33	\$195	\$89	(\$106)	(\$310)
2018	\$210	(\$36)	\$0	\$0	(\$44)	\$0	\$35	\$210	\$115	(\$95)	(\$381)
2019	\$225	(\$47)	\$0	\$0	(\$58)	\$0	\$38	\$225	\$143	(\$82)	(\$437)
2020	\$300	(\$63)	\$0	\$0	(\$78)	\$0	\$50	\$300	\$191	(\$109)	(\$506)
2021	\$315	(\$79)	\$0	\$0	(\$99)	\$0	\$53	\$315	\$231	(\$84)	(\$556)
2022	\$338	(\$97)	\$0	\$0	(\$121)	\$0	\$56	\$338	\$275	(\$63)	(\$590)
2023	\$345	(\$117)	\$0	\$0	(\$146)	\$0	\$58	\$345	\$321	(\$24)	(\$602)
2024	\$353	(\$137)	\$0	\$0	(\$172)	\$0	\$59	\$353	\$368	\$16	(\$595)
2025	\$0	(\$140)	\$0	\$0	(\$176)	\$0	\$0	\$0	\$315	\$315	(\$458)
2026	\$0 \$0	(\$142)	\$0 \$0	\$0 \$0	(\$181)	\$0 \$0	\$0	\$0 \$0	\$323	\$323	(\$327)
2027	\$0 \$0	(\$145) (\$147)	\$0 \$0	\$0 \$0	(\$185)	\$0 \$0	\$0 \$0	\$0 \$0	\$330	\$330 \$337	(\$204) (\$87)
2028 2029	\$0 \$0	(\$147) (\$150)	\$0 \$0	\$0 \$0	(\$190) (\$195)	\$0 \$0	\$0 \$0	\$0 \$0	\$337 \$345	\$337 \$345	(\$87) \$24
2029	\$0 \$0	(\$150) (\$153)	\$0 \$0	\$0 \$0	(\$195)	\$0 \$0	\$0 \$0	\$0 \$0	\$345 \$352	\$345 \$352	\$24 \$129
2031	\$0	(\$155)	\$0	\$0	(\$205)	\$0	\$0	\$0	\$361	\$361	\$229
2032	\$0	(\$158)	\$0	\$0	(\$210)	\$0	\$0	\$0	\$368	\$368	\$324
2033	\$0	(\$161)	\$0	\$0	(\$216)	\$0	\$0	\$0	\$377	\$377	\$413
2034	\$0	(\$164)	\$0	\$0	(\$221)	\$0	\$0	\$0	\$385	\$385	\$498
2035	\$0	(\$167)	\$0	\$0	(\$226)	\$0	\$0	\$0	\$392	\$392	\$578
2036	\$0	(\$170)	\$0	\$0	(\$231)	\$0	\$0	\$0	\$401	\$401	\$654
2037	\$0	(\$173)	\$0	\$0	(\$236)	\$0	\$0	\$0	\$409	\$409	\$726
2038	\$0	(\$176)	\$0	\$0	(\$241)	\$0	\$0	\$0	\$417	\$417	\$794
2039	\$0	(\$179)	\$0	\$0	(\$247)	\$0	\$0	\$0	\$426	\$426	\$859
2040	\$0	(\$182)	\$0	\$0	(\$252)	\$0	\$0	\$0	\$435	\$435	\$920
2041	\$0	(\$186)	\$0	\$0	(\$256)	\$0	\$0	\$0	\$442	\$442	\$977
2042	\$0	(\$189)	\$0	\$0	(\$263)	\$0	\$0	\$0	\$452	\$452	\$1,032
2043	\$0	(\$192)	\$0	\$0	(\$269)	\$0	\$0	\$0	\$461	\$461	\$1,083
Nominal	\$2,648	(\$3,756)			(\$4,979)		\$441	\$2,648	\$9,176	\$6,529	
Nominal	\$2,646 \$1,571	(\$1,086)	\$0	\$0	(\$4,979)	\$0	\$282	\$2,646 \$1,693.894	\$2,777.190	\$1,083	
	int Rate =	7.85%	φυ	ΨΟ	(ψ1,π09)	ΨΟ	ψευε	ŷ1,000.004	Ψ <u>ε</u> ,111.130	ψ1,000	
	Cost Ratio =	1.64									
Denember	Jos. Nano -	1.04									



Filename: Comm. Geothermal

Ratepayers' Impact Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Change in	Utility's	Utility Paid	Change in	Incremental	Incremental	Incremental	3	10		14	Total Net	Cumulative
	Electric	Program	Rebates &	Electric	Generation	T&D	Prog Induced	Other	Other	Total	Total	Benefits to	Discounted
	Supply Costs	Costs	Incentives	Revenues	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Costs	Benefits	All Customers	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
2015	\$0.000	\$30.000	\$30.000	(\$9.638)	\$0.000	(\$2.468)	(\$3.397)	\$0.000	\$0.000	\$69.638	\$5.864	(\$63.774)	(\$59.132
2016	\$0.000	\$31.250	\$31.250	(\$19.979)	\$0.000	(\$5.129)	(\$7.834)	\$0.000	\$0.000	\$82.479	\$12.963	(\$69.516)	(\$118.897
2017	\$0.000	\$32.500	\$32.500	(\$30.927)	\$0.000	(\$7.992)	(\$13.128)	\$0.000	\$0.000	\$95.927	\$21.120	(\$74.808)	(\$178.529
2018	\$0.000	\$35.000	\$35.000	(\$43.755)	\$0.000	(\$11.173)	(\$18.757)	\$0.000	\$0.000	\$113.755	\$29.930	(\$83.825)	(\$240.487
2019	\$0.000	\$37.500	\$37.500	(\$58.385)	\$0.000	(\$14.687)	(\$25.599)	\$0.000	\$0.000	\$133.385	\$40.286	(\$93.099)	(\$304.291
2020	\$0.000	\$50.000	\$50.000	(\$78.144)	\$0.000	(\$19.447)	(\$35.314)	\$0.000	\$0.000	\$178.144	\$54.761	(\$123.383)	(\$382.695
2021	\$0.000	\$52.500	\$52.500	(\$98.953)	\$0.000	(\$24.604)	(\$46.870)	\$0.000	\$0.000	\$203.953	\$71.474	(\$132.480)	(\$460.751
2022	\$0.000	\$56.250	\$56.250	(\$121.055)	\$0.000	(\$30.289)	(\$60.174)	\$0.000	\$0.000	\$233.555	\$90.463	(\$143.092)	(\$538.924
2023	\$0.000	\$57.500	\$57.500	(\$146.280)	(\$62.747)	(\$36.290)	(\$75.733)	\$0.000	\$0.000	\$261.280	\$174.770	(\$86.510)	(\$582.746
2024	\$0.000	\$58.750	\$58.750	(\$172.442)	(\$73.712)	(\$42.617)	(\$87.706)	\$0.000	\$0.000	\$289.942	\$204.035	(\$85.907)	(\$623.095
2025	\$0.000	\$0.000	\$0.000	(\$175.802)	(\$75.064)	(\$43.384)	(\$91.793)	\$0.000	\$0.000	\$175.802	\$210.241	\$34.439	(\$608.097
2026	\$0.000	\$0.000	\$0.000	(\$180.840)	(\$76.446)	(\$44.165)	(\$95.675)	\$0.000	\$0.000	\$180.840	\$216.285	\$35.445	(\$593.785
2027	\$0.000	\$0.000	\$0.000	(\$185.290)	(\$77.852)	(\$44.960)	(\$100.068)	\$0.000	\$0.000	\$185.290	\$222.880	\$37.590	(\$579.711
2028 2029	\$0.000	\$0.000	\$0.000	(\$189.670)	(\$79.284)	(\$45.769)	(\$106.157)	\$0.000	\$0.000	\$189.670	\$231.210	\$41.539	(\$565.290
	\$0.000	\$0.000	\$0.000	(\$194.733)	(\$80.741)	(\$46.593)	(\$110.207)	\$0.000	\$0.000	\$194.733	\$237.540	\$42.807	(\$551.511
2030 2031	\$0.000 \$0.000	\$0.000 \$0.000	\$0.000 \$0.000	(\$199.789) (\$205.381)	(\$82.230) (\$83.746)	(\$47.432) (\$48.286)	(\$115.955) (\$120.636)	\$0.000 \$0.000	\$0.000 \$0.000	\$199.789 \$205.381	\$245.616 \$252.668	\$45.827 \$47.286	(\$537.833 (\$524.748
2032	\$0.000	\$0.000	\$0.000	(\$209.821)	(\$85.289)	(\$49.155)	(\$125.584)	\$0.000	\$0.000	\$209.821	\$260.027	\$50.206	(\$511.865
2032	\$0.000	\$0.000	\$0.000	(\$215.633)	(\$86.865)	(\$50.040)	(\$132.025)	\$0.000	\$0.000	\$215.633	\$268.929	\$53.296	(\$499.185
2034	\$0.000	\$0.000	\$0.000	(\$221.011)	(\$88.476)	(\$50.940)	(\$138.465)	\$0.000	\$0.000	\$221.011	\$277.881	\$56.870	(\$486.640
2035	\$0.000	\$0.000	\$0.000	(\$225.603)	(\$90.115)	(\$51.857)	(\$143.467)	\$0.000	\$0.000	\$225.603	\$285.439	\$59.836	(\$474.401
2036	\$0.000	\$0.000	\$0.000	(\$231.350)	(\$91.802)	(\$52.791)	(\$149.326)	\$0.000	\$0.000	\$231.350	\$293.919	\$62.568	(\$462.535
2037	\$0.000	\$0.000	\$0.000	(\$236.313)	(\$93.475)	(\$53.741)	(\$154.606)	\$0.000	\$0.000	\$236.313	\$301.822	\$65.509	(\$451.015
2038	\$0.000	\$0.000	\$0.000	(\$240.765)	(\$95.178)	(\$54.708)	(\$160.926)	\$0.000	\$0.000	\$240.765	\$310.813	\$70.048	(\$439.593
2039	\$0.000	\$0.000	\$0.000	(\$246.865)	(\$96.905)	(\$55.693)	(\$168.476)	\$0.000	\$0.000	\$246.865	\$321.074	\$74.209	(\$428.374
2040	\$0.000	\$0.000	\$0.000	(\$252.331)	(\$98.670)	(\$56.695)	(\$174.110)	\$0.000	\$0.000	\$252.331	\$329.475	\$77.144	(\$417.560
2041	\$0.000	\$0.000	\$0.000	(\$256.206)	(\$100.467)	(\$57.716)	(\$184.055)	\$0.000	\$0.000	\$256.206	\$342.238	\$86.032	(\$406.378
2042	\$0.000	\$0.000	\$0.000	(\$263.419)	(\$102.296)	(\$58.755)	(\$189.168)	\$0.000	\$0.000	\$263.419	\$350.219	\$86.800	(\$395.917
2043	\$0.000	\$0.000	\$0.000	(\$268.821)	(\$104.139)	(\$59.812)	(\$197.271)	\$0.000	\$0.000	\$268.821	\$361.222	\$92.402	(\$385.592
	unt Rate =	\$441.250 \$282.316 7.85%	\$441.250 \$282.316	(\$4,979.204) (\$1,408.765)	(\$1,825.499) (\$455.717)	(\$1,167.186) (\$337.537)	(\$3,032.479) (\$794.551)	\$0.000	\$0.000	\$5,861.704 \$1,973.396	\$6,025.164 \$1,587.805	\$163.460 (\$385.592)	
Benefit	/Cost Ratio =	0.80											

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Filename: Comm. Ceiling Insulation

Run Date:

INPUT DATA -- PART 1

I. Program Demand Impacts and Line Losses		
(1) Change in Peak kW Customer at meter	0.00	kW/Cus
(2) Change in Peak kW per Customer at generator	0.00	
(3) kW Line Loss Percentage	7.12%	KVV Geri/Cus
(4) Change in KWh per Customer at generator		kWh/Cus/Yr
(5) kWh Line Loss Percentage	5.32%	KVVII/Od3/11
(6) Group Line Loss Multiplier	1.0015	
(7) Annual Change in Customer kWh at Meter		kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter		kW/Cus
<u> </u>		
II. Economic Life and K-Factors		
(1) DSM Program Study Period	30	Years
(2) Economic Life of Incremental Generation	40	Years
(3) Economic Life of Incremental T&D	35	Years
(4) K-Factor for Generation	1.4331	
(5) K-Factor for T&D	1.4298	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
III. Utility & Customer Costs		
(1) Utility Nonrecurring Cost Per Customer	<u>\$0.1</u> 5	
(2) Utility Recurring Cost Per Customer		\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	<u>\$</u> 0.4 <u>9</u>	\$/Cus
(5) Customer Equpiment Cost Escalation Rate	0.00%	
(6) Customer O&M Cost		\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	1 <u>.80</u> %	
* (8) Customer Tax Credit Per Installation	<u>\$</u> 0.0 <u>0</u>	\$/Cus
* (9) Customer Tax Credit Escalation Rate	1 <u>.80</u> %	
* (10) Change in Supply Costs		\$/Cus/Year
* (11) Supply Costs Escalation Rate	1.80%	
* (12) Utility Discount Rate	7 <u>.85</u> %	
* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive	<u>\$0.1</u> 5	
* (15) Utility Recurring Rebate/Incentive		\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	0.00%	

IV. Incremental Generation, Transmission, & Distribu	ution Costs
(1) Base Year	2014
(2) In-Service Year For Incremental Generation	2023 **
(3) In-Service Year For Incremental T & D	<u>2</u> 015
(4) Base Year Incremental Generation Cost	<u>\$8</u> 51. <u>95</u> \$/kW
(5) Base Year Incremental Transmission Cost	\$3 <u>02.</u> 35\$/kW
(6) Base Year Incremental Distribution Cost	<u>\$1</u> 54. <u>39</u> \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	<u>1.8</u> 0%_
(8) Generator Fixed O & M Cost	\$17. <u>89</u> \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	<u>1.96%</u>
(10) Transmission Fixed O & M Cost	\$6. <u>68</u>
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr
(12) T&D_Fixed O&M Escalation Rate	1.8 <u>0%</u>
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00_\$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	0.0 <u>0%</u>
(15) Incremental Gen Capacity Factor	9.4 <u>3%</u>
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 64_\$/kWh
(1 <u>7) Incremental Gen Unit Fuel Esc_Rate</u>	5.1 <u>2%</u>
(18) Incremental Purchased Capacity Cost	\$0.47_\$/KW/YR
(19) Incremental Capacity Cost Esc Rate	<u>21.61%</u>
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0
V. (1) Non-Fuel Cost In Customer Bill (Base Year)	
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.03</u> 63_\$/kWh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$6.3900_\$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	_0.0 <u>00</u> 375_ kW/Mo.

Summary Results for This Analysis	Summar	v Results	for This	Analysis
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	<u>TRC</u>	Participants'	RIM
NPV Benefits(\$000s)	\$4,717	\$3,939	\$4,717
NPV Costs (\$000s)	\$1,595	\$1,221	\$4,312
NPV Net Benefits (\$000s)	\$3,123	\$2,718	\$405
Benefit:Cost Ratio	2.958	3.226	1.094



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Total Resource Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	da Administrativ	10	11	12	13
	Change in	<u> </u>				Incremental	Incremental	Incremental	10		Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$34	\$110	\$0	\$0	\$0	(\$7)	(\$7)	\$144	\$14	(\$130)	(\$120
2016	\$0	\$38	\$123	\$0	\$0	\$0	(\$16)	(\$17)	\$160	\$32	(\$128)	(\$230
2017	\$0	\$41	\$135	\$0	\$0	\$0	(\$25)	(\$29)	\$176	\$54	(\$122)	(\$327
2018	\$0	\$45	\$147	\$0	\$0	\$0	(\$36)	(\$42)	\$192	\$78	(\$114)	(\$412)
2019	\$0	\$60	\$196	\$0	\$0	\$0	(\$51)	(\$61)	\$256	\$112	(\$144)	(\$510
2020	\$0	\$60	\$196	\$0	\$0	\$0	(\$66)	(\$82)	\$256	\$148	(\$108)	(\$579)
2021	\$0	\$68	\$221	\$0	\$0	\$0	(\$83)	(\$110)	\$288	\$193	(\$95)	(\$635
2022	\$0	\$75	\$245	\$0	\$0	\$0	(\$103)	(\$142)	\$320	\$245	(\$75)	(\$676)
2023	\$0	\$83	\$270	\$0	\$0	(\$218)	(\$126)	(\$181)	\$352	\$525	\$173	(\$588)
2024	\$0	\$90	\$294	\$0	\$0	(\$262)	(\$151)	(\$214)	\$384	\$627	\$243	(\$474)
2025	\$0	\$0	\$0	\$0	\$0	(\$266)	(\$154)	(\$224)	\$0	\$645	\$645	(\$193)
2026	\$0	\$0	\$0	\$0	\$0	(\$271)	(\$157)	(\$234)	\$0	\$662	\$662	\$74
2027	\$0	\$0	\$0	\$0	\$0	(\$276)	(\$160)	(\$245)	\$0	\$681	\$681	\$329
2028	\$0	\$0	\$0	\$0	\$0	(\$281)	(\$162)	(\$259)	\$0	\$703	\$703	\$573
2029	\$0	\$0	\$0	\$0	\$0	(\$287)	(\$165)	(\$269)	\$0	\$721	\$721	\$805
2030	\$0	\$0	\$0	\$0	\$0	(\$292)	(\$168)	(\$283)	\$0	\$744	\$744	\$1,027
2031	\$0	\$0	\$0	\$0	\$0	(\$297)	(\$171)	(\$295)	\$0	\$764	\$764	\$1,239
2032	\$0	\$0	\$0	\$0	\$0	(\$303)	(\$174)	(\$307)	\$0	\$784	\$784	\$1,440
2033	\$0	\$0	\$0	\$0	\$0	(\$308)	(\$178)	(\$323)	\$0	\$809	\$809	\$1,632
2034	\$0	\$0	\$0	\$0	\$0	(\$314)	(\$181)	(\$338)	\$0	\$833	\$833	\$1,816
2035	\$0	\$0	\$0	\$0	\$0	(\$320)	(\$184)	(\$351)	\$0	\$855	\$855	\$1,991
2036	\$0	\$0	\$0	\$0	\$0	(\$326)	(\$187)	(\$365)	\$0	\$878	\$878	\$2,157
2037	\$0	\$0	\$0	\$0	\$0	(\$332)	(\$191)	(\$378)	\$0	\$900	\$900	\$2,316
2038	\$0	\$0	\$0	\$0	\$0	(\$338)	(\$194)	(\$393)	\$0	\$925	\$925	\$2,467
2039	\$0	\$0	\$0	\$0	\$0	(\$344)	(\$198)	(\$412)	\$0	\$953	\$953	\$2,611
2040	\$0	\$0	\$0	\$0	\$0	(\$350)	(\$201)	(\$425)	\$0	\$977	\$977	\$2,748
2041	\$0	\$0	\$0	\$0	\$0	(\$357)	(\$205)	(\$450)	\$0	\$1,011	\$1,011	\$2,879
2042	\$0	\$0	\$0	\$0	\$0	(\$363)	(\$209)	(\$462)	\$0	\$1,034	\$1,034	\$3,004
2043	\$0	\$0	\$0	\$0	\$0	(\$370)	(\$212)	(\$482)	\$0	\$1,064	\$1,064	\$3,123

Nominal	\$593	\$1,936			(\$6,475)	(\$4,118)	(\$7,379)	\$2,528	\$17,973	\$15,445	
NPV	\$373.729	\$1,220.849	\$0.000	\$0.000	(\$1,615.294)	(\$1,181.042)	(\$1,920.982)	\$1,594.579	\$4,717.317	\$3,122.739	
Discount Rate =	7.85%										
Benefit/Cost Ratio =	2.96										



Benefit/Cost Ratio =

Filename: Comm. Ceiling Insulation

Participants' Cost-Effectiveness Measure

1	2	3	4	5	6	7	8	9	10	11	12
		<u> </u>			Change in	<u> </u>	Utility Paid			Total	Cumulative
1	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$110	\$0	\$0	\$0	(\$21)	\$0	\$34	\$110	\$55	(\$56)	(\$52)
2016	\$123	\$0	\$0	\$0	(\$45)	\$0	\$38	\$123	\$82	(\$40)	(\$86)
2017	\$135	\$0	\$0	\$0	(\$71)	\$0	\$41	\$135	\$113	(\$22)	(\$104)
2018	\$147	\$0	\$0	\$0	(\$103)	\$0	\$45	\$147	\$148	\$1	(\$103)
2019	\$196	\$0	\$0	\$0	(\$146)	\$0	\$60	\$196	\$206	\$10	(\$96)
2020	\$196	\$0	\$0	\$0	(\$192)	\$0	\$60	\$196	\$252	\$56	(\$61)
2021	\$221	\$0	\$0	\$0	(\$243)	\$0	\$68	\$221	\$311	\$90	(\$7)
2022	\$245	\$0	\$0	\$0	(\$299)	\$0	\$75	\$245	\$374	\$129	\$63
2023	\$270	\$0	\$0	\$0	(\$368)	\$0	\$83	\$270	\$450	\$181	\$155
2023	\$270 \$294	\$0 \$0	\$0	\$0 \$0	(\$443)	\$0	\$90	\$270 \$294	\$533	\$239	\$267
2025	\$294	\$0	\$0	\$0 \$0	(\$452)	\$0	\$0	\$0	\$452	\$452	\$464
2026	\$0	\$0	\$0	\$0	(\$464)	\$0	\$0	\$0	\$464	\$464	\$651
2027	\$0	\$0	\$0	\$0	(\$476)	\$0	\$0	\$0	\$476	\$476	\$829
2028	\$0	\$0	\$0	\$0	(\$487)	\$0	\$0	\$0	\$487	\$487	\$998
2029	\$0	\$0	\$0	\$0	(\$499)	\$0	\$0	\$0	\$499	\$499	\$1,159
2030	\$0	\$0	\$0	\$0	(\$512)	\$0	\$0	\$0	\$512	\$512	\$1,312
2031	\$0	\$0	\$0	\$0	(\$526)	\$0	\$0	\$0	\$526	\$526	\$1,458
2032	\$0	\$0	\$0	\$0	(\$538)	\$0	\$0	\$0	\$538	\$538	\$1,596
2033	\$0	\$0	\$0	\$0	(\$552)	\$0	\$0	\$0	\$552	\$552	\$1,727
2034	\$0	\$0	\$0	\$0	(\$566)	\$0	\$0	\$0	\$566	\$566	\$1,852
2035	\$0	\$0	\$0	\$0	(\$577)	\$0	\$0	\$0	\$577	\$577	\$1,970
2036	\$0	\$0	\$0	\$0	(\$592)	\$0	\$0	\$0	\$592	\$592	\$2,082
2037	\$0	\$0	\$0	\$0	(\$605)	\$0	\$0	\$0	\$605	\$605	\$2,188
2038	\$0	\$0	\$0	\$0	(\$616)	\$0	\$0	\$0	\$616	\$616	\$2,289
2039	\$0	\$0	\$0	\$0	(\$631)	\$0	\$0	\$0	\$631	\$631	\$2,384
2040	\$0	\$0	\$0	\$0	(\$645)	\$0	\$0	\$0	\$645	\$645	\$2,475
2041	\$0	\$0	\$0	\$0	(\$655)	\$0	\$0	\$0	\$655	\$655	\$2,560
2042	\$0	\$0	\$0	\$0	(\$673)	\$0	\$0	\$0	\$673	\$673	\$2,641
2043	\$0	\$0	\$0	\$0	(\$687)	\$0	\$0	\$0	\$687	\$687	\$2,718
					(*** /						• • •
L											
Nominal	\$1,936		•		(\$12,685)	•	\$593	\$1,936	\$13,278	\$11,342	
NPV	\$1,132	\$0	\$0	\$0	(\$3,565)	\$0	\$374	\$1,220.849	\$3,938.673	\$2,718	
	unt Rate =	7.85%	•	*-	1	*-					



Filename: Comm. Ceiling Insulation

Ratepayers' Impact Cost-Effectiveness Measure

Change in Utility's Utility Paid Change in Incremental Incremental Incremental Total Net Cumulative	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Flectric Program Rebates & Flectric Reports Rebates & Rebates Rebates & Rebates		Change in					Incremental							Cumulative
Vear (\$9009a) \$00000 \$00000 \$00000 \$00000 \$0000 \$00000 \$0000 \$00000 \$00000 \$00000 \$00000 \$00									Other	Other	Total	Total	Benefits to	Discounted
Pear \$50009 \$50009 \$50009 \$50009 \$50009 \$50009 \$50009 \$50009 \$50009 \$500000 \$50000 \$50000 \$50000 \$50000 \$50000 \$50000 \$500000 \$50000 \$50000 \$50000 \$50000 \$50000 \$50000 \$500000 \$50000 \$50000 \$50000 \$50000 \$50000 \$50000 \$500000 \$50000 \$50000 \$50000 \$50000 \$50000 \$50000 \$500000 \$50000 \$50000 \$50000 \$50000 \$50000 \$50000 \$500000 \$50000 \$50000 \$50000 \$50000 \$50000 \$50000 \$500000 \$500000 \$500000 \$500000 \$500000 \$500000 \$500000				Incentives	Revenues									
2015 \$0.000 \$33,750 \$33,750 \$33,750 \$50,000 \$54,670 \$0.000 \$515,800 \$50,000 \$519,270 \$32,258 \$58,7311 \$2017 \$0.000 \$41,250 \$41,250 \$41,250 \$51,300 \$0.000 \$50,000 \$519,270 \$37,500 \$50,000 \$510,000 \$519,270 \$37,500 \$50,000 \$510,00	Year													
2015 \$0.000 \$33,750 \$33,750 \$33,750 \$50,000 \$54,670 \$0.000 \$515,800 \$50,000 \$519,270 \$32,258 \$58,7311 \$2017 \$0.000 \$41,250 \$41,250 \$41,250 \$51,300 \$0.000 \$50,000 \$519,270 \$37,500 \$50,000 \$510,000 \$519,270 \$37,500 \$50,000 \$510,00	2014	\$0.000		\$0.000	\$0.000			\$0.000				\$0.000	\$0.000	\$0.000
2016 \$0,000 \$37,500 \$37,500 \$44,670 \$0,000 \$(\$15,773) \$(\$16,586) \$0,000 \$0,000 \$119,670 \$32,238 \$(\$87,311) \$2018 \$0,000 \$41,550 \$41,250 \$41,250 \$41,250 \$51,000 \$0,000 \$(\$26,433) \$(\$41,760) \$0,000 \$102,766 \$77,893 \$(\$114,813) \$2199 \$0,000 \$60,000 \$60,000 \$162,000 \$60,000 \$162,000 \$60,000 \$162,000 \$60,000 \$162,000 \$60,	2015	\$0.000	\$33.750	\$33.750	(\$20.796)	\$0.000	(\$7.339)	(\$6.954)	\$0.000	\$0.000	\$88.296	\$14.294		(\$68.616)
2018 S0.000 S45.000 S45.000 S60.000 S67.500	2016	\$0.000	\$37.500			\$0.000	(\$15.773)			\$0.000	\$119.670			(\$143.679)
2019 \$0.000 \$60.000 \$60.000 \$146.446 \$0.000 \$50.796 \$60.095 \$0.000 \$0.000 \$0.000 \$312.322 \$111.746 \$(5154.699)\$ 2021 \$0.000 \$675.000 \$675.000 \$675.000 \$243.379) \$0.000 \$855.975 \$82.473 \$0.000 \$0.000 \$376.379 \$133.002 \$(5165.489)\$ 2022 \$0.000 \$75.000 \$75.000 \$75.000 \$299.482 \$0.000 \$(103.481) \$(5141.525) \$0.000 \$0.000 \$376.379 \$133.002 \$(5165.378)\$ 2023 \$0.000 \$82.500 \$82.500 \$82.500 \$82.500 \$82.67724 \$217.924 \$(516.036) \$(181.072) \$0.000 \$0.000 \$449.482 \$245.006 \$(5204.476)\$ 2024 \$0.000 \$90.000 \$90.000 \$90.000 \$442.898 \$(5216.699) \$(5151.285) \$(516.036) \$(5161.285) \$0.000 \$0.000 \$444.482 \$88.400]\$ 2025 \$0.000 \$0.000 \$0.000 \$0.000 \$442.898 \$(5261.699) \$(5151.285) \$(5214.334) \$0.000 \$0.000 \$451.588 \$644.798 \$133.218\$ 2026 \$0.000 \$0.000 \$0.000 \$0.000 \$(442.898) \$(5271.372) \$(5156.780) \$(5245.441) \$0.000 \$0.000 \$464.280 \$661.961 \$197.680\$ 2027 \$0.000 \$0.000 \$0.000 \$0.000 \$(476.549) \$(277.372) \$(5156.780) \$(2244.544) \$0.000 \$0.000 \$464.280 \$661.961 \$197.680\$ 2028 \$0.000 \$0.000 \$0.000 \$(446.866.655) \$(2314.47) \$(5259.424) \$0.000 \$0.000 \$466.555 \$703.346 \$216.691\$ 2029 \$0.000 \$0.000 \$0.000 \$(5499.436) \$(5227.6355) \$(5156.600) \$(5269.321) \$0.000 \$0.000 \$466.555 \$703.346 \$214.691\$ 2029 \$0.000 \$0.000 \$0.000 \$(5499.436) \$(5266.691) \$(5165.400) \$(5269.321) \$0.000 \$0.000 \$446.655 \$703.346 \$214.691\$ 2029 \$0.000 \$0.000 \$0.000 \$(5499.436) \$(5266.691) \$(5165.400) \$(5269.321) \$0.000 \$0.000 \$486.655 \$703.346 \$214.691\$ 2029 \$0.000 \$0.000 \$0.000 \$(5499.436) \$(5266.691) \$(5165.400) \$(5269.321) \$0.000 \$0.000 \$486.655 \$703.346 \$214.691\$ 2029 \$0.000 \$0.000 \$0.000 \$(5499.436) \$(5266.691) \$(5165.400) \$(5269.321) \$0.000 \$0.000 \$486.655 \$703.346 \$214.691\$ 2029 \$0.000 \$0.000 \$0.000 \$(5665.692) \$(5297.287) \$(5174.493) \$(506.400) \$0.000 \$0.000 \$665.692) \$743.403 \$221.904\$ 2031 \$0.000 \$0.000 \$0.000 \$(5665.696) \$(531.347) \$(5174.493) \$(5306.900) \$0.000 \$0.000 \$655.219 \$606.691 \$11.477 \$0.000 \$0.000 \$656.808 \$60.414 \$2034 \$0.000 \$0.000 \$656.808 \$60.414 \$2034 \$0.000 \$0.000 \$656.808 \$60.414 \$2034 \$0.000 \$0.000 \$656.808 \$60.4188 \$60.414 \$	2017	\$0.000	\$41.250	\$41.250	(\$71.300)	\$0.000	(\$25.353)	(\$28.672)	\$0.000	\$0.000	\$153.800	\$54.024	(\$99.776)	(\$223.216)
2020 \$0.000 \$60.000 \$60.000 \$61.2222 \$0.000 \$65.975 \$82.473 \$0.000 \$0.000 \$312.232 \$148.448 \$(8163.784) \$2022 \$0.000 \$67.500 \$67.500 \$293.4329 \$0.000 \$834.499 \$(8109.502) \$0.000 \$0.000 \$378.379 \$193.002 \$(8163.788) \$2022 \$0.000 \$75.000 \$75.000 \$75.000 \$294.429 \$0.000 \$(834.481) \$(8141.525) \$0.000 \$0.000 \$344.9.482 \$245.006 \$(820.4476) \$2023 \$0.000 \$90.000	2018	\$0.000	\$45.000	\$45.000	(\$102.706)	\$0.000	(\$36.133)	(\$41.760)	\$0.000	\$0.000	\$192.706	\$77.893	(\$114.813)	(\$308.078)
2021 \$0.000 \$67.500 \$67.500 \$243.379 \$0.000 \$83.499 \$199.502 \$0.000 \$0.000 \$378.379 \$193.002 \$185.378 \$193.002 \$2022 \$0.000 \$75.000 \$75.000 \$299.482 \$0.000 \$141.525 \$0.000 \$0.000 \$449.482 \$245.006 \$224.476 \$2023 \$0.000 \$20.000	2019	\$0.000	\$60.000	\$60.000	(\$146.446)	\$0.000	(\$50.796)	(\$60.951)	\$0.000	\$0.000	\$266.446	\$111.746	(\$154.699)	(\$414.098)
2022 \$0.000 \$75.000 \$75.000 \$(299.482) \$0.000 \$(114.525) \$0.000 \$0.000 \$449.482 \$245.006 \$(204.476)	2020	\$0.000	\$60.000	\$60.000	(\$192.232)	\$0.000	(\$65.975)	(\$82.473)	\$0.000	\$0.000	\$312.232	\$148.448	(\$163.784)	(\$518.175)
2023 \$0.000 \$82.500 \$82.500 \$867.724) \$217.924 \$126.036) \$181.072) \$0.000 \$0.000 \$822.724 \$825.032 \$(5.602) 2024 \$0.000 \$90.000 \$90.000 \$442.988) \$(261.669) \$(3151.285) \$(214.334) \$0.000 \$0.000 \$627.288 \$4.300 2025 \$0.000 \$0.000 \$0.000 \$0.000 \$50.000 \$(266.466) \$(516.408) \$(5224.323) \$0.000 \$0.000 \$461.580 \$644.798 \$193.218 2026 \$0.000 \$0.000 \$0.000 \$(344.280) \$(\$271.372) \$(\$156.780) \$(\$233.808) \$0.000 \$0.000 \$464.280 \$661.961 \$197.680 2027 \$0.000 \$0.000 \$0.000 \$(\$444.280) \$(\$276.365) \$(\$159.602) \$(\$244.444) \$0.000 \$0.000 \$464.280 \$661.961 \$197.680 2028 \$0.000 \$0.000 \$0.000 \$494.361 \$(\$286.619) \$(\$166.400) \$(\$269.321) \$0.000 \$0.000 \$498.436	2021	\$0.000	\$67.500	\$67.500	(\$243.379)	\$0.000	(\$83.499)	(\$109.502)	\$0.000	\$0.000	\$378.379	\$193.002	(\$185.378)	(\$627.399)
2024 \$0.000 \$90.000 \$90.000 \$442.988) \$261.669) \$151.285) \$214.334) \$0.000 \$0.000 \$622.988 \$627.288 \$4.300 \$2025 \$0.000 \$0.000 \$0.000 \$451.580 \$266.466) \$(5154.008) \$(524.323) \$0.000 \$0.000 \$451.580 \$564.798 \$193.218 \$0.000 \$0.000 \$464.280 \$0.000 \$464.280 \$0.000 \$464.280 \$0.000 \$464.280 \$0.000 \$0.000 \$464.280 \$0.000 \$464.280 \$0.000 \$0.000 \$464.280 \$0.000 \$0.000 \$464.280 \$0.000 \$0.000 \$464.280 \$0.000 \$0.000 \$464.280 \$0.000	2022	\$0.000	\$75.000	\$75.000	(\$299.482)	\$0.000	(\$103.481)	(\$141.525)	\$0.000	\$0.000	\$449.482	\$245.006	(\$204.476)	(\$739.107)
2025 \$0.000 \$0.000 \$0.000 \$451.580 \$266.466 \$154.008 \$224.323 \$0.000 \$0.000 \$451.580 \$644.798 \$193.218 \$2026 \$0.000 \$0.000 \$0.000 \$0.000 \$464.280 \$677.372 \$(516.780) \$(233.808) \$0.000 \$0.000 \$464.280 \$661.961 \$197.680 \$224.922 \$0.000 \$0.000 \$4575.494 \$0.000 \$0.000 \$475.549 \$680.511 \$204.963 \$204.963 \$2028 \$0.000 \$0.000 \$0.000 \$486.655 \$(281.447) \$(5162.475) \$(259.424) \$0.000 \$0.000 \$486.655 \$703.346 \$216.691 \$204.963 \$2029 \$0.000 \$0.000 \$0.000 \$498.496 \$288.619 \$(518.377) \$(259.424) \$0.000 \$0.000 \$499.496 \$721.340 \$221.904 \$2030 \$0.000 \$0.000 \$0.000 \$512.207 \$(291.906) \$(5168.377) \$(283.368) \$0.000 \$0.000 \$499.496 \$721.340 \$221.904 \$2031 \$0.000 \$0.000 \$0.000 \$(526.297) \$(297.287) \$(171.408) \$(224.809) \$0.000 \$0.000 \$526.297 \$763.503 \$2237.207 \$2032 \$0.000 \$0.000 \$0.000 \$50.000 \$555.219 \$(303.59) \$(174.493) \$(306.900) \$0.000 \$50.000 \$555.219 \$808.634 \$256.414 \$2034 \$0.000 \$0.000 \$0.000 \$0.000 \$5552.219 \$(303.859) \$(177.634) \$(332.640) \$0.000 \$0.000 \$50.800 \$656.808 \$633.289 \$267.481 \$2035 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$577.483 \$0.000	2023	\$0.000	\$82.500	\$82.500	(\$367.724)	(\$217.924)	(\$126.036)	(\$181.072)	\$0.000	\$0.000	\$532.724	\$525.032	(\$7.692)	(\$743.003)
2026 \$0.000 \$0.000 \$0.000 \$0.000 \$464.280 \$271.372 \$156.780 \$233.808 \$0.000 \$0.000 \$464.280 \$661.961 \$197.680 \$2027 \$0.000	2024	\$0.000	\$90.000	\$90.000	(\$442.988)	(\$261.669)	(\$151.285)	(\$214.334)	\$0.000	\$0.000	\$622.988	\$627.288	\$4.300	(\$740.984)
2027 \$0.000 \$0.0	2025	\$0.000	\$0.000	\$0.000	(\$451.580)	(\$266.466)	(\$154.008)	(\$224.323)	\$0.000	\$0.000	\$451.580	\$644.798	\$193.218	(\$656.839)
2028 \$0.000 \$0.000 \$0.000 \$0.000 \$486.655 \$(\$281.447) \$(\$162.475) \$(\$259.424) \$0.000 \$0.000 \$486.655 \$703.346 \$216.691 \$2029 \$0.000 \$0.000 \$0.000 \$0.000 \$5.000 \$6.949.436 \$(\$286.619) \$(\$165.400) \$(\$269.321) \$0.000 \$0.000 \$499.436 \$721.340 \$221.904 \$231.904 \$231.904 \$231.904 \$231.906 \$(\$168.377) \$(\$283.368) \$0.000 \$0.000 \$512.207 \$743.651 \$221.444 \$231 \$0.000 \$0.000 \$0.000 \$0.000 \$(\$522.297) \$(\$297.287) \$(\$171.408) \$(\$294.809) \$0.000 \$0.000 \$526.297 \$763.503 \$227.207 \$232 \$0.000 \$0.000 \$0.000 \$557.577 \$(\$302.763) \$(\$171.408) \$(\$294.809) \$0.000 \$0.000 \$526.297 \$763.503 \$2237.207 \$233 \$0.000 \$0.000 \$0.000 \$5552.219 \$(\$308.359) \$(\$177.634) \$(\$326.640) \$0.000 \$0.000 \$557.577 \$784.156 \$2246.578 \$2244.089 \$0.000 \$0.000 \$552.219 \$808.634 \$256.414 \$234 \$0.000 \$0.000 \$0.000 \$556.209 \$(\$314.078) \$(\$180.831) \$(\$338.380) \$0.000 \$0.000 \$556.808 \$833.289 \$267.481 \$2035 \$0.000 \$0.000 \$0.000 \$0.000 \$591.990 \$(\$325.887) \$(\$181.406) \$(\$364.921) \$0.000 \$0.000 \$577.483 \$854.585 \$277.102 \$236 \$0.000 \$0.000 \$0.000 \$0.000 \$(\$561.945) \$(\$331.824) \$(\$190.773) \$(\$377.825) \$0.000 \$0.000 \$604.588 \$900.422 \$226.834 \$2038 \$0.000 \$0.000 \$0.000 \$604.588 \$900.422 \$226.834 \$2038 \$0.000 \$0.000 \$0.000 \$0.000 \$661.945 \$925.346 \$339.402 \$2399 \$0.000 \$0.000 \$0.000 \$665.166 \$(\$331.824) \$(\$190.7702) \$(\$411.719) \$0.000 \$0.000 \$665.166 \$1,011.320 \$356.153 \$2044 \$0.000 \$0.000 \$0.000 \$0.000 \$66573.305 \$(\$366.641) \$(\$204.884) \$(\$449.792) \$0.000 \$0.000 \$6653.306 \$360.691 \$0.000	2026	\$0.000	\$0.000	\$0.000	(\$464.280)	(\$271.372)	(\$156.780)	(\$233.808)	\$0.000	\$0.000	\$464.280	\$661.961	\$197.680	(\$577.016)
2029 \$0.000 \$0.000 \$0.000 \$0.000 \$499.436 \$286.619 \$165.400 \$269.321 \$0.000 \$0.000 \$499.436 \$721.340 \$221.904 \$2030 \$0.000 \$0.000 \$0.000 \$0.000 \$512.207 \$743.651 \$231.444 \$233.207 \$2032 \$0.000 \$0.000 \$0.000 \$526.297 \$291.906 \$6183.377 \$283.368 \$0.000 \$0.000 \$512.207 \$743.651 \$231.444 \$2032 \$0.000 \$0.00	2027	\$0.000	\$0.000	\$0.000	(\$475.549)	(\$276.365)	(\$159.602)	(\$244.544)	\$0.000	\$0.000	\$475.549	\$680.511	\$204.963	(\$500.277)
2030 \$0.000 \$0.000 \$0.000 \$0.000 \$552.207 \$291.906) \$168.377) \$283.368) \$0.000 \$0.000 \$512.207 \$743.651 \$231.444 \$2031 \$0.000 \$0	2028	\$0.000	\$0.000	\$0.000	(\$486.655)	(\$281.447)	(\$162.475)	(\$259.424)	\$0.000	\$0.000	\$486.655	\$703.346	\$216.691	(\$425.052)
2031 \$0.000 \$0.000 \$0.000 \$0.000 \$526.297 \$763.503 \$237.207 \$2032 \$0.000 \$0.000 \$0.000 \$0.000 \$556.297 \$763.503 \$237.207 \$2032 \$0.000 \$0.000 \$0.000 \$0.000 \$5552.219 \$300.359 \$0.000 \$0.000 \$557.577 \$784.156 \$2246.578 \$2034 \$0.000 \$0.0	2029	\$0.000	\$0.000	\$0.000	(\$499.436)	(\$286.619)	(\$165.400)	(\$269.321)	\$0.000	\$0.000	\$499.436	\$721.340	\$221.904	(\$353.623)
2032 \$0.000 \$0.000 \$0.000 \$0.000 \$537.577 \$(\$302.763) \$(\$174.493) \$(\$306.900) \$0.000 \$0.000 \$537.577 \$784.156 \$246.578 \$2033 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$(\$552.219) \$(\$308.359) \$(\$177.634) \$(\$322.640) \$0.000 \$0.000 \$552.219 \$808.634 \$256.414 \$2035 \$0.000 \$0.000 \$0.000 \$565.808 \$833.289 \$267.481 \$2035 \$0.000 \$0.000 \$0.000 \$5577.483 \$319.897 \$(\$184.086) \$336.800 \$0.000 \$0.000 \$5577.483 \$835.4585 \$277.102 \$2036 \$0.000 \$0.000 \$0.000 \$0.000 \$6577.483 \$319.897 \$(\$184.086) \$356.602) \$0.000 \$0.000 \$577.483 \$835.4585 \$277.102 \$2036 \$0.000 \$0.000 \$0.000 \$0.000 \$659.990 \$652.587 \$0.000 \$0.000 \$577.483 \$0.000 \$0.000 \$604.588 \$0.000 \$0.000 \$577.483 \$0.000 \$0.000 \$604.588 \$0.000	2030	\$0.000	\$0.000	\$0.000	(\$512.207)	(\$291.906)	(\$168.377)	(\$283.368)	\$0.000	\$0.000	\$512.207	\$743.651	\$231.444	(\$284.547)
2033 \$0.000 \$0.000 \$0.000 \$552.219 \$308.359 \$(\$177.634) \$322.640) \$0.000 \$0.000 \$556.219 \$808.634 \$256.414 2034 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$565.808 \$333.289 \$267.481 2035 \$0.000 \$0.000 \$0.000 \$577.483 \$845.858 \$277.102 2036 \$0.000 \$0.000 \$0.000 \$577.483 \$845.858 \$277.102 2037 \$0.000 \$0.000 \$0.000 \$651.945 \$331.824 \$(\$190.773) \$377.825 \$0.000 \$50.000 \$878.207 \$286.217 2038 \$0.000 \$0.000 \$0.000 \$60.4588 \$331.824 \$(\$190.773) \$377.825 \$0.000 \$0.000 \$604.588 \$900.422 \$285.834 2039 \$0.000 \$0.000 \$661.5386 \$(\$331.804) \$(\$197.702) \$(\$411.719) \$0.000 \$0.000 \$661.945 \$390.422 \$295.834 2040		\$0.000	\$0.000	\$0.000	(\$526.297)	(\$297.287)	(\$171.408)	(\$294.809)	\$0.000	\$0.000	\$526.297	\$763.503	\$237.207	(\$218.904)
2034 \$0.000 \$0.000 \$0.000 \$0.000 \$565.808) \$314.078) \$\$ \$180.831) \$\$ \$338.380) \$0.000 \$0.000 \$565.808 \$833.289 \$267.481 \$2035 \$0.000 \$0.000 \$0.000 \$0.000 \$557.483 \$854.685 \$277.102 \$2036 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$591.990 \$226.2887 \$187.400 \$236.2891 \$0.000 \$0.000 \$591.990 \$326.217 \$286.217 \$2037 \$0.000 \$0.	2032	\$0.000	\$0.000	\$0.000	(\$537.577)	(\$302.763)	(\$174.493)	(\$306.900)	\$0.000	\$0.000	\$537.577	\$784.156	\$246.578	(\$155.634)
2035 \$0.000 \$0.000 \$0.000 \$(\$319.897) \$(\$184.086) \$(\$350.602) \$0.000 \$0.000 \$577.483 \$854.585 \$277.102 2036 \$0.000 \$0.000 \$0.000 \$0.000 \$591.990 \$678.207 \$286.217 2037 \$0.000 \$0.000 \$0.000 \$604.588 \$(\$331.824) \$(\$190.773) \$377.825 \$0.000 \$0.000 \$604.588 \$90.422 \$295.834 2038 \$0.000 \$0.000 \$0.000 \$60.000 \$615.945 \$309.402 \$319.900 \$0.000 \$0.000 \$615.945 \$309.402 2039 \$0.000 \$0.000 \$0.000 \$631.338) \$(\$344.001) \$(\$197.702) \$411.719) \$0.000 \$631.338 \$953.423 \$322.085 2040 \$0.000 \$0.000 \$0.000 \$665.166) \$(\$356.644) \$202.261 \$449.792) \$0.000 \$0.000 \$645.191 \$377.014 \$331.822 2042 \$0.000 \$0.000 \$0.000 \$665.166) \$(\$366.644)	2033	\$0.000	\$0.000	\$0.000	(\$552.219)	(\$308.359)	(\$177.634)	(\$322.640)	\$0.000	\$0.000	\$552.219	\$808.634	\$256.414	(\$94.629)
2036 \$\script{0.000}\$		\$0.000	\$0.000	\$0.000	(\$565.808)	(\$314.078)	(\$180.831)	(\$338.380)	\$0.000	\$0.000	\$565.808	\$833.289	\$267.481	(\$35.622)
2037 \$0.000 \$0.000 \$0.000 \$604.588 \$331.824 \$190.773 \$377.825 \$0.000 \$0.000 \$604.588 \$90.422 \$295.834 2038 \$0.000 \$0.000 \$0.000 \$615.945 \$331.824 \$(\$194.207) \$(\$393.270) \$0.000 \$0.000 \$615.945 \$309.402 2039 \$0.000 \$0.000 \$0.000 \$0.000 \$653.338 \$344.001) \$(\$197.702) \$411.719) \$0.000 \$6631.338 \$953.423 \$322.085 2040 \$0.000 \$0.000 \$0.000 \$665.191) \$350.266) \$201.261) \$425.487) \$0.000 \$0.000 \$665.168 \$977.014 \$331.822 2041 \$0.000 \$0.000 \$60.000 \$655.166) \$(\$356.644) \$(\$204.884) \$(\$449.792) \$0.000 \$60.000 \$665.168 \$1,011.320 \$366.153 2042 \$0.000 \$0.000 \$0.000 \$6673.305 \$360.691	2035	\$0.000	\$0.000	\$0.000	(\$577.483)	(\$319.897)	(\$184.086)	(\$350.602)	\$0.000	\$0.000	\$577.483	\$854.585	\$277.102	\$21.057
2038 \$0.000 \$0.000 \$0.000 \$615.945 \$337.869 \$194.207 \$393.270 \$0.000 \$0.000 \$615.945 \$925.346 \$309.402 2039 \$0.000 \$0.000 \$0.000 \$60.001 \$645.191 \$645.191 \$645.191 \$620.201.861 \$620.487 \$0.000 \$0.000 \$645.191 \$977.014 \$331.822 2041 \$0.000 \$0.000 \$0.000 \$655.166 \$(\$350.664) \$(\$204.884) \$(\$449.782) \$0.000 \$655.166 \$1014.320 \$356.153 2042 \$0.000 \$0.000 \$0.000 \$6673.305 \$363.138) \$208.572) \$462.286) \$0.000 \$0.000 \$673.305 \$1,033.996 \$360.691														\$75.339
2039 \$0.000 \$0.000 \$0.000 \$344.001 \$197.702 \$411.719 \$0.000 \$0.000 \$631.338 \$953.423 \$322.085 2040 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$645.191 \$977.014 \$331.822 2041 \$0.000 \$0.000 \$0.000 \$655.166 \$356.644 \$204.884 \$449.792 \$0.000 \$0.000 \$655.166 \$1,013.29 \$36.153 2042 \$0.000 \$0.000 \$0.000 \$673.305 \$361.338 \$208.572 \$449.792 \$0.000 \$0.000 \$6573.305 \$1,013.399 \$360.691			\$0.000		(\$604.588)									\$127.362
2040 \$0.000 \$0.000 \$0.000 \$(\$45.191) \$(\$350.266) \$(\$201.261) \$(\$425.487) \$0.000 \$0.000 \$645.191 \$977.014 \$331.822 2041 \$0.000 \$0.000 \$0.000 \$655.166 \$(\$356.644) \$(\$204.884) \$(\$49.792) \$0.000 \$655.166 \$1,011.320 \$356.153 2042 \$0.000 \$0.000 \$673.305 \$(\$363.138) \$(\$208.572) \$(\$462.286) \$0.000 \$673.305 \$1,033.996 \$360.691														\$177.810
2041 \$0.000 \$0.000 \$0.000 \$655.166 \$356.644 \$204.884 \$449.792 \$0.000 \$0.000 \$655.166 \$1,011.320 \$356.153 2042 \$0.000 \$0.000 \$0.000 \$673.305 \$363.138 \$208.572 \$462.286 \$0.000 \$673.305 \$1,033.996 \$360.691														\$226.504
2042 \$0.000 \$0.000 \$0.000 (\$673.305) (\$363.138) (\$208.572) (\$462.286) \$0.000 \$0.000 \$673.305 \$1,033.996 \$360.691														\$273.019
														\$319.311
2043 \$0.000 \$0.000 \$0.000 (\$687.028) (\$369.681) (\$212.326) (\$482.087) \$0.000 \$0.000 \$687.028 \$1,064.095 \$377.066														\$362.780
	2043	\$0.000	\$0.000	\$0.000	(\$687.028)	(\$369.681)	(\$212.326)	(\$482.087)	\$0.000	\$0.000	\$687.028	\$1,064.095	\$377.066	\$404.915
Nominal \$592.500 \$592.500 (\$12,685.364) (\$4,117.887) (\$7,379.336) \$13,870.364 \$17,972.685 \$4,102.321 NPV \$373.729 \$373.729 (\$3,564.944) (\$1,615.294) (\$1,181.042) (\$1,920.982) \$0.000 \$4,312.403 \$4,717.317 \$404.915 Discount Rate = 7.85%	NPV		\$373.729						\$0.000	\$0.000				
Benefit/Cost Ratio = 1.09	Benefit	/Cost Ratio =	1.09											



PSC Form CE 1.1

Page 1 of 1
Run Date: 18-Feb-15
11:24 AM

Filename: Comm. Reflective Roof

INPUT DATA -- PART 1

(1) Change in Peak kW Customer at meter 0.00 kW/Cus (2) Change in Peak kW per Customer at generator 0.00 kW Gen/Cus (3) kW Line Loss Percentage 7.12% (4) Change in KWh per Customer at generator (2) kWh/Cus/Yr (5) kWh Line Loss Percentage 5.32% (6) Group Line Loss Multiplier 1.0015 (7) Annual Change in Customer kWh at Meter (2) kWh/Cus/Yr * (8) Change in Winter kW per Cust at meter 0.00 kW/Cus II. Economic Life and K-Factors 30 Years (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs \$0.10 \$/Cus (1) Utility Nonrecurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer Tax Credit Escalation Rate	I. Program Demand Impacts and Line Losses		
(2) Change in Peak kW per Customer at generator 0.00 kW Gen/Cus (3) kW Line Loss Percentage 7.12% (4) Change in KWh per Customer at generator (2) kWh/Cus/Yr (5) kWh Line Loss Percentage 5.32% (6) Group Line Loss Multiplier 1.0015 (7) Annual Change in Customer kWh at Meter (2) kWh/Cus/Yr * (8) Change in Winter kW per Cust at meter 0.00 kW/Cus II. Economic Life and K-Factors 30 Years (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs \$0.10 \$/Cus (1) Utility Nonrecurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Recurring Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost		0.00	kW/Cus
(4) Change in KWh per Customer at generator (2) kWh/Cus/Yr (5) kWh Line Loss Percentage 5.32% (6) Group Line Loss Multiplier 1.0015 (7) Annual Change in Customer kWh at Meter (2) kWh/Cus/Yr * (8) Change in Winter kW per Cust at meter 0.00 kW/Cus II. Economic Life and K-Factors (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus/Year (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer Tax Credit Escalation Rate 1.80% * (8) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Ye		0.00	kW Gen/Cus
1. 1. 1. 1. 1. 1. 1. 1.	(3) kW Line Loss Percentage	7.12%	
(6) Group Line Loss Multiplier 1.0015 (7) Annual Change in Customer kWh at Meter (2) kWh/Cus/Yr * (8) Change in Winter kW per Cust at meter 0.00 kW/Cus II. Economic Life and K-Factors (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%	(4) Change in KWh per Customer at generator	(2)	kWh/Cus/Yr
II. Economic Life and K-Factors (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 (6) Switch: Rev Req (0) or Val-of-Def (1) 1	(5) kWh Line Loss Percentage	5.32%	
II. Economic Life and K-Factors (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost Scalation Rate 1.80% (8) Customer Tax Credit Per Installation \$0.00 \$/Cus/Year (9) Customer Tax Credit Escalation Rate 1.80% (10) Change in Supply Costs \$0.00 \$/Cus/Year (11) Supply Costs \$0.00	(6) Group Line Loss Multiplier	1.0015	
II. Economic Life and K-Factors (1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Recurring Cost Per Customer \$1.36 \$/Cus (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost \$1.36 \$/Cus (6) Customer Equipment Cost \$0.00 \$/Cus/Year (7) Customer O&M Cost \$1.80% (8) Customer Tax Credit Per Installation \$0.00 \$/Cus \$1.80% (9) Customer Tax Credit Escalation Rate 1.80% \$1	(7) Annual Change in Customer kWh at Meter	(2)	kWh/Cus/Yr
(1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs 1 (1) Utility Nonrecurring Cost Per Customer \$0.00 \$/Cus/Year (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer O&M Cost Escalation Rate 1.80% * (8) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%		0.00	kW/Cus
(1) DSM Program Study Period 30 Years (2) Economic Life of Incremental Generation 40 Years (3) Economic Life of Incremental T&D 35 Years (4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.00 \$/Cus/Year (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer O&M Cost Escalation Rate 1.80% * (8) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%			
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3 Economic Life of Incremental T&D 35 Years	(1) DSM Program Study Period	30	Years
(4) K-Factor for Generation 1.4331 (5) K-Factor for T&D 1.4298 * (6) Switch: Rev Req (0) or Val-of-Def (1) 1 III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer O&M Cost Escalation Rate 1.80% * (8) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%			
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* (6) Switch: Rev Req (0) or Val-of-Def (1)	(4) K-Factor for Generation	1.4331	
III. Utility & Customer Costs (1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus	(5) K-Factor for T&D	1.4298	
(1) Utility Nonrecurring Cost Per Customer \$0.10 \$/Cus (2) Utility Recurring Cost Per Customer \$0.00 \$/Cus/Year (3) Utility Cost Escalation Rate 0.00% (4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer O&M Cost Escalation Rate 1.80% * (8) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%	* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	
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(4) Customer Equipment Cost \$1.36 \$/Cus (5) Customer Equipment Cost Escalation Rate 0.00% (6) Customer O&M Cost \$0.00 \$/Cus/Year (7) Customer O&M Cost Escalation Rate 1.80% * (8) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%			\$/Cus/Year
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* (8) Customer Tax Credit Per Installation \$0.00 \$/Cus * (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%		<u>\$</u> 0.0 <u>0</u>	\$/Cus/Year
* (9) Customer Tax Credit Escalation Rate 1.80% * (10) Change in Supply Costs \$0.00 \$/Cus/Year * (11) Supply Costs Escalation Rate 1.80%		1 <u>.80</u> %	
* (10) Change in Supply Costs	* (8) Customer Tax Credit Per Installation	<u>\$</u> 0.0 <u>0</u>	\$/Cus
* (11) Supply Costs Escalation Rate 1.80%	* (9) Customer Tax Credit Escalation Rate	1 <u>.80</u> %	
	* (10) Change in Supply Costs	\$0.00	\$/Cus/Year
	* (11) Supply Costs Escalation Rate	1.80%	
* (12) Utility Discount Rate 7.85%	* (12) Utility Discount Rate	7.85%	
* (13) Utility AFUDC Rate 6.26%	* (13) Utility AFUDC Rate	6.26%	
* (14) Utility Nonrecurring Rebate/Incentive \$0.10 \$/Cus	* (14) Utility Nonrecurring Rebate/Incentive	\$0.10	\$/Cus
* (15) Utility Recurring Rebate/Incentive \$0.00 \$/Cus/Year	* (15) Utility Recurring Rebate/Incentive	\$0.00	\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate 0.00%	* (16) Utility Rebate/Incentive Escalation Rate	0.00%	

IV. Incremental Generation, Transmission, & Distrib	oution Costs
(1) Base Year	2014
(2) In-Service Year For Incremental Generation	2023 **
(3) In-Service Year For Incremental T & D	2015
(4) Base Year Incremental Generation Cost	\$851.95 \$/kW
(5) Base Year Incremental Transmission Cost	\$302.35_\$/kW
(6) Base Year Incremental Distribution Cost	\$154.39 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	1.80%_
(8) Generator Fixed O & M Cost	\$17.89 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	<u>1.9</u> 6%_
(10) Transmission Fixed O & M Cost	\$6. <u>68</u> \$/kW/Yr
(11) Distribution Fixed O & M Cost	<u>\$4.</u> 74_\$/kW/Yr
(12) T&D_Fixed O&M Escalation Rate	1.8 <u>0%</u>
(13) Incremental Gen Variable O & M Costs	\$ <u>0.0</u> 00_\$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	0.0 <u>0%</u>
(1 <u>5)</u> Incremental Gen Capacity Factor	9.4 <u>3%</u>
(16) Incremental Generating Unit Fuel Cost	\$0 <u>.03</u> 64_\$/kWh
(1 <u>7) Incremental Gen Unit Fuel Esc_Rate</u>	5.1 <u>2%</u>
(18) Incremental Purchased Capacity Cost	\$0.47_\$/KW/YR
(19) Incremental Capacity Cost Esc Rate	<u>2</u> 1.6 <u>1%</u>
Stop Revenue Loss at In-Service Year? (Y=1, N=0)	0
V. (1) Non-Fuel Cost In Customer Bill (Base Year)	
(1) Non-Fuel Cost In Customer Bill (Base Year)	\$0 <u>.03</u> 63_\$/kWh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$6 <u>.39</u> 00_\$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5)Average Annual Change in Monthly Billing kW	0. <u>00</u> 067_kW/Mo.

	This Analysis	This	for	Results	Summarv
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	<u>TRC</u>	Participants'	RIM
NPV Benefits(\$000s)	\$19,374	\$18,312	\$19,374
NPV Costs (\$000s)	\$8,462	\$7,883	\$18,892
NPV Net Benefits (\$000s)	\$10,912	\$10,429	\$483
Benefit:Cost Ratio	2.290	2.323	1.026



^{*} Supplemental information.

^{**} The relevant avoidable generation unit is a combined cycle unit.

Total Resource Cost-Effectiveness Measure

								da Administrativo				
1	2	3	4	5	6	7	8	9	10	11	12	13
	Change in					Incremental	Incremental	Incremental			Total	Cumulative
	Electric	Utility's	Participants'	Other	Other	Generation	T&D	Prog Induced	Total	Total	Net	Discounted
	Supply Costs	Program Costs	Program Costs	Costs	Benefits	Cap Costs	Cap Costs	Fuel Costs	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$80	\$1,088	\$0	\$0	\$0	(\$38)	(\$57)	\$1,168	\$95	(\$1,073)	(\$995)
2016	\$0	\$80	\$1,088	\$0	\$0	\$0	(\$77)	(\$128)	\$1,168	\$206	(\$962)	(\$1,822)
2017	\$0	\$80	\$1,088	\$0	\$0	\$0	(\$118)	(\$211)	\$1,168	\$329	(\$839)	(\$2,491)
2018	\$0	\$80	\$1,088	\$0	\$0	\$0	(\$160)	(\$293)	\$1,168	\$453	(\$715)	(\$3,019)
2019	\$0	\$80	\$1,088	\$0	\$0	\$0	(\$204)	(\$387)	\$1,168	\$591	(\$577)	(\$3,415)
2020	\$0	\$85	\$1,156	\$0	\$0	\$0	(\$252)	(\$497)	\$1,241	\$749	(\$492)	(\$3,728)
2021	\$0	\$90	\$1,224	\$0	\$0	\$0	(\$304)	(\$629)	\$1,314	\$934	(\$380)	(\$3,952)
2022	\$0	\$95	\$1,292	\$0	\$0	\$0	(\$361)	(\$779)	\$1,387	\$1,139	(\$248)	(\$4,087)
2023	\$0	\$100	\$1,360	\$0	\$0	(\$730)	(\$422)	(\$957)	\$1,460	\$2,109	\$649	(\$3,758)
2024	\$0	\$105	\$1,428	\$0	\$0	(\$844)	(\$488)	(\$1,092)	\$1,533	\$2,424	\$891	(\$3,340)
2025	\$0	\$0	\$0	\$0	\$0	(\$860)	(\$497)	(\$1,143)	\$0	\$2,499	\$2,499	(\$2,252)
2026	\$0	\$0	\$0	\$0	\$0	(\$876)	(\$506)	(\$1,191)	\$0	\$2,572	\$2,572	(\$1,213)
2027	\$0	\$0	\$0	\$0	\$0	(\$892)	(\$515)	(\$1,246)	\$0	\$2,652	\$2,652	(\$220)
2028	\$0	\$0	\$0	\$0	\$0	(\$908)	(\$524)	(\$1,321)	\$0	\$2,754	\$2,754	\$736
2029	\$0	\$0	\$0	\$0	\$0	(\$925)	(\$534)	(\$1,372)	\$0	\$2,830	\$2,830	\$1,647
2030	\$0	\$0	\$0	\$0	\$0	(\$942)	(\$543)	(\$1,443)	\$0	\$2,928	\$2,928	\$2,521
2031	\$0	\$0	\$0	\$0	\$0	(\$959)	(\$553)	(\$1,502)	\$0	\$3,014	\$3,014	\$3,355
2032	\$0	\$0	\$0	\$0	\$0	(\$977)	(\$563)	(\$1,563)	\$0	\$3,103	\$3,103	\$4,152
2033	\$0	\$0	\$0	\$0	\$0	(\$995)	(\$573)	(\$1,643)	\$0	\$3,211	\$3,211	\$4,916
2034	\$0	\$0	\$0	\$0	\$0	(\$1,013)	(\$583)	(\$1,724)	\$0	\$3,320	\$3,320	\$5,648
2035	\$0	\$0	\$0	\$0	\$0	(\$1,032)	(\$594)	(\$1,786)	\$0	\$3,412	\$3,412	\$6,346
2036	\$0	\$0	\$0	\$0	\$0	(\$1,051)	(\$605)	(\$1,859)	\$0	\$3,515	\$3,515	\$7,013
2037	\$0	\$0	\$0	\$0	\$0	(\$1,071)	(\$616)	(\$1,925)	\$0	\$3,611	\$3,611	\$7,648
2037	\$0	\$0	\$0	\$0	\$0 \$0				\$0	\$3,720	\$3,720	\$8,254
2039	\$0	\$0	\$0 \$0	\$0	\$0 \$0	(\$1,090) (\$1,110)	(\$627) (\$638)	(\$2,003) (\$2,097)	\$0	\$3,845	\$3,845	\$8,835
			\$0 \$0									
2040	\$0	\$0		\$0	\$0	(\$1,130)	(\$649)	(\$2,167)	\$0	\$3,947	\$3,947	\$9,389
2041	\$0	\$0 \$0	\$0	\$0	\$0	(\$1,151)	(\$661)	(\$2,291)	\$0	\$4,103	\$4,103	\$9,922
2042 2043	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$1,172) (\$1,193)	(\$673) (\$685)	(\$2,355) (\$2,456)	\$0 \$0	\$4,199 \$4,333	\$4,199 \$4,333	\$10,428 \$10,912
2043	ΨΟ	ΨΟ	φυ	ΨΟ	ΨΟ	(ψ1,193)	(4003)	(\$2,430)	Ψ	ψ4,333	ψ4,555	φ10,512
Nominal NPV		\$875 \$579.596	\$11,900 \$7,882.512	\$0.000	\$0.000	(\$20,919) (\$5,225.098)	(\$13,563) (\$4,003.188)	(\$38,116) (\$10,146.121)	\$12,775 \$8,462.109	\$72,599 \$19,374.407	\$59,824 \$10,912.298	
	ount Rate =	7.85%	ψ1,002.012	ψυ.υυυ	ψ0.000	(ψο,220.030)	(ψπ,000.100)	(ψ10, 170.121)	ψ0, 1 02. 103	₩ 10,01 T.TUI	ψ10,012.200	
	it/Cost Ratio =	2.29										
Dener	IVOUSI RAIIU =	2.29	l									



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Filename: Comm. Reflective Roof

Participants' Cost-Effectiveness Measure

11	2	3	4	5	6	7	8	9	10	11	12
				<u> </u>	Change in	<u></u>	Utility Paid			Total	Cumulative
	Customer	Customer	Other	Other	Participants'	Tax	Rebates &	Total	Total	Net	Discounted
	Equip Costs	O&M Costs	Costs	Benefits	Electric Bills	Credits	Incentives	Costs	Benefits	Benefits	Net Benefits
Year	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)	(\$000s)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$1,088	\$0	\$0	\$0	(\$158)	\$0	\$80	\$1,088	\$238	(\$850)	(\$789
2016	\$1,088	\$0	\$0	\$0	(\$320)	\$0	\$80	\$1,088	\$400	(\$688)	(\$1,380
2017	\$1,088	\$0	\$0	\$0	(\$485)	\$0	\$80	\$1,088	\$565	(\$523)	(\$1,797
2018	\$1,088	\$0	\$0	\$0	(\$667)	\$0	\$80	\$1,088	\$747	(\$341)	(\$2,050
2019	\$1,088	\$0	\$0	\$0	(\$861)	\$0	\$80	\$1,088	\$941	(\$147)	(\$2,150
2020 2021	\$1,156 \$1,224	\$0 \$0	\$0 \$0	\$0 \$0	(\$1,075)	\$0 \$0	\$85 \$90	\$1,156	\$1,160 \$1,389	\$4 \$165	(\$2,148 (\$2,051
2021	\$1,224 \$1,292	\$0 \$0	\$0 \$0		(\$1,299) (\$1,531)		\$95	\$1,224 \$1,292	\$1,369 \$1,626	\$334	(\$2,051 (\$1,868)
2022	\$1,292 \$1,360	\$0 \$0	\$0 \$0	\$0 \$0		\$0 \$0	\$95 \$100	\$1,292 \$1,360	\$1,626 \$1,907	\$334 \$547	(\$1,868 (\$1,591
		\$0 \$0	\$0 \$0	\$0 \$0	(\$1,807)	\$0 \$0	\$100 \$105			\$547 \$776	
2024 2025	\$1,428	\$0 \$0	\$0 \$0	\$0 \$0	(\$2,099) (\$2,140)	\$0 \$0	\$105	\$1,428 \$0	\$2,204 \$2,140	\$2,140	(\$1,226 (\$295
2025	\$0										\$595
2026	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$2,202) (\$2,256)	\$0 \$0	\$0 \$0	\$0 \$0	\$2,202 \$2,256	\$2,202 \$2,256	\$1,439
2027	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	(\$2,256)	\$0 \$0	\$0 \$0	\$0 \$0	\$2,256 \$2,310	\$2,250	\$2,241
2029	\$0 \$0	\$0	\$0	\$0	(\$2,372)	\$0	\$0	\$0	\$2,372	\$2,372	\$3,005
2029	\$0 \$0	\$0 \$0	\$0	\$0 \$0	(\$2,434)	\$0 \$0	\$0	\$0	\$2,434	\$2,372	\$3,731
2031	\$0 \$0	\$0	\$0	\$0	(\$2,503)	\$0	\$0	\$0	\$2,503	\$2,503	\$4,424
2032	\$0	\$0	\$0	\$0	(\$2,557)	\$0	\$0	\$0	\$2,557	\$2,557	\$5,080
2033	\$0	\$0	\$0	\$0	(\$2,628)	\$0	\$0	\$0	\$2,628	\$2,628	\$5,705
2034	\$0	\$0	\$0	\$0	(\$2,694)	\$0	\$0	\$0	\$2,694	\$2,694	\$6,300
2035	\$0	\$0	\$0	\$0	(\$2,751)	\$0	\$0	\$0	\$2,751	\$2,751	\$6,862
2036	\$0	\$0	\$0	\$0	(\$2,821)	\$0	\$0	\$0	\$2,821	\$2,821	\$7,397
2037	\$0	\$0	\$0	\$0	(\$2,882)	\$0	\$0	\$0	\$2,882	\$2,882	\$7,904
2038	\$0	\$0	\$0	\$0	(\$2,936)	\$0	\$0	\$0	\$2,936	\$2,936	\$8,383
2039	\$0	\$0	\$0	\$0	(\$3,011)	\$0	\$0	\$0	\$3,011	\$3,011	\$8,838
2040	\$0	\$0	\$0	\$0	(\$3,078)	\$0	\$0	\$0	\$3,078	\$3,078	\$9,269
2041	\$0	\$0	\$0	\$0	(\$3,125)	\$0	\$0	\$0	\$3,125	\$3,125	\$9,676
2042	\$0	\$0	\$0	\$0	(\$3,214)	\$0	\$0	\$0	\$3,214	\$3,214	\$10,063
2043	\$0	\$0	\$0	\$0	(\$3,280)	\$0	\$0	\$0	\$3,280	\$3,280	\$10,429
Nominal NPV Discou	\$11,900 \$7,309 Int Rate =	\$0 7.85%	\$0	\$0	(\$61,494) (\$17,732)	\$0	\$875 \$580	\$11,900 \$7,882.512	\$62,369 \$18,311.918	\$50,469 \$10,429	
	Cost Ratio =	2.32									

Ratepayers' Impact Cost-Effectiveness Measure

2029 \$0.000 \$0.000 \$0.000 \$0.000 \$(\$2.372.019) \$(\$924.788) \$(\$53.5657) \$(\$1.371.887) \$0.000 \$0.000 \$2.372.019 \$2.830.822 \$458.263 \$(\$1.357.887) \$2.000 \$0.000 \$0.000 \$2.000 \$0.000 \$2.434.035 \$2.928.496 \$458.461 \$12.09.88 \$2.001 \$0.000	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Supply Costs Costs Incoming Costs Co														
Part 19000														
2014 50.00 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0000 \$0.0														
2016 \$ 0,000 \$ 80,000														
2016 50.000 \$8														
2017 \$0,000 \$8														
2019 \$0,000 \$8														
2029 \$0.000 \$8														
2020 \$0.000 \$85.000 \$85.000 \$85.000 \$85.000 \$1.24.721 \$1.90.000 \$1.24.721 \$1.90.000 \$1.24.721 \$1.90.000 \$1.24.64 \$1.778.85 \$1.90.000 \$1.24.721 \$1.90.000 \$1.24.721 \$1.90.000 \$1.24.80 \$1.90.0					,									
2021 \$0,000 \$90,000 \$10,000 \$10,000 \$1,000 \$														
2022 \$0,000 \$50,000 \$105,000 \$115,31333 \$0,000 \$85,000 \$115,31333 \$1,133,370 \$15,31333 \$1,133,370 \$15,31333 \$1,133,370 \$15,31333 \$1,133,370 \$15,31333 \$1,133,370 \$15,31333 \$1,133,370 \$15,31333 \$1,133,370 \$15,313,313 \$10,255 \$12,413,313 \$10,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000 \$2,139,814 \$115,249 \$115,249 \$115,249 \$15,314,313 \$1,133,313 \$1,133,313 \$1,133,310 \$1,132,314 \$115,249 \$15,134,313 \$1,133,313 \$1,133,310 \$1,132,314														
2024 \$0,000 \$100,000 \$100,000 \$100,000 \$100,000 \$2,085,085,000 \$242,041 48 \$115,249 \$22,115,520 \$2025 \$0,000 \$0,000 \$50,000 \$2,0														
2024 \$0.000 \$105.000 \$105.000 \$105.000 \$2,089.900 \$2,484.827 \$4,848.169 \$3,147.876 \$0.000 \$0.000 \$2,309.900 \$2,248.488 \$115.449 \$2,135.252 \$2,652.241 \$3,165.947 \$3,														
2026 S 0,000														
2026 \$0.000 \$0.000 \$0.000 \$2.201.743 \$875.574 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$550.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$550.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$555.8471 \$550.000 \$5.000 \$5.0000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.2000 \$5.0000 \$5.0000 \$5.2000 \$5.0000 \$5.0000 \$5.0000 \$5.0000 \$5.0000 \$5.0000 \$5.0000 \$5.2000 \$5.0000 \$5.0000 \$5.2000 \$5.0000 \$5														
2027 \$0,000 \$0,000 \$0,000 \$0,000 \$2,256,251] \$(\$891,884) \$(\$514,952) \$(\$1,246,647) \$0,000 \$0,000 \$2,256,251] \$2,652,283 \$398,022 \$(\$1,699,05) \$2028 \$0,000 \$0,000 \$0,000 \$2,372,019] \$(\$324,768) \$(\$533,657) \$(\$1,371,657) \$0,000 \$0,000 \$2,372,019] \$2,830,282 \$458,283 \$(\$1,357,47) \$2039 \$0,000 \$0,000 \$0,000 \$2,372,019] \$2,830,282 \$458,283 \$(\$1,357,47) \$2030 \$0,000 \$0,000 \$0,000 \$2,372,019] \$2,830,282 \$458,283 \$(\$1,357,47) \$2030 \$0,000 \$0,000 \$0,000 \$2,570,019] \$2,830,282 \$458,283 \$(\$1,357,47) \$2030 \$0,000														
2028 \$0,000 \$0,000 \$0,000 \$0,000 \$(\$2,309.900) \$(\$308.080) \$(\$523.221) \$(\$524.221) \$(\$51.244.3)\$ \$0,000 \$0,000 \$2,309.900 \$2,753.744 \$44.384.4 \$(\$1.594.87)\$ 2029 \$0,000 \$0,000 \$0,000 \$0,000 \$2,000 \$2,244.035) \$(\$941.826) \$(\$543.263) \$(\$1.444.407) \$0,000 \$0,000 \$2,434.035 \$2,928.496 \$494.461 \$(\$1.208.89.80)\$ 2020 \$0,000 \$0,000 \$0,000 \$0,000 \$2,567.032 \$(\$941.826) \$(\$562.996) \$(\$1.668.87) \$0,000 \$0,000 \$2,567.032 \$3,103.124 \$546.092 \$(\$828.30)\$ 2033 \$0,000 \$0,000 \$0,000 \$0,000 \$2,567.032 \$(\$976.867) \$(\$562.996) \$(\$1.668.87) \$0,000 \$0,000 \$2,567.032 \$3,103.124 \$546.092 \$(\$828.30)\$ 2034 \$0,000 \$0,000 \$0,000 \$0,000 \$2,567.032 \$(\$976.867) \$(\$562.996) \$(\$1.668.871) \$0,000 \$0,000 \$2,567.032 \$3,103.124 \$546.092 \$(\$828.30)\$ 2034 \$0,000 \$0,000 \$0,000 \$0,000 \$2,567.032 \$(\$1.444.0) \$(\$94.444) \$(\$654.444) \$(\$94.444) \$(\$654.444) \$(\$94.444) \$(\$654.444) \$(\$94.444) \$(\$654.444) \$(\$94.444) \$(\$654.444) \$(\$94.4														
2029 \$0.000 \$0.000 \$0.000 \$0.000 \$(\$2.372.019) \$(\$924.788) \$(\$53.5657) \$(\$1.371.887) \$0.000 \$0.000 \$2.372.019 \$2.830.822 \$458.263 \$(\$1.357.887) \$2.000 \$0.000 \$0.000 \$2.000 \$0.000 \$2.434.035 \$2.928.496 \$458.461 \$12.09.88 \$2.001 \$0.000														(\$1,504.979)
2030 \$0,000 \$0,000 \$0,000 \$2,444,035 \$344,461 \$120,884 \$120,8														(\$1,357.470)
2031 \$0,000 \$0,000 \$0,000 \$0,000 \$2,000 \$2,000 \$2,000 \$2,000 \$0,000 \$2,0	2030	\$0.000	\$0.000	\$0.000						\$0.000	\$2,434,035			(\$1,209.894)
2032 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$0,000 \$2,657,032 \$3,103,124 \$546,092 \$(\$928.30) 2033 \$0,000 \$0,000 \$0,000 \$0,000 \$2,6694.373 \$(\$1,013.363) \$(\$873.130) \$(\$1,64.450) \$0,000 \$2,000 \$2,669.473 \$3,320.433 \$562.600 \$(\$861.47) 2035 \$0,000 \$0,000 \$0,000 \$0,000 \$2,694.373 \$1,013.363 \$(\$863.447) \$1,723.624) \$0,000 \$0,000 \$2,694.373 \$3,320.433 \$562.600 \$(\$861.47) 2036 \$0,000 \$0,000 \$0,000 \$0,000 \$2,2675.528 \$(\$1,013.363) \$(\$863.447) \$1,723.624) \$0,000 \$0,000 \$2,2675.528 \$3,414.94 \$586.602 \$(\$861.47) 2036 \$0,000 \$0,000 \$0,000 \$2,2675.528 \$(\$1,013.464) \$(\$804.640) \$(\$1,858.815) \$0,000 \$0,000 \$2,267.052 \$3,814.918 \$693.887 \$(\$384.58) \$2,000 \$0,000 \$2,000 \$0,000 \$2														(\$1,068.428)
2034 \$0,000 \$0,000 \$0,000 \$0,000 \$2,694.373 \$1,053.383 \$583.491 \$1,785.679 \$0,000 \$0,000 \$2,694.373 \$3,320.433 \$686.660 \$6851.432 \$2035 \$0,000	2032	\$0.000		\$0.000						\$0.000				(\$928.305)
2035 \$0.000 \$0.000 \$0.000 \$2.750.528 \$3.411.966 \$681.438 \$5516.18 \$2036 \$0.000	2033	\$0.000	\$0.000	\$0.000	(\$2,628.414)	(\$994.913)	(\$573.130)	(\$1,643.450)	\$0.000	\$0.000	\$2,628.414	\$3,211.494	\$583.080	(\$789.581)
2036 \$0,000 \$0,000 \$0,000 \$2,821,051 \$3,514.94\$ \$693.867 (\$384.58) \$0,000 \$0,000 \$2,281,733 \$3,616.98\$ \$693.867 (\$384.58) \$2037 \$0,000 \$0,000 \$0,000 \$2,281,733 \$3,616.98\$ \$693.867 (\$2584.68) \$0,000 \$0,000 \$2,281,733 \$3,616.98\$ \$693.867 (\$2584.68) \$0,000 \$0,000 \$2,281,733 \$3,616.98\$ \$782.889 \$1256.40 \$2039 \$0,000 \$0,000 \$0,000 \$2,000 \$2,000 \$0,000 \$2,281,733 \$3,616.98\$ \$783.803 \$122.860 \$2039 \$0,000 \$0,100 \$0,000 \$0,000 \$0,100 \$0,000 \$0,000 \$0,100 \$0,000	2034	\$0.000	\$0.000	\$0.000	(\$2,694.373)	(\$1,013.363)	(\$583.447)	(\$1,723.624)	\$0.000	\$0.000	\$2,694.373	\$3,320.433	\$626.060	(\$651.472)
2037 \$0,000 \$0,000 \$0,000 \$0,000 \$2,881,793 \$1,6070,622 \$615,522 \$1,824,546 \$0,000 \$0,000 \$2,881,793 \$3,610,691 \$728,899 \$328,640 \$2038 \$0,000			\$0.000	\$0.000	(\$2,750.528)	(\$1,032.139)	(\$593.949)	(\$1,785.879)	\$0.000	\$0.000	\$2,750.528	\$3,411.966	\$661.438	(\$516.180)
2038 \$ 0.000 \$	2036	\$0.000	\$0.000	\$0.000	(\$2,821.051)	(\$1,051.464)	(\$604.640)	(\$1,858.815)				\$3,514.918	\$693.867	(\$384.584)
2039 \$0.000 \$0.0	2037	\$0.000	\$0.000	\$0.000	(\$2,881.793)	(\$1,070.622)	(\$615.523)	(\$1,924.546)	\$0.000	\$0.000		\$3,610.691	\$728.899	(\$256.407)
2040 \$0.000 \$0.000 \$0.000 \$0.000 \$3.07.950 \$1.30.124] \$6.49.363] \$(2.167.324) \$0.000 \$0.000 \$3.077.950 \$3.946.811 \$888.861 \$119.277. 2041 \$0.000 \$0.000 \$0.000 \$0.000 \$3.125.079 \$4.102.882 \$977.803 \$246.362 2042 \$0.000 \$0.000 \$0.000 \$0.000 \$3.213.727 \$1.171.653 \$2672.951 \$2.291.127 \$0.000 \$0.000 \$3.213.727 \$4.109.376 \$985.649 \$3.865.15 2043 \$0.000 \$0.000 \$0.000 \$3.213.727 \$1.171.653 \$2672.951 \$2.294.127 \$0.000 \$0.000 \$3.213.727 \$4.199.376 \$985.649 \$3.865.15 2043 \$0.000 \$0.000 \$0.000 \$0.000 \$3.213.727 \$4.199.376 \$985.649 \$3.865.15 2043 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$3.213.727 \$4.199.376 \$985.649 \$3.865.15 2043 \$0.000 \$0.														(\$128.607)
2041 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$3,125.079 \$4,102.882 \$977.803 \$246.36 2042 \$0.000 \$0.000 \$0.000 \$0.000 \$0.000 \$3.213.727 \$4.199.376 \$985.649 \$385.15 2043 \$0.000 \$0.000 \$0.000 \$0.000 \$3.279.818 \$4.333.464 \$1,053.646 \$482.893 Nominal \$875.000 \$875.000 \$875.000 \$875.000 \$875.000 \$875.000 \$61,494.491 \$72,598.813 \$9,354.322 NPV \$579.596 \$875.000 \$875.000 \$877.32.321 \$52.25.098 \$4,102.882 \$977.803 \$246.36 \$20.000 \$0.000														
2042 \$0.000 \$0.0								** *						
2043 \$0.000 \$0.0														
Nominal \$875.000 \$875.000 (\$61,494.491) (\$20,919.342) (\$13,563.218) (\$38,116.253) \$63,244.491 \$72,598.813 \$9,354.322 \$ NPV \$579.596 \$579.596 (\$17,732.321) (\$5,225.098) (\$4,003.188) (\$10,146.121) \$0.000 \$0.000 \$18,891.514 \$19,374.407 \$482.893 \$ Discount Rate = 7.85%														
NPV \$579.596 \$579.596 \$579.596 \$17,732.321 (\$5,225.098) (\$4,003.188) (\$10,146.121) \$0.000 \$0.000 \$18,891.514 \$19,374.407 \$482.893 Discount Rate = 7.85%	2043	\$0.000	\$0.000	\$0.000	(\$3,279.818)	(\$1,192.767)	(\$685.064)	(\$2,455.633)	\$0.000	\$0.000	\$3,279.818	\$4,333.464	\$1,053.646	\$482.893
NPV \$579.596 \$579.596 \$579.596 \$17,732.321 (\$5,225.098) (\$4,003.188) (\$10,146.121) \$0.000 \$0.000 \$18,891.514 \$19,374.407 \$482.893 Discount Rate = 7.85%														
	NPV Disco		\$579.596						\$0.000	\$0.000				

