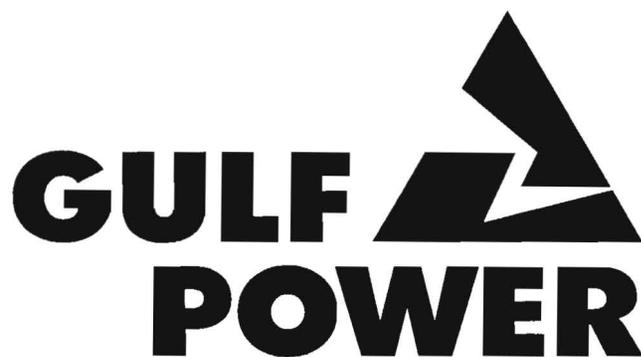


ORIGINAL

2000

*Demand Side  
Management  
Plan*

**Docket No. 991790-EG  
December 29, 1999**



**A SOUTHERN COMPANY**

DOCUMENT NUMBER-DATE

15821 DEC 29 99

FPSC-RECORDS/REPORTING

# INTRODUCTION

The following report contains Gulf Power Company's 1999 Demand Side Management Plan. The report contains five (5) sections as described below.

**SECTION 1:** Section 1 contains an Executive Summary of the programs Gulf Power Company proposes to meet the numerical demand and energy savings set by the Florida Public Service Commission in Order No. PSC-99-1942-FOF-EG. Tables are also included which summarize the demand and energy savings by year for the residential and commercial/industrial markets.

**SECTION 2:** The actual Demand Side Management Plan is contained in Section 2. The section is arranged by market - residential and commercial/industrial. Each program proposed for numeric goal achievement contains a detailed description and, when appropriate, a cost-effectiveness analysis.

**SECTION 3:** Gulf Power Company's effort in the area of solar and other renewable energy sources is contained in Section 3 under Environmental Initiatives. The Environmental Initiatives program contains Gulf Power Company's Solar for Schools, Photovoltaic Rate Rider, In Concert with the Environment, and GoodCents Environmental Home. The Environmental Initiatives endeavor will also incorporate all other Gulf Power Company activities and research regarding solar and other renewable energy sources related to demonstration and/or educational activities.

**SECTION 4:** Gulf Power Company's programs aimed at Affordable Housing Builders and Providers and Low Income Assistance are contained in Section 4. The low-income assistance programs are a continuation of Gulf Power Company's history of providing energy conservation and efficiency information to all customers without discrimination. Included in this portfolio of activities are energy audits, educational programs, and project SHARE. A new initiative is being developed to target affordable housing builder and providers on the economic benefits of energy conservation and how to incorporate energy efficiency into building practices.

**SECTION 5:** The final section provides an overview for Gulf Power Company's research and development efforts, which include the Conservation Demonstration and Development programs. Projects may include research in such areas as: alternative renewable energy sources, new and/or promising energy storage technologies, advanced battery or low emission technologies in transportation, distributed generation, and packaged co-generation.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## TABLE OF CONTENTS

	PAGE
<b>Introduction</b>	i
<b>Table of Contents</b>	ii
<b>Executive Summary</b>	1
<b>Demand Side Management Plan</b>	
<i>Residential</i>	14
GoodCents Select Program	14
Residential Geothermal Heat Pump Program	26
GoodCents Home/Energy Star Program	43
GoodCents Energy Survey Program	46
GoodCents Mail-In Energy Survey Program	49
Duct Leakage Program	53
<i>Commercial/Industrial</i>	66
GoodCents Commercial Buildings Program	66
Commercial Energy Analysis Programs	
Tier 1	83
Tier 2	86
Technical Assistance Audit	89
Real Time Pricing Program	91
Interruptible Service Program	103
Energy Services Program	105
<b>Environmental Initiatives</b>	109
Green Pricing Program	110
Solar for Schools	110
Photovoltaic Rate Rider	112
Other Green Pricing Initiatives	114
In Concert with the Environment Program	115
GoodCents Environmental Home Program	120
<b>Low Income</b>	124
GoodCents Energy Surveys: Tailored Low-Income Pilot Program	124
Project SHARE Program	128
Energy Education – Low Income	128
Affordable Housing Builders and Providers Program	129
<b>Conservation Demonstration and Development</b>	130

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **EXECUTIVE SUMMARY**

Gulf Power Company's 2000 Demand Side Management Plan continues the Company's history of developing and providing programs that focus on delivering customer value on energy purchases. Since 1976 with the implementation of the GoodCents Home, Gulf Power Company has been a leader in promoting and educating its customers on the benefits and rewards of energy efficiency. The GoodCents Home program has not only been successful in Northwest Florida but has been adopted by 270 utilities through the United States, providing clear evidence that selling efficiency to consumers can be done successfully.

The 2000 Demand Side Management Plan provides a portfolio of programs aimed at all segments of the market place. The proposed programs and related goals are aggressive and will employ all phases of the Company's operations. The programs will use all the Company's customer contact mechanisms: personal contact, mailings, advertising, and civic groups. For the first time, the Internet will also be used to inform, educate, promote, and deliver several of the demand side programs.

The 1995 Demand Side Management Plan introduced two innovative pilot programs that emphasized pricing flexibility as a means to increase energy efficiency. Gulf Power Company tested and implemented two pricing arrangements and structures that better reflected the marginal costs associated with providing electric service. The customer was guided by the price signal in making purchase decisions, including demand side and or energy efficiency measures, that more appropriately reflected the scarcity of resources used in producing and supplying electric energy. The Real Time Pricing pilot program was approved as a permanent tariff offering in August 1999. The recurring theme from the pilot related to what real time pricing did for the customer. Customers for the first time, in their words, felt "in control." Real time pricing continues to be an integral part of the commercial and industrial demand side offering. The second program, Residential Advanced Energy Management, has recently gone to market as GoodCents Select.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

With an energetic goal, GoodCents Select is expected to contribute over three quarters of the projected energy and demand savings in the residential segment.

The 2000 Demand Side Management Plan contains existing programs, enhancements to current offerings, and some new programs. In the residential market, the GoodCents Home will continue to be offered and additionally will be complemented with the Energy Star Home Program. In an effort to further enhance the GoodCents Home Program and market it more efficiently and effectively, Gulf Power Company signed a Memorandum of Understanding with the Department of Energy (DOE) and the Environmental Protection Agency (EPA) on December 11, 1998. This agreement provides Gulf Power Company the opportunity to offer the Energy Star Home Program to our builders and customers and correlates the performance of GoodCents homes to the nationally recognized Energy Star efficiency label. Residential energy audits can now be performed electronically. Customers can enter data on their homes and receive an energy analysis electronically with the GoodCents Energy Survey.

In the commercial and industrial markets, customers can mail in a completed a questionnaire and receive and Energy Analysis that includes billing history and energy evaluation recommendations tailored to their responses. The traditional personal energy analysis is also offered. Real time pricing and interruptible service will provide the majority of demand savings in the commercial and industrial markets. In addition, the Energy Services program has been enhanced to induce larger commercial and industrial customers to implement energy efficiency recommendations identified in Technical Assistance Audits.

The 2000 Demand Side Management Plan pulls together all the environmental efforts of Gulf Power Company in the Environmental Initiatives portfolio. The portfolio contains the current programs offered by Gulf Power Company: Solar for Schools, *In Concert With The Environment*®, and the GoodCents Environmental Home. In the area of renewable and “green” energy, Gulf Power Company recently introduced the Photovoltaic Rate Rider. The Photovoltaic Rate Rider is an optional rate for Gulf Power

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

Company customers. Customers may purchase photovoltaic energy in multiple 100-watt blocks. The Green Pricing Program will also investigate other renewable and green energy sources in an effort to develop additional options and products for the customer and the Company.

Gulf Power Company has provided customers benefits through energy conservation programs for many years without discrimination. However, it is recognized that low-income customers may be less likely to participate in particular programs due to a lack of disposable income. The goal of the low-income initiatives is to increase participation in the benefits of energy conservation for this targeted group. One of the most effective means of educating and communicating the value of energy conservation is through the GoodCents Energy Survey. The GoodCents Energy Survey continues to focus on increasing awareness and understanding of factors that influence energy purchases such as a home's thermal envelope, equipment, and lifestyle. In order to better reach a broader customer base, Gulf Power Company will expand its offerings to low-income customers by partnering with Weatherization Assistance Programs (WAPs), and Affordable Housing Providers (AHPs) within Gulf Power Company's service territory. Gulf Power Company plans to increase its GoodCents Energy Survey participation among low-income families and educate homebuilders within the affordable housing sector on energy efficiency and conservation. Gulf Power Company will provide energy survey training to WAPs and AHPs so they may become qualified to conduct Gulf's walk-through and mail-in energy surveys for low-income residential customers.

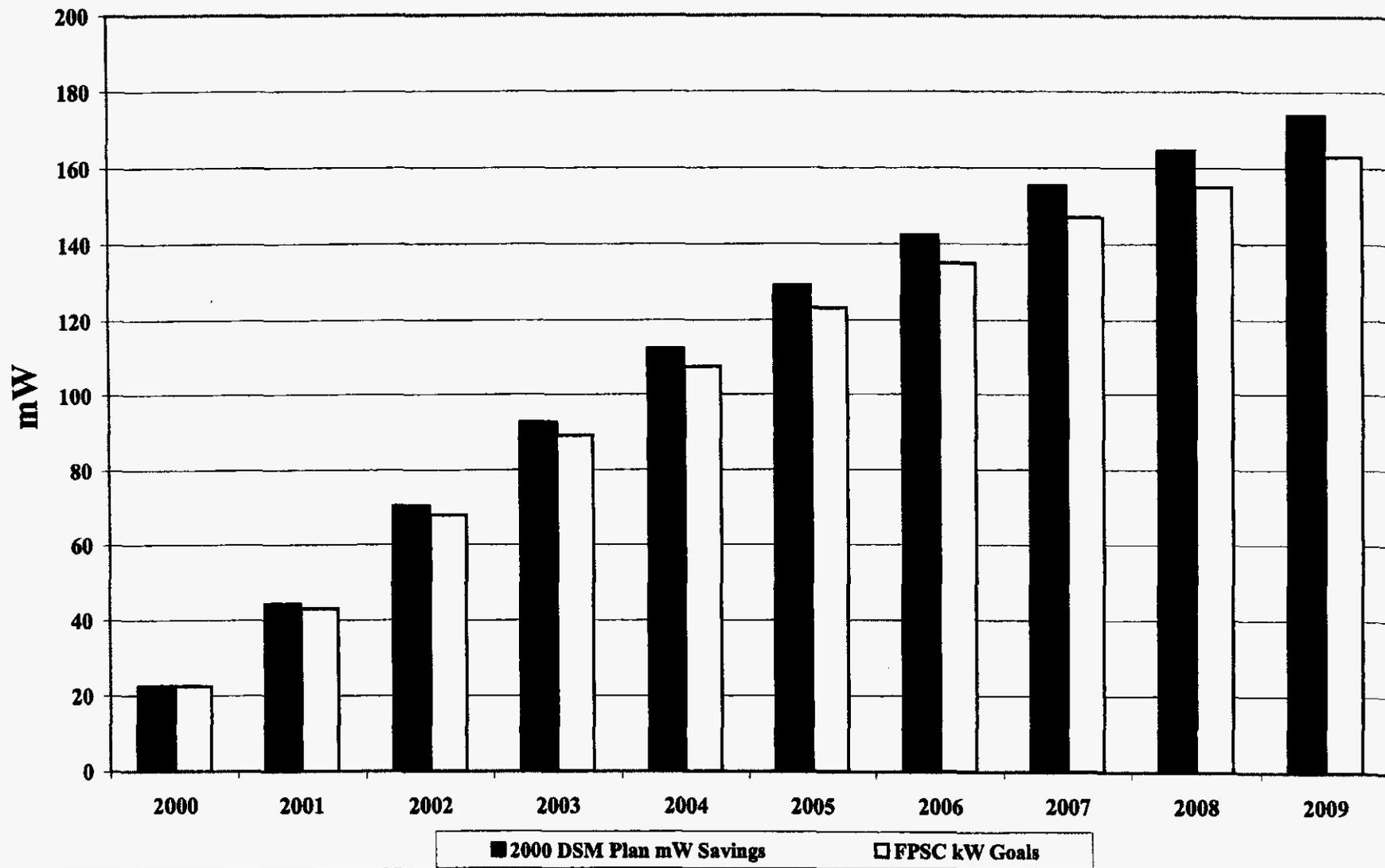
Further, Gulf Power Company plans to identify the affordable housing builders within the service area and encourage them to attend education seminars and workshops related to energy efficient construction, retrofit programs, financing programs, etc., and to participate in the GoodCents Home program. Gulf Power Company will work with the Florida Energy Extension Service and other seminar sponsors to offer a minimum of four seminars and/or workshops per year.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

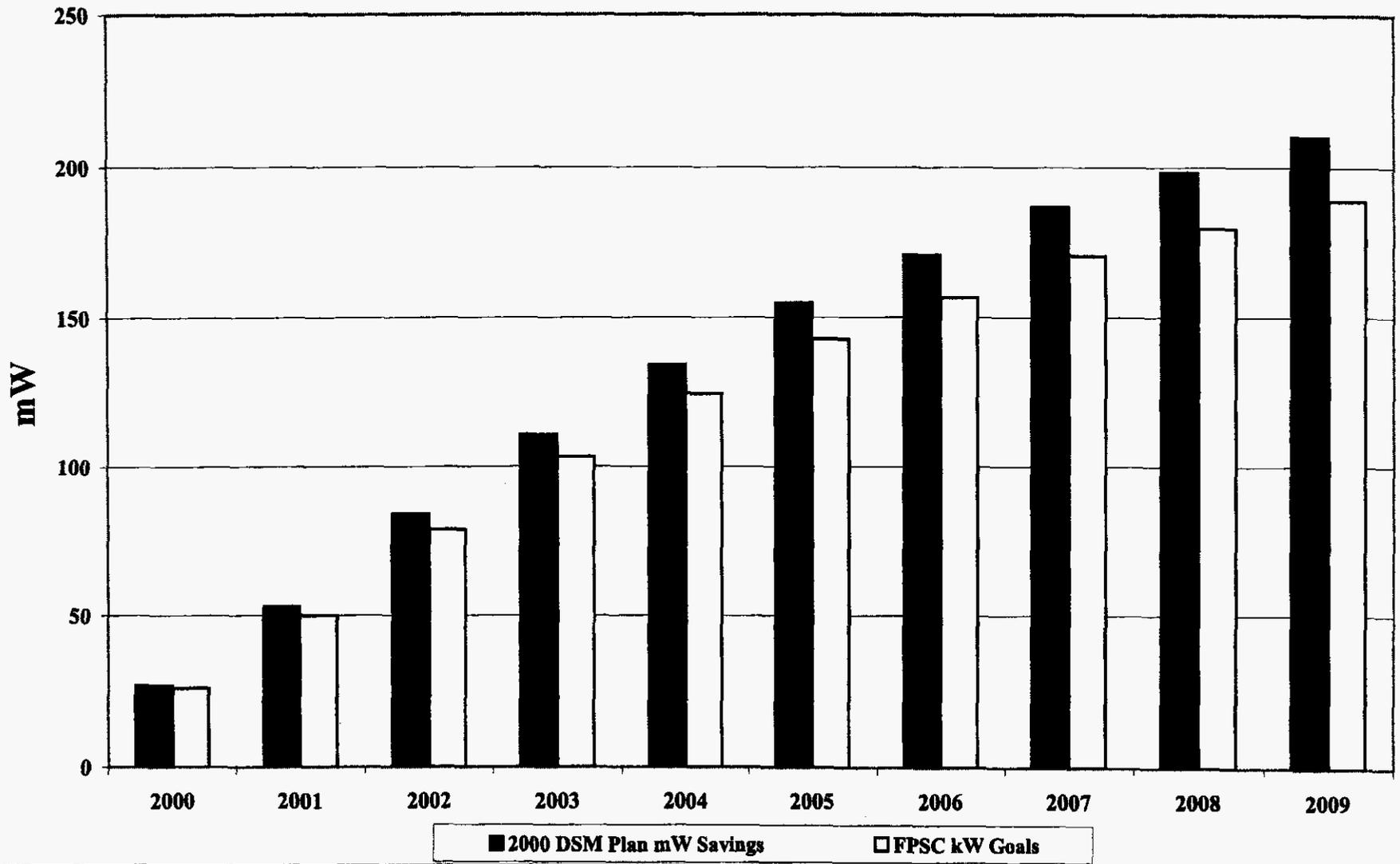
The final section of Gulf Power Company's 2000 Demand Side Management Plan provides a means for the Company to pursue new and leading edge technology in the areas of energy production, distribution, and consumption. The Conservation Demonstration and Development Program includes research into such areas as: alternative renewable energy sources, new and/or promising energy storage technologies, advanced battery or low emission technologies in transportation, distributed generation, and packaged co-generation.

As a whole, Gulf Power Company's 2000 Demand Side Management Plan has been designed to meet and exceed the numeric goals set by the Florida Public Service Commission in Order No. PSC-99-1942-FOF-EG. A summary of the goals by market, residential and commercial/industrial, is provided in the following attached graphs. The graphs show the Commission established numeric goals and Gulf Power Company's planned achievements for the 10 year period of 2000 to 2009.

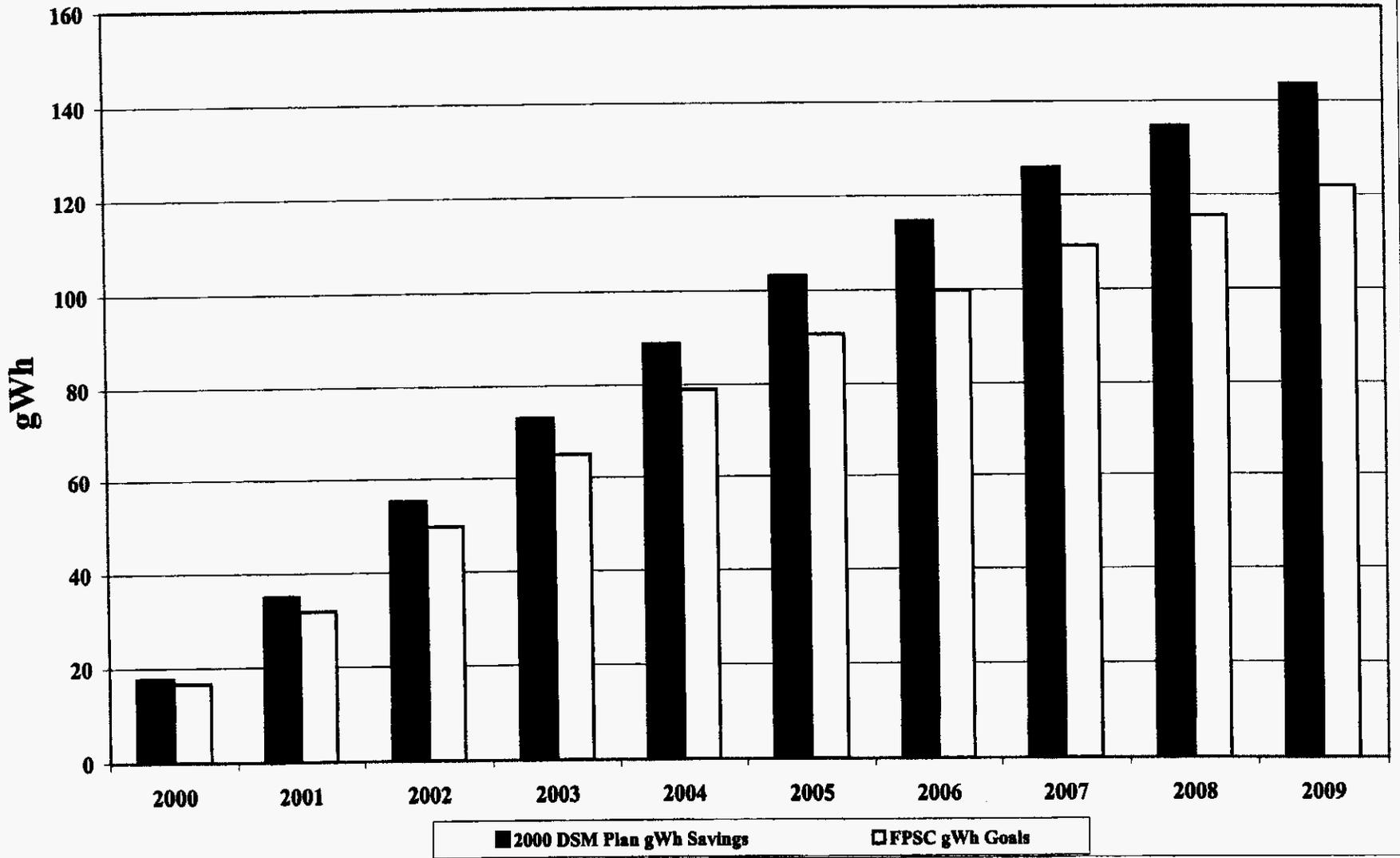
## Gulf Power Company - Residential Market Summer mW: DSM Plan and Goals



### Gulf Power Company - Residential Market Winter mW: DSM Plan and Goals



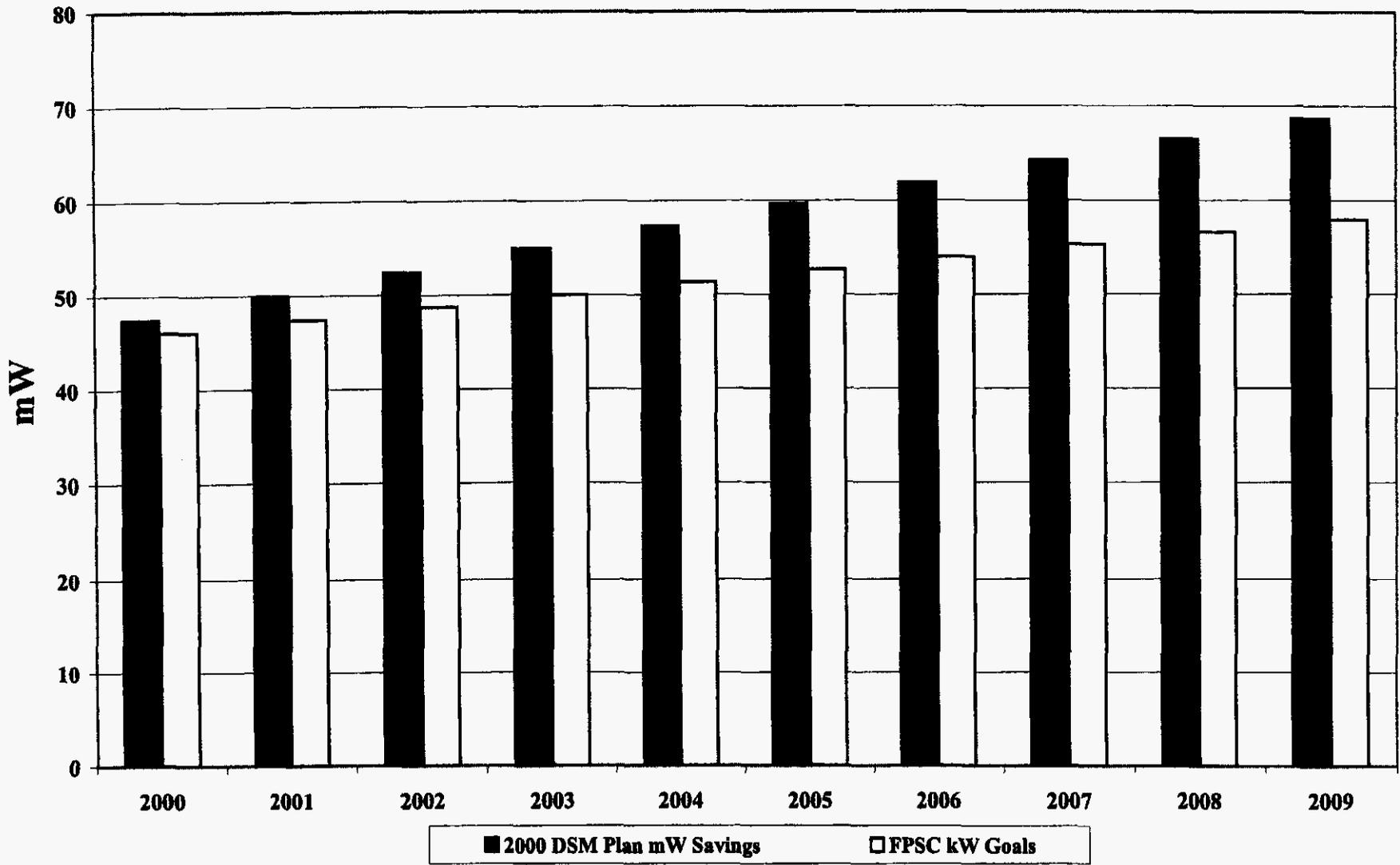
## Gulf Power Company - Residential Market Annual gWh: DSM Plan and Goals



7

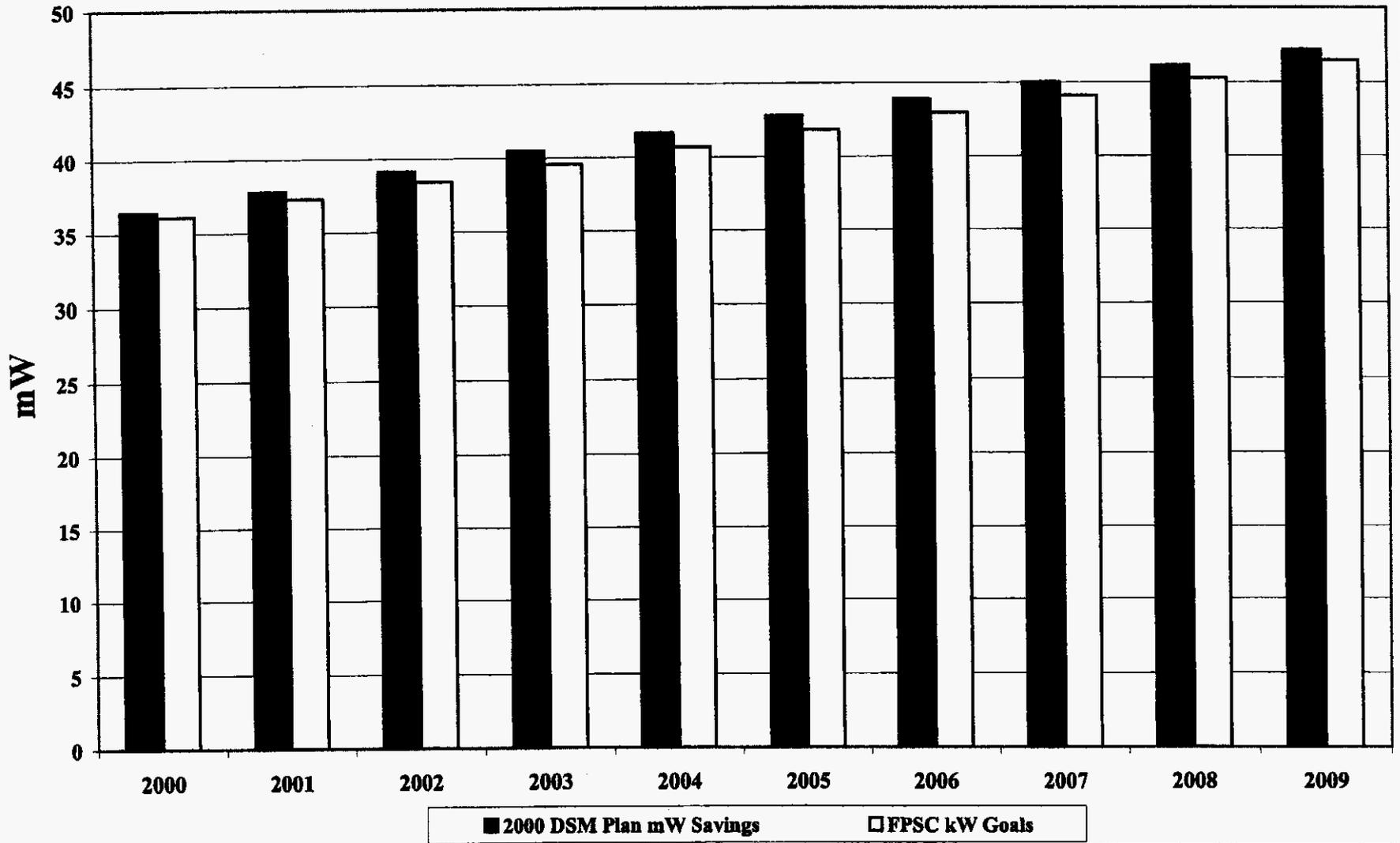
# Gulf Power Company - Commercial & Industrial Markets

## Summer mW: DSM Plan and Goals



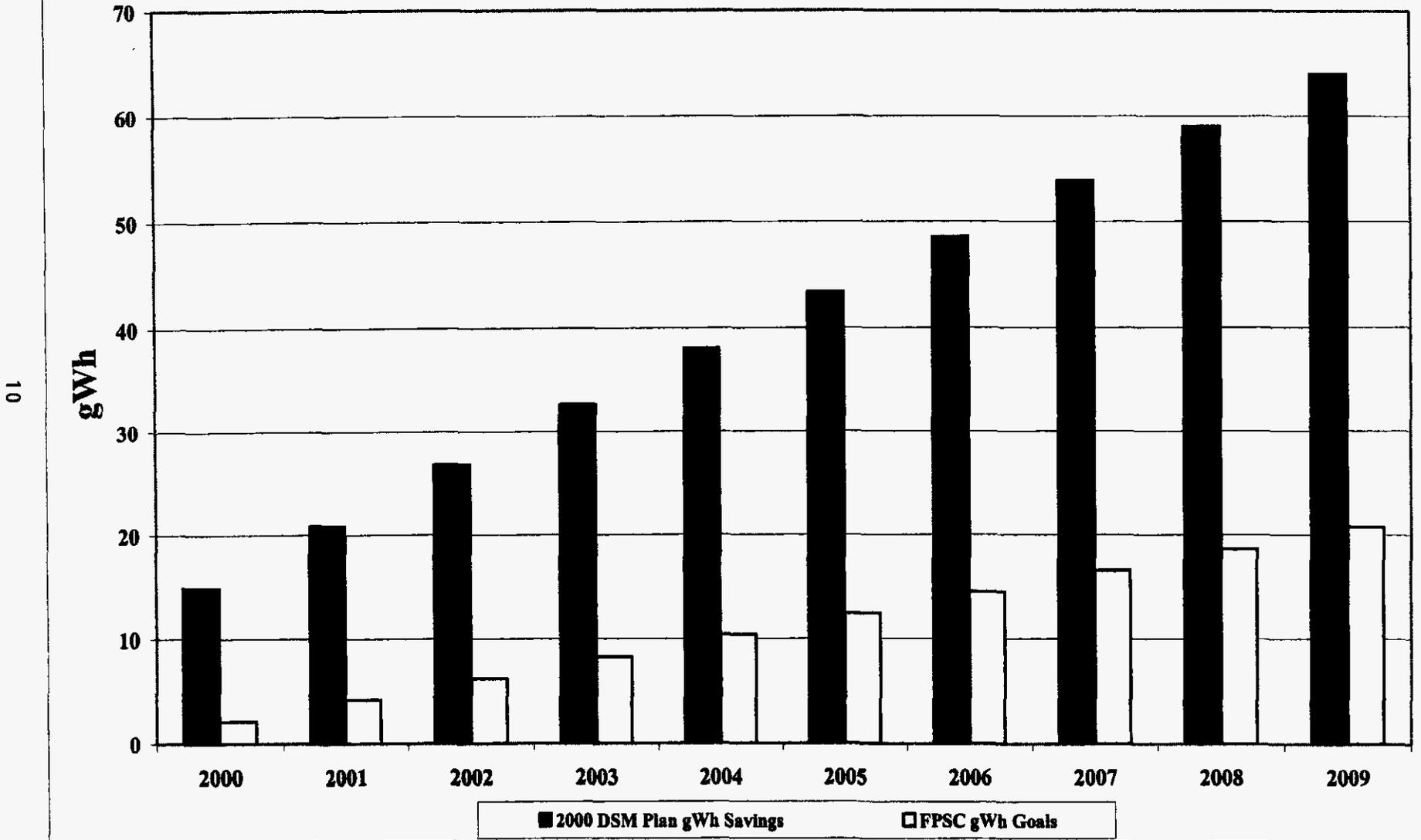
# Gulf Power Company - Commercial & Industrial Markets

## Winter mW: DSM Plan and Goals



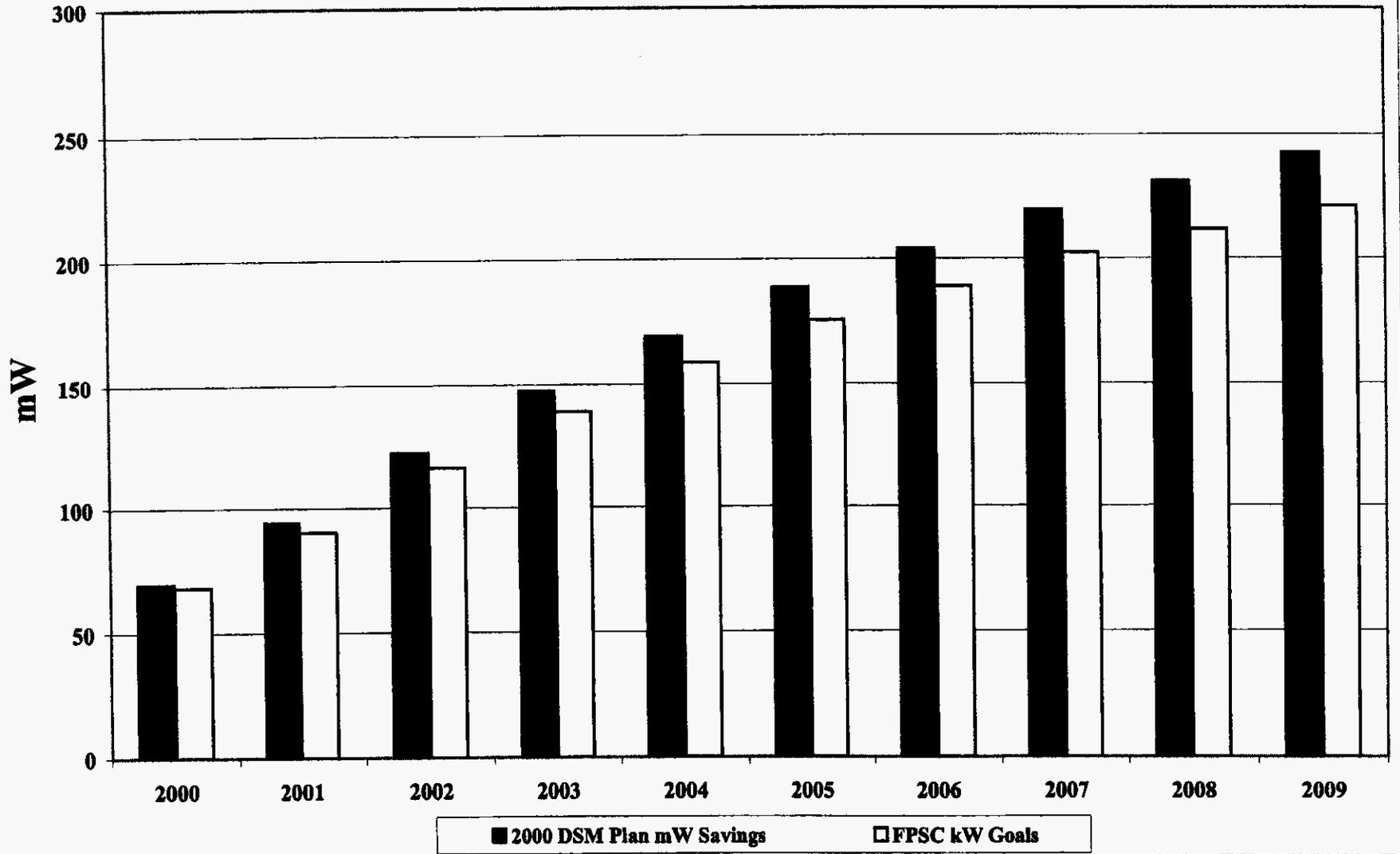
6

## Gulf Power Company - Commercial & Industrial Markets Annual gWh: DSM Plan and Goals

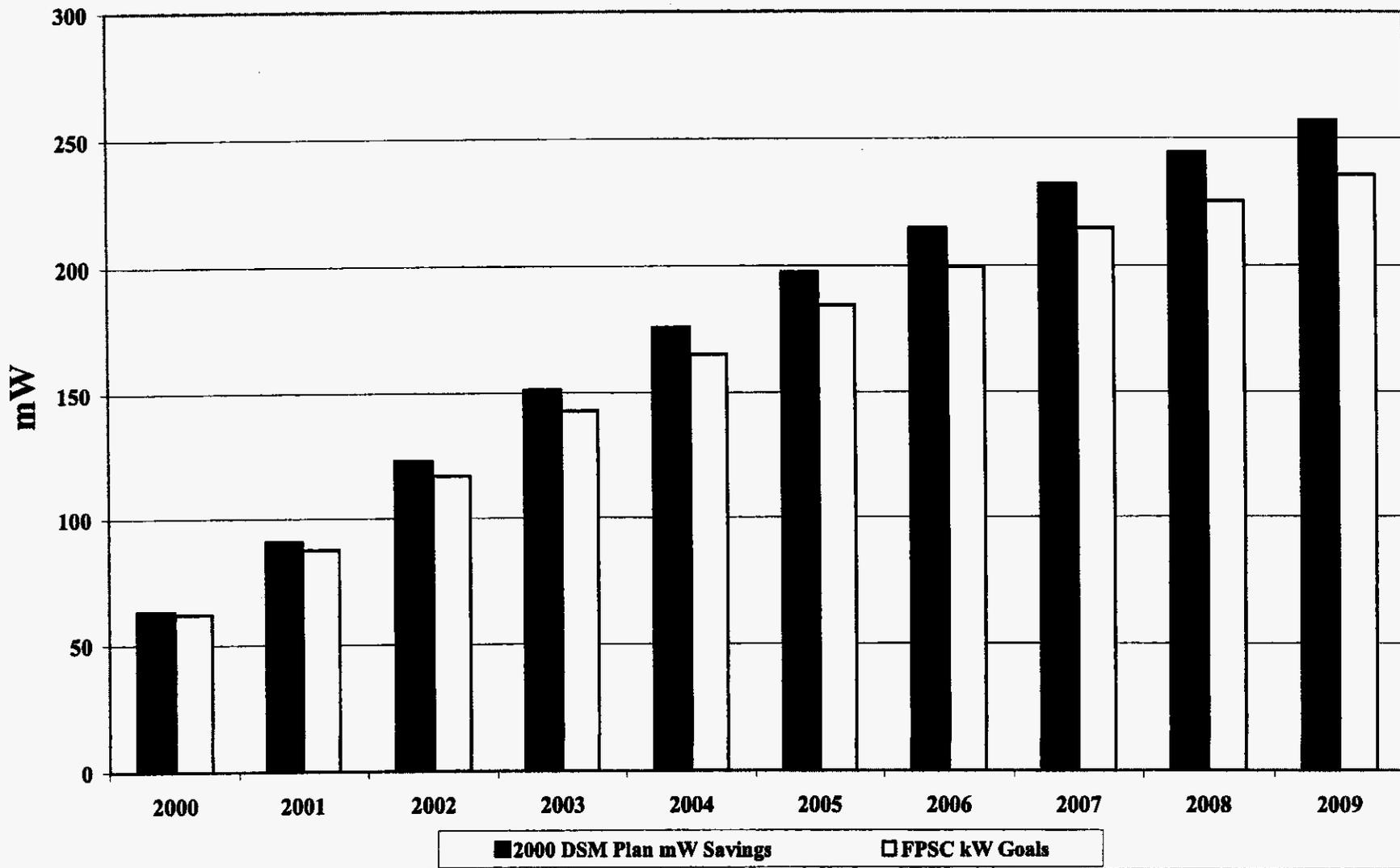


10

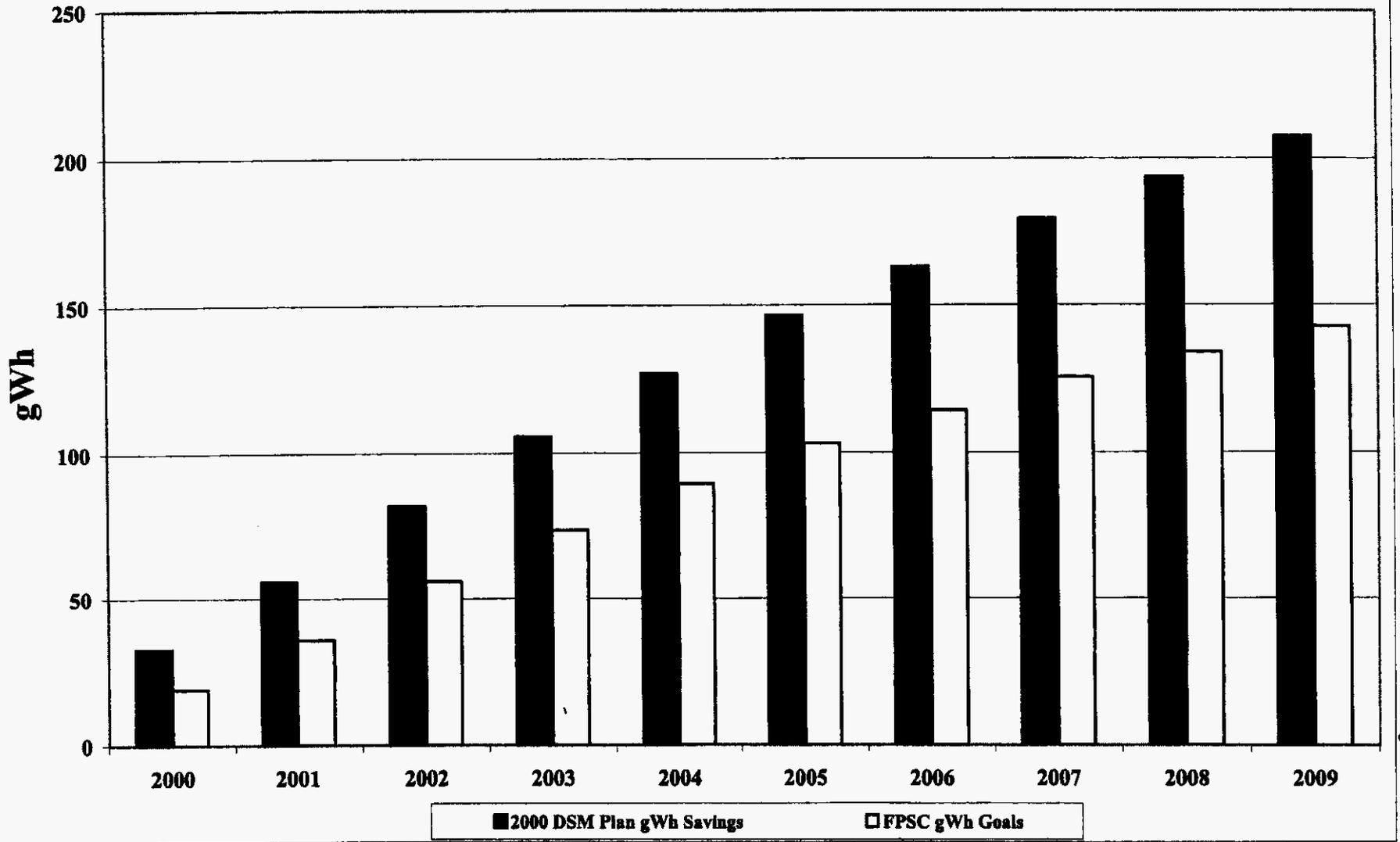
## Gulf Power Company - Total All Markets Summer mW: DSM Plan and Goals



## Gulf Power Company - Total All Markets Winter mW: DSM Plan and Goals



## Gulf Power Company - Total All Markets Annual gWh: DSM Plan and Goals



# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## Residential Programs

### GoodCents Select

- **Program Description**

Gulf Power Company, through its various conservation programs, is committed to increasing the efficiency of energy consumption on its system. As part of this long-term commitment, Gulf Power Company is seeking to implement the GoodCents Select Program, formerly known as the Advanced Energy Management (AEM) Program, which was field tested through the TranstexT Advanced Energy Management Pilot Program in Gulf Breeze, Florida. The program will continue to be directed at the residential sector, which is the largest and most weather-sensitive class of customers on the Company's system.

The GoodCents Select program is designed to provide Gulf Power's Company customers with a means of conveniently and automatically controlling and monitoring their energy purchases in response to prices that vary during the day and by season in relation to the Company's cost of producing or purchasing energy. Based on results gathered from the AEM (TranstexT) Pilot Program, this type system will not only increase Gulf Power Company's load factor, but also reduce summer peak demand at the meter by approximately 2.5 kW per household.

The GoodCents Select System allows the customer to control more precisely the amount of electricity purchased for heating, cooling, water heating, and other selected loads; and to purchase electric energy on a variable price rate. The various components of the GoodCents Select System installed in the customer's home, as well as the components installed at Gulf Power Company, provide constant communication between customer and utility. The combination of the GoodCents Select System and Gulf Power Company's innovative variable rate concept will provide consumers with the opportunity to modify their usage of electricity in order to purchase energy at prices that are somewhat lower to

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

significantly lower than standard rates a majority of the time. Further, the communication capabilities of the GoodCents Select System allow Gulf Power Company to send a critical price signal to the customer's premises during extreme peak load conditions. The signal results in a reduction attributable to predetermined thermostat and relay settings chosen by the individual participating customer.

A key element of the GoodCents Select Program is the variable pricing concept which varies the price of electric energy during the day and seasons in relation to the cost of producing energy. Although the equipment provides capability to emulate direct load control, primary emphasis is placed on price signals as a vehicle for effecting load shape changes. Variable pricing better reflects the cost of service and provides a basis for customers to trade off service levels with cost. Thus, there is a high degree of integration between the pricing and control components of the GoodCents Select Program.

The GoodCents Select System connects the utility and the customer through a communications link to the customer's home. As a result, the customer's system is in constant communication with the utility and, as price levels change, the customer's pre-programmed instructions regarding their desired comfort levels will adjust electricity use for heating, cooling, water heating and other appliances automatically. Therefore, the customer's control of their electric bill is accomplished by allowing them to choose different comfort levels at different price levels in accordance with their individual lifestyles.

- **Participation Standards**

The GoodCents Select program will be available to all residential customers served by Gulf Power Company who meet certain equipment requirements. This program will provide participating customers with the information needed to respond to pricing signals generated by the utility. Each

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

customer will pay a monthly participation charge. Implementation of this program began November 17, 1999.

- **Benefits and Costs**

Seasonal peak demand and annual energy impacts, as well as customer bill savings, are based directly on the results of Gulf Power Company's AEM pilot program. Likewise, monthly program participation charges to the customer are derived from customer research performed at the conclusion of the two-year pilot. Results from the pilot show a summer peak demand reduction of 3.2 kW, winter demand reduction of 3.7 kW, and an annual energy reduction of 2,262 kWh all measured at the generator.

- **Monitoring and Evaluation**

Gulf Power Company will conduct on-going monitoring and evaluation of the GoodCents Select program to ensure energy savings and customer satisfaction. Specifically, surveys will be conducted with customers who have had the system installed along with a control group of customers that have not had the system installed. The control group will also be used to determine GoodCents Select's effect on perceived value of electric service and to assess barriers to program participation. Customer billing and load research information will also be monitored to determine actual customer savings.

- **Cost Effectiveness**

This program is cost-effective using the Florida Public Service Commission's approved methodology (Rule 25-17.008). The cost-effectiveness runs are included in Attachment B.

## GoodCents Select Program

<b>At the Meter</b>						
<b>Year</b>	<b>Per Customer kWh Reduction</b>	<b>Per Customer Winter kW Reduction</b>	<b>Per Customer Summer kW Reduction</b>	<b>Total Annual kWh Reduction</b>	<b>Total Annual Winter kW Reduction</b>	<b>Total Annual Summer kW Reduction</b>
2000	2,100	2.89	2.48	12,810,000	17,629	15,128
2001	2,100	2.89	2.48	12,600,000	17,340	14,880
2002	2,100	2.89	2.48	15,120,000	20,808	17,856
2003	2,100	2.89	2.48	12,600,000	17,340	14,880
2004	2,100	2.89	2.48	10,710,000	14,739	12,648
2005	2,100	2.89	2.48	8,820,000	12,138	10,416
2006	2,100	2.89	2.48	6,300,000	8,670	7,440
2007	2,100	2.89	2.48	6,300,000	8,670	7,440
2008	2,100	2.89	2.48	3,780,000	5,202	4,464
2009	2,100	2.89	2.48	3,780,000	5,202	4,464

<b>At the Generator</b>						
<b>Year</b>	<b>Per Customer kWh Reduction</b>	<b>Per Customer Winter kW Reduction</b>	<b>Per Customer Summer kW Reduction</b>	<b>Total Annual kWh Reduction</b>	<b>Total Annual Winter kW Reduction</b>	<b>Total Annual Summer kW Reduction</b>
2000	2,262	3.74	3.21	13,796,370	22,828	19,589
2001	2,262	3.74	3.21	13,570,200	22,454	19,268
2002	2,262	3.74	3.21	16,284,240	26,944	23,122
2003	2,262	3.74	3.21	13,570,200	22,454	19,268
2004	2,262	3.74	3.21	11,534,670	19,086	16,378
2005	2,262	3.74	3.21	9,499,140	15,717	13,488
2006	2,262	3.74	3.21	6,785,100	11,227	9,634
2007	2,262	3.74	3.21	6,785,100	11,227	9,634
2008	2,262	3.74	3.21	4,071,060	6,736	5,780
2009	2,262	3.74	3.21	4,071,060	6,736	5,780

<b>Customers and Participation Rates</b>					
<b>Year</b>	<b>Total Number of Customers</b>	<b>Total Number of Eligible Customers</b>	<b>Annual Number of Program Participants</b>	<b>Cumulative Penetration Level %</b>	<b>Cumulative Number of Program Participants</b>
2000	319,883	317,887	6,100	1.9%	6,100
2001	326,907	324,859	6,000	3.7%	12,100
2002	332,822	330,739	7,200	5.8%	19,300
2003	338,496	336,378	6,000	7.5%	25,300
2004	344,126	341,973	5,100	8.9%	30,400
2005	349,831	347,643	4,200	10.0%	34,600
2006	355,624	353,401	3,000	10.6%	37,600
2007	361,464	359,206	3,000	11.3%	40,600
2008	367,275	364,982	1,800	11.6%	42,400
2009	373,177	370,849	1,800	11.9%	44,200

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	-2.48	kW/Cus
(2) Change in Peak kW per Customer at generator	-3.21	kW Gen/Cus
(3) kW Line Loss Percentage	12.60%	
(4) Change in kWh per Customer at generator	(2,262)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	7.70%	
(6) Group Line Loss Multiplier	1.0014	
(7) Annual Change in Customer kWh at Meter	(2,100)	kWh/Cus/Yr
(8) Change in Winter kW per Cust at meter	-2.89	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	30	Years
(4) K-Factor for Generation	1.4493	
(5) K-Factor for T&D	1.4394	
(6) Switch: Rev Req (0) or Val-of-Def (1)	1	

III. Utility & Customer Costs

(1) Utility Nonrecurring Cost Per Customer	\$0.00	\$/Cus
(2) Utility Recurring Cost Per Customer	\$68.86	\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$0.00	\$/Cus
(5) Customer Equipment Cost Escalation Rate	3.06%	
(6) Customer O&M Cost	\$103.29	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	0.00%	
(8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
(9) Customer Tax Credit Escalation Rate	3.06%	
(10) Change in Supply Costs	\$0.00	\$/Cus/Year
(11) Supply Costs Escalation Rate	3.06%	
(12) Utility Discount Rate	8.97%	
(13) Utility AFUDC Rate	10.30%	
(14) Utility Nonrecurring Rebate/Incentive	\$0.00	\$/Cus
(15) Utility Recurring Rebate/Incentive	\$30.44	\$/Cus/Year
(16) Utility Rebate/Incentive Escalation Rate	0.00%	

IV. Incremental Generation, Transmission, & Distribution Costs

(1) Base Year	2000
(2) In-Service Year For Incremental Generation	2001 **
(3) In-Service Year For Incremental T & D	2001
(4) Base Year Incremental Generation Cost	\$234.85 \$/kW
(5) Base Year Incremental Transmission Cost	\$58.75 \$/kW
(6) Base Year Incremental Distribution Cost	\$33.00 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	2.56%
(8) Generator Fixed O & M Cost	\$2.77 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	2.99%
(10) Transmission Fixed O & M Cost	\$0.73 \$/kW/Yr
(11) Distribution Fixed O & M Cost	\$0.84 \$/kW/Yr
(12) T&D Fixed O&M Escalation Rate	2.56%
(13) Incremental Gen Variable O & M Costs	\$0.433 \$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	3.84%
(15) Incremental Gen Capacity Factor	3.40%
(16) Incremental Generating Unit Fuel Cost	\$0.0356 \$/kWh
(17) Incremental Gen Unit Fuel Esc Rate	3.00%
(18) Incremental Purchased Capacity Cost	\$20.70 \$/KW/YR
(19) Incremental Capacity Cost Esc Rate	2.56%

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)	\$0.0352 \$/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

	RIM	Participants'
NPV Benefits(\$000s)	\$95,594	\$52,032
NPV Costs (\$000s)	\$77,518	\$38,230
NPV Net Benefits (\$000s)	\$18,075	\$13,801
Benefit:Cost Ratio	1.233	1.361

\* Supplemental Information Not Specifically Specified in Cost Effectiveness Manual

\*\* The relevant avoidable generation unit is a combustion turbine peaking unit. Since the kilowatt savings occur at the time of the system peak, this is the appropriate unit against which to measure cost savings.

**INPUT DATA – PART 2**  
**Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	Cumulative Total Participating Customers	Cumulative Participating Customers Adj Free Rides	Utility Average System Fuel Cost (C / kWh)	Marginal Fuel Cost (Decreases) (C / kWh)	Marginal Fuel Cost (Increases) (C / kWh)	Replacement Fuel Cost (C / kWh)	Program kW Effectiveness Factor	Program kWh Effectiveness Factor	Other Costs (\$000)	Other Benefits (\$000)
2000	6,100	6,100	1.4660	2.0099	2.0099	1.4660	1.00	1.00	\$0	\$0
2001	12,100	12,100	1.4570	2.1798	2.1798	1.4570	1.00	1.00	\$0	\$0
2002	19,300	19,300	1.4167	2.1667	2.1667	1.4167	1.00	1.00	\$0	\$0
2003	25,300	25,300	1.3619	2.2272	2.2272	1.3619	1.00	1.00	\$0	\$0
2004	30,400	30,400	1.3729	2.2390	2.2390	1.3729	1.00	1.00	\$0	\$0
2005	34,600	34,600	1.3879	2.2692	2.2692	1.3879	1.00	1.00	\$0	\$0
2006	37,600	37,600	1.4261	2.3280	2.3280	1.4261	1.00	1.00	\$0	\$0
2007	40,600	40,600	1.4700	2.3468	2.3468	1.4700	1.00	1.00	\$0	\$0
2008	42,400	42,400	1.5114	2.4306	2.4306	1.5114	1.00	1.00	\$0	\$0
2009	44,200	44,200	1.5445	2.5090	2.5090	1.5445	1.00	1.00	\$0	\$0
2010	44,200	44,200	1.5902	2.5498	2.5498	1.5902	1.00	1.00	\$0	\$0
2011	44,200	44,200	1.6373	2.5981	2.5981	1.6373	1.00	1.00	\$0	\$0
2012	44,200	44,200	1.6859	2.6838	2.6838	1.6859	1.00	1.00	\$0	\$0
2013	44,200	44,200	1.7359	2.7707	2.7707	1.7359	1.00	1.00	\$0	\$0
2014	44,200	44,200	1.7875	2.8131	2.8131	1.7875	1.00	1.00	\$0	\$0
2015	44,200	44,200	1.8406	2.7636	2.7636	1.8406	1.00	1.00	\$0	\$0
2016	44,200	44,200	1.8953	2.7683	2.7683	1.8953	1.00	1.00	\$0	\$0
2017	44,200	44,200	1.9517	2.7274	2.7274	1.9517	1.00	1.00	\$0	\$0
2018	44,200	44,200	2.0098	2.7028	2.7028	2.0098	1.00	1.00	\$0	\$0
2019	44,200	44,200	2.0697	2.8597	2.8597	2.0697	1.00	1.00	\$0	\$0
2020	44,200	44,200	2.1314	2.9472	2.9472	2.1314	1.00	1.00	\$0	\$0
2021	44,200	44,200	2.1949	3.0375	3.0375	2.1949	1.00	1.00	\$0	\$0
2022	44,200	44,200	2.2604	3.1305	3.1305	2.2604	1.00	1.00	\$0	\$0
2023	44,200	44,200	2.3279	3.2264	3.2264	2.3279	1.00	1.00	\$0	\$0
2024	44,200	44,200	2.3992	3.3251	3.3251	2.3992	1.00	1.00	\$0	\$0
2025	44,200	44,200	2.4726	3.4270	3.4270	2.4726	1.00	1.00	\$0	\$0
2026	44,200	44,200	2.5483	3.5319	3.5319	2.5483	1.00	1.00	\$0	\$0
2027	44,200	44,200	2.6264	3.6400	3.6400	2.6264	1.00	1.00	\$0	\$0
2028	44,200	44,200	2.7068	3.7515	3.7515	2.7068	1.00	1.00	\$0	\$0
2029	44,200	44,200	2.7897	3.8664	3.8664	2.7897	1.00	1.00	\$0	\$0

Incremental Generation Capacity Costs or Benefits

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

(1) Year	(2) Incremental Owned Gen. Capacity Cost (\$000s)	(3) Incremental Generation Fixed O&M (\$000s)	(4) Incremental Generation Variable O&M (\$000s)	(5) Fuel Cost for the Incr. Cap. (\$000s)	(6) Replacement Fuel Cost (\$000s)	(6a) Incremental Purchased Gen. Capacity Cost (\$000s)	(7) Incremental Gen. Capacity Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0		\$0
2001	(\$1,010)	(\$111)	(\$18)	(\$380)	(\$169)		(\$1,350)
2002	(\$1,652)	(\$182)	(\$27)	(\$624)	(\$262)		(\$2,224)
2003	(\$2,221)	(\$246)	(\$37)	(\$802)	(\$330)		(\$2,976)
2004	(\$2,737)	(\$304)	(\$46)	(\$1,007)	(\$399)		(\$3,694)
2005	(\$3,195)	(\$356)	(\$53)	(\$1,202)	(\$459)		(\$4,347)
2006	(\$3,561)	(\$399)	(\$60)	(\$1,367)	(\$513)		(\$4,874)
2007	(\$3,944)	(\$443)	(\$67)	(\$1,498)	(\$571)		(\$5,381)
2008	(\$4,224)	(\$477)	(\$72)	(\$1,586)	(\$613)		(\$5,746)
2009	(\$4,516)	(\$512)	(\$78)	(\$1,677)	(\$653)		(\$6,130)
2010	(\$4,632)	(\$527)	(\$80)	(\$1,738)	(\$672)		(\$6,305)
2011	(\$4,751)	(\$543)	(\$83)	(\$1,791)	(\$692)		(\$6,475)
2012	(\$4,872)	(\$559)	(\$87)	(\$1,845)	(\$713)		(\$6,650)
2013	(\$4,997)	(\$576)	(\$91)	(\$1,906)	(\$734)		(\$6,836)
2014	(\$5,125)	(\$593)	(\$96)	(\$1,962)	(\$756)		(\$7,021)
2015	(\$5,256)	(\$611)	(\$100)	(\$2,020)	(\$778)		(\$7,209)
2016	(\$5,391)	(\$629)	(\$104)	(\$2,073)	(\$801)		(\$7,396)
2017	(\$5,529)	(\$648)	(\$110)	(\$2,129)	(\$825)		(\$7,591)
2018	(\$5,671)	(\$667)	(\$116)	(\$2,194)	(\$850)		(\$7,799)
2019	(\$5,816)	(\$687)	(\$123)	(\$2,263)	(\$875)		(\$8,014)
2020	(\$5,965)	(\$708)	(\$130)	(\$2,406)	(\$901)		(\$8,307)
2021	(\$6,118)	(\$729)	(\$137)	(\$2,559)	(\$928)		(\$8,615)
2022	(\$6,275)	(\$751)	(\$145)	(\$2,722)	(\$956)		(\$8,937)
2023	(\$6,436)	(\$773)	(\$153)	(\$2,827)	(\$984)		(\$9,205)
2024	(\$6,600)	(\$796)	(\$158)	(\$2,937)	(\$1,014)		(\$9,477)
2025	(\$6,770)	(\$820)	(\$162)	(\$3,051)	(\$1,045)		(\$9,758)
2026	(\$6,943)	(\$845)	(\$167)	(\$3,169)	(\$1,077)		(\$10,047)
2027	(\$7,121)	(\$870)	(\$173)	(\$3,292)	(\$1,110)		(\$10,345)
2028	(\$7,303)	(\$896)	(\$178)	(\$3,420)	(\$1,144)		(\$10,653)
2029	(\$7,490)	(\$923)	(\$183)	(\$3,553)	(\$1,179)		(\$10,970)
Nominal	(\$146,122)	(\$17,183)	(\$3,032)	(\$60,000)	(\$22,003)		(\$204,333)
NPV	(\$39,984)	(\$4,602)	(\$757)	(\$15,640)	(\$5,948)		(\$55,035)

Incremental T&D Capacity and Incremental Fuel

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

(1) Year	(2) Incremental Transmission Capacity Cost (\$000s)	(3) Incremental Transmission O&M Cost (\$000s)	(4) Total Incremental Trans. Cost (\$000s)	(5) Incremental Distribution Capacity Cost (\$000s)	(6) Incremental Distribution O&M Cost (\$000s)	(7) Total Incremental Dist. Cost (\$000s)	(8) Effective Incremental Fuel Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	(\$277)
2001	(\$264)	(\$29)	(\$294)	(\$148)	(\$33)	(\$182)	(\$597)
2002	(\$432)	(\$48)	(\$480)	(\$243)	(\$55)	(\$297)	(\$946)
2003	(\$581)	(\$64)	(\$646)	(\$326)	(\$73)	(\$400)	(\$1,274)
2004	(\$716)	(\$79)	(\$796)	(\$402)	(\$90)	(\$493)	(\$1,539)
2005	(\$836)	(\$93)	(\$929)	(\$470)	(\$106)	(\$575)	(\$1,776)
2006	(\$932)	(\$103)	(\$1,035)	(\$523)	(\$118)	(\$641)	(\$1,980)
2007	(\$1,032)	(\$114)	(\$1,146)	(\$580)	(\$130)	(\$710)	(\$2,155)
2008	(\$1,105)	(\$122)	(\$1,228)	(\$621)	(\$139)	(\$760)	(\$2,331)
2009	(\$1,182)	(\$131)	(\$1,313)	(\$664)	(\$149)	(\$813)	(\$2,508)
2010	(\$1,212)	(\$134)	(\$1,346)	(\$681)	(\$153)	(\$834)	(\$2,549)
2011	(\$1,243)	(\$138)	(\$1,381)	(\$698)	(\$157)	(\$855)	(\$2,597)
2012	(\$1,275)	(\$141)	(\$1,416)	(\$716)	(\$161)	(\$877)	(\$2,683)
2013	(\$1,308)	(\$145)	(\$1,453)	(\$735)	(\$165)	(\$900)	(\$2,770)
2014	(\$1,341)	(\$149)	(\$1,490)	(\$753)	(\$169)	(\$923)	(\$2,812)
2015	(\$1,376)	(\$152)	(\$1,528)	(\$773)	(\$174)	(\$946)	(\$2,763)
2016	(\$1,411)	(\$156)	(\$1,567)	(\$792)	(\$178)	(\$970)	(\$2,767)
2017	(\$1,447)	(\$160)	(\$1,607)	(\$813)	(\$183)	(\$995)	(\$2,727)
2018	(\$1,484)	(\$164)	(\$1,648)	(\$834)	(\$187)	(\$1,021)	(\$2,702)
2019	(\$1,522)	(\$169)	(\$1,691)	(\$855)	(\$192)	(\$1,047)	(\$2,859)
2020	(\$1,561)	(\$173)	(\$1,734)	(\$877)	(\$197)	(\$1,074)	(\$2,946)
2021	(\$1,601)	(\$177)	(\$1,778)	(\$899)	(\$202)	(\$1,101)	(\$3,036)
2022	(\$1,642)	(\$182)	(\$1,824)	(\$922)	(\$207)	(\$1,130)	(\$3,129)
2023	(\$1,684)	(\$187)	(\$1,871)	(\$946)	(\$213)	(\$1,158)	(\$3,225)
2024	(\$1,727)	(\$191)	(\$1,919)	(\$970)	(\$218)	(\$1,188)	(\$3,324)
2025	(\$1,772)	(\$196)	(\$1,968)	(\$995)	(\$224)	(\$1,219)	(\$3,426)
2026	(\$1,817)	(\$201)	(\$2,018)	(\$1,021)	(\$229)	(\$1,250)	(\$3,531)
2027	(\$1,863)	(\$206)	(\$2,070)	(\$1,047)	(\$235)	(\$1,282)	(\$3,639)
2028	(\$1,911)	(\$212)	(\$2,123)	(\$1,074)	(\$241)	(\$1,315)	(\$3,750)
2029	(\$1,960)	(\$217)	(\$2,177)	(\$1,101)	(\$247)	(\$1,348)	(\$3,865)
Nominal	(\$38,239)	(\$4,235)	(\$42,474)	(\$21,479)	(\$4,825)	(\$26,304)	(\$76,484)
NPV	(\$10,464)	(\$1,159)	(\$11,622)	(\$5,877)	(\$1,320)	(\$7,198)	(\$21,738)

Worksheet for Utility Program Costs and Participants' Benefits & Costs

Utility Program Costs, Rebates, & Incentives								Participating Customers' Benefits and Costs						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Year	Annual Incremental kWh Generated (000s)	Utility Non-recurring Costs (\$000)	Utility Recurring Costs (\$000)	Total Utility Program Costs (\$000)	Utility Non-recurring Rebates/Incent. (\$000)	Utility Recurring Rebates/Incent. (\$000)	Total Utility Paid Rebates/Incent. (\$000)	Participant Equipment Costs (\$000)	Participant O&M Costs (\$000)	Total Participant Costs (\$000)	Change in Participants' Billed kWh (000s)	Change in Participants' Billed Fuel (\$000)	Change in Participants' Billed Non-Fuel (\$000)	Change in Participants' Electric Bills (\$000)
2000	(13,796)	\$0	\$420	\$420	\$0	\$186	\$186	\$0	\$630	\$630	(12,610)	(\$186)	(\$461)	(\$639)
2001	(27,367)	\$0	\$633	\$633	\$0	\$366	\$366	\$0	\$1,250	\$1,250	(25,410)	(\$371)	(\$912)	(\$1,263)
2002	(43,651)	\$0	\$1,329	\$1,329	\$0	\$587	\$587	\$0	\$1,993	\$1,993	(40,530)	(\$576)	(\$1,428)	(\$2,003)
2003	(57,221)	\$0	\$1,742	\$1,742	\$0	\$770	\$770	\$0	\$2,613	\$2,613	(53,130)	(\$725)	(\$1,962)	(\$2,677)
2004	(68,756)	\$0	\$2,093	\$2,093	\$0	\$925	\$925	\$0	\$3,140	\$3,140	(63,840)	(\$878)	(\$2,210)	(\$3,068)
2005	(78,255)	\$0	\$2,363	\$2,363	\$0	\$1,033	\$1,033	\$0	\$3,574	\$3,574	(72,660)	(\$1,010)	(\$2,579)	(\$3,589)
2006	(85,040)	\$0	\$2,589	\$2,589	\$0	\$1,145	\$1,145	\$0	\$3,884	\$3,884	(78,960)	(\$1,128)	(\$2,763)	(\$3,890)
2007	(91,825)	\$0	\$2,796	\$2,796	\$0	\$1,236	\$1,236	\$0	\$4,194	\$4,194	(85,260)	(\$1,255)	(\$2,961)	(\$4,236)
2008	(95,896)	\$0	\$2,820	\$2,820	\$0	\$1,291	\$1,291	\$0	\$4,379	\$4,379	(89,040)	(\$1,348)	(\$3,195)	(\$4,542)
2009	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,436)	(\$3,274)	(\$4,709)
2010	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,478)	(\$3,276)	(\$4,753)
2011	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,522)	(\$3,276)	(\$4,796)
2012	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,567)	(\$3,277)	(\$4,844)
2013	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,614)	(\$3,278)	(\$4,891)
2014	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,661)	(\$3,279)	(\$4,940)
2015	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,711)	(\$3,280)	(\$4,990)
2016	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,762)	(\$3,281)	(\$5,042)
2017	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,814)	(\$3,281)	(\$5,098)
2018	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,868)	(\$3,282)	(\$5,151)
2019	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,924)	(\$3,283)	(\$5,207)
2020	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$1,981)	(\$3,284)	(\$5,265)
2021	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,040)	(\$3,285)	(\$5,325)
2022	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,101)	(\$3,286)	(\$5,387)
2023	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,164)	(\$3,287)	(\$5,451)
2024	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,230)	(\$3,288)	(\$5,518)
2025	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,298)	(\$3,289)	(\$5,587)
2026	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,369)	(\$3,290)	(\$5,659)
2027	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,441)	(\$3,291)	(\$5,732)
2028	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,516)	(\$3,292)	(\$5,808)
2029	(99,967)	\$0	\$3,044	\$3,044	\$0	\$1,345	\$1,345	\$0	\$4,565	\$4,565	(92,820)	(\$2,593)	(\$3,293)	(\$5,889)

22

**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)
Year	Change in Electric Supply Costs (\$000s)	Utility's Program Costs (\$000s)	Participants' Program Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Incremental Generation Cap Costs (\$000s)	Incremental T&D Cap Costs (\$000s)	Incremental Prog Induced Fuel Costs (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Total Net Benefits (\$000s)	Cumulative Discounted Net Benefits (\$000s)
2000	\$0	\$420	\$830	\$0	\$0	\$0	\$0	(\$277)	\$1,050	\$277	(\$773)	(\$773)
2001	\$0	\$833	\$1,250	\$0	\$0	(\$1,350)	(\$475)	(\$597)	\$2,083	\$2,422	\$339	(\$482)
2002	\$0	\$1,329	\$1,983	\$0	\$0	(\$2,224)	(\$778)	(\$948)	\$3,322	\$3,947	\$625	\$84
2003	\$0	\$1,742	\$2,613	\$0	\$0	(\$2,976)	(\$1,046)	(\$1,274)	\$4,355	\$5,296	\$940	\$791
2004	\$0	\$2,093	\$3,140	\$0	\$0	(\$3,694)	(\$1,288)	(\$1,539)	\$5,233	\$6,522	\$1,289	\$1,705
2005	\$0	\$2,383	\$3,574	\$0	\$0	(\$4,347)	(\$1,504)	(\$1,776)	\$5,956	\$7,627	\$1,670	\$2,792
2006	\$0	\$2,589	\$3,884	\$0	\$0	(\$4,874)	(\$1,878)	(\$1,980)	\$6,473	\$8,530	\$2,057	\$4,020
2007	\$0	\$2,796	\$4,194	\$0	\$0	(\$5,381)	(\$1,856)	(\$2,155)	\$6,989	\$9,392	\$2,403	\$5,337
2008	\$0	\$2,920	\$4,379	\$0	\$0	(\$5,748)	(\$1,988)	(\$2,331)	\$7,299	\$10,065	\$2,766	\$6,728
2009	\$0	\$3,044	\$4,565	\$0	\$0	(\$6,130)	(\$2,126)	(\$2,508)	\$7,609	\$10,764	\$3,155	\$8,184
2010	\$0	\$3,044	\$4,565	\$0	\$0	(\$6,305)	(\$2,180)	(\$2,549)	\$7,609	\$11,034	\$3,425	\$9,635
2011	\$0	\$3,044	\$4,565	\$0	\$0	(\$6,475)	(\$2,236)	(\$2,597)	\$7,609	\$11,308	\$3,699	\$11,073
2012	\$0	\$3,044	\$4,565	\$0	\$0	(\$6,650)	(\$2,293)	(\$2,683)	\$7,609	\$11,627	\$4,018	\$12,508
2013	\$0	\$3,044	\$4,565	\$0	\$0	(\$6,838)	(\$2,352)	(\$2,770)	\$7,609	\$11,958	\$4,349	\$13,929
2014	\$0	\$3,044	\$4,565	\$0	\$0	(\$7,021)	(\$2,412)	(\$2,812)	\$7,609	\$12,245	\$4,636	\$15,322
2015	\$0	\$3,044	\$4,565	\$0	\$0	(\$7,209)	(\$2,474)	(\$2,763)	\$7,609	\$12,446	\$4,837	\$16,655
2016	\$0	\$3,044	\$4,565	\$0	\$0	(\$7,398)	(\$2,538)	(\$2,767)	\$7,609	\$12,701	\$5,092	\$17,943
2017	\$0	\$3,044	\$4,565	\$0	\$0	(\$7,591)	(\$2,603)	(\$2,727)	\$7,609	\$12,920	\$5,311	\$19,176
2018	\$0	\$3,044	\$4,565	\$0	\$0	(\$7,799)	(\$2,669)	(\$2,702)	\$7,609	\$13,170	\$5,561	\$20,361
2019	\$0	\$3,044	\$4,565	\$0	\$0	(\$8,014)	(\$2,738)	(\$2,859)	\$7,609	\$13,610	\$6,001	\$21,534
2020	\$0	\$3,044	\$4,565	\$0	\$0	(\$8,307)	(\$2,808)	(\$2,946)	\$7,609	\$14,061	\$6,452	\$22,691
2021	\$0	\$3,044	\$4,565	\$0	\$0	(\$8,615)	(\$2,880)	(\$3,036)	\$7,609	\$14,531	\$6,922	\$23,831
2022	\$0	\$3,044	\$4,565	\$0	\$0	(\$8,937)	(\$2,953)	(\$3,129)	\$7,609	\$15,020	\$7,411	\$24,950
2023	\$0	\$3,044	\$4,565	\$0	\$0	(\$9,205)	(\$3,029)	(\$3,225)	\$7,609	\$15,460	\$7,850	\$26,039
2024	\$0	\$3,044	\$4,565	\$0	\$0	(\$9,477)	(\$3,107)	(\$3,324)	\$7,609	\$15,908	\$8,299	\$27,094
2025	\$0	\$3,044	\$4,565	\$0	\$0	(\$9,758)	(\$3,186)	(\$3,426)	\$7,609	\$16,370	\$8,761	\$28,117
2026	\$0	\$3,044	\$4,565	\$0	\$0	(\$10,047)	(\$3,268)	(\$3,531)	\$7,609	\$16,846	\$9,237	\$29,107
2027	\$0	\$3,044	\$4,565	\$0	\$0	(\$10,345)	(\$3,352)	(\$3,639)	\$7,609	\$17,336	\$9,727	\$30,063
2028	\$0	\$3,044	\$4,565	\$0	\$0	(\$10,653)	(\$3,438)	(\$3,750)	\$7,609	\$17,841	\$10,232	\$30,986
2029	\$0	\$3,044	\$4,565	\$0	\$0	(\$10,970)	(\$3,526)	(\$3,865)	\$7,609	\$18,361	\$10,752	\$31,876
Nominal NPV		\$81,021	\$121,531			(\$204,333)	(\$68,778)	(\$76,484)	\$202,652	\$349,594	\$147,043	
		\$25,487	\$38,230			(\$55,035)	(\$18,820)	(\$21,738)	\$63,717	\$95,594	\$31,876	
Discount Rate =		8.97%										
Benefit/Cost Ratio =		1.50										

23

**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)
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)
2000	\$0	\$630	\$0	\$0	(\$639)	\$0	\$186	\$630	\$824	\$194	\$194
2001	\$0	\$1,250	\$0	\$0	(\$1,283)	\$0	\$368	\$1,250	\$1,651	\$401	\$562
2002	\$0	\$1,993	\$0	\$0	(\$2,003)	\$0	\$587	\$1,993	\$2,590	\$597	\$1,065
2003	\$0	\$2,613	\$0	\$0	(\$2,677)	\$0	\$770	\$2,613	\$3,447	\$834	\$1,709
2004	\$0	\$3,140	\$0	\$0	(\$3,088)	\$0	\$925	\$3,140	\$4,013	\$873	\$2,329
2005	\$0	\$3,574	\$0	\$0	(\$3,589)	\$0	\$1,053	\$3,574	\$4,642	\$1,068	\$3,024
2006	\$0	\$3,884	\$0	\$0	(\$3,890)	\$0	\$1,145	\$3,884	\$5,035	\$1,151	\$3,711
2007	\$0	\$4,194	\$0	\$0	(\$4,238)	\$0	\$1,236	\$4,194	\$5,472	\$1,278	\$4,412
2008	\$0	\$4,379	\$0	\$0	(\$4,542)	\$0	\$1,291	\$4,379	\$5,833	\$1,453	\$5,143
2009	\$0	\$4,565	\$0	\$0	(\$4,709)	\$0	\$1,345	\$4,565	\$6,055	\$1,490	\$5,830
2010	\$0	\$4,565	\$0	\$0	(\$4,753)	\$0	\$1,345	\$4,565	\$6,098	\$1,533	\$6,480
2011	\$0	\$4,565	\$0	\$0	(\$4,798)	\$0	\$1,345	\$4,565	\$6,143	\$1,578	\$7,093
2012	\$0	\$4,565	\$0	\$0	(\$4,844)	\$0	\$1,345	\$4,565	\$6,189	\$1,624	\$7,672
2013	\$0	\$4,565	\$0	\$0	(\$4,891)	\$0	\$1,345	\$4,565	\$6,237	\$1,671	\$8,219
2014	\$0	\$4,565	\$0	\$0	(\$4,940)	\$0	\$1,345	\$4,565	\$6,286	\$1,720	\$8,736
2015	\$0	\$4,565	\$0	\$0	(\$4,990)	\$0	\$1,345	\$4,565	\$6,336	\$1,770	\$9,224
2016	\$0	\$4,565	\$0	\$0	(\$5,042)	\$0	\$1,345	\$4,565	\$6,388	\$1,822	\$9,685
2017	\$0	\$4,565	\$0	\$0	(\$5,096)	\$0	\$1,345	\$4,565	\$6,441	\$1,876	\$10,120
2018	\$0	\$4,565	\$0	\$0	(\$5,151)	\$0	\$1,345	\$4,565	\$6,496	\$1,931	\$10,531
2019	\$0	\$4,565	\$0	\$0	(\$5,207)	\$0	\$1,345	\$4,565	\$6,553	\$1,987	\$10,920
2020	\$0	\$4,565	\$0	\$0	(\$5,265)	\$0	\$1,345	\$4,565	\$6,611	\$2,045	\$11,287
2021	\$0	\$4,565	\$0	\$0	(\$5,325)	\$0	\$1,345	\$4,565	\$6,671	\$2,106	\$11,633
2022	\$0	\$4,565	\$0	\$0	(\$5,387)	\$0	\$1,345	\$4,565	\$6,733	\$2,167	\$11,961
2023	\$0	\$4,565	\$0	\$0	(\$5,451)	\$0	\$1,345	\$4,565	\$6,796	\$2,231	\$12,270
2024	\$0	\$4,565	\$0	\$0	(\$5,518)	\$0	\$1,345	\$4,565	\$6,864	\$2,298	\$12,562
2025	\$0	\$4,565	\$0	\$0	(\$5,587)	\$0	\$1,345	\$4,565	\$6,933	\$2,367	\$12,839
2026	\$0	\$4,565	\$0	\$0	(\$5,659)	\$0	\$1,345	\$4,565	\$7,004	\$2,439	\$13,100
2027	\$0	\$4,565	\$0	\$0	(\$5,732)	\$0	\$1,345	\$4,565	\$7,078	\$2,512	\$13,347
2028	\$0	\$4,565	\$0	\$0	(\$5,808)	\$0	\$1,345	\$4,565	\$7,153	\$2,588	\$13,580
2029	\$0	\$4,565	\$0	\$0	(\$5,886)	\$0	\$1,345	\$4,565	\$7,231	\$2,666	\$13,801
<b>Nominal</b>		<b>\$121,531</b>			<b>(\$135,987)</b>		<b>\$35,816</b>	<b>\$121,531</b>	<b>\$171,802</b>	<b>\$50,271</b>	
<b>NPV</b>		<b>\$38,230</b>			<b>(\$40,765)</b>		<b>\$11,267</b>	<b>\$38,230</b>	<b>\$52,032</b>	<b>\$13,801</b>	
	Discount Rate =	8.97%									
	Benefit/Cost Ratio =	1.36									

24

**Ratepayers' Impact 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)	(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)
2000	\$0	\$420	\$186	(\$639)	\$0	\$0	(\$277)	\$0	\$0	\$1,244	\$277	(\$967)	(\$967)
2001	\$0	\$833	\$368	(\$1,283)	(\$1,350)	(\$475)	(\$597)	\$0	\$0	\$2,484	\$2,422	(\$62)	(\$1,024)
2002	\$0	\$1,329	\$587	(\$2,003)	(\$2,224)	(\$778)	(\$948)	\$0	\$0	\$3,919	\$3,947	\$28	(\$1,001)
2003	\$0	\$1,742	\$770	(\$2,677)	(\$2,976)	(\$1,045)	(\$1,274)	\$0	\$0	\$5,189	\$5,296	\$107	(\$918)
2004	\$0	\$2,093	\$925	(\$3,088)	(\$3,694)	(\$1,288)	(\$1,539)	\$0	\$0	\$6,106	\$6,522	\$416	(\$624)
2005	\$0	\$2,383	\$1,053	(\$3,589)	(\$4,347)	(\$1,504)	(\$1,776)	\$0	\$0	\$7,024	\$7,627	\$602	(\$232)
2006	\$0	\$2,589	\$1,145	(\$3,890)	(\$4,874)	(\$1,876)	(\$1,980)	\$0	\$0	\$7,624	\$8,530	\$906	\$309
2007	\$0	\$2,796	\$1,236	(\$4,236)	(\$5,381)	(\$1,856)	(\$2,155)	\$0	\$0	\$8,268	\$9,392	\$1,125	\$925
2008	\$0	\$2,920	\$1,291	(\$4,542)	(\$5,746)	(\$1,988)	(\$2,331)	\$0	\$0	\$8,753	\$10,065	\$1,313	\$1,586
2009	\$0	\$3,044	\$1,345	(\$4,709)	(\$6,130)	(\$2,126)	(\$2,508)	\$0	\$0	\$9,099	\$10,764	\$1,665	\$2,354
2010	\$0	\$3,044	\$1,345	(\$4,753)	(\$6,305)	(\$2,180)	(\$2,549)	\$0	\$0	\$9,142	\$11,034	\$1,892	\$3,156
2011	\$0	\$3,044	\$1,345	(\$4,798)	(\$6,475)	(\$2,236)	(\$2,597)	\$0	\$0	\$9,187	\$11,308	\$2,121	\$3,880
2012	\$0	\$3,044	\$1,345	(\$4,844)	(\$6,650)	(\$2,293)	(\$2,683)	\$0	\$0	\$9,233	\$11,627	\$2,394	\$4,834
2013	\$0	\$3,044	\$1,345	(\$4,891)	(\$6,836)	(\$2,352)	(\$2,770)	\$0	\$0	\$9,280	\$11,958	\$2,678	\$5,710
2014	\$0	\$3,044	\$1,345	(\$4,940)	(\$7,021)	(\$2,412)	(\$2,812)	\$0	\$0	\$9,329	\$12,245	\$2,916	\$6,586
2015	\$0	\$3,044	\$1,345	(\$4,990)	(\$7,209)	(\$2,474)	(\$2,763)	\$0	\$0	\$9,379	\$12,446	\$3,067	\$7,432
2016	\$0	\$3,044	\$1,345	(\$5,042)	(\$7,396)	(\$2,538)	(\$2,767)	\$0	\$0	\$9,431	\$12,701	\$3,270	\$8,259
2017	\$0	\$3,044	\$1,345	(\$5,096)	(\$7,591)	(\$2,603)	(\$2,727)	\$0	\$0	\$9,485	\$12,920	\$3,435	\$9,058
2018	\$0	\$3,044	\$1,345	(\$5,151)	(\$7,799)	(\$2,669)	(\$2,702)	\$0	\$0	\$9,540	\$13,170	\$3,630	\$9,830
2019	\$0	\$3,044	\$1,345	(\$5,207)	(\$8,014)	(\$2,738)	(\$2,859)	\$0	\$0	\$9,596	\$13,610	\$4,014	\$10,614
2020	\$0	\$3,044	\$1,345	(\$5,265)	(\$8,307)	(\$2,808)	(\$2,946)	\$0	\$0	\$9,655	\$14,061	\$4,407	\$11,405
2021	\$0	\$3,044	\$1,345	(\$5,325)	(\$8,615)	(\$2,880)	(\$3,036)	\$0	\$0	\$9,715	\$14,531	\$4,816	\$12,198
2022	\$0	\$3,044	\$1,345	(\$5,387)	(\$8,937)	(\$2,953)	(\$3,129)	\$0	\$0	\$9,776	\$15,020	\$5,243	\$12,990
2023	\$0	\$3,044	\$1,345	(\$5,451)	(\$9,205)	(\$3,029)	(\$3,225)	\$0	\$0	\$9,840	\$15,480	\$5,620	\$13,769
2024	\$0	\$3,044	\$1,345	(\$5,518)	(\$9,477)	(\$3,107)	(\$3,324)	\$0	\$0	\$9,907	\$15,908	\$6,001	\$14,532
2025	\$0	\$3,044	\$1,345	(\$5,587)	(\$9,758)	(\$3,186)	(\$3,428)	\$0	\$0	\$9,976	\$16,370	\$6,394	\$15,279
2026	\$0	\$3,044	\$1,345	(\$5,659)	(\$10,047)	(\$3,268)	(\$3,531)	\$0	\$0	\$10,048	\$16,846	\$6,798	\$16,007
2027	\$0	\$3,044	\$1,345	(\$5,732)	(\$10,345)	(\$3,352)	(\$3,639)	\$0	\$0	\$10,121	\$17,336	\$7,216	\$16,716
2028	\$0	\$3,044	\$1,345	(\$5,808)	(\$10,653)	(\$3,438)	(\$3,750)	\$0	\$0	\$10,197	\$17,841	\$7,644	\$17,406
2029	\$0	\$3,044	\$1,345	(\$5,886)	(\$10,970)	(\$3,526)	(\$3,865)	\$0	\$0	\$10,275	\$18,361	\$8,086	\$18,075
Nominal		\$81,021	\$35,816	(\$135,967)	(\$204,333)	(\$68,778)	(\$76,484)			\$252,823	\$349,594	\$96,771	
NPV		\$25,487	\$11,267	(\$40,765)	(\$55,035)	(\$18,820)	(\$21,736)			\$77,518	\$95,594	\$18,075	
Discount Rate =		8.97%											
Benefit/Cost Ratio =		1.23											

25

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## Residential Geothermal Heat Pump Program

### • Program Description

The objective of the Residential Geothermal Heat Pump Program is to reduce the demand and energy requirements of new and existing residential customers through the promotion and installation of advanced and emerging geothermal systems. Due to the long life of space conditioning equipment, the choices that are made over the next decade regarding space conditioning equipment will have important economic and environmental ramifications lasting well into the next century. Geothermal heat pumps provide significant benefits to participating customers in the form of reduced operating costs and increased comfort levels, and are superior to other available heating and cooling technologies with respect to source efficiency and environmental impacts. Gulf Power Company's Geothermal Heat Pump program is designed to overcome existing market barriers, specifically, lack of consumer awareness, knowledge and acceptance of this technology. This program will promote efficiency levels well above current market conditions, specifically those units with an Energy Efficiency Ratio (EER) of 13.0 or higher.

According to the Department of Energy (DOE) geothermal technology is the most energy-efficient and environmentally clean space-conditioning system available today. Additionally, a recent DOE study indicates that geothermal systems have the lowest life-cycle cost of any HVAC system today.

In addition, the Environmental Protection Agency (EPA) in a 1993 report titled "Space Conditioning: The Next Frontier" stated that advanced residential space conditioning equipment can save consumers money, significantly reduce emissions and can be highly cost-effective for utility conservation programs. In this report, EPA explored advanced alternative space conditioning technologies and the opportunities each provides for cost-effective energy savings and pollution prevention. EPA compared the performance and cost of emerging high-efficiency space conditioning equipment with equipment already on the market (i.e. high efficiency air source heat pump, emerging ground source heat pump,

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

emerging gas-fired heat pump, advanced gas furnace/high efficient AC, etc.). All comparisons were based on source energy performance taking into account losses associated with all stages of energy use, i.e. energy production, transmission, and distribution.

A summary of the major findings included:

- The emerging ground source heat pump had the highest source heating season performance factor (HSPF) in all locations.
- The emerging ground source heat pump also had the highest cooling HSPF in all locations, followed by the advanced ground source heat pump.
- The emerging and advanced ground source heat pump systems were highly cost-effective as replacement units when compared to all other systems.

Gulf Power Company intends to continue this program over a sustained period of time, currently expected to be about five years, in order to educate consumers on geothermal technology and raise awareness about the availability, affordability, and improved customer satisfaction associated with these units. This commitment is necessary to foster a stable market for this promising technology. Not only will this increase customer and trade ally confidence, it will serve to encourage competition within this technology market and reduce the higher initial cost generally associated with new technology.

- **Participation Standards**

- The Residential Geothermal Heat Pump Program will provide Gulf Power Company's residential customers an incentive to install advanced residential space conditioning technologies; specifically, geothermal HVAC systems. Gulf Power Company will promote these systems by providing: guaranteed heating and cooling operating costs to customers installing geothermal heat pumps in single family homes; \$250 rebate for multifamily projects; financing availability for

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

qualified geothermal installations in existing homes; economic analyses and comparisons; and Gulf Power Company will participate in field days and demonstration projects.

- All Gulf Power Company served single and multi-family dwellings in new or existing structures are eligible for the program. Single-family is defined as a unit occupied by one family or household which includes single-family detached or duplex. Multi-family is defined as three or more units attached within a single structure.
- All participants must be willing to have an existing home energy audit or new home plan review completed to address proper HVAC sizing, proper installation and other conservation measures.
- To qualify for the guaranteed heating and cooling cost or the multi family incentive the geothermal heat pump must meet the minimum efficiency of 13.0 EER at 90° entering water temperature (85° if 90° data is not published) and water flow of 3.0 gallons per minute per ton.
- The incentive will be issued for only one 13.0 EER geothermal unit per dwelling unit. It is not based on the unit size (ex: 12,000 BTUH or 36,000 BTUH).
- All participants will be paid per dwelling unit in one single payment after verification and inspection by a Gulf Power Company Energy Consultant.

To qualify for guaranteed heating and cooling costs, the closed loop geothermal installation must meet specific installation guidelines. A Gulf Power Company Energy Consultant will perform duct diagnostics during new home construction process or at existing home before and after equipment installation as necessary to assure installation guidelines are met.

The equipment contractor will set the Gulf Power Company provided electrical meter and meter enclosure in close proximity to the geothermal unit

Heating and cooling costs will be estimated for determining the guaranteed amount by performing a Residential Building Energy Program (RBEP) energy calculation on the home with the performance

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

data on the actual unit to be installed and comfort conditions of seventy-two (72) degrees winter and seventy-five (75) degrees summer. The annual heating and cooling kWh times 7.0 cents will give the approximate annual cost. Guarantee will actually be based on kWh usage.

Meter must be read by Gulf Power Company personnel at the time of owner occupancy to assure accurate record (unit could be used during construction for heating/cooling or drying in some cases). One year from date of original meter reading, Gulf Power Company representative will read the meter to determine actual kWh usage during the first year. At the end of year two, a Gulf Power Company representative will read the meter to determine actual kWh usage during the second year. If actual kWh for either of the two years exceeds the warranted usage, documentation of the warranted and actual usage will be forwarded to Gulf Power Company Corporate Office Marketing for customer reimbursement. A copy of the geothermal heat pump heating and cooling cost guarantee is provided as Attachment A.

Gulf Power Company reserves the right to weather normalize the original estimate of guaranteed amount if combined heating and cooling degree hours exceed typical meteorological year (TMY) degree hours by 10% or more.

- **Benefits and Costs**

All kW and kWh reduction is compared to a minimum code base unit of 10.0 SEER. The minimum summer kW reduction projected is 1.2 ranging to 1.7 dependent on existing home or new home construction, respectively. The weighted average summer kW reduction is 1.45 for all homes. The annual kWh reductions range from 1,183 for existing homes and 2,841 for new home construction with a weighted average annual net reduction of 2,012 kWh. The kW and kWh savings are measured at the meter.

Calculations for kW and kWh savings are derived from the Residential Building Energy Program (RBEP) computer simulations. Inputs are based on Gulf's 1996 and 1997 averages for new home and existing home geothermal installations. The computations include only the effect of equipment efficiency alterations, not BTUH capacity or thermal package changes. Greater savings in kW and kWh will be realized when thermal packages are also improved.

- **Monitoring and Evaluation**

Gulf Power Company will utilize its Gulf Account Reporting System (GARS) to track all geothermal installations. Gulf Power Company will further validate engineering analysis of energy and demand savings with billing data and metering of customer equipment. In order to assess levels and reasons for program non-participation, interviews will be conducted with program participants, dealers and customers that chose not to participate. *Dependent upon the level of participation, surveys may be conducted among customers with the geothermal heat pump and those that have other systems to establish levels of customer satisfaction with the technology.*

- **Cost Effectiveness**

This program is cost-effective using the Florida Public Service Commission's approved methodology (Rule 25-17.008). The cost-effectiveness runs are included in Attachment C.

Customer cost figures are derived from contractor estimates for the installed measures. A significant amount of research and development is taking place with regard to reducing first cost of geothermal installations. Research by the *Department of Energy, the Electric Power Research Institute, the Geothermal Heat Pump Consortium, the International Ground Source Heat Pump Association, and other groups* is expected to result in significant reductions in installation costs in the future.

**Attachment A**

**GEOHERMAL HEAT PUMP  
 HEATING AND COOLING COST GUARANTEE**

Homeowner Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, State, Zip \_\_\_\_\_  
 Phone Number \_\_\_\_\_  
 Date of Commencement \_\_\_\_\_  
 Warranted Heating and Cooling Cost \_\_\_\_\_

Gulf Power Company, along with the Geothermal Heat Pump Installing Contractor and the Geothermal Loop Installer, certify that the geothermal closed loop heat pump(s) installed at the following location has met the installation guidelines necessary to qualify for a guarantee of the maximum energy use required to operate the geothermal system under normal operating conditions and the following limitations during two consecutive one year periods commencing at the date as noted above.

Meter reading (submeter) beginning \_\_\_\_\_  
 Meter reading (submeter) end of year one \_\_\_\_\_  
 Meter reading (submeter) end of year two \_\_\_\_\_  
 Warranted usage kWh annual \_\_\_\_\_  
 Actual kWh year one \_\_\_\_\_  
 Actual kWh year two \_\_\_\_\_

Gulf Power Company warrants to the homeowner named above, that the energy required to operate the geothermal heat pump(s) installed at the listed address will not exceed the Warranted Usage kilowatt-hours (kWh). Heating and cooling Warranted Usage kWh were calculated by use of the Residential Building Energy Program (RBEP). The estimated operating cost of this Warranted Usage kWh is derived by multiplying the kWh times 7 cents.

Gulf Power reserves the right to adjust the warranted usage kWh by weather normalization if the combined

heating and cooling degree hours exceed Typical Meteorological Year (TMY) degree hours by 10% or more.

Should the Actual Usage kWh exceed the Warranted Usage kWh in any one-year period, Gulf Power will reimburse the homeowner for 100 percent of the difference according to the following formula:

$$\begin{aligned} & \text{Meter reading (submeter) end of period} \\ & - \text{beginning meter reading (submeter)} \\ & \text{Actual Usage for heating and cooling} \\ & - \text{Warranted Usage (may be weather adjusted)} \\ & \times \text{Rate (customer's average annual cost per kWh)} \\ & = \text{Reimbursement Due} \end{aligned}$$

**Homeowner Responsibilities**

In order to maintain this guarantee, the Homeowner agrees to:

1. Maintain reasonable temperatures not below seventy-five (75) degrees F during the cooling season or above seventy-two (72) degrees F during the heating season.
2. Practice reasonable energy conservation habits.
3. Change or clean heat pump filters regularly as recommended by the equipment manufacturer.
4. Service the HVAC equipment as recommended by the equipment manufacturer.
5. Provide reasonable access for Gulf Power Energy Consultant to read and record meter reading at the end of year one and year two time periods.
6. Inform Gulf Power Energy Consultant of any alteration or modifications to property or equipment as well as any equipment malfunction that may affect heat pump energy consumption. Homeowner agrees that such alteration, modification or malfunction may cause this guarantee to terminate.

Gulf Power Energy Consultant  
 Energy Consultant Signature \_\_\_\_\_

Geothermal Dealer  
 Dealer Signature \_\_\_\_\_

Geothermal Loop Installer  
 Loop Installer Signature \_\_\_\_\_

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

### **LIMITATIONS**

Gulf Power Company shall not be liable for any incidental or consequential damages resulting from breach of the guarantee other than as expressly stated in this agreement.

The Homeowner recognizes and agrees that Gulf Power Company is not a seller, distributor, manufacturer or installer of the equipment described herein, and that Gulf Power Company makes no warranties, express or implied, including warranties of merchantability or fitness for purpose, except that Gulf Power Company warrants that the energy required to operate the geothermal heat pump(s) installed at the listed address will not exceed the Warranted Usage kilowatt hours. Homeowner agrees that Gulf Power Company will not be liable for any direct, indirect or consequential damage suffered by the Homeowner or third party caused by the heating and cooling system, its use, installation, manufacture, or performance or lack of performance. This warranty is non-transferable.

### **INSPECTIONS**

*Gulf Power Company shall have the right to verify by conducting an inspection of the Homeowner's dwelling any warranty claim made by the Homeowner. Gulf Power Company shall have the right to enter the Homeowner's dwelling and to make an inspection at a reasonable time by giving to the Homeowner a notice of intention to inspect at least 48 hours prior to such inspection. Customer shall not withhold consent to Gulf Power Company to conduct an inspection and agrees to be present at the dwelling at the time of the inspection.*

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## GEOHERMAL HEAT PUMP

### Installation Guidelines

Job specifications and installation guidelines are as follows:

- Must be closed loop geothermal heat pump.
- The geothermal heat pump must meet the minimum efficiency of 13.0 EER at 90° entering water temperature (85° if 90° data is not published) and water flow of 3.0 gallons per minute per ton.
- Pressure and temperature (P/T) ports shall be installed on all loop systems.
- All piping for loop shall be PE 3408 polyethylene pipe with heat fused joints.
- Exposed polyethylene pipe shall be insulated with minimum 3/8 inch armaflex or equivalent to prevent condensation and potential moisture damage to surrounding materials.
- All loop piping is to be pressure tested above ground prior to placing in bore holes or trench.
- All vertical bore holes are to be grouted/sealed at surface penetrations or in accordance with standard water management requirements.
- Unit shall be set on sound deadening/vibration isolation pad.
- Equipment shall be sized according to Manual J or equivalent load calculation procedure.
- Equipment contractor shall provide manufacturer letter of certification to install ground source closed loop heat pumps.
- Loop contractor to provide manufacturer letter of certification in heat fusion, design (sizing), and installation of ground source closed loop systems.
- Loop contractor guarantees that loop temperature will not exceed design condition of 100 degree entering water temperature during normal cooling operations.
- Ducts shall be visually inspected for leakage. Any visible problem areas or leakage points shall be repaired or sealed.

## Residential Geothermal Heat Pump Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	2,012	1.90	1.45	1,006,000	950	725
2001	2,012	1.90	1.45	1,207,200	1,140	870
2002	2,012	1.90	1.45	1,408,400	1,330	1,015
2003	2,012	1.90	1.45	1,609,600	1,520	1,160
2004	2,012	1.90	1.45	1,810,800	1,710	1,305
2005	2,012	1.90	1.45	2,012,000	1,900	1,450
2006	2,012	1.90	1.45	2,012,000	1,900	1,450
2007	2,012	1.90	1.45	2,012,000	1,900	1,450
2008	2,012	1.90	1.45	2,012,000	1,900	1,450
2009	2,012	1.90	1.45	2,012,000	1,900	1,450

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
7	2,167	2.46	1.88	1,083,462	1,230	939
8	2,167	2.46	1.88	1,300,154	1,476	1,127
9	2,167	2.46	1.88	1,516,847	1,722	1,314
10	2,167	2.46	1.88	1,733,539	1,968	1,502
11	2,167	2.46	1.88	1,950,232	2,214	1,690
12	2,167	2.46	1.88	2,166,924	2,460	1,878
13	2,167	2.46	1.88	2,166,924	2,460	1,878
14	2,167	2.46	1.88	2,166,924	2,460	1,878
15	2,167	2.46	1.88	2,166,924	2,460	1,878
16	2,167	2.46	1.88	2,166,924	2,460	1,878

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	312,263	310,277	500	0.2%	500
2001	319,883	317,887	600	0.3%	1,100
2002	326,907	324,859	700	0.6%	1,800
2003	332,822	330,739	800	0.8%	2,600
2004	338,496	336,378	900	1.0%	3,500
2005	344,126	341,973	1,000	1.3%	4,500
2006	349,831	347,643	1,000	1.6%	5,500
2007	355,624	353,401	1,000	1.8%	6,500
2008	361,464	359,206	1,000	2.1%	7,500
2009	367,275	364,982	1,000	2.3%	8,500

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	-1.45	kW/Cus
(2) Change in Peak kW per Customer at generator	-1.88	kW Gen/Cus
(3) kW Line Loss Percentage	12.60%	
(4) Change in kWh per Customer at generator	(2,166.92)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	7.70%	
(6) Group Line Loss Multiplier	1.0014	
(7) Annual Change in Customer kWh at Meter	(2,012.00)	kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	-1.90	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	30	Years
(4) K-Factor for Generation	1.4493	
(5) K-Factor for T&D	1.4394	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	0	

III. Utility & Customer Costs

(1) Utility Nonrecurring Cost Per Customer	See F-25 Colu	\$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00	\$/Cus/Year
(3) Utility Cost Escalation Rate	0.00%	
(4) Customer Equipment Cost	\$1,970.00	\$/Cus
(5) Customer Equipment Cost Escalation Rate	3.06%	
(6) Customer O&M Cost	(\$97.00)	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	3.06%	
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	3.06%	
* (10) Change in Supply Costs	\$0.00	\$/Cus/Year
* (11) Supply Costs Escalation Rate	3.06%	
* (12) Utility Discount Rate	8.97%	
* (13) Utility AFUDC Rate	10.30%	
* (14) Utility Nonrecurring Rebate/Incentive	See F-25 Colu	\$/Cus
* (15) Utility Recurring Rebate/Incentive	\$0.00	\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	3.06%	

IV. Incremental Generation, Transmission, & Distribution Costs

(1) Base Year	2000
(2) In-Service Year For Incremental Generation	2001
(3) In-Service Year For Incremental T & D	2001
(4) Base Year Incremental Generation Cost	\$234.85 \$/kW
(5) Base Year Incremental Transmission Cost	\$58.75 \$/kW
(6) Base Year Incremental Distribution Cost	\$33.00 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	2.56%
(8) Generator Fixed O & M Cost	\$2.77 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	2.99%
(10) Transmission Fixed O & M Cost	\$0.73 \$/kW/Yr
(11) Distribution Fixed O & M Cost	\$0.84 \$/kW/Yr
(12) T&D Fixed O&M Escalation Rate	2.56%
(13) Incremental Gen Variable O & M Costs	\$0.433 \$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	3.84%
(15) Incremental Gen Capacity Factor	3.40%
(16) Incremental Generating Unit Fuel Cost	\$0.0356 \$/kWh
(17) Incremental Gen Unit Fuel Esc Rate	3.00%
* (18) Incremental Purchased Capacity Cost	\$20.70 \$/KW/YR
* (19) Incremental Capacity Cost Esc Rate	2.56%

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)	\$0.0352 \$/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

	RIM	Participants'
NPV Benefits(\$000s)	\$14,999	\$26,195
NPV Costs (\$000s)	\$12,844	\$26,759
NPV Net Benefits (\$000s)	\$2,155	(\$564)
Benefit:Cost Ratio	1.168	0.979

\* Supplemental Information Not Specifically Specified in Cost Effectiveness Manual

**INPUT DATA -- PART 2**  
**Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	Cumulative Total Participating Customers	Cumulative Participating Customers Adj Free Rides	Utility Average System Fuel Cost (C / kWh)	Marginal Fuel Cost (Decreases) (C / kWh)	Marginal Fuel Cost (Increases) (C / kWh)	Replacement Fuel Cost (C / kWh)	Program kW Effectiveness Factor	Program kWh Effectiveness Factor	Other Costs (\$000)	Other Benefits (\$000)
2000	500	500	2.0531	2.0099	2.0099	2.0531	1.00	1.00	\$0	\$0
2001	1,100	1,100	1.8796	2.1798	2.1798	1.8796	1.00	1.00	\$0	\$0
2002	1,800	1,800	1.7318	2.1667	2.1667	1.7318	1.00	1.00	\$0	\$0
2003	2,600	2,600	1.7345	2.2272	2.2272	1.7345	1.00	1.00	\$0	\$0
2004	3,500	3,500	1.7895	2.2390	2.2390	1.7895	1.00	1.00	\$0	\$0
2005	4,500	4,500	1.8528	2.2692	2.2692	1.8528	1.00	1.00	\$0	\$0
2006	5,500	5,500	1.8989	2.3280	2.3280	1.8989	1.00	1.00	\$0	\$0
2007	6,500	6,500	1.9501	2.3468	2.3468	1.9501	1.00	1.00	\$0	\$0
2008	7,500	7,500	1.9987	2.4306	2.4306	1.9987	1.00	1.00	\$0	\$0
2009	8,500	8,500	2.0415	2.5090	2.5090	2.0415	1.00	1.00	\$0	\$0
2010	9,500	9,500	2.0973	2.5498	2.5498	2.0973	1.00	1.00	\$0	\$0
2011	10,500	10,500	2.1547	2.5981	2.5981	2.1547	1.00	1.00	\$0	\$0
2012	11,500	11,500	2.2136	2.6838	2.6838	2.2136	1.00	1.00	\$0	\$0
2013	12,500	12,500	2.2740	2.7707	2.7707	2.2740	1.00	1.00	\$0	\$0
2014	13,500	13,500	2.3362	2.8131	2.8131	2.3362	1.00	1.00	\$0	\$0
2015	14,500	14,500	2.4000	2.7636	2.7636	2.4000	1.00	1.00	\$0	\$0
2016	15,500	15,500	2.4656	2.7683	2.7683	2.4656	1.00	1.00	\$0	\$0
2017	16,500	16,500	2.5330	2.7274	2.7274	2.5330	1.00	1.00	\$0	\$0
2018	17,500	17,500	2.6023	2.7028	2.7028	2.6023	1.00	1.00	\$0	\$0
2019	18,500	18,500	2.6734	2.8597	2.8597	2.6734	1.00	1.00	\$0	\$0
2020	19,500	19,500	2.7464	2.9472	2.9472	2.7464	1.00	1.00	\$0	\$0
2021	20,500	20,500	2.8215	3.0375	3.0375	2.8215	1.00	1.00	\$0	\$0
2022	21,500	21,500	2.8986	3.1305	3.1305	2.8986	1.00	1.00	\$0	\$0
2023	22,500	22,500	2.9778	3.2264	3.2264	2.9778	1.00	1.00	\$0	\$0
2024	23,500	23,500	3.0690	3.3251	3.3251	3.0690	1.00	1.00	\$0	\$0
2025	24,500	24,500	3.1630	3.4270	3.4270	3.1630	1.00	1.00	\$0	\$0
2026	25,500	25,500	3.2598	3.5319	3.5319	3.2598	1.00	1.00	\$0	\$0
2027	26,500	26,500	3.3596	3.6400	3.6400	3.3596	1.00	1.00	\$0	\$0
2028	27,500	27,500	3.4625	3.7515	3.7515	3.4625	1.00	1.00	\$0	\$0
2029	28,500	28,500	3.5685	3.8664	3.8664	3.5685	1.00	1.00	\$0	\$0

36

Incremental Generation Capacity Costs or Benefits

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

(1) Year	(2) Incremental Owned Gen. Capacity Cost (\$000s)	(3) Incremental Generation Fixed O&M (\$000s)	(4) Incremental Generation Variable O&M (\$000s)	(5) Fuel Cost for the Incr. Cap. (\$000s)	(6) Replacement Fuel Cost (\$000s)	(6a) Incremental Purchased Gen. Capacity Cost (\$000s)	(7) Incremental Gen. Capacity Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2001	(\$103)	(\$6)	(\$1)	(\$20)	(\$12)		(\$118)
2002	(\$162)	(\$10)	(\$1)	(\$34)	(\$17)		(\$190)
2003	(\$223)	(\$15)	(\$2)	(\$48)	(\$25)		(\$263)
2004	(\$287)	(\$20)	(\$3)	(\$68)	(\$35)		(\$343)
2005	(\$353)	(\$27)	(\$4)	(\$91)	(\$47)		(\$429)
2006	(\$413)	(\$34)	(\$5)	(\$117)	(\$58)		(\$511)
2007	(\$468)	(\$42)	(\$6)	(\$140)	(\$71)		(\$585)
2008	(\$516)	(\$49)	(\$7)	(\$164)	(\$84)		(\$653)
2009	(\$559)	(\$58)	(\$9)	(\$189)	(\$97)		(\$716)
2010	(\$595)	(\$68)	(\$10)	(\$218)	(\$111)		(\$778)
2011	(\$624)	(\$75)	(\$12)	(\$249)	(\$127)		(\$834)
2012	(\$648)	(\$85)	(\$13)	(\$281)	(\$142)		(\$885)
2013	(\$665)	(\$95)	(\$15)	(\$315)	(\$159)		(\$932)
2014	(\$676)	(\$106)	(\$17)	(\$350)	(\$176)		(\$973)
2015	(\$681)	(\$117)	(\$19)	(\$387)	(\$195)		(\$1,010)
2016	(\$687)	(\$129)	(\$21)	(\$425)	(\$214)		(\$1,049)
2017	(\$703)	(\$141)	(\$24)	(\$465)	(\$234)		(\$1,099)
2018	(\$723)	(\$154)	(\$27)	(\$508)	(\$255)		(\$1,158)
2019	(\$742)	(\$168)	(\$30)	(\$554)	(\$277)		(\$1,217)
2020	(\$757)	(\$183)	(\$33)	(\$621)	(\$299)		(\$1,294)
2021	(\$770)	(\$198)	(\$37)	(\$694)	(\$323)		(\$1,375)
2022	(\$781)	(\$214)	(\$41)	(\$774)	(\$349)		(\$1,461)
2023	(\$789)	(\$230)	(\$46)	(\$842)	(\$375)		(\$1,531)
2024	(\$794)	(\$248)	(\$49)	(\$913)	(\$403)		(\$1,600)
2025	(\$797)	(\$266)	(\$53)	(\$989)	(\$433)		(\$1,671)
2026	(\$798)	(\$285)	(\$56)	(\$1,069)	(\$465)		(\$1,743)
2027	(\$796)	(\$305)	(\$60)	(\$1,154)	(\$498)		(\$1,817)
2028	(\$791)	(\$326)	(\$65)	(\$1,244)	(\$532)		(\$1,893)
2029	(\$784)	(\$348)	(\$69)	(\$1,339)	(\$569)		(\$1,972)
Nominal	(\$17,685)	(\$4,000)	(\$737)	(\$14,262)	(\$6,582)		(\$30,103)
NPV	(\$4,812)	(\$777)	(\$135)	(\$2,686)	(\$1,290)		(\$7,119)

Incremental T&D Capacity and Incremental Fuel

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

(1) Year	(2) Incremental Transmission Capacity Cost (\$000s)	(3) Incremental Transmission O&M Cost (\$000s)	(4) Total Incremental Trans. Cost (\$000s)	(5) Incremental Distribution Capacity Cost (\$000s)	(6) Incremental Distribution O&M Cost (\$000s)	(7) Total Incremental Dist. Cost (\$000s)	(8) Effective Incremental Fuel Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	(\$22)
2001	(\$26)	(\$2)	(\$28)	(\$15)	(\$2)	(\$16)	(\$52)
2002	(\$41)	(\$3)	(\$43)	(\$23)	(\$3)	(\$26)	(\$85)
2003	(\$56)	(\$4)	(\$60)	(\$32)	(\$4)	(\$36)	(\$125)
2004	(\$72)	(\$5)	(\$77)	(\$40)	(\$6)	(\$47)	(\$170)
2005	(\$88)	(\$7)	(\$95)	(\$50)	(\$8)	(\$58)	(\$221)
2006	(\$103)	(\$9)	(\$112)	(\$68)	(\$10)	(\$68)	(\$277)
2007	(\$116)	(\$11)	(\$127)	(\$85)	(\$12)	(\$77)	(\$331)
2008	(\$127)	(\$13)	(\$140)	(\$71)	(\$14)	(\$86)	(\$395)
2009	(\$137)	(\$15)	(\$152)	(\$77)	(\$17)	(\$94)	(\$462)
2010	(\$145)	(\$17)	(\$162)	(\$81)	(\$19)	(\$101)	(\$525)
2011	(\$151)	(\$19)	(\$170)	(\$85)	(\$22)	(\$107)	(\$591)
2012	(\$156)	(\$21)	(\$177)	(\$87)	(\$24)	(\$112)	(\$669)
2013	(\$158)	(\$24)	(\$182)	(\$89)	(\$27)	(\$116)	(\$750)
2014	(\$160)	(\$27)	(\$186)	(\$90)	(\$30)	(\$120)	(\$823)
2015	(\$159)	(\$29)	(\$188)	(\$89)	(\$33)	(\$123)	(\$868)
2016	(\$158)	(\$32)	(\$190)	(\$89)	(\$36)	(\$125)	(\$930)
2017	(\$160)	(\$35)	(\$195)	(\$90)	(\$40)	(\$130)	(\$975)
2018	(\$163)	(\$38)	(\$201)	(\$91)	(\$43)	(\$135)	(\$1,025)
2019	(\$164)	(\$41)	(\$206)	(\$92)	(\$47)	(\$139)	(\$1,146)
2020	(\$165)	(\$45)	(\$210)	(\$93)	(\$51)	(\$144)	(\$1,245)
2021	(\$165)	(\$48)	(\$214)	(\$93)	(\$55)	(\$148)	(\$1,349)
2022	(\$165)	(\$52)	(\$216)	(\$93)	(\$59)	(\$151)	(\$1,458)
2023	(\$163)	(\$56)	(\$219)	(\$92)	(\$63)	(\$155)	(\$1,573)
2024	(\$161)	(\$59)	(\$220)	(\$90)	(\$68)	(\$158)	(\$1,693)
2025	(\$158)	(\$64)	(\$221)	(\$89)	(\$72)	(\$161)	(\$1,819)
2026	(\$154)	(\$68)	(\$222)	(\$87)	(\$77)	(\$164)	(\$1,952)
2027	(\$149)	(\$72)	(\$222)	(\$84)	(\$82)	(\$166)	(\$2,090)
2028	(\$144)	(\$77)	(\$221)	(\$81)	(\$88)	(\$168)	(\$2,236)
2029	(\$137)	(\$82)	(\$219)	(\$77)	(\$93)	(\$170)	(\$2,388)
Nominal	(\$3,901)	(\$973)	(\$4,874)	(\$2,191)	(\$1,108)	(\$3,300)	(\$28,247)
NPV	(\$1,124)	(\$192)	(\$1,316)	(\$631)	(\$219)	(\$850)	(\$5,713)

Worksheet for Utility Program Costs and Participants' Benefits & Costs

Utility Program Costs, Rebates, & Incentives								Participating Customers' Benefits and Costs						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Year	Annual Incremental kWh Generated (000s)	Utility Non-recurring Costs (\$000)	Utility Recurring Costs (\$000)	Total Utility Program Costs (\$000)	Utility Non-recurring Rebates/Incent. (\$000)	Utility Recurring Rebates/Incent. (\$000)	Total Utility Paid Rebates/Incent. (\$000)	Participant Equipment Costs (\$000)	Participant O&M Costs (\$000)	Total Participant Costs (\$000)	Change in Participants' Billed kWh (000s)	Change in Participants' Billed Fuel (\$000)	Change in Participants' Billed Non-Fuel (\$000)	Change in Participants' Electric Bills (\$000)
2000	(1,083)	\$267	0	\$267	\$0	\$63	\$63	\$965	(\$49)	\$937	(1,008)	(\$21)	(\$36)	(\$56)
2001	(2,384)	\$250	0	\$250	\$0	\$75	\$75	\$1,218	(\$110)	\$1,108	(2,213)	(\$42)	(\$79)	(\$121)
2002	(3,900)	\$213	0	\$213	\$0	\$0	\$0	\$1,465	(\$185)	\$1,279	(3,822)	(\$63)	(\$128)	(\$190)
2003	(5,834)	\$183	0	\$183	\$0	\$0	\$0	\$1,725	(\$276)	\$1,449	(5,231)	(\$91)	(\$192)	(\$283)
2004	(7,584)	\$138	0	\$138	\$0	\$0	\$0	\$2,000	(\$383)	\$1,617	(7,042)	(\$128)	(\$244)	(\$370)
2005	(9,751)	\$125	0	\$125	\$0	\$0	\$0	\$2,291	(\$508)	\$1,783	(9,054)	(\$168)	(\$321)	(\$489)
2006	(11,918)	\$115	0	\$115	\$0	\$0	\$0	\$2,381	(\$839)	\$1,721	(11,066)	(\$210)	(\$387)	(\$598)
2007	(14,085)	\$105	0	\$105	\$0	\$0	\$0	\$2,433	(\$779)	\$1,654	(13,078)	(\$255)	(\$457)	(\$713)
2008	(18,252)	\$95	0	\$95	\$0	\$0	\$0	\$2,508	(\$926)	\$1,582	(15,090)	(\$302)	(\$541)	(\$843)
2008	(18,419)	\$85	0	\$85	\$0	\$0	\$0	\$2,684	(\$1,082)	\$1,503	(17,102)	(\$350)	(\$603)	(\$953)
2010	(20,586)	\$75	0	\$75	\$0	\$0	\$0	\$2,863	(\$1,248)	\$1,418	(19,114)	(\$401)	(\$674)	(\$1,076)
2011	(22,753)	\$65	0	\$65	\$0	\$0	\$0	\$2,745	(\$1,419)	\$1,328	(21,126)	(\$456)	(\$746)	(\$1,201)
2012	(24,920)	\$50	0	\$50	\$0	\$0	\$0	\$2,828	(\$1,602)	\$1,227	(23,138)	(\$513)	(\$817)	(\$1,330)
2013	(27,087)	\$35	0	\$35	\$0	\$0	\$0	\$2,818	(\$1,795)	\$1,121	(25,150)	(\$573)	(\$888)	(\$1,481)
2014	(29,253)	\$35	0	\$35	\$0	\$0	\$0	\$3,005	(\$1,997)	\$1,008	(27,162)	(\$635)	(\$959)	(\$1,595)
2015	(31,420)	\$36	0	\$36	\$0	\$0	\$0	\$3,097	(\$2,211)	\$886	(29,174)	(\$701)	(\$1,031)	(\$1,732)
2016	(33,587)	\$35	0	\$35	\$0	\$0	\$0	\$3,192	(\$2,436)	\$756	(31,186)	(\$770)	(\$1,102)	(\$1,872)
2017	(35,754)	\$35	0	\$35	\$0	\$0	\$0	\$3,290	(\$2,673)	\$617	(33,198)	(\$842)	(\$1,174)	(\$2,016)
2018	(37,921)	\$35	0	\$35	\$0	\$0	\$0	\$3,390	(\$2,921)	\$469	(35,210)	(\$918)	(\$1,245)	(\$2,163)
2019	(40,088)	\$35	0	\$35	\$0	\$0	\$0	\$3,494	(\$3,183)	\$311	(37,222)	(\$996)	(\$1,317)	(\$2,313)
2020	(42,255)	\$35	0	\$35	\$0	\$0	\$0	\$3,601	(\$3,458)	\$143	(39,234)	(\$1,079)	(\$1,388)	(\$2,467)
2021	(44,422)	\$35	0	\$35	\$0	\$0	\$0	\$3,711	(\$3,746)	(\$35)	(41,248)	(\$1,165)	(\$1,460)	(\$2,625)
2022	(46,589)	\$35	0	\$35	\$0	\$0	\$0	\$3,825	(\$4,049)	(\$224)	(43,258)	(\$1,256)	(\$1,532)	(\$2,787)
2023	(48,756)	\$35	0	\$35	\$0	\$0	\$0	\$3,942	(\$4,387)	(\$425)	(45,270)	(\$1,350)	(\$1,603)	(\$2,953)
2024	(50,923)	\$35	0	\$35	\$0	\$0	\$0	\$4,068	(\$4,701)	(\$638)	(47,282)	(\$1,453)	(\$1,675)	(\$3,128)
2025	(53,090)	\$35	0	\$35	\$0	\$0	\$0	\$4,187	(\$5,051)	(\$864)	(49,294)	(\$1,561)	(\$1,747)	(\$3,308)
2026	(55,257)	\$35	0	\$35	\$0	\$0	\$0	\$4,315	(\$5,418)	(\$1,103)	(51,306)	(\$1,675)	(\$1,819)	(\$3,493)
2027	(57,423)	\$35	0	\$35	\$0	\$0	\$0	\$4,448	(\$5,803)	(\$1,356)	(53,318)	(\$1,794)	(\$1,890)	(\$3,684)
2028	(59,590)	\$35	0	\$35	\$0	\$0	\$0	\$4,584	(\$6,207)	(\$1,623)	(55,330)	(\$1,918)	(\$1,962)	(\$3,881)
2029	(61,757)	\$35	0	\$35	\$0	\$0	\$0	\$4,724	(\$6,629)	(\$1,905)	(57,342)	(\$2,049)	(\$2,034)	(\$4,083)

39

**Total Resource Cost-Effectiveness Measure**  
**Cost-Effectiveness Analysis per Rule 25-17.006 Florida Administrative Code**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Year	Change in Electric Supply Costs (\$000s)	Utility's Program Costs (\$000s)	Participants' Program Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Incremental Generation Cap Costs (\$000s)	Incremental T&D Cap Costs (\$000s)	Incremental Prog Induced Fuel Costs (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Total Net Benefits (\$000s)	Cumulative Discounted Net Benefits (\$000s)
2000	\$0	\$267	\$937	\$0	\$0	\$0	\$0	(\$22)	\$1,203	\$22	(\$1,182)	(\$1,182)
2001	\$0	\$250	\$1,108	\$0	\$0	(\$118)	(\$44)	(\$52)	\$1,358	\$214	(\$1,144)	(\$2,231)
2002	\$0	\$213	\$1,279	\$0	\$0	(\$190)	(\$69)	(\$85)	\$1,492	\$344	(\$1,148)	(\$3,198)
2003	\$0	\$163	\$1,449	\$0	\$0	(\$263)	(\$96)	(\$125)	\$1,612	\$485	(\$1,127)	(\$4,089)
2004	\$0	\$138	\$1,617	\$0	\$0	(\$343)	(\$124)	(\$170)	\$1,755	\$637	(\$1,118)	(\$4,862)
2005	\$0	\$125	\$1,783	\$0	\$0	(\$429)	(\$153)	(\$221)	\$1,908	\$803	(\$1,105)	(\$5,581)
2006	\$0	\$115	\$1,721	\$0	\$0	(\$511)	(\$179)	(\$277)	\$1,836	\$968	(\$869)	(\$6,100)
2007	\$0	\$105	\$1,654	\$0	\$0	(\$585)	(\$204)	(\$331)	\$1,759	\$1,119	(\$640)	(\$6,451)
2008	\$0	\$95	\$1,582	\$0	\$0	(\$653)	(\$226)	(\$395)	\$1,677	\$1,274	(\$403)	(\$6,853)
2009	\$0	\$85	\$1,503	\$0	\$0	(\$718)	(\$245)	(\$462)	\$1,588	\$1,424	(\$164)	(\$6,729)
2010	\$0	\$75	\$1,418	\$0	\$0	(\$778)	(\$262)	(\$525)	\$1,493	\$1,585	\$73	(\$6,698)
2011	\$0	\$65	\$1,326	\$0	\$0	(\$834)	(\$277)	(\$591)	\$1,391	\$1,702	\$311	(\$6,577)
2012	\$0	\$50	\$1,227	\$0	\$0	(\$885)	(\$289)	(\$669)	\$1,277	\$1,842	\$565	(\$6,376)
2013	\$0	\$35	\$1,121	\$0	\$0	(\$932)	(\$299)	(\$750)	\$1,156	\$1,981	\$825	(\$6,106)
2014	\$0	\$35	\$1,008	\$0	\$0	(\$973)	(\$306)	(\$823)	\$1,043	\$2,102	\$1,060	(\$5,787)
2015	\$0	\$35	\$886	\$0	\$0	(\$1,010)	(\$311)	(\$868)	\$921	\$2,189	\$1,268	(\$5,438)
2016	\$0	\$35	\$756	\$0	\$0	(\$1,049)	(\$318)	(\$930)	\$791	\$2,294	\$1,503	(\$5,057)
2017	\$0	\$35	\$617	\$0	\$0	(\$1,099)	(\$325)	(\$975)	\$652	\$2,399	\$1,747	(\$4,652)
2018	\$0	\$35	\$489	\$0	\$0	(\$1,158)	(\$335)	(\$1,025)	\$504	\$2,518	\$2,014	(\$4,223)
2019	\$0	\$35	\$311	\$0	\$0	(\$1,217)	(\$345)	(\$1,146)	\$346	\$2,708	\$2,362	(\$3,761)
2020	\$0	\$35	\$143	\$0	\$0	(\$1,294)	(\$354)	(\$1,245)	\$178	\$2,893	\$2,714	(\$3,274)
2021	\$0	\$35	(\$35)	\$0	\$0	(\$1,375)	(\$361)	(\$1,349)	\$35	\$3,121	\$3,086	(\$2,786)
2022	\$0	\$35	(\$224)	\$0	\$0	(\$1,461)	(\$368)	(\$1,458)	\$35	\$3,512	\$3,477	(\$2,241)
2023	\$0	\$35	(\$425)	\$0	\$0	(\$1,531)	(\$374)	(\$1,573)	\$35	\$3,903	\$3,868	(\$1,705)
2024	\$0	\$35	(\$638)	\$0	\$0	(\$1,600)	(\$379)	(\$1,693)	\$35	\$4,311	\$4,276	(\$1,161)
2025	\$0	\$35	(\$864)	\$0	\$0	(\$1,671)	(\$383)	(\$1,819)	\$35	\$4,737	\$4,702	(\$612)
2026	\$0	\$35	(\$1,103)	\$0	\$0	(\$1,743)	(\$386)	(\$1,952)	\$35	\$5,184	\$5,149	(\$80)
2027	\$0	\$35	(\$1,356)	\$0	\$0	(\$1,817)	(\$388)	(\$2,090)	\$35	\$5,651	\$5,616	\$492
2028	\$0	\$35	(\$1,623)	\$0	\$0	(\$1,893)	(\$389)	(\$2,236)	\$35	\$6,141	\$6,106	\$1,043
2029	\$0	\$35	(\$1,905)	\$0	\$0	(\$1,972)	(\$390)	(\$2,388)	\$35	\$6,654	\$6,619	\$1,591

0 hr

Nominal	\$2,339	\$15,742				(\$30,103)	(\$8,174)	(\$28,247)	\$26,255	\$74,697	\$48,442	
NPV	\$1,375	\$12,034				(\$7,119)	(\$2,167)	(\$5,713)	\$14,245	\$15,836	\$1,591	
Discount Rate =	8.97%											
Benefit/Cost Ratio =	1.11											

**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)
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)
2000	\$985	(\$49)	\$0	\$0	(\$56)	\$0	\$63	\$985	\$167	(\$818)	(\$818)
2001	\$1,218	(\$110)	\$0	\$0	(\$121)	\$0	\$75	\$1,218	\$306	(\$912)	(\$1,655)
2002	\$1,465	(\$185)	\$0	\$0	(\$190)	\$0	\$0	\$1,465	\$376	(\$1,089)	(\$2,572)
2003	\$1,725	(\$276)	\$0	\$0	(\$283)	\$0	\$0	\$1,725	\$559	(\$1,166)	(\$3,473)
2004	\$2,000	(\$383)	\$0	\$0	(\$370)	\$0	\$0	\$2,000	\$753	(\$1,247)	(\$4,359)
2005	\$2,291	(\$508)	\$0	\$0	(\$489)	\$0	\$0	\$2,291	\$997	(\$1,294)	(\$5,200)
2006	\$2,361	(\$639)	\$0	\$0	(\$598)	\$0	\$0	\$2,361	\$1,237	(\$1,124)	(\$5,871)
2007	\$2,433	(\$779)	\$0	\$0	(\$713)	\$0	\$0	\$2,433	\$1,491	(\$942)	(\$6,387)
2008	\$2,508	(\$926)	\$0	\$0	(\$843)	\$0	\$0	\$2,508	\$1,769	(\$738)	(\$6,758)
2009	\$2,584	(\$1,082)	\$0	\$0	(\$963)	\$0	\$0	\$2,584	\$2,034	(\$550)	(\$7,012)
2010	\$2,663	(\$1,246)	\$0	\$0	(\$1,078)	\$0	\$0	\$2,663	\$2,322	(\$342)	(\$7,157)
2011	\$2,745	(\$1,419)	\$0	\$0	(\$1,201)	\$0	\$0	\$2,745	\$2,621	(\$124)	(\$7,205)
2012	\$2,829	(\$1,602)	\$0	\$0	(\$1,330)	\$0	\$0	\$2,829	\$2,932	\$103	(\$7,189)
2013	\$2,916	(\$1,795)	\$0	\$0	(\$1,461)	\$0	\$0	\$2,916	\$3,255	\$340	(\$7,057)
2014	\$3,005	(\$1,997)	\$0	\$0	(\$1,595)	\$0	\$0	\$3,005	\$3,592	\$587	(\$6,881)
2015	\$3,097	(\$2,211)	\$0	\$0	(\$1,732)	\$0	\$0	\$3,097	\$3,943	\$846	(\$6,648)
2016	\$3,192	(\$2,436)	\$0	\$0	(\$1,872)	\$0	\$0	\$3,192	\$4,308	\$1,116	(\$6,365)
2017	\$3,290	(\$2,673)	\$0	\$0	(\$2,016)	\$0	\$0	\$3,290	\$4,688	\$1,399	(\$6,041)
2018	\$3,390	(\$2,921)	\$0	\$0	(\$2,163)	\$0	\$0	\$3,390	\$5,084	\$1,694	(\$5,880)
2019	\$3,494	(\$3,183)	\$0	\$0	(\$2,313)	\$0	\$0	\$3,494	\$5,498	\$2,002	(\$5,289)
2020	\$3,601	(\$3,458)	\$0	\$0	(\$2,467)	\$0	\$0	\$3,601	\$5,925	\$2,324	(\$4,872)
2021	\$3,711	(\$3,746)	\$0	\$0	(\$2,625)	\$0	\$0	\$3,711	\$6,371	\$2,660	(\$4,434)
2022	\$3,825	(\$4,049)	\$0	\$0	(\$2,787)	\$0	\$0	\$3,825	\$6,836	\$3,011	(\$3,979)
2023	\$3,942	(\$4,367)	\$0	\$0	(\$2,953)	\$0	\$0	\$3,942	\$7,321	\$3,378	(\$3,511)
2024	\$4,063	(\$4,701)	\$0	\$0	(\$3,128)	\$0	\$0	\$4,063	\$7,829	\$3,766	(\$3,031)
2025	\$4,187	(\$5,051)	\$0	\$0	(\$3,308)	\$0	\$0	\$4,187	\$8,359	\$4,172	(\$2,544)
2026	\$4,315	(\$5,418)	\$0	\$0	(\$3,493)	\$0	\$0	\$4,315	\$8,912	\$4,596	(\$2,052)
2027	\$4,448	(\$5,803)	\$0	\$0	(\$3,684)	\$0	\$0	\$4,448	\$9,488	\$5,040	(\$1,556)
2028	\$4,584	(\$6,207)	\$0	\$0	(\$3,881)	\$0	\$0	\$4,584	\$10,088	\$5,504	(\$1,080)
2029	\$4,724	(\$6,629)	\$0	\$0	(\$4,083)	\$0	\$0	\$4,724	\$10,713	\$5,989	(\$564)
Nominal	\$91,592	(\$75,850)			(\$53,786)		\$138	\$91,592	\$129,773	\$38,181	
NPV	\$26,759	(\$14,725)			(\$11,338)		\$131	\$26,759	\$26,195	(\$564)	
Discount Rate =		8.97%									
Benefit/Cost Ratio =		0.98									

41

**Ratepayers' Impact 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)	(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)
2000	\$0	\$267	\$63	(\$58)	\$0	\$0	(\$22)	\$0	\$0	\$385	\$22	(\$364)	(\$364)
2001	\$0	\$250	\$75	(\$121)	(\$118)	(\$44)	(\$52)	\$0	\$0	\$446	\$214	(\$232)	(\$576)
2002	\$0	\$213	\$0	(\$190)	(\$190)	(\$69)	(\$85)	\$0	\$0	\$403	\$344	(\$59)	(\$626)
2003	\$0	\$163	\$0	(\$283)	(\$263)	(\$96)	(\$125)	\$0	\$0	\$446	\$485	\$39	(\$596)
2004	\$0	\$138	\$0	(\$370)	(\$343)	(\$124)	(\$170)	\$0	\$0	\$507	\$637	\$130	(\$504)
2005	\$0	\$125	\$0	(\$489)	(\$429)	(\$153)	(\$221)	\$0	\$0	\$614	\$803	\$189	(\$381)
2006	\$0	\$115	\$0	(\$598)	(\$511)	(\$179)	(\$277)	\$0	\$0	\$713	\$968	\$255	(\$229)
2007	\$0	\$105	\$0	(\$713)	(\$585)	(\$204)	(\$331)	\$0	\$0	\$818	\$1,119	\$302	(\$64)
2008	\$0	\$95	\$0	(\$843)	(\$653)	(\$226)	(\$395)	\$0	\$0	\$938	\$1,274	\$336	\$105
2009	\$0	\$85	\$0	(\$953)	(\$718)	(\$245)	(\$462)	\$0	\$0	\$1,038	\$1,424	\$386	\$283
2010	\$0	\$75	\$0	(\$1,078)	(\$778)	(\$282)	(\$525)	\$0	\$0	\$1,151	\$1,565	\$414	\$459
2011	\$0	\$65	\$0	(\$1,201)	(\$834)	(\$277)	(\$591)	\$0	\$0	\$1,266	\$1,702	\$435	\$628
2012	\$0	\$50	\$0	(\$1,330)	(\$885)	(\$289)	(\$669)	\$0	\$0	\$1,380	\$1,842	\$483	\$793
2013	\$0	\$35	\$0	(\$1,461)	(\$932)	(\$299)	(\$750)	\$0	\$0	\$1,496	\$1,981	\$485	\$952
2014	\$0	\$35	\$0	(\$1,595)	(\$973)	(\$306)	(\$823)	\$0	\$0	\$1,830	\$2,102	\$472	\$1,094
2015	\$0	\$35	\$0	(\$1,732)	(\$1,010)	(\$311)	(\$868)	\$0	\$0	\$1,767	\$2,189	\$422	\$1,210
2016	\$0	\$35	\$0	(\$1,872)	(\$1,049)	(\$316)	(\$930)	\$0	\$0	\$1,907	\$2,294	\$387	\$1,308
2017	\$0	\$35	\$0	(\$2,018)	(\$1,099)	(\$325)	(\$975)	\$0	\$0	\$2,051	\$2,399	\$348	\$1,389
2018	\$0	\$35	\$0	(\$2,163)	(\$1,158)	(\$335)	(\$1,025)	\$0	\$0	\$2,198	\$2,518	\$321	\$1,457
2019	\$0	\$35	\$0	(\$2,313)	(\$1,217)	(\$345)	(\$1,146)	\$0	\$0	\$2,348	\$2,708	\$360	\$1,527
2020	\$0	\$35	\$0	(\$2,467)	(\$1,294)	(\$354)	(\$1,245)	\$0	\$0	\$2,502	\$2,893	\$391	\$1,597
2021	\$0	\$35	\$0	(\$2,625)	(\$1,375)	(\$361)	(\$1,349)	\$0	\$0	\$2,660	\$3,086	\$426	\$1,668
2022	\$0	\$35	\$0	(\$2,787)	(\$1,461)	(\$368)	(\$1,458)	\$0	\$0	\$2,822	\$3,287	\$465	\$1,738
2023	\$0	\$35	\$0	(\$2,953)	(\$1,531)	(\$374)	(\$1,573)	\$0	\$0	\$2,988	\$3,478	\$490	\$1,806
2024	\$0	\$35	\$0	(\$3,128)	(\$1,600)	(\$379)	(\$1,693)	\$0	\$0	\$3,163	\$3,672	\$509	\$1,871
2025	\$0	\$35	\$0	(\$3,308)	(\$1,671)	(\$383)	(\$1,819)	\$0	\$0	\$3,343	\$3,873	\$530	\$1,932
2026	\$0	\$35	\$0	(\$3,493)	(\$1,743)	(\$388)	(\$1,952)	\$0	\$0	\$3,528	\$4,081	\$552	\$1,992
2027	\$0	\$35	\$0	(\$3,684)	(\$1,817)	(\$388)	(\$2,090)	\$0	\$0	\$3,719	\$4,295	\$576	\$2,048
2028	\$0	\$35	\$0	(\$3,881)	(\$1,893)	(\$389)	(\$2,236)	\$0	\$0	\$3,916	\$4,518	\$602	\$2,103
2029	\$0	\$35	\$0	(\$4,083)	(\$1,972)	(\$390)	(\$2,388)	\$0	\$0	\$4,118	\$4,749	\$631	\$2,155
<b>Nominal</b>		<b>\$2,339</b>	<b>\$138</b>	<b>(\$53,786)</b>	<b>(\$30,103)</b>	<b>(\$8,174)</b>	<b>(\$28,247)</b>			<b>\$56,263</b>	<b>\$66,523</b>	<b>\$10,261</b>	
<b>NPV</b>		<b>\$1,375</b>	<b>\$131</b>	<b>(\$11,338)</b>	<b>(\$7,119)</b>	<b>(\$2,167)</b>	<b>(\$5,713)</b>			<b>\$12,844</b>	<b>\$14,999</b>	<b>\$2,155</b>	
Discount Rate =		8.97%											
Benefit/Cost Ratio =		1.17											

42

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **GoodCents Home/Energy Star Program**

- **Program Description**

The GoodCents Home Program has long been the standard for energy efficient construction in Northwest Florida and throughout other parts of the country where the GoodCents Program has been utilized by as many as 270 different utilities. For Gulf Power Company and our customers, GoodCents homes have been providing benefits of reduced demand and energy usage since 1976. During this time, over 49,000 homes served by Gulf Power Company have been built to the GoodCents standards.

In an effort to further enhance the GoodCents Home Program and market it more efficiently and effectively, Gulf Power Company signed a Memorandum of Understanding with the Department of Energy (DOE) and the Environmental Protection Agency (EPA) on December 11, 1998. This agreement provides Gulf Power Company the opportunity to offer the Energy Star Home Program to our builders and customers and correlates the performance of GoodCents homes to the nationally recognized Energy Star efficiency label. In many cases, a standard GoodCents home will also qualify as an Energy Star home. The GoodCents Home standards continue to exceed the minimum efficiency standards for new construction as set forth by the Florida Model Energy Code.

- **Participation Standards**

The GoodCents Home/Energy Star Program is available to individuals or entities constructing new residential buildings served by Gulf Power Company's service area.

- **Benefits and Costs**

Through Gulf Power Company's GoodCents Home/Energy Star Program, participating customers will experience lower utility bills, increased comfort, and the eligibility to utilize energy efficient home

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

mortgage products. Gulf Power Company's benefits include kWh energy reduction, kW demand savings, and increased customer satisfaction. Regardless of its designation as GoodCents or GoodCents and Energy Star, the average GoodCents home constructed in Northwest Florida today achieves a 0.5 kW demand reduction in the summer, 0.9 kW demand reduction in the winter and 929 kWh annual energy reduction. The energy and demand savings were determined through engineering analysis using Gulf Power Company's Residential Building Energy Program (RBEP) to compare an 1,800 square foot GoodCents /Energy Star Home to the same home built to the Florida Model Energy Code minimum standard as outlined below.

	<u>Code Built Home</u>	<u>GoodCents/ Energy Star Home</u>
Wall Insulation	R-11 Wall Insulation	R-13 Wall Insulation
Ceiling Insulation	R-30 Attic Insulation	R-38 Attic Insulation
Windows	Double Pane Windows	Double Pane Windows
Doors	Wood Doors	<i>Insulated Doors</i>
Heating	.78 AFUE/3.1 COP	.90 AFUE/3.25 COP
Cooling	10.0 SEER	11.5 SEER

- **Monitoring and Evaluation**

Gulf Power Company will monitor this program through its existing Gulf Account Reporting System (GARS) in order to determine and report program participation.

- **Cost-Effectiveness**

Gulf Power Company will not recover any expenses related to this program through the Energy Conservation Cost Recovery (ECCR) mechanism.

## GoodCents Home/Energy Star Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	929	0.90	0.50	2,032,652	1,969	1,094
2001	929	0.90	0.50	1,628,537	1,578	877
2002	929	0.90	0.50	1,610,886	1,561	867
2003	929	0.90	0.50	1,631,324	1,580	878
2004	929	0.90	0.50	1,624,821	1,574	875
2005	929	0.90	0.50	1,650,833	1,599	889
2006	929	0.90	0.50	1,677,774	1,625	903
2007	929	0.90	0.50	1,687,993	1,635	909
2008	929	0.90	0.50	1,683,348	1,631	906
2009	929	0.90	0.50	1,727,940	1,674	930

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	1,001	1.17	0.65	2,189,166	2,550	1,417
2001	1,001	1.17	0.65	1,753,934	2,043	1,135
2002	1,001	1.17	0.65	1,734,924	2,021	1,123
2003	1,001	1.17	0.65	1,756,936	2,046	1,137
2004	1,001	1.17	0.65	1,749,932	2,038	1,132
2005	1,001	1.17	0.65	1,777,947	2,071	1,151
2006	1,001	1.17	0.65	1,806,963	2,105	1,169
2007	1,001	1.17	0.65	1,817,968	2,118	1,176
2008	1,001	1.17	0.65	1,812,966	2,112	1,173
2009	1,001	1.17	0.65	1,860,991	2,168	1,204

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	319,883	8,171	2,188	26.8%	2,188
2001	326,907	6,549	1,753	26.8%	3,941
2002	332,822	6,475	1,734	26.8%	5,675
2003	338,496	6,560	1,756	26.8%	7,431
2004	344,126	6,533	1,749	26.8%	9,180
2005	349,831	6,637	1,777	26.8%	10,957
2006	355,624	6,745	1,806	26.8%	12,763
2007	361,464	6,788	1,817	26.8%	14,580
2008	367,275	6,768	1,812	26.8%	16,392
2009	373,177	6,946	1,860	26.8%	18,252

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## GoodCents Energy Surveys

- **Program Description**

The objective of the GoodCents Energy Survey (formerly known as the Residential Audit Program) is to provide Gulf Power Company's residential customers with energy conservation advice that encourages the implementation of efficiency measures resulting in energy savings for the customer. These measures, once implemented, also lower Gulf Power Company's energy requirements, as well as improve operating efficiencies. Gulf Power Company views this program as a vehicle to promote the installation of cost-effective conservation features. During the audit process, the customer is provided with specific whole-house recommendations. Through follow-up audit work, Gulf Power Company monitors and tracks the installation of these features. As a result, the increase in operating efficiencies provides for a reduction in *weather-sensitive peak demand*, as well as a *reduction in energy consumption*.

- **Participation Standards**

The GoodCents Energy Survey Program is available to all residential customers served by within Gulf Power Company. The program provides participating customers with the information needed to determine which energy saving measures are best suited to their individual needs and requirements. Customers are notified of this no cost service every six months as specified in Rule 25-17.003 of the Florida Administrative Code.

- **Benefits and Costs**

The Residential Building Energy Program (RBEP) was used to estimate energy consumption impacts. Based on the RBEP analysis for a typical Northwest Florida home, it is estimated that the GoodCents

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

Energy Survey Program yields an approximate reduction in demand of 0.1 kW per customer, and an energy reduction of 211 kWh per customer on an annual basis.

Costs for the program are based on typical costs incurred for upgrading attic insulation from R-19 to R-38 and upgrading cooling system efficiency from 7.0 SEER to an average of 10.5. Estimated costs per customer are \$1,019.

- **Monitoring and Evaluation**

Availability of the audit program to residential customers is communicated through bill stuffers, newspaper advertisements, and other media. Each participating customer is presented with an assessment of his or her current energy situation and recommendations for improvement. Assistance with the locating of qualified contractors and the proper installation of audit features is provided.

Follow-up audits are typically performed when specific upgrades or recommendations are undertaken by the customer. In addition, data regarding the installations is accumulated to reflect, more accurately, the impact of the energy audit. Gulf Power Company also monitors this program through its existing Gulf Account Reporting System (GARS) which enables the tracking of participating customers.

- **Cost Effectiveness**

Not applicable.

## GoodCents Energy Survey Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	211	0.060	0.107	316,500	90	161
2001	211	0.060	0.107	316,500	90	161
2002	211	0.060	0.107	316,500	90	161
2003	211	0.060	0.107	316,500	90	161
2004	211	0.060	0.107	316,500	90	161
2005	211	0.060	0.107	316,500	90	161
2006	211	0.060	0.107	316,500	90	161
2007	211	0.060	0.107	316,500	90	161
2008	211	0.060	0.107	316,500	90	161
2009	211	0.060	0.107	316,500	90	161

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	228	0.078	0.139	342,000	117	209
2001	228	0.078	0.139	342,000	117	209
2002	228	0.078	0.139	342,000	117	209
2003	228	0.078	0.139	342,000	117	209
2004	228	0.078	0.139	342,000	117	209
2005	228	0.078	0.139	342,000	117	209
2006	228	0.078	0.139	342,000	117	209
2007	228	0.078	0.139	342,000	117	209
2008	228	0.078	0.139	342,000	117	209
2009	228	0.078	0.139	342,000	117	209

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	319,883	317,887	1,500	0.5%	1,500
2001	326,907	324,859	1,500	0.9%	3,000
2002	332,822	330,739	1,500	1.4%	4,500
2003	338,496	336,378	1,500	1.8%	6,000
2004	344,126	341,973	1,500	2.2%	7,500
2005	349,831	347,643	1,500	2.6%	9,000
2006	355,624	353,401	1,500	3.0%	10,500
2007	361,464	359,206	1,500	3.3%	12,000
2008	367,275	364,982	1,500	3.7%	13,500
2009	373,177	370,849	1,500	4.0%	15,000

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## **GoodCents Mail-In Energy Survey**

- **Program Description**

The *GoodCents Mail-In Energy Survey* program is a direct mail energy-auditing program. This program is an extension of Gulf Power Company's existing *GoodCents Energy Survey* program and assists in the evaluation of the specific energy requirements of a customer's home.

Gulf Power Company mails an introductory letter and Residential Mail-In Energy Survey questionnaire to the customer. The letter explains how the program works and the benefits the customer receives by participating. Customers then complete the questionnaire on their own or may request the assistance of a Gulf Power Company representative. The questionnaire asks customers about their energy consuming equipment or appliances, square footage, and other detailed questions regarding their existing energy practices.

Completed surveys are returned to Gulf Power Company or its agent to be analyzed and processed to generate a personalized customer analysis. This analysis identifies specific recommendations the participant can implement to reduce their energy consumption. A complete analysis is mailed to the customer and a Gulf Power Company representative provides any follow-up assistance requested by the customer to aid in implementation of the recommendations made in the analysis.

An on-line version of the *GoodCents Energy Survey* has recently been added whereby customers are able to complete and submit the energy survey electronically. The surveys are analyzed and the results sent electronically to the customer.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Participation Standards**

The GoodCents Mail-In Energy Survey program is available to all residential customers served by Gulf Power Company. The program is designed to involve the homeowner or person responsible for energy related decisions.

- **Benefits and Cost**

Benefits for Gulf Power Company's customers are achieved through the customers' participation in the program. The customer analysis is specific to each customer's survey responses. The analysis makes customer specific recommendations for lowering energy costs. After reviewing the customer's energy use, the analysis provides the customer with energy management strategies to enhance the energy efficiency of their home. New technologies and other ideas are provided to help individual customers control energy costs.

The GoodCents Mail-In Energy Survey program is an extension of Gulf Power Company's Good Cents Energy Survey Program. The current steps include:

1. customer contact
2. survey completion
3. survey analysis
4. forwarding of analysis and follow-up with customer by company representative .

Gulf Power Company expects benefits to be similar to those stated in Docket No. 941172-EI, therefore a 0.1 kW reduction per audit and an annual 211 kWh reduction per audit is expected. There are no rebates or incentives for this program.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Monitoring and Evaluation**

*Gulf Power Company validates customer load information during the follow-up visit conducted by the company representative. Gulf Power Company also monitors this program through its existing Gulf Account Reporting System (GARS) which enables the tracking of participating customers.*

- **Cost Effectiveness**

Not applicable.

## GoodCents Mail-In Energy Survey Program

<b>At the Meter</b>						
<b>Year</b>	<b>Per Customer kWh Reduction</b>	<b>Per Customer Winter kW Reduction</b>	<b>Per Customer Summer kW Reduction</b>	<b>Total Annual kWh Reduction</b>	<b>Total Annual Winter kW Reduction</b>	<b>Total Annual Summer kW Reduction</b>
2000	211	0.060	0.107	316,500	90	161
2001	211	0.060	0.107	316,500	90	161
2002	211	0.060	0.107	316,500	90	161
2003	211	0.060	0.107	316,500	90	161
2004	211	0.060	0.107	316,500	90	161
2005	211	0.060	0.107	316,500	90	161
2006	211	0.060	0.107	316,500	90	161
2007	211	0.060	0.107	316,500	90	161
2008	211	0.060	0.107	316,500	90	161
2009	211	0.060	0.107	316,500	90	161

<b>At the Generator</b>						
<b>Year</b>	<b>Per Customer kWh Reduction</b>	<b>Per Customer Winter kW Reduction</b>	<b>Per Customer Summer kW Reduction</b>	<b>Total Annual kWh Reduction</b>	<b>Total Annual Winter kW Reduction</b>	<b>Total Annual Summer kW Reduction</b>
2000	228	0.078	0.139	342,000	117	209
2001	228	0.078	0.139	342,000	117	209
2002	228	0.078	0.139	342,000	117	209
2003	228	0.078	0.139	342,000	117	209
2004	228	0.078	0.139	342,000	117	209
2005	228	0.078	0.139	342,000	117	209
2006	228	0.078	0.139	342,000	117	209
2007	228	0.078	0.139	342,000	117	209
2008	228	0.078	0.139	342,000	117	209
2009	228	0.078	0.139	342,000	117	209

<b>Customers and Participation Rates</b>					
<b>Year</b>	<b>Total Number of Customers</b>	<b>Total Number of Eligible Customers</b>	<b>Annual Number of Program Participants</b>	<b>Cumulative Penetration Level %</b>	<b>Cumulative Number of Program Participants</b>
2000	319,883	317,887	1,500	0.5%	1,500
2001	326,907	324,859	1,500	0.9%	3,000
2002	332,822	330,739	1,500	1.4%	4,500
2003	338,496	336,378	1,500	1.8%	6,000
2004	344,126	341,973	1,500	2.2%	7,500
2005	349,831	347,643	1,500	2.6%	9,000
2006	355,624	353,401	1,500	3.0%	10,500
2007	361,464	359,206	1,500	3.3%	12,000
2008	367,275	364,982	1,500	3.7%	13,500
2009	373,177	370,849	1,500	4.0%	15,000

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## Duct Leakage Repair

- **Program Description**

The objective of the Duct Leakage Repair Program is to provide Gulf Power Company's residential customers a means to identify house air duct leakage and recommend repairs that can reduce customer kWh energy usage and kW demand. This program design results from Gulf Power's 1992 HVAC Duct and Infiltration (Blower Door) Pilot Program. In the pilot, 103 homes were tested and duct repairs performed.

Gulf Power Company identifies potential program participants through the Residential Energy Audit Program as well as through educational and promotional activities. Blower Door testing required to identify and quantify the duct leakage is offered to these potential participants for a fee of \$25.00. Gulf Power Company or its approved contractors do this testing. After identification of the leakage sites and quantities, the customer is given a written summary of the test findings and the potential for savings, along with a list of Gulf Power Company approved repair contractors. Upon completion of duct repairs, a customer is eligible to receive reimbursement of the \$25.00 test fee as well as a \$25.00 incentive. Gulf Power Company provides duct leakage testing on new construction duct systems to ensure maximum efficiency and comfort in these new homes. Gulf Power Company provides duct pressurization testing on homes under construction within its service territory for a fee of \$25.00 per duct system. This testing is available to the builder, HVAC contractor, or homeowner. In addition, Gulf Power Company utilizes duct pressurization equipment and expertise for the purpose of educating builders and HVAC contractors by testing several houses or systems and identifying problem areas and improvement methodology or techniques.

This program builds upon the GoodCents Energy Survey (formerly known as the Residential Energy Audit) process by revealing additional energy efficiency and comfort measures available to the customer.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

- **Program Guidelines**

**Existing Home:**

1. Gulf Power Company Residential Energy Consultant determines need or potential benefit of duct sealing during GoodCents Energy Survey for Gulf Power Company residential customer.
2. Energy consultant gives customer option of \$25.00 blower door test.
3. If customer agrees to test, Gulf Power Company or a Gulf Power Company approved contractor tests home with blower door and identifies leakage points for potential repair.
4. Gulf Power Company approved contractor gives estimate for repair.
5. Upon acceptance by customer, contractor repairs duct system in accordance with residential duct sealing requirements as specified in the Florida Efficiency Energy Code for Building Construction. All accessible duct leakage is sealed with a duct sealer (mastic). Leakage around removable areas of the air handler is sealed with UL181 approved duct tape.
6. When approved repairs are made and verified by Gulf Power Company energy consultant, customer is eligible for reimbursement of the \$25.00 blower door test fee and a \$25.00 incentive.
7. Gulf Power Company does post tests on 10% of all jobs to identify leakage improvements.

**New Construction:**

1. Builder, HVAC contractor, or homeowner requests duct leakage test for new construction duct system.
2. Gulf Power Company provides duct pressurization test on home under construction within its service territory for a fee of \$25.00 per duct system.
3. Gulf Power Company provides requesting party documentation of leakage amount and location of leaks so repairs can be made.
4. Gulf Power Company utilizes duct pressurization equipment and expertise to educate builders and HVAC contractors in the proper construction of duct systems by testing several of the contractors' houses or systems for leakage and teaching alternative construction methods or techniques to correct the problems.

- **Participation Standards**

*The Duct Leakage Repair Program is available to all residential customers served by Gulf Power Company. The duct system must be accessible. This program provides participating customers with the information needed to determine the need or potential for duct sealing and repair.*

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

- **Benefits and Costs**

Through our Blower Door Pilot Program and the SRC Electricity Conservation and Energy Efficiency in Florida study, duct leakage was identified as a problem that should be addressed in Gulf Power Company's service territory. Blower Door diagnostics is one of several tools that aids in identifying duct leakage and assures proper repairs.

For our customers, many quantifiable benefits have been identified. These include: reduced kWh usage; increased conditioned airflow; sealed duct system; and increased system efficiency. Also identified but not quantified were the benefits of increased comfort, humidity control, and improved indoor air quality.

For Gulf Power Company, the benefits are increased customer satisfaction, consumer education, kWh reduction, and summer kW demand savings. The pilot program, SRC study, and engineering analysis indicated the following benefits:

1.	kW demand reduction (summer)	0.3 kW
2.	kW demand reduction (winter)	1.3 kW
3.	Annual kWh energy reduction	500 kWh
4.	Average cost of repairs	\$173

- **Monitoring and Evaluation**

The duct leakage program continues to be part of Gulf Power Company's portfolio of conservation programs available to homeowners and builders. Experience indicates a very low participation rate. With few participants per year, even limited monitoring and evaluation is not economically feasible. The program's benefits were demonstrated during the pilot phase and Gulf Power Company does not have any other data suggesting different results.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Cost Effectiveness**

This program is cost-effective using the commission's approved methodology (Rule 25-17.008). The cost-effectiveness runs are included in *Attachment B*.

- **Goal Achievement**

While Gulf Power Company recognizes the conservation benefits of the duct leakage repair program, the Company has experienced low participation in this program. For goal achievement purposes, Gulf Power Company is not projecting any numeric goals for the 2000 to 2009 period.

## Residential Duct Leakage Repair Program

<b>At the Meter</b>						
<b>Year</b>	<b>Per Customer kWh Reduction</b>	<b>Per Customer Winter kW Reduction</b>	<b>Per Customer Summer kW Reduction</b>	<b>Total Annual kWh Reduction</b>	<b>Total Annual Winter kW Reduction</b>	<b>Total Annual Summer kW Reduction</b>
2000	500	1.30	0.30	0	0	0
2001	500	1.30	0.30	0	0	0
2002	500	1.30	0.30	0	0	0
2003	500	1.30	0.30	0	0	0
2004	500	1.30	0.30	0	0	0
2005	500	1.30	0.30	0	0	0
2006	500	1.30	0.30	0	0	0
2007	500	1.30	0.30	0	0	0
2008	500	1.30	0.30	0	0	0
2009	500	1.30	0.30	0	0	0

<b>At the Generator</b>						
<b>Year</b>	<b>Per Customer kWh Reduction</b>	<b>Per Customer Winter kW Reduction</b>	<b>Per Customer Summer kW Reduction</b>	<b>Total Annual kWh Reduction</b>	<b>Total Annual Winter kW Reduction</b>	<b>Total Annual Summer kW Reduction</b>
2000	539	1.68	0.39	0	0	0
2001	539	1.68	0.39	0	0	0
2002	539	1.68	0.39	0	0	0
2003	539	1.68	0.39	0	0	0
2004	539	1.68	0.39	0	0	0
2005	539	1.68	0.39	0	0	0
2006	539	1.68	0.39	0	0	0
2007	539	1.68	0.39	0	0	0
2008	539	1.68	0.39	0	0	0
2009	539	1.68	0.39	0	0	0

<b>Customers and Participation Rates</b>					
<b>Year</b>	<b>Total Number of Customers</b>	<b>Total Number of Eligible Customers</b>	<b>Annual Number of Program Participants</b>	<b>Cumulative Penetration Level %</b>	<b>Cumulative Number of Program Participants</b>
2000	319,883	317,887	0	0.0%	0
2001	326,907	324,859	0	0.0%	0
2002	332,822	330,739	0	0.0%	0
2003	338,496	336,378	0	0.0%	0
2004	344,126	341,973	0	0.0%	0
2005	349,831	347,643	0	0.0%	0
2006	355,624	353,401	0	0.0%	0
2007	361,464	359,206	0	0.0%	0
2008	367,275	364,982	0	0.0%	0
2009	373,177	370,849	0	0.0%	0

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	-0.39	kW Gen/Cus
(3) kW Line Loss Percentage	12.60%	
(4) Change in KWh per Customer at generator	(539)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	7.70%	
(6) Group Line Loss Multiplier	1.0014	
(7) Annual Change in Customer kWh at Meter	(500)	kWh/Cus/Yr
(8) Change in Winter kW per Cust at meter	-1.30	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	30	Years
(4) K-Factor for Generation	1.4493	
(5) K-Factor for T&D	1.4394	
(6) Switch: Rev Req (0) or Val-of-Def (1)	0	

III. Utility & Customer Costs

(1) Utility Nonrecurring Cost Per Customer	\$40.00	\$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00	\$/Cus/Year
(3) Utility Cost Escalation Rate	3.06%	
(4) Customer Equipment Cost	\$173.00	\$/Cus
(5) Customer Equipment Cost Escalation Rate	3.06%	
(6) Customer O&M Cost	\$0.00	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	0.00%	
(8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
(9) Customer Tax Credit Escalation Rate	3.06%	
(10) Change in Supply Costs	\$0.00	\$/Cus/Year
(11) Supply Costs Escalation Rate	3.06%	
(12) Utility Discount Rate	8.97%	
(13) Utility AFUDC Rate	10.30%	
(14) Utility Nonrecurring Rebate/Incentive	\$25.00	\$/Cus
(15) Utility Recurring Rebate/Incentive	\$0.00	\$/Cus/Year
(16) Utility Rebate/Incentive Escalation Rate	3.06%	

IV. Incremental Generation, Transmission, & Distribution Costs

(1) Base Year	2000
(2) In-Service Year For Incremental Generation	2001 **
(3) In-Service Year For Incremental T & D	2001
(4) Base Year Incremental Generation Cost	\$234.85 \$/kW
(5) Base Year Incremental Transmission Cost	\$58.75 \$/kW
(6) Base Year Incremental Distribution Cost	\$33.00 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	2.56%
(8) Generator Fixed O & M Cost	\$2.77 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	2.99%
(10) Transmission Fixed O & M Cost	\$0.73 \$/kW/Yr
(11) Distribution Fixed O & M Cost	\$0.84 \$/kW/Yr
(12) T&D Fixed O&M Escalation Rate	2.56%
(13) Incremental Gen Variable O & M Costs	\$0.433 \$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	3.84%
(15) Incremental Gen Capacity Factor	3.40%
(16) Incremental Generating Unit Fuel Cost	\$0.0356 \$/kWh
(17) Incremental Gen Unit Fuel Esc Rate	3.00%
(18) Incremental Purchased Capacity Cost	\$20.70 \$/KW/YR
(19) Incremental Capacity Cost Esc Rate	2.56%

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)	\$0.0352 \$/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

	RIM	Participants'
NPV Benefits(\$000s)	\$0	\$0
NPV Costs (\$000s)	\$0	\$0
NPV Net Benefits (\$000s)	\$0	\$0
Benefit:Cost Ratio	1.125	1.831

\* Supplemental Information Not Specifically Specified in Cost Effectiveness Manual

\*\* The relevant avoidable generation unit is a combustion turbine peaking unit. Since the kilowatt savings occur at the time of the system peak, this is the appropriate unit against which to measure cost savings.

**INPUT DATA -- PART 2**  
**Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	Cumulative Total Participating Customers	Cumulative Participating Customers Adj Free Rides	Utility Average System Fuel Cost (C / kWh)	Marginal Fuel Cost (Decreases) (C / kWh)	Marginal Fuel Cost (Increases) (C / kWh)	Replacement Fuel Cost (C / kWh)	Program kW Effectiveness Factor	Program kWh Effectiveness Factor	Other Costs (\$000)	Other Benefits (\$000)
2000	1	1	1.4855	2.0099	2.0099	1.4855	1.00	1.00	\$0	\$0
2001	1	1	1.4771	2.1798	2.1798	1.4771	1.00	1.00	\$0	\$0
2002	1	1	1.4360	2.1667	2.1667	1.4360	1.00	1.00	\$0	\$0
2003	1	1	1.3796	2.2272	2.2272	1.3796	1.00	1.00	\$0	\$0
2004	1	1	1.3908	2.2390	2.2390	1.3908	1.00	1.00	\$0	\$0
2005	1	1	1.4057	2.2692	2.2692	1.4057	1.00	1.00	\$0	\$0
2006	1	1	1.4444	2.3280	2.3280	1.4444	1.00	1.00	\$0	\$0
2007	1	1	1.4891	2.3468	2.3468	1.4891	1.00	1.00	\$0	\$0
2008	1	1	1.5309	2.4306	2.4306	1.5309	1.00	1.00	\$0	\$0
2009	1	1	1.5645	2.5090	2.5090	1.5645	1.00	1.00	\$0	\$0
2010	1	1	1.6108	2.5498	2.5498	1.6108	1.00	1.00	\$0	\$0
2011	1	1	1.6585	2.5981	2.5981	1.6585	1.00	1.00	\$0	\$0
2012	1	1	1.7077	2.6838	2.6838	1.7077	1.00	1.00	\$0	\$0
2013	1	1	1.7584	2.7707	2.7707	1.7584	1.00	1.00	\$0	\$0
2014	1	1	1.8106	2.8131	2.8131	1.8106	1.00	1.00	\$0	\$0
2015	1	1	1.8644	2.7636	2.7636	1.8644	1.00	1.00	\$0	\$0
2016	1	1	1.9198	2.7683	2.7683	1.9198	1.00	1.00	\$0	\$0
2017	1	1	1.9769	2.7274	2.7274	1.9769	1.00	1.00	\$0	\$0
2018	1	1	2.0357	2.7028	2.7028	2.0357	1.00	1.00	\$0	\$0
2019	1	1	2.0964	2.8597	2.8597	2.0964	1.00	1.00	\$0	\$0
2020	1	1	2.1588	2.9472	2.9472	2.1588	1.00	1.00	\$0	\$0
2021	1	1	2.2232	3.0375	3.0375	2.2232	1.00	1.00	\$0	\$0
2022	1	1	2.2895	3.1305	3.1305	2.2895	1.00	1.00	\$0	\$0
2023	1	1	2.3578	3.2264	3.2264	2.3578	1.00	1.00	\$0	\$0
2024	1	1	2.4300	3.3251	3.3251	2.4300	1.00	1.00	\$0	\$0
2025	1	1	2.5044	3.4270	3.4270	2.5044	1.00	1.00	\$0	\$0
2026	1	1	2.5811	3.5319	3.5319	2.5811	1.00	1.00	\$0	\$0
2027	1	1	2.6601	3.6400	3.6400	2.6601	1.00	1.00	\$0	\$0
2028	1	1	2.7415	3.7515	3.7515	2.7415	1.00	1.00	\$0	\$0
2029	1	1	2.8255	3.8664	3.8664	2.8255	1.00	1.00	\$0	\$0

Incremental Generation Capacity Costs or Benefits

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

(1) Year	(2) Incremental Owned Gen. Capacity Cost (\$000s)	(3) Incremental Generation Fixed O&M (\$000s)	(4) Incremental Generation Variable O&M (\$000s)	(5) Fuel Cost for the Increment. Cap. (\$000s)	(6) Replacement Fuel Cost (\$000s)	(6a) Incremental Purchased Gen. Capacity Cost (\$000s)	(7) Incremental Gen. Capacity Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2001	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2002	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2003	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2004	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2005	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2006	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2007	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2008	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2009	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2010	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2011	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2012	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2013	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2014	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2015	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2016	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2017	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2018	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2019	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2020	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2021	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2022	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2023	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2024	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2025	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2026	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2027	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2028	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2029	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
Nominal NPV	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)

60

Incremental T&D Capacity and Incremental Fuel

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

(1) Year	(2) Incremental Transmission Capacity Cost (\$000s)	(3) Incremental Transmission O&M Cost (\$000s)	(4) Total Incremental Trans. Cost (\$000s)	(5) Incremental Distribution Capacity Cost (\$000s)	(6) Incremental Distribution O&M Cost (\$000s)	(7) Total Incremental Dist. Cost (\$000s)	(8) Effective Incremental Fuel Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)
2001	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2002	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2003	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2004	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2005	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2006	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2007	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2008	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2009	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2010	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2011	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2012	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2013	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2014	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2015	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2016	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2017	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2018	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2019	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2020	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2021	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2022	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2023	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2024	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2025	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2026	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2027	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2028	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
2029	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)	(\$0)
Nominal NPV	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)	(\$0) (\$0)

Worksheet for Utility Program Costs and Participants' Benefits & Costs

Utility Program Costs, Rebates, & Incentives								Participating Customers' Benefits and Costs						
(1) Year	(2) Annual Incremental kWh Generated (000s)	(3) Utility Non-recurring Costs (\$000)	(4) Utility Recurring Costs (\$000)	(5) Total Utility Program Costs (\$000)	(6) Utility Non-recurring Rebates/Incent. (\$000)	(7) Utility Recurring Rebates/Incent. (\$000)	(8) Total Utility Paid Rebates/Incent. (\$000)	(9) Participant Equipment Costs (\$000)	(10) Participant O&M Costs (\$000)	(11) Total Participant Costs (\$000)	(12) Change in Participants' Billed kWh (000s)	(13) Change in Participants' Billed Fuel (\$000)	(14) Change in Participants' Billed Non-Fuel (\$000)	(15) Change in Participants' Electric Bills (\$000)
2000	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2001	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2002	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2003	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2004	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2005	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2006	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2007	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2008	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2009	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2010	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2011	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2012	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2013	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2014	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2015	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2016	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2017	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2018	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2019	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2020	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2021	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2022	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2023	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2024	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2025	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2026	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2027	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2028	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)
2029	(1)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(1)	(\$0)	(\$0)	(\$0)

**Total Resource Cost-Effectiveness Measure  
Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code**

(1) Year	(2) Change in Electric Supply Costs (\$000s)	(3) Utility's Program Costs (\$000s)	(4) Participants' Program Costs (\$000s)	(5) Other Costs (\$000s)	(6) Other Benefits (\$000s)	(7) Incremental Generation Cap Costs (\$000s)	(8) Incremental T&D Cap Costs (\$000s)	(9) Incremental Prog Induced Fuel Costs (\$000s)	(10) Total Costs (\$000s)	(11) Total Benefits (\$000s)	(12) Total Net Benefits (\$000s)	(13) Cumulative Discounted Net Benefits (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2001	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2002	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2003	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2004	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2005	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2013	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2015	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2017	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2018	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2019	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2020	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2021	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2023	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2024	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2025	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2026	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2027	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2028	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
2029	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	(\$0)
Nominal NPV		\$0	\$0			(\$0)	(\$0)	(\$0)	\$0	\$1	\$1	
		\$0	\$0			(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	
Discount Rate =		8.97%										
Benefit/Cost Ratio =		1.88										

63

**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)
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)
2000	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	(\$0)	(\$0)
2001	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2002	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2003	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2004	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2005	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2006	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2007	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2008	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2011	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2013	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2016	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2017	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2018	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2019	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2020	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2021	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2022	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2023	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2024	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2025	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2026	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2027	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2028	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
2029	\$0	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	\$0	\$0
Nominal	\$0				(\$1)		\$0	\$0	\$1	\$1	
NPV	\$0				(\$0)		\$0	\$0	\$0	\$0	
Discount Rate =		8.97%									
Benefit/Cost Ratio =		1.83									

64

**Ratepayers' Impact 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)	(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)
2000	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	\$0	\$0	\$0	\$0	(\$0)	(\$0)
2001	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2002	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2003	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2004	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2005	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2006	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2007	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2008	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2009	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2010	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2011	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2012	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2013	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2014	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2015	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2016	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2017	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2018	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2019	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2020	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2021	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2022	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2023	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2024	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2025	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2026	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2027	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2028	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
2029	\$0	\$0	\$0	(\$0)	(\$0)	(\$0)	(\$0)	\$0	\$0	\$0	\$0	\$0	(\$0)
<b>Nominal NPV</b>		\$0	\$0	(\$1)	(\$0)	(\$0)	(\$0)			\$1	\$1	\$0	
<b>Discount Rate =</b>		8.97%		(\$0)	(\$0)	(\$0)	(\$0)			\$0	\$0	\$0	
<b>Benefit/Cost Ratio =</b>		1.12											

65

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## Commercial/Industrial Programs

### **GoodCents Commercial Buildings**

- **Program Description**

The commercial/industrial market is comprised of a wide range of diverse businesses with variable size and operational characteristics. The success of the GoodCents Building program lies in its ability to address this diversity by focusing on the mutual characteristics of commercial buildings. The most common critical areas in commercial buildings that affect summer peak kW demand are the thermal efficiency of the building and HVAC equipment efficiency. The GoodCents Building program provides requirements for these areas that, if adhered to, will help reduce peak kW demand and energy consumption.

The promotion of the GoodCents Building program through the years has featured a positive relationship with trade allies, the public and local commercial/industrial customers. The program's design continues to be sufficiently flexible to allow an architect or designer to use initiative and ingenuity to achieve results that are meaningful to both the customer and Gulf Power Company.

The GoodCents Building program is designed to ensure that buildings are constructed with energy efficiency levels above the Florida Model Energy code standards. These standards include both HVAC efficiency and thermal envelope requirements.

To provide an accurate quantitative analysis of the kW and kWh savings due to the GoodCents Building Program, the GoodCents standards for average commercial buildings are compared to the Florida Model Energy Code. The features used to prepare the customer's analysis include: wall and ceiling R-values; glass area; description of glass; and equipment used in determining the kW and kWh differences for the two types of structures. The AXCESS - Energy Analysis Computer Program

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

(AXCESS) is used to calculate the kW and kWh differences. Use of the AXCESS program is further described in the Benefits and Costs section.

### **Prescriptive Envelope Option:**

The *Prescriptive Envelope Option* provides architects/designers and building owners a menu of items available for a GoodCents Building certification. Except for one, the features in this option are all structural in nature. The minimum requirements listed are those for insulation levels and window (glass) shading. As described in the Participation Standards section on the following pages, the minimum window requirement consists of two choices. The first choice of 100 percent externally shaded at 3:00 p.m. indicates the need for overhangs. Windows (glass) that would be naturally shaded by the building itself at 3:00 p.m. would not need external overhangs installed (i.e. N, NE, E, SE). The second choice considers the shading coefficient of the glass itself. The shading coefficient of .65 (35 percent solar reduction) does not allow for internal shading (blinds, curtains, etc.).

The Additional Requirements section of the Prescriptive Option allows the customer a choice of three of the seven requirements listed. These choices include increased insulation levels above the minimum requirements, improved entryways with the incorporation of vestibules and exterior door improvements, and increased glass performance. One option is more behavioral rather than structural, that being the installation of an Energy Management System.

### ***Thermal Performance Option:***

A building may meet GoodCents standards through its thermal performance. This option requires a building to use the entire exterior thermal envelope by calculating both solar and transmission heat gains into the performance formula. The resulting BTUH heat gain is then divided by the total envelope square footage (total exterior shell of the conditioned space including walls, windows, roof/ceiling, and floors if off-grade) to obtain a BTUH/Sq. Ft. ratio. Depending upon the conditioned floor square footage of the building, this ratio must meet the requirements of the

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

applicable building size described in the program. By using this calculation, the performance of the entire envelope of the building is evaluated.

## **HVAC Efficiency Requirements:**

Besides increased efficiency requirements, differentiation has been made between single phase and three-phase equipment with a cooling capacity less than 65,000 BTU/h. The lack of market availability for three phase units in the higher efficiencies justifies a lower standard than that of a single-phase unit. The addition of the package thermal air conditioners and heat pumps (PTAC or PTHP) has allowed a more complete list of possible cooling types in the commercial market.

The HVAC requirements are applicable to both the Prescriptive and Thermal Performance Options. Gulf Power Company's continuing efforts to influence the market toward high efficiency equipment and quality construction standards are the foundation of the GoodCents Building program.

- **Participation Standards**

To qualify for the GoodCents Commercial certification, customers must meet the HVAC requirements and meet or exceed the standards in either the Prescriptive or Performance options.

### **HVAC Efficiency Requirements (A/C or Heat Pump):**

*Systems with cooling capacity < 65,000 BTU/h*

Unitary split systems

    Single Phase                      Min. 11.0 SEER

    Three Phase                      Min. 10.2 SEER

Unitary package systems            Min. 10.0 SEER

Packaged Terminal A/C or Heat Pump (PTAC or PTHP)

    <12,000                      Min. 9.0 EER

    >12,001                      Min. 8.7 EER

*Systems with cooling capacity > 65,001 and < 135,000 BTU/h*

Unitary split systems                Min. 9.0 EER

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

Unitary package systems                      Min. 9.0 EER

*Systems with cooling capacity > 135,001 BTU/h*

Unitary split systems                      Min. 9.0 EER

Unitary package systems                      Min. 8.5 EER

**Prescriptive Envelope Option:**

*Minimum Insulation Requirements:*

R-19 Roof/Ceiling structure

R-11 Exterior Walls

*Minimum Window (including glass doors) Requirements:*

All glass is 100% externally shaded at 3:00 p.m.

or

All glass has a shading coefficient (without any internal shading) of .65 or lower as rated by the manufacturer

**Additional Requirements**

In addition to the above requirements, the building must also meet at least three of the seven requirements listed below.

1. Increase roof/ceiling insulation to R-30.
2. Increase exterior wall insulation to R-13.
3. Incorporate a vestibule on all regularly used entrances and exits.
4. Total glass area is less than 12% of gross exterior wall area.
5. All exterior glass (except glass doors) is double pane.
6. Metal insulated or double pane glass exterior doors.
7. Install programmable thermostats or Energy Management Systems on all HVAC systems.

**Thermal Performance Option:**

The solar and transmission heat gain designed at 93° outside and 78° inside shall not exceed the following levels of heat gain per square foot of the above grade exterior envelope.

Conditioned Floor Square Footage	BTU/h/Sq. Ft. of Exterior Envelope
0 to 5,000	5.5
5,001 to 15,000	5.0
Over 15,000	4.5

The benefits that accrue by the construction of a new GoodCents Building or the retrofit of an existing building are:

- Customer
  1. Lower life cycle costs.
  2. Lower operating costs.
  3. Lower risks.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

4. Improved comfort.
  - Architects / Engineers
    1. Lower design risks.
    2. Increased client satisfaction.
    3. Innovation and differentiation.
  - Gulf Power Company
    1. Improved load factor (peak clipping/valley filling).
    2. Improved demand-side management.
    3. Strategic conservation.
    4. Improved productivity and effectiveness.

- **Benefits and Costs**

A summary sheet describes the features used in order to prepare the analysis and is contained in Attachment A. Such items provided are: wall and ceiling R-values, glass area, description of glass and equipment used in determining the kW and kWh difference for the two types of structures.

With regard to the customer equipment cost, generally, there will be an increased cost to improve the buildings thermal requirements, but this cost will be partially offset by the reduced size of the HVAC equipment. The kW, kWh and cost figures used in the cost-effectiveness determination were weighted between the new and improved customers with an estimate of 80 percent new and 20 percent improved. The AXCESS-Energy Analysis Computer Program (AXCESS) was used to calculate the kW and kWh savings.

The AXCESS computer program for evaluation of alternative HVAC systems is designed to calculate the total energy use and demands of a building. Including the variations that normally occur in the number of people occupying the building and the variations in building equipment use. Using building specific information, energy requirements are calculated in hourly intervals. Designated equipment and controls are operated by the program to maintain specified temperature and humidity conditions. Total building energy, demands, and individual equipment energy and demands are metered and displayed in a wide variety of report formats. The user provides data in a logical flow:

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

1. general information, construction data, and building use information
2. interior and exterior building loads (people and equipment)
3. profiles of occupancy and equipment use
4. building zones specifications (orientation, glass, wall, floor, and ceiling areas; percent of base loads in the zone; number of people; etc.)
5. thermal system types, cooling primary system types, and heating primary system types for each building zone
6. controls (temperature, humidity, time clocks, etc.)

AXCESS performs up to 8760 hourly calculations for each zone using hourly weather data. As the hourly zone energy requirements are determined, the program operates all HVAC components (fans, pumps, compressors, burners, economizers, storage systems, etc.) and calculates each component's energy use in BTU's. BTU's are converted to fuel units as specified by the user (electricity at 3,413 BTU/kWh). Output data is specified by the user and may be as short as annual summaries or may be reports for every hour of the year.

A utility cost of \$1,380 per customer is based on 1998 data for actual costs. Customer costs were estimated to be \$111. This is considered to be the per customer cost-differential necessary to bring the building standards up to what is required for this program.

- **Monitoring and Evaluation**

Gulf Power Company's representatives are made aware of the possible construction or renovation of a building either through official notification as reported in the Dodge Reports published weekly, architect/engineers' request for assistance, or a request for temporary service made by the construction firm or owner.

The Gulf Power Company representative contacts the architect/engineer, if not previously contacted, to begin assisting in the design phase of the building in order to incorporate the conservation measures necessary to qualify for the GoodCents Building program. The assistance provided consists of load

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

calculations, lighting designs both interior and exterior, equipment recommendations, recommendations of energy storage systems, heat recovery systems, economizers, demand control equipment, and specialized equipment recommendations.

During the construction phase, the representative visually inspects for the installation of the GoodCents features and equipment. At the end of the construction phase, the representative assists in acquiring electrical service to meet the customer's needs.

- **Cost-Effectiveness**

This program is cost-effective using the Florida Public Service Commission's approved methodology (Rule 25-17.008). The cost effectiveness runs included in Attachment C and the charts shown in Attachment B are reflective of the total GoodCents Building program.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## Attachment A

### Summary Sheet GoodCents Building Program

	<u>Gulf Power GoodCents Building</u>	<u>Florida 1997 Model Energy Code</u>
Sq. Ft.	4,444	4,444
Glass	½" Double Pane 0.55 SC 1/4" Plate ~ 12% of Gross Walls/West	1/4" clear plate 340 sq. ft./West
Ceiling	R-30	R-10
HVAC	11 SEER/120 MBTUH cooling with resis- tance heat	10 SEER/144 MBTUH Heat Pumps
kWh	80,008	88,679
kW Summer/ Winter Peak	23 kW 12.7 kW	28 kW 13.0 kW
Design Total Heat Gain BTUH/sq. ft. of Thermal Envelope	5.5	13.6

## GoodCents Commercial Buildings Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	8,671	0.36	4.65	1,864,265	77	1,000
2001	8,671	0.36	4.65	1,838,252	76	986
2002	8,671	0.36	4.65	1,838,252	76	986
2003	8,671	0.36	4.65	1,838,252	76	986
2004	8,671	0.36	4.65	1,838,252	76	986
2005	8,671	0.36	4.65	1,838,252	76	986
2006	8,671	0.36	4.65	1,838,252	76	986
2007	8,671	0.36	4.65	1,838,252	76	986
2008	8,671	0.36	4.65	1,838,252	76	986
2009	8,671	0.36	4.65	1,838,252	76	986

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	9,339	0.47	6.02	2,007,813	100	1,295
2001	9,339	0.47	6.02	1,979,797	99	1,277
2002	9,339	0.47	6.02	1,979,797	99	1,277
2003	9,339	0.47	6.02	1,979,797	99	1,277
2004	9,339	0.47	6.02	1,979,797	99	1,277
2005	9,339	0.47	6.02	1,979,797	99	1,277
2006	9,339	0.47	6.02	1,979,797	99	1,277
2007	9,339	0.47	6.02	1,979,797	99	1,277
2008	9,339	0.47	6.02	1,979,797	99	1,277
2009	9,339	0.47	6.02	1,979,797	99	1,277

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	48,979	41,601	215	0.5%	215
2001	50,377	42,686	212	1.0%	427
2002	51,457	43,481	212	1.5%	639
2003	52,498	44,242	212	1.9%	851
2004	53,531	44,997	212	2.4%	1,063
2005	54,578	45,763	212	2.8%	1,275
2006	55,636	46,540	212	3.2%	1,487
2007	56,704	47,325	212	3.6%	1,699
2008	57,768	48,109	212	4.0%	1,911
2009	58,845	48,903	212	4.3%	2,123

INPUT DATA - PART 1

Cost-Effectiveness Analysis per Rule 25-17.006 Florida Administrative Code

I. Program Demand Impacts and Line Losses

(1) Change in Peak kW Customer at meter	-4.65	kW/Cus
(2) Change in Peak kW per Customer at generator	-6.02	kW Gen/Cu:
(3) kW Line Loss Percentage	12.60%	
(4) Change in kWh per Customer at generator	(9,339)	kWh/Cus/Yr
(5) kWh Line Loss Percentage	7.70%	
(6) Group Line Loss Multiplier	1.0014	
(7) Annual Change in Customer kWh at Meter	(8,671)	kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	-0.36	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	30	Years
(4) K-Factor for Generation	1.4493	
(5) K-Factor for T&D	1.4394	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	1	

III. Utility & Customer Costs

(1) Utility Nonrecurring Cost Per Customer	\$1,380.00	\$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00	\$/Cus/Year
(3) Utility Cost Escalation Rate	3.06%	
(4) Customer Equipment Cost	\$111.00	\$/Cus
(5) Customer Equipment Cost Escalation Rate	3.06%	
(6) Customer O&M Cost	\$0.00	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	0.00%	
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	3.06%	
* (10) Change in Supply Costs	\$0.00	\$/Cus/Year
* (11) Supply Costs Escalation Rate	3.06%	
* (12) Utility Discount Rate	8.97%	
* (13) Utility AFUDC Rate	10.30%	
* (14) Utility Nonrecurring Rebate/Incentive	\$0.00	\$/Cus
* (15) Utility Recurring Rebate/Incentive	\$0.00	\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	3.06%	

IV. Incremental Generation, Transmission, & Distribution Costs

(1) Base Year	2000
(2) In-Service Year For Incremental Generation	2001 **
(3) In-Service Year For Incremental T & D	2001
(4) Base Year Incremental Generation Cost	\$234.85 \$/kW
(5) Base Year Incremental Transmission Cost	\$58.75 \$/kW
(6) Base Year Incremental Distribution Cost	\$33.00 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	2.56%
(8) Generator Fixed O & M Cost	\$2.77 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	2.99%
(10) Transmission Fixed O & M Cost	\$0.73 \$/kW/Yr
(11) Distribution Fixed O & M Cost	\$0.84 \$/kW/Yr
(12) T&D Fixed O&M Escalation Rate	2.56%
(13) Incremental Gen Variable O & M Costs	\$0.433 \$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	3.84%
(15) Incremental Gen Capacity Factor	3.40%
(16) Incremental Generating Unit Fuel Cost	\$0.0358 \$/kWh
(17) Incremental Gen Unit Fuel Esc Rate	3.00%
* (18) Incremental Purchased Capacity Cost	\$20.70 \$/KW/YR
* (19) Incremental Capacity Cost Esc Rate	2.56%

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)	\$0.0130 \$/kWh
(2) Non-Fuel Escalation Rate	Per Table
(3) Customer Demand Charge Per kW (Base Year)	\$4.5600 \$/kW/Mo
(4) Demand Charge Escalation Rate	Per Table
* (5) Average Annual Change in Monthly Billing kW	-3.37 kW/Mo.

Summary Results for This Analysis

	RIM	Participants
NPV Benefits(\$000s)	\$10,116	\$7,271
NPV Costs (\$000s)	\$9,581	\$186
NPV Net Benefits (\$000s)	\$535	\$7,085
Benefit:Cost Ratio	1.056	39.133

\* Supplemental Information Not Specifically Specified in Cost Effectiveness Manual

\*\* The relevant avoidable generation unit is a combustion turbine peaking unit. Since the kilowatt savings occur at the time of the system peak, this is the appropriate unit against which to measure cost savings.

**INPUT DATA – PART 2**  
**Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	Cumulative Total Participating Customers	Cumulative Participating Customers Adj Free Rides	Utility Average System Fuel Cost (C / kWh)	Marginal Fuel Cost (Decreases) (C / kWh)	Marginal Fuel Cost (Increases) (C / kWh)	Replacement Fuel Cost (C / kWh)	Program kW Effectiveness Factor	Program kWh Effectiveness Factor	Other Costs (\$000)	Other Benefits (\$000)
2000	215	215	1.4855	2.0099	2.0099	1.4855	1.00	1.00	\$0	\$0
2001	427	427	1.4771	2.1798	2.1798	1.4771	1.00	1.00	\$0	\$0
2002	639	639	1.4360	2.1667	2.1667	1.4360	1.00	1.00	\$0	\$0
2003	851	851	1.3796	2.2272	2.2272	1.3796	1.00	1.00	\$0	\$0
2004	1,063	1,063	1.3908	2.2390	2.2390	1.3908	1.00	1.00	\$0	\$0
2005	1,275	1,275	1.4057	2.2692	2.2692	1.4057	1.00	1.00	\$0	\$0
2006	1,487	1,487	1.4444	2.3280	2.3280	1.4444	1.00	1.00	\$0	\$0
2007	1,699	1,699	1.4891	2.3468	2.3468	1.4891	1.00	1.00	\$0	\$0
2008	1,911	1,911	1.5309	2.4306	2.4306	1.5309	1.00	1.00	\$0	\$0
2009	2,123	2,123	1.5645	2.5090	2.5090	1.5645	1.00	1.00	\$0	\$0
2010	2,123	2,123	1.6108	2.5498	2.5498	1.6108	1.00	1.00	\$0	\$0
2011	2,123	2,123	1.6585	2.5981	2.5981	1.6585	1.00	1.00	\$0	\$0
2012	2,123	2,123	1.7077	2.6838	2.6838	1.7077	1.00	1.00	\$0	\$0
2013	2,123	2,123	1.7584	2.7707	2.7707	1.7584	1.00	1.00	\$0	\$0
2014	2,123	2,123	1.8106	2.8131	2.8131	1.8106	1.00	1.00	\$0	\$0
2015	2,123	2,123	1.8644	2.7836	2.7836	1.8644	1.00	1.00	\$0	\$0
2016	2,123	2,123	1.9198	2.7683	2.7683	1.9198	1.00	1.00	\$0	\$0
2017	2,123	2,123	1.9769	2.7274	2.7274	1.9769	1.00	1.00	\$0	\$0
2018	2,123	2,123	2.0357	2.7028	2.7028	2.0357	1.00	1.00	\$0	\$0
2019	2,123	2,123	2.0964	2.8597	2.8597	2.0964	1.00	1.00	\$0	\$0
2020	2,123	2,123	2.1588	2.9472	2.9472	2.1588	1.00	1.00	\$0	\$0
2021	2,123	2,123	2.2232	3.0375	3.0375	2.2232	1.00	1.00	\$0	\$0
2022	2,123	2,123	2.2895	3.1305	3.1305	2.2895	1.00	1.00	\$0	\$0
2023	2,123	2,123	2.3578	3.2264	3.2264	2.3578	1.00	1.00	\$0	\$0
2024	2,123	2,123	2.4300	3.3251	3.3251	2.4300	1.00	1.00	\$0	\$0
2025	2,123	2,123	2.5044	3.4270	3.4270	2.5044	1.00	1.00	\$0	\$0
2026	2,123	2,123	2.5811	3.5319	3.5319	2.5811	1.00	1.00	\$0	\$0
2027	2,123	2,123	2.6601	3.6400	3.6400	2.6601	1.00	1.00	\$0	\$0
2028	2,123	2,123	2.7415	3.7515	3.7515	2.7415	1.00	1.00	\$0	\$0
2029	2,123	2,123	2.8255	3.8664	3.8664	2.8255	1.00	1.00	\$0	\$0

Incremental Generation Capacity Costs or Benefits

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

(1) Year	(2) Incremental Owned Gen. Capacity Cost (\$000s)	(3) Incremental Generation Fixed O&M (\$000s)	(4) Incremental Generation Variable O&M (\$000s)	(5) Fuel Cost for the Increment. Cap. (\$000s)	(6) Replacement Fuel Cost (\$000s)	(6a) Incremental Purchased Gen. Capacity Cost (\$000s)	(7) Incremental Gen. Capacity Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2001	(\$67)	(\$7)	(\$1)	(\$25)	(\$11)		(\$89)
2002	(\$103)	(\$11)	(\$2)	(\$39)	(\$16)		(\$138)
2003	(\$140)	(\$15)	(\$2)	(\$51)	(\$21)		(\$187)
2004	(\$179)	(\$20)	(\$3)	(\$66)	(\$27)		(\$242)
2005	(\$221)	(\$25)	(\$4)	(\$83)	(\$32)		(\$300)
2006	(\$264)	(\$30)	(\$4)	(\$101)	(\$39)		(\$361)
2007	(\$309)	(\$35)	(\$5)	(\$118)	(\$45)		(\$422)
2008	(\$357)	(\$40)	(\$6)	(\$134)	(\$52)		(\$485)
2009	(\$407)	(\$46)	(\$7)	(\$151)	(\$60)		(\$551)
2010	(\$417)	(\$47)	(\$7)	(\$157)	(\$61)		(\$567)
2011	(\$428)	(\$49)	(\$7)	(\$161)	(\$63)		(\$582)
2012	(\$439)	(\$50)	(\$8)	(\$166)	(\$65)		(\$598)
2013	(\$450)	(\$52)	(\$8)	(\$172)	(\$67)		(\$615)
2014	(\$462)	(\$53)	(\$9)	(\$177)	(\$69)		(\$631)
2015	(\$473)	(\$55)	(\$9)	(\$182)	(\$71)		(\$648)
2016	(\$486)	(\$57)	(\$9)	(\$187)	(\$73)		(\$665)
2017	(\$498)	(\$58)	(\$10)	(\$192)	(\$75)		(\$683)
2018	(\$511)	(\$60)	(\$10)	(\$198)	(\$78)		(\$701)
2019	(\$524)	(\$62)	(\$11)	(\$204)	(\$80)		(\$721)
2020	(\$537)	(\$64)	(\$12)	(\$217)	(\$82)		(\$747)
2021	(\$551)	(\$66)	(\$12)	(\$230)	(\$85)		(\$775)
2022	(\$565)	(\$68)	(\$13)	(\$245)	(\$87)		(\$804)
2023	(\$580)	(\$70)	(\$14)	(\$255)	(\$90)		(\$828)
2024	(\$594)	(\$72)	(\$14)	(\$265)	(\$93)		(\$852)
2025	(\$610)	(\$74)	(\$15)	(\$275)	(\$95)		(\$878)
2026	(\$625)	(\$76)	(\$15)	(\$285)	(\$98)		(\$904)
2027	(\$641)	(\$78)	(\$16)	(\$296)	(\$101)		(\$930)
2028	(\$658)	(\$81)	(\$16)	(\$308)	(\$104)		(\$958)
2029	(\$675)	(\$83)	(\$17)	(\$320)	(\$108)		(\$987)
Nominal	(\$12,769)	(\$1,504)	(\$267)	(\$5,258)	(\$1,949)		(\$17,849)
NPV	(\$3,332)	(\$385)	(\$64)	(\$1,308)	(\$502)		(\$4,586)

77

Incremental T&D Capacity and Incremental Fuel

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

(1) Year	(2) Incremental Transmission Capacity Cost (\$000s)	(3) Incremental Transmission O&M Cost (\$000s)	(4) Total Incremental Trans. Cost (\$000s)	(5) Incremental Distribution Capacity Cost (\$000s)	(6) Incremental Distribution O&M Cost (\$000s)	(7) Total Incremental Dist. Cost (\$000s)	(8) Effective Incremental Fuel Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	(\$40)
2001	(\$17)	(\$2)	(\$19)	(\$10)	(\$2)	(\$12)	(\$87)
2002	(\$27)	(\$3)	(\$30)	(\$15)	(\$3)	(\$18)	(\$129)
2003	(\$37)	(\$4)	(\$41)	(\$21)	(\$5)	(\$25)	(\$177)
2004	(\$47)	(\$5)	(\$52)	(\$26)	(\$6)	(\$32)	(\$222)
2005	(\$58)	(\$6)	(\$64)	(\$32)	(\$7)	(\$40)	(\$270)
2006	(\$69)	(\$8)	(\$77)	(\$39)	(\$9)	(\$48)	(\$323)
2007	(\$81)	(\$9)	(\$90)	(\$45)	(\$10)	(\$56)	(\$372)
2008	(\$93)	(\$10)	(\$104)	(\$52)	(\$12)	(\$64)	(\$434)
2009	(\$106)	(\$12)	(\$118)	(\$60)	(\$13)	(\$73)	(\$497)
2010	(\$109)	(\$12)	(\$121)	(\$61)	(\$14)	(\$75)	(\$506)
2011	(\$112)	(\$12)	(\$124)	(\$63)	(\$14)	(\$77)	(\$515)
2012	(\$115)	(\$13)	(\$128)	(\$65)	(\$14)	(\$79)	(\$532)
2013	(\$118)	(\$13)	(\$131)	(\$66)	(\$15)	(\$81)	(\$549)
2014	(\$121)	(\$13)	(\$134)	(\$68)	(\$15)	(\$83)	(\$558)
2015	(\$124)	(\$14)	(\$138)	(\$70)	(\$16)	(\$85)	(\$548)
2016	(\$127)	(\$14)	(\$141)	(\$71)	(\$16)	(\$87)	(\$549)
2017	(\$130)	(\$14)	(\$145)	(\$73)	(\$16)	(\$90)	(\$541)
2018	(\$134)	(\$15)	(\$148)	(\$75)	(\$17)	(\$92)	(\$536)
2019	(\$137)	(\$15)	(\$152)	(\$77)	(\$17)	(\$94)	(\$567)
2020	(\$141)	(\$16)	(\$156)	(\$79)	(\$18)	(\$97)	(\$584)
2021	(\$144)	(\$16)	(\$160)	(\$81)	(\$18)	(\$99)	(\$602)
2022	(\$148)	(\$16)	(\$164)	(\$83)	(\$19)	(\$102)	(\$621)
2023	(\$152)	(\$17)	(\$168)	(\$85)	(\$19)	(\$104)	(\$640)
2024	(\$156)	(\$17)	(\$173)	(\$87)	(\$20)	(\$107)	(\$659)
2025	(\$160)	(\$18)	(\$177)	(\$90)	(\$20)	(\$110)	(\$679)
2026	(\$164)	(\$18)	(\$182)	(\$92)	(\$21)	(\$113)	(\$700)
2027	(\$168)	(\$19)	(\$186)	(\$94)	(\$21)	(\$115)	(\$722)
2028	(\$172)	(\$19)	(\$191)	(\$97)	(\$22)	(\$118)	(\$744)
2029	(\$177)	(\$20)	(\$196)	(\$99)	(\$22)	(\$121)	(\$767)
Nominal	(\$3,342)	(\$370)	(\$3,712)	(\$1,877)	(\$422)	(\$2,299)	(\$14,671)
NPV	(\$872)	(\$97)	(\$968)	(\$490)	(\$110)	(\$600)	(\$3,962)

Worksheet for Utility Program Costs and Participants' Benefits & Costs

Utility Program Costs, Rebates, & Incentives								Participating Customers' Benefits and Costs						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Year	Annual Incremental kWh Generated (000s)	Utility Non-recurring Costs (\$000)	Utility Recurring Costs (\$000)	Total Utility Program Costs (\$000)	Utility Non-recurring Rebates/Incent. (\$000)	Utility Recurring Rebates/Incent. (\$000)	Total Utility Paid Rebates/Incent. (\$000)	Participant Equipment Costs (\$000)	Participant O&M Costs (\$000)	Total Participant Costs (\$000)	Change in Participants' Billed kWh (000s)	Change in Participants' Billed Fuel (\$000)	Change in Participants' Billed Non-Fuel (\$000)	Change in Participants' Electric Bills (\$000)
2000	(2,008)	\$297	\$0	\$297	\$0	\$0	\$0	\$24	\$0	\$24	(1,864)	(\$28)	(\$84)	(\$92)
2001	(3,968)	\$302	\$0	\$302	\$0	\$0	\$0	\$24	\$0	\$24	(3,703)	(\$55)	(\$129)	(\$184)
2002	(5,967)	\$311	\$0	\$311	\$0	\$0	\$0	\$25	\$0	\$25	(5,541)	(\$80)	(\$190)	(\$270)
2003	(7,947)	\$320	\$0	\$320	\$0	\$0	\$0	\$26	\$0	\$26	(7,379)	(\$102)	(\$264)	(\$366)
2004	(9,827)	\$330	\$0	\$330	\$0	\$0	\$0	\$27	\$0	\$27	(9,217)	(\$128)	(\$311)	(\$439)
2005	(11,907)	\$340	\$0	\$340	\$0	\$0	\$0	\$27	\$0	\$27	(11,056)	(\$156)	(\$382)	(\$538)
2006	(13,987)	\$351	\$0	\$351	\$0	\$0	\$0	\$28	\$0	\$28	(12,894)	(\$186)	(\$439)	(\$628)
2007	(15,866)	\$361	\$0	\$361	\$0	\$0	\$0	\$29	\$0	\$29	(14,732)	(\$220)	(\$502)	(\$721)
2008	(17,846)	\$372	\$0	\$372	\$0	\$0	\$0	\$30	\$0	\$30	(16,570)	(\$254)	(\$579)	(\$839)
2009	(19,826)	\$384	\$0	\$384	\$0	\$0	\$0	\$31	\$0	\$31	(18,409)	(\$288)	(\$632)	(\$921)
2010	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$297)	(\$633)	(\$930)
2011	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$306)	(\$633)	(\$939)
2012	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$315)	(\$633)	(\$948)
2013	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$324)	(\$633)	(\$957)
2014	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$334)	(\$633)	(\$967)
2015	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$344)	(\$634)	(\$977)
2016	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$354)	(\$634)	(\$988)
2017	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$364)	(\$634)	(\$998)
2018	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$375)	(\$634)	(\$1,009)
2019	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$386)	(\$634)	(\$1,021)
2020	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$398)	(\$634)	(\$1,032)
2021	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$410)	(\$635)	(\$1,044)
2022	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$422)	(\$635)	(\$1,057)
2023	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$435)	(\$635)	(\$1,070)
2024	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$448)	(\$635)	(\$1,083)
2025	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$462)	(\$635)	(\$1,097)
2026	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$476)	(\$636)	(\$1,111)
2027	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$490)	(\$636)	(\$1,126)
2028	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$505)	(\$636)	(\$1,141)
2029	(19,826)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(18,409)	(\$521)	(\$636)	(\$1,157)

79

**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)
Year	Change in Electric Supply Costs (\$000s)	Utility's Program Costs (\$000s)	Participants' Program Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Incremental Generation Cap Costs (\$000s)	Incremental T&D Cap Costs (\$000s)	Incremental Prog Induced Fuel Costs (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Total Net Benefits (\$000s)	Cumulative Discounted Net Benefits (\$000s)
2000	\$0	\$297	\$24	\$0	\$0	\$0	\$0	(\$40)	\$321	\$40	(\$280)	(\$280)
2001	\$0	\$302	\$24	\$0	\$0	(\$89)	(\$31)	(\$87)	\$326	\$208	(\$118)	(\$389)
2002	\$0	\$311	\$25	\$0	\$0	(\$138)	(\$48)	(\$129)	\$386	\$315	(\$20)	(\$408)
2003	\$0	\$320	\$26	\$0	\$0	(\$187)	(\$66)	(\$177)	\$346	\$430	\$84	(\$341)
2004	\$0	\$330	\$27	\$0	\$0	(\$242)	(\$84)	(\$222)	\$357	\$549	\$192	(\$205)
2005	\$0	\$340	\$27	\$0	\$0	(\$300)	(\$104)	(\$270)	\$368	\$674	\$306	(\$5)
2006	\$0	\$351	\$28	\$0	\$0	(\$361)	(\$124)	(\$323)	\$379	\$808	\$430	\$252
2007	\$0	\$361	\$29	\$0	\$0	(\$422)	(\$146)	(\$372)	\$390	\$940	\$549	\$553
2008	\$0	\$372	\$30	\$0	\$0	(\$485)	(\$168)	(\$434)	\$402	\$1,087	\$684	\$897
2009	\$0	\$384	\$31	\$0	\$0	(\$551)	(\$191)	(\$497)	\$415	\$1,240	\$825	\$1,278
2010	\$0	\$0	\$0	\$0	\$0	(\$567)	(\$196)	(\$508)	\$0	\$1,269	\$1,269	\$1,815
2011	\$0	\$0	\$0	\$0	\$0	(\$582)	(\$201)	(\$515)	\$0	\$1,299	\$1,299	\$2,320
2012	\$0	\$0	\$0	\$0	\$0	(\$598)	(\$207)	(\$532)	\$0	\$1,337	\$1,337	\$2,797
2013	\$0	\$0	\$0	\$0	\$0	(\$615)	(\$212)	(\$549)	\$0	\$1,376	\$1,376	\$3,247
2014	\$0	\$0	\$0	\$0	\$0	(\$631)	(\$217)	(\$558)	\$0	\$1,406	\$1,406	\$3,670
2015	\$0	\$0	\$0	\$0	\$0	(\$648)	(\$223)	(\$548)	\$0	\$1,419	\$1,419	\$4,061
2016	\$0	\$0	\$0	\$0	\$0	(\$665)	(\$229)	(\$549)	\$0	\$1,443	\$1,443	\$4,426
2017	\$0	\$0	\$0	\$0	\$0	(\$683)	(\$234)	(\$541)	\$0	\$1,458	\$1,458	\$4,764
2018	\$0	\$0	\$0	\$0	\$0	(\$701)	(\$240)	(\$536)	\$0	\$1,478	\$1,478	\$5,079
2019	\$0	\$0	\$0	\$0	\$0	(\$721)	(\$247)	(\$567)	\$0	\$1,534	\$1,534	\$5,379
2020	\$0	\$0	\$0	\$0	\$0	(\$747)	(\$253)	(\$584)	\$0	\$1,584	\$1,584	\$5,863
2021	\$0	\$0	\$0	\$0	\$0	(\$775)	(\$259)	(\$602)	\$0	\$1,636	\$1,636	\$5,932
2022	\$0	\$0	\$0	\$0	\$0	(\$804)	(\$266)	(\$621)	\$0	\$1,690	\$1,690	\$6,188
2023	\$0	\$0	\$0	\$0	\$0	(\$828)	(\$273)	(\$640)	\$0	\$1,740	\$1,740	\$6,429
2024	\$0	\$0	\$0	\$0	\$0	(\$852)	(\$280)	(\$659)	\$0	\$1,791	\$1,791	\$6,657
2025	\$0	\$0	\$0	\$0	\$0	(\$878)	(\$287)	(\$679)	\$0	\$1,844	\$1,844	\$6,872
2026	\$0	\$0	\$0	\$0	\$0	(\$904)	(\$294)	(\$700)	\$0	\$1,898	\$1,898	\$7,075
2027	\$0	\$0	\$0	\$0	\$0	(\$930)	(\$302)	(\$722)	\$0	\$1,954	\$1,954	\$7,268
2028	\$0	\$0	\$0	\$0	\$0	(\$958)	(\$310)	(\$744)	\$0	\$2,011	\$2,011	\$7,449
2029	\$0	\$0	\$0	\$0	\$0	(\$987)	(\$318)	(\$767)	\$0	\$2,071	\$2,071	\$7,620
Nominal		\$3,368	\$271			(\$17,849)	(\$6,010)	(\$14,671)	\$3,638	\$38,530	\$34,892	
NPV		\$2,310	\$186			(\$4,586)	(\$1,568)	(\$3,962)	\$2,496	\$10,116	\$7,620	
Discount Rate =		8.97%										
Benefit/Cost Ratio =		4.05										

80

**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)
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)
2000	\$24	\$0	\$0	\$0	(\$92)	\$0	\$0	\$24	\$92	\$68	\$68
2001	\$24	\$0	\$0	\$0	(\$184)	\$0	\$0	\$24	\$184	\$160	\$215
2002	\$25	\$0	\$0	\$0	(\$270)	\$0	\$0	\$25	\$270	\$245	\$421
2003	\$26	\$0	\$0	\$0	(\$368)	\$0	\$0	\$26	\$368	\$340	\$684
2004	\$27	\$0	\$0	\$0	(\$439)	\$0	\$0	\$27	\$439	\$413	\$976
2005	\$27	\$0	\$0	\$0	(\$538)	\$0	\$0	\$27	\$538	\$510	\$1,309
2006	\$28	\$0	\$0	\$0	(\$626)	\$0	\$0	\$28	\$626	\$598	\$1,865
2007	\$29	\$0	\$0	\$0	(\$721)	\$0	\$0	\$29	\$721	\$692	\$2,045
2008	\$30	\$0	\$0	\$0	(\$833)	\$0	\$0	\$30	\$833	\$803	\$2,449
2009	\$31	\$0	\$0	\$0	(\$921)	\$0	\$0	\$31	\$921	\$890	\$2,960
2010	\$0	\$0	\$0	\$0	(\$930)	\$0	\$0	\$0	\$930	\$930	\$3,253
2011	\$0	\$0	\$0	\$0	(\$939)	\$0	\$0	\$0	\$939	\$939	\$3,618
2012	\$0	\$0	\$0	\$0	(\$948)	\$0	\$0	\$0	\$948	\$948	\$3,956
2013	\$0	\$0	\$0	\$0	(\$957)	\$0	\$0	\$0	\$957	\$957	\$4,270
2014	\$0	\$0	\$0	\$0	(\$967)	\$0	\$0	\$0	\$967	\$967	\$4,560
2015	\$0	\$0	\$0	\$0	(\$977)	\$0	\$0	\$0	\$977	\$977	\$4,829
2016	\$0	\$0	\$0	\$0	(\$988)	\$0	\$0	\$0	\$988	\$988	\$5,079
2017	\$0	\$0	\$0	\$0	(\$998)	\$0	\$0	\$0	\$998	\$998	\$5,311
2018	\$0	\$0	\$0	\$0	(\$1,009)	\$0	\$0	\$0	\$1,009	\$1,009	\$5,526
2019	\$0	\$0	\$0	\$0	(\$1,021)	\$0	\$0	\$0	\$1,021	\$1,021	\$5,725
2020	\$0	\$0	\$0	\$0	(\$1,032)	\$0	\$0	\$0	\$1,032	\$1,032	\$5,911
2021	\$0	\$0	\$0	\$0	(\$1,044)	\$0	\$0	\$0	\$1,044	\$1,044	\$6,083
2022	\$0	\$0	\$0	\$0	(\$1,057)	\$0	\$0	\$0	\$1,057	\$1,057	\$6,242
2023	\$0	\$0	\$0	\$0	(\$1,070)	\$0	\$0	\$0	\$1,070	\$1,070	\$6,391
2024	\$0	\$0	\$0	\$0	(\$1,083)	\$0	\$0	\$0	\$1,083	\$1,083	\$6,528
2025	\$0	\$0	\$0	\$0	(\$1,097)	\$0	\$0	\$0	\$1,097	\$1,097	\$6,656
2026	\$0	\$0	\$0	\$0	(\$1,111)	\$0	\$0	\$0	\$1,111	\$1,111	\$6,776
2027	\$0	\$0	\$0	\$0	(\$1,126)	\$0	\$0	\$0	\$1,126	\$1,126	\$6,886
2028	\$0	\$0	\$0	\$0	(\$1,141)	\$0	\$0	\$0	\$1,141	\$1,141	\$6,989
2029	\$0	\$0	\$0	\$0	(\$1,157)	\$0	\$0	\$0	\$1,157	\$1,157	\$7,085
Nominal	\$271				(\$25,643)			\$271	\$25,643	\$25,372	
NPV	\$186				(\$7,271)			\$186	\$7,271	\$7,085	
Discount Rate =		8.97%									
Benefit/Cost Ratio =		39.13									

81

**Ratepayers' Impact 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)	(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)
2000	\$0	\$297	\$0	(\$92)	\$0	\$0	(\$40)	\$0	\$0	\$388	\$40	(\$348)	(\$348)
2001	\$0	\$302	\$0	(\$184)	(\$89)	(\$31)	(\$87)	\$0	\$0	\$486	\$208	(\$278)	(\$603)
2002	\$0	\$311	\$0	(\$270)	(\$138)	(\$48)	(\$129)	\$0	\$0	\$581	\$315	(\$265)	(\$827)
2003	\$0	\$320	\$0	(\$366)	(\$187)	(\$66)	(\$177)	\$0	\$0	\$686	\$430	(\$256)	(\$1,024)
2004	\$0	\$330	\$0	(\$439)	(\$242)	(\$84)	(\$222)	\$0	\$0	\$789	\$549	(\$221)	(\$1,181)
2005	\$0	\$340	\$0	(\$538)	(\$300)	(\$104)	(\$270)	\$0	\$0	\$878	\$674	(\$204)	(\$1,314)
2006	\$0	\$351	\$0	(\$626)	(\$361)	(\$124)	(\$323)	\$0	\$0	\$977	\$808	(\$168)	(\$1,414)
2007	\$0	\$361	\$0	(\$721)	(\$422)	(\$146)	(\$372)	\$0	\$0	\$1,083	\$940	(\$143)	(\$1,492)
2008	\$0	\$372	\$0	(\$833)	(\$485)	(\$188)	(\$434)	\$0	\$0	\$1,208	\$1,087	(\$119)	(\$1,552)
2009	\$0	\$384	\$0	(\$921)	(\$551)	(\$191)	(\$497)	\$0	\$0	\$1,305	\$1,240	(\$64)	(\$1,582)
2010	\$0	\$0	\$0	(\$930)	(\$567)	(\$196)	(\$506)	\$0	\$0	\$930	\$1,269	\$339	(\$1,438)
2011	\$0	\$0	\$0	(\$939)	(\$582)	(\$201)	(\$515)	\$0	\$0	\$939	\$1,299	\$380	(\$1,298)
2012	\$0	\$0	\$0	(\$948)	(\$598)	(\$207)	(\$532)	\$0	\$0	\$948	\$1,337	\$389	(\$1,159)
2013	\$0	\$0	\$0	(\$957)	(\$615)	(\$212)	(\$549)	\$0	\$0	\$957	\$1,376	\$419	(\$1,022)
2014	\$0	\$0	\$0	(\$967)	(\$631)	(\$217)	(\$558)	\$0	\$0	\$967	\$1,408	\$439	(\$890)
2015	\$0	\$0	\$0	(\$977)	(\$648)	(\$223)	(\$548)	\$0	\$0	\$977	\$1,419	\$442	(\$769)
2016	\$0	\$0	\$0	(\$988)	(\$665)	(\$229)	(\$549)	\$0	\$0	\$988	\$1,443	\$455	(\$654)
2017	\$0	\$0	\$0	(\$998)	(\$683)	(\$234)	(\$541)	\$0	\$0	\$998	\$1,458	\$459	(\$547)
2018	\$0	\$0	\$0	(\$1,009)	(\$701)	(\$240)	(\$538)	\$0	\$0	\$1,009	\$1,478	\$468	(\$447)
2019	\$0	\$0	\$0	(\$1,021)	(\$721)	(\$247)	(\$567)	\$0	\$0	\$1,021	\$1,534	\$513	(\$347)
2020	\$0	\$0	\$0	(\$1,032)	(\$747)	(\$253)	(\$584)	\$0	\$0	\$1,032	\$1,584	\$552	(\$248)
2021	\$0	\$0	\$0	(\$1,044)	(\$775)	(\$259)	(\$602)	\$0	\$0	\$1,044	\$1,636	\$592	(\$150)
2022	\$0	\$0	\$0	(\$1,057)	(\$804)	(\$266)	(\$621)	\$0	\$0	\$1,057	\$1,690	\$634	(\$55)
2023	\$0	\$0	\$0	(\$1,070)	(\$828)	(\$273)	(\$640)	\$0	\$0	\$1,070	\$1,740	\$671	\$38
2024	\$0	\$0	\$0	(\$1,083)	(\$852)	(\$280)	(\$659)	\$0	\$0	\$1,083	\$1,791	\$708	\$128
2025	\$0	\$0	\$0	(\$1,097)	(\$878)	(\$287)	(\$679)	\$0	\$0	\$1,097	\$1,844	\$747	\$216
2026	\$0	\$0	\$0	(\$1,111)	(\$904)	(\$294)	(\$700)	\$0	\$0	\$1,111	\$1,898	\$787	\$300
2027	\$0	\$0	\$0	(\$1,126)	(\$930)	(\$302)	(\$722)	\$0	\$0	\$1,126	\$1,954	\$828	\$381
2028	\$0	\$0	\$0	(\$1,141)	(\$958)	(\$310)	(\$744)	\$0	\$0	\$1,141	\$2,011	\$870	\$460
2029	\$0	\$0	\$0	(\$1,157)	(\$987)	(\$318)	(\$767)	\$0	\$0	\$1,157	\$2,071	\$914	\$535
Nominal		\$3,368		(\$25,643)	(\$17,849)	(\$8,010)	(\$14,671)			\$29,011	\$38,530	\$9,520	
NPV		\$2,310		(\$7,271)	(\$4,586)	(\$1,568)	(\$3,982)			\$9,581	\$10,116	\$535	
		Discount Rate = 8.97%											
		Benefit/Cost Ratio = 1.08											

82

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## **Commercial Energy Analysis Program: Tier 1 (Mail-In Program)**

- **Program Description**

The Tier I Commercial Energy Analysis Program is a direct mail energy audit program. Gulf Power Company mails an introductory letter and questionnaire to qualifying businesses. The letter explains how the program works and the benefits the customer will receive by participating. The customer fills out the questionnaire and returns it to Gulf Power Company. The customer is then mailed a completed analysis that includes billing history data and energy evaluation recommendations based on the information from the questionnaire. Recommendations are primarily standardized and encourage the customer to implement measures that, if cost effective, move the customer beyond the efficiency level typically installed in the marketplace.

- **Participation Standards**

The Tier I Commercial Energy Analysis is available to all commercial customers with billing demands of 150 kW or less served by Gulf Power Company. The program is designed to involve the business owner, management or person responsible for energy related decisions for the business.

- **Benefits and Cost**

Benefits for Gulf Power Company's customers are achieved through the customer's participation in the program. The customer analysis is specific to each customer's survey responses and business type. The analysis makes customer specific recommendations for improving profitability by lowering energy cost. After reviewing the customer's energy use, the analysis provides the customer with energy management strategies to enhance their overall business operations. New technologies and other ideas are provided to help individual businesses control energy costs.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

The Tier 1 Commercial Energy Analysis program is an extension of Gulf Power Company's Commercial Energy Audit program as filed in Docket No. 941172-E1. The Company estimates a summer and winter peak reduction of 0.8 kW per audit and an annual 2,943 kWh savings. An estimated cost of \$69.00 per participant has been calculated for this program for Gulf Power Company. Participants' cost is dependent upon the condition of the existing building and the specific recommendations per the program audit and follow-up by the customer.

- **Monitoring and Evaluation**

This program is evaluated annually by the number of analyses performed and the cost per analysis. A computerized database is used to track and record each analysis and method of request for the analysis. Each year, a representative customer sample will be drawn to compare customer demand and energy usage before and after the audits were performed to analyze the effectiveness of the program.

- **Cost Effectiveness**

Not applicable.

## Commercial Energy Analysis Program - Tier 1

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	2,943	0.80	0.80	2,795,850	760	760
2001	2,943	0.80	0.80	2,795,850	760	760
2002	2,943	0.80	0.80	2,795,850	760	760
2003	2,943	0.80	0.80	2,795,850	760	760
2004	2,943	0.80	0.80	2,354,400	640	640
2005	2,943	0.80	0.80	2,207,250	600	600
2006	2,943	0.80	0.80	2,060,100	560	560
2007	2,943	0.80	0.80	2,207,250	600	600
2008	2,943	0.80	0.80	2,060,100	560	560
2009	2,943	0.80	0.80	1,912,950	520	520

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	3,170	1.04	1.04	3,011,130	984	984
2001	3,170	1.04	1.04	3,011,130	984	984
2002	3,170	1.04	1.04	3,011,130	984	984
2003	3,170	1.04	1.04	3,011,130	984	984
2004	3,170	1.04	1.04	2,535,689	829	829
2005	3,170	1.04	1.04	2,377,208	777	777
2006	3,170	1.04	1.04	2,218,728	725	725
2007	3,170	1.04	1.04	2,377,208	777	777
2008	3,170	1.04	1.04	2,218,728	725	725
2009	3,170	1.04	1.04	2,060,247	673	673

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	47,376	40,103	950	2.4%	950
2001	48,979	41,149	950	4.6%	1,900
2002	50,377	41,916	950	6.8%	2,850
2003	51,457	42,649	950	8.9%	3,800
2004	52,498	43,377	800	10.6%	4,600
2005	53,531	44,116	750	12.1%	5,350
2006	54,578	44,865	700	13.5%	6,050
2007	55,636	45,621	750	14.9%	6,800
2008	56,704	46,377	700	16.2%	7,500
2009	57,768	47,142	650	17.3%	8,150

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **Commercial Energy Analysis Program: Tier 2**

- **Program Description**

The Tier II Commercial Energy Analysis Program is an interactive program that provides commercial customers assistance in identifying energy conservation opportunities. The Tier II analysis is a prime tool for the Gulf Power Company Commercial Energy Consultant to personally introduce customers to conservation measures including low/no cost improvements or new electro-technologies to replace old or inefficient equipment. Further, this program facilitates the load factor improvement process necessary for the company to increase its performance.

The Tier II energy analysis process consists of an on-site review by the Commercial Energy Consultant of the commercial customer's facility operation, equipment and energy usage pattern. The consultant identifies all areas of potential reduction in kW demand and kWh consumption. An electronic evaluation is then performed which includes an energy use summary, energy management options, and a facility use and equipment inventory. This evaluation presents opportunities for reducing electrical operating costs that were revealed by the on-site evaluation.

- **Participation Standards**

The Tier II Commercial Energy Analysis will be available to all commercial customers served by Gulf Power Company. The program is designed to involve the business owner, management, or person responsible for energy related decisions for the business. Customers are notified of this no cost service every six months as specified in Rule 25-17.003 of the Florida Administrative Code.

- **Benefits and Cost**

Benefits for Gulf Power Company's customers are achieved through the customer's participation in the program. The customer analysis is specific to each customer's business. The analysis makes customer-specific recommendations for improving profitability by lowering energy cost. After

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

reviewing the customer's energy use, the analysis provides the customer with energy management strategies to enhance their overall business operations. New technologies and other ideas are provided to help individual businesses control energy costs.

Gulf Power Company expects a summer and winter peak reduction of 1.6 kW per audit and an annual 5,886 kWh savings. As a modification to the existing commercial/industrial audit program, Gulf Power Company's cost per participant will change. The proposed changes to the Tier 2 Audits are expected to enhance productivity in conducting this type of audit. Gulf Power Company's cost will be monitored and evaluated on an annual basis. Participants' cost is dependent upon the condition of the existing building and the specific recommendations per the program audit and follow-up by the customer.

- **Monitoring and Evaluation**

This program will be evaluated annually by the number of analyses performed and the cost per analysis. Gulf Power Company will also monitor this program through its existing Gulf Account Reporting System (GARS) which enables the tracking of participating customers.

- **Cost Effectiveness**

Not applicable.

## Commercial Energy Analysis Program - Tier 2

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	5,886	1.60	1.60	735,750	200	200
2001	5,886	1.60	1.60	735,750	200	200
2002	5,886	1.60	1.60	735,750	200	200
2003	5,886	1.60	1.60	735,750	200	200
2004	5,886	1.60	1.60	735,750	200	200
2005	5,886	1.60	1.60	735,750	200	200
2006	5,886	1.60	1.60	735,750	200	200
2007	5,886	1.60	1.60	735,750	200	200
2008	5,886	1.60	1.60	735,750	200	200
2009	5,886	1.60	1.60	735,750	200	200

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	6,339	2.07	2.07	792,403	259	259
2001	6,339	2.07	2.07	792,403	259	259
2002	6,339	2.07	2.07	792,403	259	259
2003	6,339	2.07	2.07	792,403	259	259
2004	6,339	2.07	2.07	792,403	259	259
2005	6,339	2.07	2.07	792,403	259	259
2006	6,339	2.07	2.07	792,403	259	259
2007	6,339	2.07	2.07	792,403	259	259
2008	6,339	2.07	2.07	792,403	259	259
2009	6,339	2.07	2.07	792,403	259	259

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	48,979	41,601	125	0.3%	125
2001	50,377	42,686	125	0.6%	250
2002	51,457	43,481	125	0.9%	375
2003	52,498	44,242	125	1.1%	500
2004	53,531	44,997	125	1.4%	625
2005	54,578	45,763	125	1.6%	750
2006	55,636	46,540	125	1.9%	875
2007	56,704	47,325	125	2.1%	1,000
2008	57,768	48,109	125	2.3%	1,125
2009	58,845	48,903	125	2.6%	1,250

# GULF POWER COMPANY

## DEMAND SIDE MANAGEMENT PLAN

### Technical Assistance Audit (TAA) Program

- **Program Description**

The Technical Assistance Audit Program is an interactive program that provides commercial 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 Technical Assistance Audit process consists of an on-site review by the Commercial Market 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 performing an AXCESS simulation 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.

- **Participation Standards**

The Technical Assistance Audit Program is available to all commercial and industrial customers with a minimum annual peak demand of 20kW.

- **Benefits and Cost**

The Technical Assistance Audit provides specific recommendation on energy conservation opportunities for the customer. The cost to the customer will be based on the recommendations regarding equipment, operational options, or other suggestions. The age of the existing stock of appliances and building structure envelope are key determinates in the cost of implementation to the customer. Because the program provides specific and unique options to the customer, gross or average cost estimates are not computed.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

The benefits to Gulf Power Company are energy conservation as well as improved customer satisfaction. In recent research of commercial/industrial customers, consistent response for areas of improvement from this class of customer include this type of individualized attention and service in helping them improve their cost of operation and efficiency.

- **Monitoring and Evaluation**

Monitoring and evaluation of the Technical Assistance Audits 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. Gulf Power Company will monitor this program through its existing Gulf Account Reporting System (GARS) which enables the tracking of participating customers.

- **Cost Effectiveness**

Not applicable

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **Real Time Pricing**

- **Program Description**

On February 7, 1995, the Florida Public Service Commission (FPSC) approved Gulf Power Company's proposed Real Time Pricing (RTP) rate schedule as a pilot program. The rate was originally made available only to the largest customers served by Gulf Power Company – customers with a minimum monthly demand of 2,000 kW or higher. Participation in the RTP pilot was voluntary and initially limited to twelve (12) customers. The first group of six customers volunteered for the pilot in February and March 1995.

The original petition identified five program objectives: customer response, conservation, economic efficiency, value based pricing, and customer satisfaction. The first three objectives were highly related. Customer reactions to price signals impacted demand response (conservation) and economic efficiency. Customer satisfaction with the pilot was partly influenced by the value the customer received or perceived from hourly price signals.

The pilot program was modified in December 1996 to allow up to a maximum of twenty-four (24) customers to participate in the pilot. Increasing the number of potential participants allowed Gulf Power Company to broaden the base and gain information on different customer segments' response to alternative price offerings.

After granting an extension of the pilot in the summer of 1999, the Florida Public Service Commission approved the Real Time Pricing as a permanent rate effective September 1, 1999.

- **Program Objective**

- **Conservation**

As a condition of the pilot program, Gulf Power Company was required to file with Florida Public Service Commission a final report evaluating the effectiveness of the program. Two of the

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

sections of that report dealt with customer response and conservation. An independent research firm conducted a statistical analysis of the customer response to hourly price signals over the period of January 1997 through September 1998. The analytical work consisted of twenty (20) customers divided into five market segments: industrial, government, health care, other commercial, and other commercial with on-site generation.

The industrial segment showed the most responsiveness to hourly prices. This is largely because this segment has access to on-site or co-generation facilities, processes that allow shifting of production, or other energy management control systems or procedures. The maximum hourly response to hourly prices was estimated to be 24.5 mW with industrial contributing 17.5 mW and the remaining segments 7.0 mW.

Real time pricing has proven to conserve peak demand resources and was well received by customers participating in the pilot program.

- **Participation Standards**

Participation under the permanent real time pricing schedule is limited to customers with an annual peak demand of not less than 2,000 kW served by Gulf Power Company. For customers who did not participate in the pilot program, a five-year contract is required. The five-year contract is waived for participants of the pilot but they are required to sign a renewable one-year contract by March of each year.

Contract terms were introduced to allow sufficient resource planning options to be reviewed and incorporated in the short-term and long-term system planning requirements of Gulf Power Company.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

- **Cost-Effectiveness Analysis**

The Real Time Pricing program is cost-effective using the Florida Public Service Commission's approved methodology (Rule 25-17.008). The cost effectiveness runs are included in Attachment B. The cost-effective analysis used the most recent data available from the pilot real time pricing study. Six (6) customers are presently on the real time pricing schedule. To estimate the demand savings, the results of the pilot study were used to estimate average savings by customer type. The customer segments were discussed in the conservation section described above. The cost-effectiveness test also used known program costs for administration and recurring costs.

Because Real Time Pricing rate is voluntary, the cost-effectiveness can change based on the number and type of customers in the program. Gulf Power Company through its marketing representatives believes the current customers constitute the best core of candidates to participate and remain on the rate. The pilot study also provided an indication of when other customers would be willing to participate. These customers indicated Real Time Pricing provides the most benefits when they are able to respond.

Gulf Power Company believes new customers or returning participants will choose Real Time Pricing only after they have invested in energy management systems or other load shedding technologies to respond to hourly prices. As such, the per customer demand reductions would be similar to current customers on the program. The cost-effectiveness would not be expected to diminish below 1.0 over time with additional customer participation. The use of eight (8) customers with an average 2,000 kW demand reduction reflects Gulf Power Company's expectation of future participation in the program.

## Real Time Pricing Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	...	1,059	2,000	...	8,469	16,000
2001	...	1,059	2,000	...	8,469	16,000
2002	...	1,059	2,000	...	8,469	16,000
2003	...	1,059	2,000	...	8,469	16,000
2004	...	1,059	2,000	...	8,469	16,000
2005	...	1,059	2,000	...	8,469	16,000
2006	...	1,059	2,000	...	8,469	16,000
2007	...	1,059	2,000	...	8,469	16,000
2008	...	1,059	2,000	...	8,469	16,000
2009	...	1,059	2,000	...	8,469	16,000

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	...	1,371	2,590	...	10,966	20,718
2001	...	1,371	2,590	...	10,966	20,718
2002	...	1,371	2,590	...	10,966	20,718
2003	...	1,371	2,590	...	10,966	20,718
2004	...	1,371	2,590	...	10,966	20,718
2005	...	1,371	2,590	...	10,966	20,718
2006	...	1,371	2,590	...	10,966	20,718
2007	...	1,371	2,590	...	10,966	20,718
2008	...	1,371	2,590	...	10,966	20,718
2009	...	1,371	2,590	...	10,966	20,718

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	42,060	31	8	25.8%	8
2001	43,156	31	8	25.8%	8
2002	43,957	31	8	25.8%	8
2003	44,725	31	8	25.8%	8
2004	45,486	31	8	25.8%	8
2005	46,259	31	8	25.8%	8
2006	47,042	31	8	25.8%	8
2007	47,834	31	8	25.8%	8
2008	48,624	31	8	25.8%	8
2009	49,425	31	8	25.8%	8

**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	-2000.00	kW/Cus
(2) Change in Peak kW per Customer at generator	-2589.80	kW Gen/Cus
(3) kW Line Loss Percentage	12.60%	
(4) Change in kWh per Customer at generator	3,525,754	kWh/Cus/Yr
(5) kWh Line Loss Percentage	7.70%	
(6) Group Line Loss Multiplier	1.0014	
(7) Annual Change in Customer kWh at Meter	3,273,681	kWh/Cus/Yr
* (8) Change in Winter kW per Cust at meter	-1058.60	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	30	Years
(4) K-Factor for Generation	1.4493	
(5) K-Factor for T&D	1.4394	
* (6) Switch: Rev Req (0) or Val-of-Def (1)	0	

**III. Utility & Customer Costs**

(1) Utility Nonrecurring Cost Per Customer	\$5,000.00	\$/Cus
(2) Utility Recurring Cost Per Customer	\$0.00	\$/Cus/Year
(3) Utility Cost Escalation Rate	3.06%	
(4) Customer Equipment Cost	\$0.00	\$/Cus
(5) Customer Equipment Cost Escalation Rate	3.06%	
(6) Customer O&M Cost	\$0.00	\$/Cus/Year
(7) Customer O&M Cost Escalation Rate	0.00%	
* (8) Customer Tax Credit Per Installation	\$0.00	\$/Cus
* (9) Customer Tax Credit Escalation Rate	3.06%	
* (10) Change in Supply Costs	\$0.00	\$/Cus/Year
* (11) Supply Costs Escalation Rate	3.06%	
* (12) Utility Discount Rate	8.97%	
* (13) Utility AFUDC Rate	10.30%	
* (14) Utility Nonrecurring Rebate/Incentive	\$0.00	\$/Cus
* (15) Utility Recurring Rebate/Incentive	\$128,415.00	\$/Cus/Year
* (16) Utility Rebate/Incentive Escalation Rate	3.06%	

**IV. Incremental Generation, Transmission, & Distribution Costs**

(1) Base Year	2000
(2) In-Service Year For Incremental Generation	2001 **
(3) In-Service Year For Incremental T & D	2001
(4) Base Year Incremental Generation Cost	\$234.85 \$/kW
(5) Base Year Incremental Transmission Cost	\$58.75 \$/kW
(6) Base Year Incremental Distribution Cost	\$33.00 \$/kW
(7) Gen, Tran, & Dist Cost Escalation Rate	2.56%
(8) Generator Fixed O & M Cost	\$2.77 \$/kW/Yr
(9) Generator Fixed O&M Escalation Rate	2.99%
(10) Transmission Fixed O & M Cost	\$0.73 \$/kW/Yr
(11) Distribution Fixed O & M Cost	\$0.84 \$/kW/Yr
(12) T&D Fixed O&M Escalation Rate	2.56%
(13) Incremental Gen Variable O & M Costs	\$0.433 \$/kW/Yr
(14) Incre Gen Variable O&M Cost Esc Rate	3.84%
(15) Incremental Gen Capacity Factor	3.40%
(16) Incremental Generating Unit Fuel Cost	\$0.0356 \$/kWh
(17) Incremental Gen Unit Fuel Esc Rate	3.00%
* (18) Incremental Purchased Capacity Cost	\$20.70 \$/KW/YR
* (19) Incremental Capacity Cost Esc Rate	2.56%

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)	\$0.0187 \$/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**

	RIM	Participants'
NPV Benefits(\$000s)	\$23,769	\$15,388
NPV Costs (\$000s)	\$23,290	\$10,358
NPV Net Benefits (\$000s)	\$479	\$5,030
Benefit:Cost Ratio	1.021	1.486

\* Supplemental Information Not Specifically Specified in Cost Effectiveness Manual

\*\* The relevant avoidable generation unit is a combustion turbine peaking unit. Since the kilowatt savings occur at the time of the system peak, this is the appropriate unit against which to measure cost savings.

**INPUT DATA - PART 2**  
**Cost-Effectiveness Analysis per Rule 25-17.008 Florida Administrative Code**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	Cumulative Total Participating Customers	Cumulative Participating Customers Adj Free Rides	Utility Average System Fuel Cost (C / kWh)	Marginal Fuel Cost (Decreases) (C / kWh)	Marginal Fuel Cost (Increases) (C / kWh)	Replacement Fuel Cost (C / kWh)	Program kW Effectiveness Factor	Program kWh Effectiveness Factor	Other Costs (\$000)	Other Benefits (\$000)
2000	8	8	1.4660	2.0099	2.0099	1.4660	1.00	1.00	\$0	\$0
2001	8	8	1.4570	2.1798	2.1798	1.4570	1.00	1.00	\$0	\$0
2002	8	8	1.4167	2.1667	2.1667	1.4167	1.00	1.00	\$0	\$0
2003	8	8	1.3619	2.2272	2.2272	1.3619	1.00	1.00	\$0	\$0
2004	8	8	1.3729	2.2390	2.2390	1.3729	1.00	1.00	\$0	\$0
2005	8	8	1.3879	2.2692	2.2692	1.3879	1.00	1.00	\$0	\$0
2006	8	8	1.4261	2.3280	2.3280	1.4261	1.00	1.00	\$0	\$0
2007	8	8	1.4700	2.3468	2.3468	1.4700	1.00	1.00	\$0	\$0
2008	8	8	1.5114	2.4306	2.4306	1.5114	1.00	1.00	\$0	\$0
2009	8	8	1.5445	2.5090	2.5090	1.5445	1.00	1.00	\$0	\$0
2010	8	8	1.5902	2.5498	2.5498	1.5902	1.00	1.00	\$0	\$0
2011	8	8	1.6373	2.5981	2.5981	1.6373	1.00	1.00	\$0	\$0
2012	8	8	1.6859	2.6838	2.6838	1.6859	1.00	1.00	\$0	\$0
2013	8	8	1.7359	2.7707	2.7707	1.7359	1.00	1.00	\$0	\$0
2014	8	8	1.7875	2.8131	2.8131	1.7875	1.00	1.00	\$0	\$0
2015	8	8	1.8406	2.7636	2.7636	1.8406	1.00	1.00	\$0	\$0
2016	8	8	1.8953	2.7683	2.7683	1.8953	1.00	1.00	\$0	\$0
2017	8	8	1.9517	2.7274	2.7274	1.9517	1.00	1.00	\$0	\$0
2018	8	8	2.0098	2.7028	2.7028	2.0098	1.00	1.00	\$0	\$0
2019	8	8	2.0697	2.8597	2.8597	2.0697	1.00	1.00	\$0	\$0
2020	8	8	2.1314	2.9472	2.9472	2.1314	1.00	1.00	\$0	\$0
2021	8	8	2.1949	3.0375	3.0375	2.1949	1.00	1.00	\$0	\$0
2022	8	8	2.2604	3.1305	3.1305	2.2604	1.00	1.00	\$0	\$0
2023	8	8	2.3279	3.2264	3.2264	2.3279	1.00	1.00	\$0	\$0
2024	8	8	2.3992	3.3251	3.3251	2.3992	1.00	1.00	\$0	\$0
2025	8	8	2.4726	3.4270	3.4270	2.4726	1.00	1.00	\$0	\$0
2026	8	8	2.5483	3.5319	3.5319	2.5483	1.00	1.00	\$0	\$0
2027	8	8	2.6264	3.6400	3.6400	2.6264	1.00	1.00	\$0	\$0
2028	8	8	2.7068	3.7515	3.7515	2.7068	1.00	1.00	\$0	\$0
2029	8	8	2.7897	3.8664	3.8664	2.7897	1.00	1.00	\$0	\$0

Incremental Generation Capacity Costs or Benefits

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

(1) Year	(2) Incremental Owned Gen. Capacity Cost (\$000s)	(3) Incremental Generation Fixed O&M (\$000s)	(4) Incremental Generation Variable O&M (\$000s)	(5) Fuel Cost for the Incr. Cap. (\$000s)	(6) Replacement Fuel Cost (\$000s)	(6a) Incremental Purchased Gen. Capacity Cost (\$000s)	(7) Incremental Gen. Capacity Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2001	(\$1,032)	(\$59)	(\$9)	(\$203)	(\$90)		(\$1,213)
2002	(\$993)	(\$61)	(\$9)	(\$209)	(\$87)		(\$1,184)
2003	(\$947)	(\$63)	(\$9)	(\$205)	(\$84)		(\$1,140)
2004	(\$905)	(\$64)	(\$10)	(\$214)	(\$85)		(\$1,108)
2005	(\$866)	(\$66)	(\$10)	(\$224)	(\$86)		(\$1,081)
2006	(\$829)	(\$68)	(\$10)	(\$235)	(\$88)		(\$1,054)
2007	(\$794)	(\$70)	(\$11)	(\$238)	(\$91)		(\$1,022)
2008	(\$760)	(\$73)	(\$11)	(\$241)	(\$93)		(\$991)
2009	(\$725)	(\$75)	(\$11)	(\$245)	(\$95)		(\$961)
2010	(\$691)	(\$77)	(\$12)	(\$254)	(\$98)		(\$935)
2011	(\$656)	(\$79)	(\$12)	(\$261)	(\$101)		(\$908)
2012	(\$622)	(\$82)	(\$13)	(\$269)	(\$104)		(\$881)
2013	(\$587)	(\$84)	(\$13)	(\$278)	(\$107)		(\$856)
2014	(\$553)	(\$87)	(\$14)	(\$286)	(\$110)		(\$830)
2015	(\$518)	(\$89)	(\$15)	(\$295)	(\$114)		(\$803)
2016	(\$489)	(\$92)	(\$15)	(\$303)	(\$117)		(\$782)
2017	(\$470)	(\$95)	(\$16)	(\$311)	(\$120)		(\$771)
2018	(\$456)	(\$97)	(\$17)	(\$320)	(\$124)		(\$787)
2019	(\$442)	(\$100)	(\$18)	(\$330)	(\$128)		(\$763)
2020	(\$428)	(\$103)	(\$19)	(\$351)	(\$132)		(\$770)
2021	(\$415)	(\$106)	(\$20)	(\$373)	(\$135)		(\$779)
2022	(\$401)	(\$110)	(\$21)	(\$397)	(\$139)		(\$789)
2023	(\$387)	(\$113)	(\$22)	(\$413)	(\$144)		(\$791)
2024	(\$373)	(\$116)	(\$23)	(\$429)	(\$148)		(\$793)
2025	(\$359)	(\$120)	(\$24)	(\$445)	(\$153)		(\$795)
2026	(\$345)	(\$123)	(\$24)	(\$463)	(\$157)		(\$798)
2027	(\$331)	(\$127)	(\$25)	(\$481)	(\$162)		(\$802)
2028	(\$317)	(\$131)	(\$26)	(\$499)	(\$167)		(\$806)
2029	(\$304)	(\$135)	(\$27)	(\$519)	(\$172)		(\$811)
Nominal	(\$16,996)	(\$2,665)	(\$466)	(\$9,290)	(\$3,432)		(\$25,986)
NPV	(\$7,527)	(\$795)	(\$129)	(\$2,700)	(\$1,042)		(\$10,109)

Incremental T&D Capacity and Incremental Fuel

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

(1) Year	(2) Incremental Transmission Capacity Cost (\$000s)	(3) Incremental Transmission O&M Cost (\$000s)	(4) Total Incremental Trans. Cost (\$000s)	(5) Incremental Distribution Capacity Cost (\$000s)	(6) Incremental Distribution O&M Cost (\$000s)	(7) Total Incremental Dist. Cost (\$000s)	(8) Effective Incremental Fuel Costs (\$000s)
2000	\$0	\$0	\$0	\$0	\$0	\$0	\$567
2001	(\$261)	(\$16)	(\$277)	(\$147)	(\$18)	(\$164)	\$615
2002	(\$250)	(\$16)	(\$266)	(\$141)	(\$18)	(\$159)	\$611
2003	(\$238)	(\$16)	(\$255)	(\$134)	(\$19)	(\$153)	\$628
2004	(\$227)	(\$17)	(\$244)	(\$127)	(\$19)	(\$147)	\$632
2005	(\$216)	(\$17)	(\$234)	(\$121)	(\$20)	(\$141)	\$640
2006	(\$206)	(\$18)	(\$224)	(\$116)	(\$20)	(\$136)	\$657
2007	(\$197)	(\$18)	(\$215)	(\$110)	(\$21)	(\$131)	\$662
2008	(\$187)	(\$19)	(\$206)	(\$105)	(\$21)	(\$126)	\$686
2009	(\$178)	(\$19)	(\$197)	(\$100)	(\$22)	(\$122)	\$708
2010	(\$168)	(\$20)	(\$188)	(\$94)	(\$22)	(\$117)	\$719
2011	(\$159)	(\$20)	(\$179)	(\$89)	(\$23)	(\$112)	\$733
2012	(\$149)	(\$21)	(\$170)	(\$84)	(\$23)	(\$107)	\$757
2013	(\$140)	(\$21)	(\$161)	(\$79)	(\$24)	(\$103)	\$781
2014	(\$130)	(\$22)	(\$152)	(\$73)	(\$25)	(\$98)	\$793
2015	(\$121)	(\$22)	(\$143)	(\$68)	(\$25)	(\$93)	\$780
2016	(\$113)	(\$23)	(\$135)	(\$63)	(\$26)	(\$89)	\$781
2017	(\$107)	(\$23)	(\$130)	(\$60)	(\$27)	(\$87)	\$769
2018	(\$102)	(\$24)	(\$126)	(\$58)	(\$27)	(\$85)	\$762
2019	(\$98)	(\$25)	(\$123)	(\$55)	(\$28)	(\$83)	\$807
2020	(\$94)	(\$25)	(\$119)	(\$53)	(\$29)	(\$81)	\$831
2021	(\$89)	(\$26)	(\$115)	(\$50)	(\$29)	(\$80)	\$857
2022	(\$85)	(\$27)	(\$111)	(\$47)	(\$30)	(\$78)	\$883
2023	(\$80)	(\$27)	(\$107)	(\$45)	(\$31)	(\$76)	\$910
2024	(\$76)	(\$28)	(\$104)	(\$42)	(\$32)	(\$74)	\$938
2025	(\$71)	(\$29)	(\$100)	(\$40)	(\$33)	(\$73)	\$967
2026	(\$67)	(\$29)	(\$96)	(\$37)	(\$33)	(\$71)	\$996
2027	(\$62)	(\$30)	(\$92)	(\$35)	(\$34)	(\$69)	\$1,027
2028	(\$58)	(\$31)	(\$89)	(\$32)	(\$35)	(\$68)	\$1,058
2029	(\$53)	(\$32)	(\$85)	(\$30)	(\$36)	(\$66)	\$1,091
Nominal	(\$3,982)	(\$659)	(\$4,641)	(\$2,236)	(\$751)	(\$2,988)	\$23,644
NPV	(\$1,838)	(\$201)	(\$2,040)	(\$1,032)	(\$230)	(\$1,262)	\$7,862

98

Worksheet for Utility Program Costs and Participants' Benefits & Costs

Utility Program Costs, Rebates, & Incentives								Participating Customers' Benefits and Costs						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Year	Annual Incremental kWh Generated (000s)	Utility Non-recurring Costs (\$000)	Utility Recurring Costs (\$000)	Total Utility Program Costs (\$000)	Utility Non-recurring Rebates/Incent. (\$000)	Utility Recurring Rebates/Incent. (\$000)	Total Utility Paid Rebates/Incent. (\$000)	Participant Equipment Costs (\$000)	Participant O&M Costs (\$000)	Total Participant Costs (\$000)	Change in Participants' Billed kWh (000s)	Change in Participants' Billed Fuel (\$000)	Change in Participants' Billed Non-Fuel (\$000)	Change in Participants' Electric Bills (\$000)
2000	28,206	\$40	\$0	\$40	\$0	\$1,027	\$1,027	\$0	\$0	\$0	28,189	\$384	\$491	\$875
2001	28,206	\$0	\$0	\$0	\$0	\$1,059	\$1,059	\$0	\$0	\$0	28,189	\$382	\$501	\$883
2002	28,206	\$0	\$0	\$0	\$0	\$1,091	\$1,091	\$0	\$0	\$0	28,189	\$372	\$491	\$863
2003	28,206	\$0	\$0	\$0	\$0	\$1,125	\$1,125	\$0	\$0	\$0	28,189	\$357	\$513	\$870
2004	28,206	\$0	\$0	\$0	\$0	\$1,159	\$1,159	\$0	\$0	\$0	28,189	\$380	\$483	\$843
2005	28,206	\$0	\$0	\$0	\$0	\$1,195	\$1,195	\$0	\$0	\$0	28,189	\$364	\$495	\$859
2006	28,206	\$0	\$0	\$0	\$0	\$1,231	\$1,231	\$0	\$0	\$0	28,189	\$374	\$488	\$862
2007	28,206	\$0	\$0	\$0	\$0	\$1,269	\$1,269	\$0	\$0	\$0	28,189	\$386	\$488	\$873
2008	28,206	\$0	\$0	\$0	\$0	\$1,308	\$1,308	\$0	\$0	\$0	28,189	\$398	\$501	\$897
2009	28,206	\$0	\$0	\$0	\$0	\$1,348	\$1,348	\$0	\$0	\$0	28,189	\$405	\$492	\$897
2010	28,206	\$0	\$0	\$0	\$0	\$1,389	\$1,389	\$0	\$0	\$0	28,189	\$417	\$492	\$909
2011	28,206	\$0	\$0	\$0	\$0	\$1,431	\$1,431	\$0	\$0	\$0	28,189	\$429	\$492	\$922
2012	28,206	\$0	\$0	\$0	\$0	\$1,475	\$1,475	\$0	\$0	\$0	28,189	\$442	\$492	\$935
2013	28,206	\$0	\$0	\$0	\$0	\$1,521	\$1,521	\$0	\$0	\$0	28,189	\$455	\$493	\$948
2014	28,206	\$0	\$0	\$0	\$0	\$1,567	\$1,567	\$0	\$0	\$0	28,189	\$469	\$493	\$962
2015	28,206	\$0	\$0	\$0	\$0	\$1,615	\$1,615	\$0	\$0	\$0	28,189	\$483	\$493	\$976
2016	28,206	\$0	\$0	\$0	\$0	\$1,664	\$1,664	\$0	\$0	\$0	28,189	\$497	\$493	\$990
2017	28,206	\$0	\$0	\$0	\$0	\$1,715	\$1,715	\$0	\$0	\$0	28,189	\$512	\$493	\$1,005
2018	28,206	\$0	\$0	\$0	\$0	\$1,768	\$1,768	\$0	\$0	\$0	28,189	\$527	\$493	\$1,020
2019	28,206	\$0	\$0	\$0	\$0	\$1,822	\$1,822	\$0	\$0	\$0	28,189	\$543	\$493	\$1,036
2020	28,206	\$0	\$0	\$0	\$0	\$1,878	\$1,878	\$0	\$0	\$0	28,189	\$559	\$494	\$1,053
2021	28,206	\$0	\$0	\$0	\$0	\$1,935	\$1,935	\$0	\$0	\$0	28,189	\$576	\$494	\$1,069
2022	28,206	\$0	\$0	\$0	\$0	\$1,995	\$1,995	\$0	\$0	\$0	28,189	\$593	\$494	\$1,087
2023	28,206	\$0	\$0	\$0	\$0	\$2,056	\$2,056	\$0	\$0	\$0	28,189	\$611	\$494	\$1,105
2024	28,206	\$0	\$0	\$0	\$0	\$2,119	\$2,119	\$0	\$0	\$0	28,189	\$629	\$494	\$1,123
2025	28,206	\$0	\$0	\$0	\$0	\$2,184	\$2,184	\$0	\$0	\$0	28,189	\$648	\$494	\$1,143
2026	28,206	\$0	\$0	\$0	\$0	\$2,250	\$2,250	\$0	\$0	\$0	28,189	\$668	\$494	\$1,163
2027	28,206	\$0	\$0	\$0	\$0	\$2,319	\$2,319	\$0	\$0	\$0	28,189	\$689	\$495	\$1,183
2028	28,206	\$0	\$0	\$0	\$0	\$2,390	\$2,390	\$0	\$0	\$0	28,189	\$710	\$495	\$1,205
2029	28,206	\$0	\$0	\$0	\$0	\$2,464	\$2,464	\$0	\$0	\$0	28,189	\$732	\$495	\$1,227

99

**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)
Year	Change in Electric Supply Costs (\$000s)	Utility's Program Costs (\$000s)	Participants' Program Costs (\$000s)	Other Costs (\$000s)	Other Benefits (\$000s)	Incremental Generation Cap Costs (\$000s)	Incremental T&D Cap Costs (\$000s)	Incremental Prog Induced Fuel Costs (\$000s)	Total Costs (\$000s)	Total Benefits (\$000s)	Total Net Benefits (\$000s)	Cumulative Discounted Net Benefits (\$000s)
2000	\$0	\$40	\$0	\$0	\$0	\$0	\$0	\$567	\$607	\$0	(\$607)	(\$607)
2001	\$0	\$0	\$0	\$0	\$0	(\$1,213)	(\$441)	\$615	\$615	\$1,654	\$1,039	\$347
2002	\$0	\$0	\$0	\$0	\$0	(\$1,184)	(\$425)	\$611	\$611	\$1,609	\$998	\$1,187
2003	\$0	\$0	\$0	\$0	\$0	(\$1,140)	(\$407)	\$628	\$628	\$1,547	\$919	\$1,898
2004	\$0	\$0	\$0	\$0	\$0	(\$1,108)	(\$390)	\$632	\$632	\$1,499	\$867	\$2,513
2005	\$0	\$0	\$0	\$0	\$0	(\$1,081)	(\$375)	\$640	\$640	\$1,455	\$815	\$3,043
2006	\$0	\$0	\$0	\$0	\$0	(\$1,054)	(\$360)	\$657	\$657	\$1,414	\$758	\$3,496
2007	\$0	\$0	\$0	\$0	\$0	(\$1,022)	(\$346)	\$662	\$662	\$1,368	\$706	\$3,883
2008	\$0	\$0	\$0	\$0	\$0	(\$991)	(\$332)	\$666	\$666	\$1,323	\$638	\$4,204
2009	\$0	\$0	\$0	\$0	\$0	(\$961)	(\$318)	\$708	\$708	\$1,279	\$571	\$4,467
2010	\$0	\$0	\$0	\$0	\$0	(\$935)	(\$305)	\$719	\$719	\$1,240	\$520	\$4,688
2011	\$0	\$0	\$0	\$0	\$0	(\$908)	(\$291)	\$733	\$733	\$1,199	\$466	\$4,869
2012	\$0	\$0	\$0	\$0	\$0	(\$881)	(\$277)	\$757	\$757	\$1,159	\$402	\$5,012
2013	\$0	\$0	\$0	\$0	\$0	(\$856)	(\$264)	\$781	\$781	\$1,119	\$338	\$5,123
2014	\$0	\$0	\$0	\$0	\$0	(\$830)	(\$250)	\$793	\$793	\$1,080	\$286	\$5,209
2015	\$0	\$0	\$0	\$0	\$0	(\$803)	(\$236)	\$780	\$780	\$1,040	\$260	\$5,280
2016	\$0	\$0	\$0	\$0	\$0	(\$782)	(\$225)	\$781	\$781	\$1,007	\$226	\$5,337
2017	\$0	\$0	\$0	\$0	\$0	(\$771)	(\$217)	\$769	\$769	\$988	\$219	\$5,388
2018	\$0	\$0	\$0	\$0	\$0	(\$767)	(\$211)	\$762	\$762	\$978	\$216	\$5,434
2019	\$0	\$0	\$0	\$0	\$0	(\$763)	(\$206)	\$807	\$807	\$969	\$162	\$5,466
2020	\$0	\$0	\$0	\$0	\$0	(\$770)	(\$200)	\$831	\$831	\$970	\$139	\$5,491
2021	\$0	\$0	\$0	\$0	\$0	(\$779)	(\$194)	\$857	\$857	\$973	\$117	\$5,510
2022	\$0	\$0	\$0	\$0	\$0	(\$789)	(\$189)	\$883	\$883	\$978	\$95	\$5,524
2023	\$0	\$0	\$0	\$0	\$0	(\$791)	(\$183)	\$910	\$910	\$974	\$64	\$5,533
2024	\$0	\$0	\$0	\$0	\$0	(\$793)	(\$178)	\$938	\$938	\$971	\$33	\$5,538
2025	\$0	\$0	\$0	\$0	\$0	(\$795)	(\$172)	\$967	\$967	\$968	\$1	\$5,538
2026	\$0	\$0	\$0	\$0	\$0	(\$798)	(\$167)	\$996	\$996	\$965	(\$31)	\$5,534
2027	\$0	\$0	\$0	\$0	\$0	(\$802)	(\$162)	\$1,027	\$1,027	\$963	(\$63)	\$5,528
2028	\$0	\$0	\$0	\$0	\$0	(\$806)	(\$156)	\$1,058	\$1,058	\$962	(\$96)	\$5,519
2029	\$0	\$0	\$0	\$0	\$0	(\$811)	(\$151)	\$1,091	\$1,091	\$962	(\$128)	\$5,509
<b>Nominal NPV</b>		\$40				(\$25,986)	(\$7,629)	\$23,644	\$23,684	\$33,615	\$9,930	
<b>Discount Rate =</b>		8.97%				(\$10,109)	(\$3,302)	\$7,862	\$7,902	\$13,411	\$5,509	
<b>Benefit/Cost Ratio =</b>		1.70										

100

**Participants' Cost-Effectiveness Measure**  
**Cost-Effectiveness Analysis per Rule 25-17.006 Florida Administrative Code**

(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)
2000	\$0	\$0	\$0	\$0	\$875	\$0	\$1,027	\$875	\$1,027	\$152	\$152
2001	\$0	\$0	\$0	\$0	\$883	\$0	\$1,059	\$883	\$1,059	\$176	\$314
2002	\$0	\$0	\$0	\$0	\$863	\$0	\$1,091	\$863	\$1,091	\$228	\$506
2003	\$0	\$0	\$0	\$0	\$870	\$0	\$1,125	\$870	\$1,125	\$255	\$703
2004	\$0	\$0	\$0	\$0	\$843	\$0	\$1,159	\$843	\$1,159	\$316	\$927
2005	\$0	\$0	\$0	\$0	\$859	\$0	\$1,195	\$859	\$1,195	\$335	\$1,145
2006	\$0	\$0	\$0	\$0	\$862	\$0	\$1,231	\$862	\$1,231	\$369	\$1,365
2007	\$0	\$0	\$0	\$0	\$873	\$0	\$1,269	\$873	\$1,269	\$396	\$1,582
2008	\$0	\$0	\$0	\$0	\$897	\$0	\$1,308	\$897	\$1,308	\$411	\$1,789
2009	\$0	\$0	\$0	\$0	\$897	\$0	\$1,348	\$897	\$1,348	\$451	\$1,997
2010	\$0	\$0	\$0	\$0	\$909	\$0	\$1,389	\$909	\$1,389	\$480	\$2,200
2011	\$0	\$0	\$0	\$0	\$922	\$0	\$1,431	\$922	\$1,431	\$510	\$2,398
2012	\$0	\$0	\$0	\$0	\$935	\$0	\$1,475	\$935	\$1,475	\$541	\$2,591
2013	\$0	\$0	\$0	\$0	\$948	\$0	\$1,521	\$948	\$1,521	\$573	\$2,778
2014	\$0	\$0	\$0	\$0	\$962	\$0	\$1,567	\$962	\$1,567	\$605	\$2,960
2015	\$0	\$0	\$0	\$0	\$976	\$0	\$1,615	\$976	\$1,615	\$639	\$3,136
2016	\$0	\$0	\$0	\$0	\$990	\$0	\$1,664	\$990	\$1,664	\$674	\$3,307
2017	\$0	\$0	\$0	\$0	\$1,005	\$0	\$1,715	\$1,005	\$1,715	\$710	\$3,472
2018	\$0	\$0	\$0	\$0	\$1,020	\$0	\$1,768	\$1,020	\$1,768	\$748	\$3,631
2019	\$0	\$0	\$0	\$0	\$1,036	\$0	\$1,822	\$1,036	\$1,822	\$786	\$3,785
2020	\$0	\$0	\$0	\$0	\$1,053	\$0	\$1,878	\$1,053	\$1,878	\$825	\$3,933
2021	\$0	\$0	\$0	\$0	\$1,069	\$0	\$1,935	\$1,069	\$1,935	\$866	\$4,075
2022	\$0	\$0	\$0	\$0	\$1,087	\$0	\$1,995	\$1,087	\$1,995	\$908	\$4,213
2023	\$0	\$0	\$0	\$0	\$1,105	\$0	\$2,056	\$1,105	\$2,056	\$951	\$4,344
2024	\$0	\$0	\$0	\$0	\$1,123	\$0	\$2,119	\$1,123	\$2,119	\$995	\$4,471
2025	\$0	\$0	\$0	\$0	\$1,143	\$0	\$2,184	\$1,143	\$2,184	\$1,041	\$4,593
2026	\$0	\$0	\$0	\$0	\$1,163	\$0	\$2,250	\$1,163	\$2,250	\$1,088	\$4,709
2027	\$0	\$0	\$0	\$0	\$1,183	\$0	\$2,319	\$1,183	\$2,319	\$1,136	\$4,821
2028	\$0	\$0	\$0	\$0	\$1,205	\$0	\$2,390	\$1,205	\$2,390	\$1,186	\$4,928
2029	\$0	\$0	\$0	\$0	\$1,227	\$0	\$2,464	\$1,227	\$2,464	\$1,237	\$5,030
Nominal NPV					\$29,782		\$49,369	\$29,782	\$49,369	\$19,587	
					\$10,358		\$15,388	\$10,358	\$15,388	\$5,030	
					Discount Rate = 8.97%						
					Benefit/Cost Ratio = 1.49						

101

**Ratepayers' Impact Cost-Effectiveness Measure**  
**Cost-Effectiveness Analysis per Rule 25-17.006 Florida Administrative Code**

(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)
2000	\$0	\$40	\$1,027	\$875	\$0	\$0	\$567	\$0	\$0	\$1,634	\$875	(\$759)	(\$759)
2001	\$0	\$0	\$1,059	\$883	(\$1,213)	(\$441)	\$615	\$0	\$0	\$1,674	\$2,537	\$863	\$33
2002	\$0	\$0	\$1,091	\$883	(\$1,184)	(\$425)	\$611	\$0	\$0	\$1,702	\$2,472	\$770	\$682
2003	\$0	\$0	\$1,125	\$870	(\$1,140)	(\$407)	\$628	\$0	\$0	\$1,753	\$2,417	\$664	\$1,195
2004	\$0	\$0	\$1,159	\$843	(\$1,108)	(\$390)	\$632	\$0	\$0	\$1,791	\$2,342	\$551	\$1,586
2005	\$0	\$0	\$1,195	\$859	(\$1,081)	(\$375)	\$640	\$0	\$0	\$1,835	\$2,315	\$480	\$1,898
2006	\$0	\$0	\$1,231	\$862	(\$1,054)	(\$360)	\$657	\$0	\$0	\$1,888	\$2,276	\$389	\$2,130
2007	\$0	\$0	\$1,269	\$873	(\$1,022)	(\$346)	\$662	\$0	\$0	\$1,931	\$2,242	\$311	\$2,301
2008	\$0	\$0	\$1,308	\$897	(\$991)	(\$332)	\$686	\$0	\$0	\$1,993	\$2,220	\$227	\$2,415
2009	\$0	\$0	\$1,348	\$897	(\$961)	(\$318)	\$708	\$0	\$0	\$2,065	\$2,176	\$121	\$2,471
2010	\$0	\$0	\$1,389	\$909	(\$935)	(\$305)	\$719	\$0	\$0	\$2,108	\$2,149	\$41	\$2,488
2011	\$0	\$0	\$1,431	\$922	(\$908)	(\$291)	\$733	\$0	\$0	\$2,164	\$2,121	(\$44)	\$2,471
2012	\$0	\$0	\$1,475	\$935	(\$881)	(\$277)	\$757	\$0	\$0	\$2,232	\$2,093	(\$139)	\$2,421
2013	\$0	\$0	\$1,521	\$948	(\$856)	(\$264)	\$781	\$0	\$0	\$2,302	\$2,067	(\$235)	\$2,344
2014	\$0	\$0	\$1,567	\$962	(\$830)	(\$250)	\$793	\$0	\$0	\$2,361	\$2,041	(\$319)	\$2,248
2015	\$0	\$0	\$1,616	\$976	(\$803)	(\$236)	\$780	\$0	\$0	\$2,395	\$2,015	(\$379)	\$2,144
2016	\$0	\$0	\$1,664	\$990	(\$782)	(\$225)	\$781	\$0	\$0	\$2,445	\$1,997	(\$449)	\$2,030
2017	\$0	\$0	\$1,715	\$1,005	(\$771)	(\$217)	\$789	\$0	\$0	\$2,485	\$1,993	(\$492)	\$1,916
2018	\$0	\$0	\$1,768	\$1,020	(\$767)	(\$211)	\$762	\$0	\$0	\$2,530	\$1,999	(\$532)	\$1,803
2019	\$0	\$0	\$1,822	\$1,036	(\$763)	(\$206)	\$807	\$0	\$0	\$2,629	\$2,005	(\$624)	\$1,881
2020	\$0	\$0	\$1,878	\$1,053	(\$770)	(\$200)	\$831	\$0	\$0	\$2,709	\$2,023	(\$686)	\$1,558
2021	\$0	\$0	\$1,935	\$1,069	(\$779)	(\$194)	\$857	\$0	\$0	\$2,792	\$2,043	(\$749)	\$1,435
2022	\$0	\$0	\$1,995	\$1,087	(\$789)	(\$189)	\$883	\$0	\$0	\$2,878	\$2,065	(\$813)	\$1,312
2023	\$0	\$0	\$2,056	\$1,105	(\$791)	(\$183)	\$910	\$0	\$0	\$2,966	\$2,079	(\$887)	\$1,189
2024	\$0	\$0	\$2,119	\$1,123	(\$793)	(\$178)	\$938	\$0	\$0	\$3,057	\$2,094	(\$963)	\$1,067
2025	\$0	\$0	\$2,184	\$1,143	(\$795)	(\$172)	\$967	\$0	\$0	\$3,150	\$2,110	(\$1,040)	\$945
2026	\$0	\$0	\$2,250	\$1,163	(\$798)	(\$167)	\$996	\$0	\$0	\$3,247	\$2,128	(\$1,119)	\$825
2027	\$0	\$0	\$2,319	\$1,183	(\$802)	(\$162)	\$1,027	\$0	\$0	\$3,346	\$2,147	(\$1,199)	\$707
2028	\$0	\$0	\$2,390	\$1,205	(\$806)	(\$156)	\$1,058	\$0	\$0	\$3,449	\$2,167	(\$1,281)	\$592
2029	\$0	\$0	\$2,464	\$1,227	(\$811)	(\$151)	\$1,091	\$0	\$0	\$3,554	\$2,189	(\$1,365)	\$479
Nominal NPV		\$40	\$49,369	\$29,782	(\$25,966)	(\$7,829)	\$23,644			\$73,053	\$63,397	(\$9,856)	
		\$40	\$15,368	\$10,359	(\$10,109)	(\$3,302)	\$7,862			\$23,290	\$23,769	\$479	
			Discount Rate = 8.97%										
			Benefit/Cost Ratio = 1.02										

102

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## **Interruptible Service**

- **Program Description**

Interruptible service provides Gulf Power Company with a contracted and callable resource. Per contractual arrangements between Gulf Power Company and the participants, the participants agree to reduce demand in periods of system reliability constraints. Participating customers are notified in advance for the need to curtail consumption. Under preset terms and conditions, the customer must reduce demand and energy for the designated period.

- **Program Standards**

Each customer participating in interruptible service has a specific contract with Gulf Power Company. The terms of the contract specify when and how often Gulf Power Company can call for an interruption and under what conditions. The customer contracts for the specific terms of how much demand will be reduced when a call for interruption appears. Monetary penalties are assessable for noncompliance by the customer per agreement with Gulf Power Company.

- **Monitoring and Evaluation**

The nature of the contracts between Gulf Power Company and the customer provides for a self-monitoring system. A customer not responding to an interruptible call by Gulf Power Company would be subject to the monetary penalties specified in the contract. Penalties are generally structured to exceed the cost of compliance; thereby, making the program self-regulating.

- **Cost-Effectiveness Analysis**

The cost-effectiveness analysis is specific and unique to each of the participating customers. The contract terms are covered by confidentiality agreement between Gulf Power Company and the customers. A cost-effectiveness analysis is performed on each specific customer prior to entering into a contract.

## Interruptible Service Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	...	...	...	...	18,534	18,534
2001	...	...	...	...	18,534	18,534
2002	...	...	...	...	18,534	18,534
2003	...	...	...	...	18,534	18,534
2004	...	...	...	...	18,534	18,534
2005	...	...	...	...	18,534	18,534
2006	...	...	...	...	18,534	18,534
2007	...	...	...	...	18,534	18,534
2008	...	...	...	...	18,534	18,534
2009	...	...	...	...	18,534	18,534

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	...	...	...	...	24,000	24,000
2001	...	...	...	...	24,000	24,000
2002	...	...	...	...	24,000	24,000
2003	...	...	...	...	24,000	24,000
2004	...	...	...	...	24,000	24,000
2005	...	...	...	...	24,000	24,000
2006	...	...	...	...	24,000	24,000
2007	...	...	...	...	24,000	24,000
2008	...	...	...	...	24,000	24,000
2009	...	...	...	...	24,000	24,000

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	42,060	465	...	...	...
2001	43,156	476	...	...	...
2002	43,957	482	...	...	...
2003	44,725	489	...	...	...
2004	45,486	495	...	...	...
2005	46,259	502	...	...	...
2006	47,042	508	...	...	...
2007	47,834	515	...	...	...
2008	48,624	521	...	...	...
2009	49,425	528	...	...	...

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **Energy Services**

- **Program Description**

The Energy Services program is designed to establish the capability and process to offer advanced energy services and energy efficient end-use equipment to customers. It is customized to meet the individual needs of large customers as required; therefore, it is an ever-evolving program. These energy services include comprehensive audits, design, construction and financing of energy conservation projects. Specifically, the types of projects covered under this program would be demand reduction or efficiency improvement retrofits, such as lighting (fluorescent and incandescent), motor replacements, HVAC retrofit (including geothermal applications), and new electrotechnologies. The program will be administered in four phases: (1) the energy audit; (2) the proposal; (3) design/construction; and (4) financing. The energy audit will be conducted under the existing Florida Public Service Commission approved audit program. Gulf Power Company currently has full cost recovery of expenses associated with evaluating energy efficiency opportunities in commercial and industrial facilities. Once the customer accepts audit recommendations, *Gulf Power Company* will develop a scope and price proposal for the project.

The Technical Assistance Audit identifies customer opportunities for efficiency, demand reduction, and/or end-use technology opportunities. In cases where the economic payback is less than two years, the customer has the proper economic incentive to make the proposed changes outlined in the Technical Assistance Audits. Gulf Power Company will provide follow-up monitoring to identify customer conservation efforts from the audit.

When conservation projects identified in the Technical Assistance Audit are promising and cost effective but exceed an acceptable customer payback period (greater than two years), Gulf Power Company will offer a cost-effective incentive and/or rebate to the customer. The incentive or rebate would be on a project specific basis and used to reduce the payback period for the customer. Any proposed incentive or rebate to implement kW and/or kWh reduction project will be driven by a

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

minimum Rate Impact Measure (RIM) analysis which results in a 1.0 RIM value or greater after the incentive/rebate inclusion. The RIM analysis will be done on a case by case basis.

- **Participation Standards**

This program will initially be limited to commercial and industrial customers with a minimum annual peak demand of 20 kW served by Gulf Power Company. Any of these customers may receive a Technical Assistance Audit along with simple payback or life cycle cost analysis.

For those participants with kW and/or kWh reduction potential, who fail to meet a minimum simple payback of two years, the conservation reduction incentive/rebate may be made available. Applicability would be based upon a RIM analysis equal to or exceeding 1.01 after the incentive/rebate has been applied.

- **Benefits and Costs**

The Technical Assistance Audit provides specific recommendations on energy conservation opportunities for the customer. The cost to customer will be based on the recommendations regarding equipment, operational options, or other suggestions. The age of the existing stock of appliances and building structure envelope are key determinates in the cost of implementation to the customer. Because the program provides specific and unique options to the customer, gross or average cost estimates are not computed.

The benefits to Gulf Power Company are energy conservation as well as improved customer satisfaction. In recent research of commercial/industrial customers, consistent response for areas of improvement from this class of customer include this type of individualized attention and service in helping them improve their cost of operation and efficiency.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

- **Monitoring and Evaluation**

Monitoring and evaluation of the Energy Services Program 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. Gulf Power Company will also monitor this program through its existing Gulf Account Reporting System (GARS) which enables the tracking of participating customers.

- **Cost Effectiveness**

The Technical Assistance Audits are provided at no cost to commercial and industrial customers. As an audit program, the Technical Assistance Audit portion of the program does need to meet a cost-effectiveness test. Conservation recommendations implemented as a result of the Technical Assistance Audit which have a simple payback period of two years or less will not be recovered by Gulf Power Company through the Energy Conservation Cost Recovery clause.

Projects potentially qualifying for a conservation incentive or rebate would be required to pass a cost – effectiveness test with a Rate Impact Measure value of 1.0 or greater including the incentive or rebate. The cost-effectiveness analyses will be performed on a case by case basis and be made available at the time of cost recovery for each project.

## Energy Services Program

<b>At the Meter</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	...	...	...	8,446,620	115	129
2001	...	...	...	8,566,620	115	129
2002	...	...	...	8,690,220	115	129
2003	...	...	...	8,817,528	115	129
2004	...	...	...	8,948,655	115	129
2005	...	...	...	9,083,716	115	129
2006	...	...	...	9,222,829	115	129
2007	...	...	...	9,366,115	115	129
2008	...	...	...	9,513,700	115	129
2009	...	...	...	9,665,713	115	129

<b>At the Generator</b>						
<u>Year</u>	<u>Per Customer kWh Reduction</u>	<u>Per Customer Winter kW Reduction</u>	<u>Per Customer Summer kW Reduction</u>	<u>Total Annual kWh Reduction</u>	<u>Total Annual Winter kW Reduction</u>	<u>Total Annual Summer kW Reduction</u>
2000	...	...	...	9,097,010	149	167
2001	...	...	...	9,226,250	149	167
2002	...	...	...	9,359,367	149	167
2003	...	...	...	9,496,478	149	167
2004	...	...	...	9,637,702	149	167
2005	...	...	...	9,783,162	149	167
2006	...	...	...	9,932,987	149	167
2007	...	...	...	10,087,306	149	167
2008	...	...	...	10,246,255	149	167
2009	...	...	...	10,409,973	149	167

<b>Customers and Participation Rates</b>					
<u>Year</u>	<u>Total Number of Customers</u>	<u>Total Number of Eligible Customers</u>	<u>Annual Number of Program Participants</u>	<u>Cumulative Penetration Level %</u>	<u>Cumulative Number of Program Participants</u>
2000	42,060	42,060	...	...	...
2001	43,156	42,060	...	...	...
2002	43,957	42,060	...	...	...
2003	44,725	42,060	...	...	...
2004	45,486	42,060	...	...	...
2005	46,259	42,060	...	...	...
2006	47,042	42,060	...	...	...
2007	47,834	42,060	...	...	...
2008	48,624	42,060	...	...	...
2009	49,425	42,060	...	...	...

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **ENVIRONMENTAL INITIATIVES**

Gulf Power Company proposes to create an Environmental Initiatives portfolio, which will contain all of its current and proposed programs related to solar, environmental, and renewable energy activities. The Environmental Initiatives will include two of Gulf Power Company's established programs: *In Concert With The Environment*®, and the GoodCents Environmental Home. A new program proposed under the Environmental Initiatives is the Green Pricing Program that encompasses Gulf's Solar for School pilot results, as well as the recently approved Photovoltaic Rate Rider. Our customers will have the option to choose which program or programs they would like to support within the Environmental Initiative portfolio.

Gulf Power Company will use all of its customer communication channels to inform and educate its consumers of the availability of the programs contained within the Environmental Initiatives Portfolio. Gulf Power Company will use its monthly newsletter (Gulf Power Update), the internet, bill stuffers, and advertising to disseminate information, update, and attract customer participation for new and existing programs.

Gulf Power Company will begin implementation of the Environmental Initiative portfolio in 2000. The programs in the Environmental Initiative portfolio are described in more detail below.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **Green Pricing Program**

- **Program Description**

The Green Pricing Program is designed to encompass a variety of voluntary renewable and green energy programs under development by Gulf Power Company. The voluntary pricing options for customers will include but not be limited to the Photovoltaic Rate Rider Tariff and Solar for Schools. Additionally, this program will include research and administrative costs to study the cost effectiveness of additional green pricing offerings utilizing wind or other renewable energy sources.

The Green Pricing Program will be available to all customers served by Gulf Power Company. Customers will be able to select one or more programs from the Green Pricing portfolio. This program provides customers the opportunity to participate in renewable energy projects or contribute to educational programs that focus on renewable energy sources.

Administratively, Gulf Power Company can accommodate Green Pricing Program successfully, primarily because of our experience with the Solar for Schools pilot program, which allows customers, on a voluntary basis, to contribute \$1.75 per month. Gulf Power Company has experienced no problems with the disbursement, tracking, or the administration of Solar for Schools program funds.

### **A. Solar for Schools**

- **Program Description**

The principle objective of the Solar for Schools program is to implement cost-effective solar education and demonstration projects at local educational facilities by means of voluntary contributions. The program also seeks to increase renewable energy and energy awareness among students, parents, and contributors.

Solar for Schools is a program that uses voluntary contributions to fund materials for energy education, permanent demonstration displays, rewards for science contests, and teacher education.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

Voluntary contributions are solicited from customers interested in renewable energy and /or helping to improve the quality of schools in the Gulf Power Company service area. Funds are collected through a “check-off” mechanism on the utility bill or through a direct contribution and accumulated in an interest bearing account. When contributions reach an adequate level, they are directed to an educational facility for implementation of various solar educational programs and for the installation of solar equipment. Contributions will not be used for administrative costs, program research or for program promotion costs.

- **Participation Standards**

All schools, museums, and other non-profit educational facilities served by Gulf Power Company are eligible to participate in the Solar for Schools program. Candidate facilities must adhere to the guidelines specified in the Standards and Procedures for the Solar for Schools Program. Upon notification of the availability of funds, the candidate school may elect to become a participant and implement one of the programs as described in the previous section.

- **Benefits and costs**

The educational aspects of the Solar for Schools program encourages students and teachers to learn about solar and other renewable energy sources and how they interact and impact the environment. Through participation in educational seminars teachers are motivated to bring lessons back to the classroom and share ideas, projects, and experiences with other teachers and students. Students through science fairs are encouraged to demonstrate these lessons in competitive science projects.

Gulf Power Company benefits by having a forum to educate students and teachers on solar and other renewable energy sources.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

The direct program cost will continue to be funded by voluntary contributions. Funds are collected through a “check-off “ mechanism on the utility bill or through a direct contribution and accumulated in an interest bearing account. The cost to fund materials for energy education, permanent demonstration displays, rewards for science contests, teacher education, etc. is borne by these voluntary contributions. Any administrative, research and promotional costs will be recovered through ECCR.

- **Monitoring and Evaluation**

The Solar for Schools Program will be analyzed for participant school interest, public interest, actual contribution levels achieved, and operating and administrative costs. The program results will be reported each calendar year.

- **Cost Effectiveness**

The pilot program stressed on-site physical demonstration projects. The original pilot as conceived was capital intensive and spurred recurring operations and maintenance costs. These elements proved to be a deterrent to schools to participate in the pilot. The proposed change in the Solar for Schools program will emphasize the educational aspects of solar and other renewable energy sources. Given the change in program focus to education, normal cost-benefit analysis is not applicable. Neither short- nor long-term benefits can be estimated with any reasonableness.

### **B. Photovoltaic Optional Rate Rider (PV)**

- **Program Description**

The PV Rate Rider is an optional rate for Gulf Power Company customers. Customers may purchase photovoltaic energy in 100-watt blocks. Multiple blocks may be purchased. Power purchased or produced from photovoltaic facilities may not be specifically delivered to the

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

customer, but will displace power that would have otherwise been produced from traditional generating facilities.

The construction of the photovoltaic facility or power purchased from photovoltaic facilities will begin upon the attainment of sufficient commitments from all participants across the Southern Company electric system where the option is available and, as necessary, after obtaining Florida Public Service Commission approval. Customer billing will begin the second month following the date in which power is purchased from photovoltaic generating facilities or in which a photovoltaic generating facility of the Southern Company begins commercial operation.

- **Participation Standards**

The PV Rate Rider will be available to all customers served by Gulf Power Company.

- **Benefits and costs**

The benefit of this program is to provide all customers the opportunity to fund the building of a solar-powered generation facility. The Monthly rate is \$6.00 per 100-watt block. The service shall be for a five-year term and may be terminated by either party following two years written notice. The \$6.00 monthly rate is designed to recover capital related and operation and maintenance cost of the facility. Any administrative, research and promotional costs associated with the PV Rate Rider will be recovered through ECCR.

- **Monitoring and Evaluation**

Participation in the PV Rate Rider will be tracked through the company's customer information system (CSS). Additional customer research may be performed if sufficient participation levels are not reached.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## C. Other Green Pricing Initiatives

- **Program Description**

Gulf Power Company will continue to investigate customer interest in and the economic viability of additional Green pricing offerings. The objective will be to determine customer/market acceptance, technology development and alternatives, and economic viability of additional offerings. In addition, this research will help increase the knowledge of Gulf Power Company as it relates to renewable and green energy.

- **Benefits and Cost**

If Gulf Power Company determines an initiative to be feasible, the Company will design and offer the initiative within the Green Pricing Portfolio. These offerings will be in addition to existing programs described in the Environmental Initiatives Portfolio.

Gulf Power Company will provide written notification to the Florida Public Service Commission of all projects that are equal to or greater than \$ 5,000. The administrative responsibility of managing the portfolio will be handled through the Energy Conservation Cost Recovery (ECCR) clause.

- **Monitoring and Evaluation**

Gulf Power Company will evaluate each potential project for cost effectiveness on a case by case basis. The research will help Gulf Power Company determine customer attitudes, perceptions, and acceptance regarding green initiatives.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## **In Concert with the Environment**

- **Program Description**

*In Concert With The Environment*® is an environmental and energy awareness program that is available to 8th and 9th grade science classes in Gulf Power Company's service area. The program shows students how everyday energy use impacts the environment and how using energy wisely increases the quality of the environment. *In Concert With The Environment*® is brought to students who are already making decisions which impact our country's energy supply and the environment. Wise energy use today can best be achieved by linking environmental benefits to wise energy-use activities and by educating both present and future consumers on how to live "in concert with the environment".

The *In Concert With The Environment*® program was designed for teachers and their students from the ground up. Program materials include a video, an introductory presentation to launch student participation, complete lesson plans, an energy survey, and student handbooks.

Participants in the program become environmental and energy experts in three easy steps. First, students become energy investigators, seeking real life data on their homes and family transportation and recycling habits. Next, they analyze the information through a sophisticated, "hands-on" software program that generates a personal plan using graphs to illustrate energy savings and environmental benefits on each student's research. Finally, students become energy experts by discussing the material in class and presenting their plans for saving energy and preserving natural resources to their families.

*In Concert With The Environment*® comes complete with suggestions for implementation and evaluation, with quality materials designed to accentuate distinctive teaching styles. The program is flexible enough to be used as a stand-alone learning unit, or it can be integrated into existing lessons.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

A program outline, including stated objectives and program material descriptions follows:

## **Objectives:**

- To provide residential customers with energy conservation advice that will encourage the implementation of efficiency measures resulting in energy savings for the customer.
- To encourage the wise use of energy and natural resources and affect change in energy-use habits.
- To illustrate the connection which exists between the daily use of energy and the quality of our environment.
- To develop a sensitivity to energy related environmental concerns.
- To create an understanding of what energy is and how it is transformed for our use.
- To help students understand how personal and family energy use impact the environment, and encourage them to make positive changes in personal and family energy habits and, thus, positively impact the environment.

## **Teacher's Guide:**

The Teacher's Guide contains a description of the program and its objectives as well as a host of useful instructional material including:

- A sample lesson plan, including stated goals and objectives, which can be lengthened or shortened to suit the individual teacher and subject area.
- Answers to the questions posed in the Student Handbook.
- Suggested evaluation methods in the form of pre-tests and post-tests giving the teacher an accurate measure of what students have learned.
- Computer instructions that are easily understood and executed.
- Suggested activities, including hands-on activities, the teacher can use to demonstrate good energy habits. For example, in an activity the student will demonstrate which light bulb is more energy efficient -- an incandescent or fluorescent. In another activity, the student must evaluate the energy use required to make apple sauce versus buying it packaged two different ways. Equipment and materials for the labs are of no cost or low cost and easily obtained.
- A list of resources giving the teacher the opportunity to contact various agencies and groups to obtain more information.
- A series of graphs and charts the teacher can use to illustrate various energy resources and uses.

## **Energy Survey:**

Using the Energy Survey, students investigate energy, water, transportation and recycling habits in their own homes. An important component of the program is that students work with household members to complete the questions in the survey. Students collect data concerning the following:

- types of energy resources in the home, along with dwelling type (single family, multi-family, mobile home)
- insulation
- type of construction

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

- heating and cooling
- water heater(s) and water saving devices
- waterbeds
- major and small appliances and electronics
- lighting
- pools and hot tubs or spas
- landscaping and transportation

## **Computer:**

Students enjoy and benefit from the hands-on experience with the computers. They enter their collected data into a specially programmed computer provided by the program sponsor which contains an energy-use database for each utility customer. The computer generates an eight-page report dealing with various energy uses along with transportation and recycling habits of the household. The first part of the report is an Annual Energy Expenditure Report showing how much the family spends on various energy uses. The second part of the report, the *EcoWatt® Benefits* report, demonstrates to the student how the family can save money and earn *EcoWatts®* to benefit the environment. An *EcoWatt®* is a measure of environmental benefit which is gained any time an action is taken to use energy more efficiently. The Energy Survey and Report are presented in a folder so that the student can easily keep them together to study and take home to share with other members of their household.

## **Student Handbook:**

The Student Handbook is a companion to the Energy Survey. The handbook demonstrates to the student the link between energy consumption and the environment. In turn, the student demonstrates the ability to answer the questions and participate in the activities presented in the Student Handbook.

*In Concert With The Environment®* involves students in an active problem-solving process in which they investigate their own homes and work with members of their households to complete the Energy Survey.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

- **Participation Standards**

*In Concert With The Environment*® is available to either 8th or 9th grade classroom in schools served by Gulf Power Company. This program is designed to educate students and their households about energy efficiency, resource management and the positive environmental results from wise energy use. The program encourages participation by all household members.

- **Benefits and Costs**

Since *In Concert With The Environment*® is an energy awareness program (take-home Energy Survey, Energy Survey Results, and student educational handbook), the program is an extension of Gulf Power Company's GoodCents Energy Survey Program. Through the services and actions taken through this energy survey, it is estimated that summer demand savings are 0.1 kW and energy savings are 211 kWh per customer measured at the meter.

For Gulf Power Company's customers, the GoodCents Residential Energy Survey is completed as a family project. After the data from the GoodCents Energy Survey is input into the computer, the GoodCents Energy Survey Results are printed. The GoodCents Energy Survey results are reviewed by the students along with their families. Included in the GoodCents Energy Survey results is an *EcoWatt*® Benefit Action Plan (EBAP) which the student and family sign and return to Gulf Power Company. The EBAP asks the students and their households to commit to certain actions which would qualify them as living "in concert with the environment". These actions include both energy conservation measures and environmental measures.

For Gulf Power Company, the benefits are kWh reduction, kW demand savings, increased customer satisfaction, and consumer education.

- **Cost Effectiveness**

Gulf Power Company does not seek to recover any future costs associated with this program.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

*In Concert With The Environment*® is available to area schools but only limited participation is expected in the future. Gulf Power Company will offer the program until the current inventory of materials is depleted. Gulf Power Company believes *In Concert With The Environment*® fits well within the Company's Environmental Initiative portfolio.

- **Goal Achievement**

While Gulf Power Company recognizes the conservation benefits of the *In Concert With The Environment*® program, the Company has experienced low participation in this program. For goal achievement purposes, Gulf Power Company is not projecting any numeric goals for the 2000 to 2009 period.

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

## GoodCents Environmental Home

- **Program Description**

The objective of the GoodCents Environmental Home Program is to provide Gulf Power Company's residential customers with guidance concerning energy and environmental efficiency in new home construction. The program promotes energy-efficient and environmentally sensitive home construction techniques by evaluating over 500 components in six categories of design and construction practices. These categories include:

**Energy Efficiency:**

- Ceiling, wall and floor insulation levels
- Type and orientation of windows and skylights
- Type of HVAC system (SEER, COP/AFUE, location of ductwork, Manual "J" approved load calculation performed)
- Water Heating, appliances and lighting

**Building Design:**

- Ridge vent
- Whole-house mechanical ventilation system
- Return air filter
- Landscaping (location and type of trees and shrubs)

**Construction Practices:**

- Original or native landscaping and topography
- Type of pesticides and termite control used
- Recycled or reused construction material

**Building Materials:**

- Type of structural wall, ceiling and floor material used
- Type of sheathing material used
- Type of window frame, doors, flooring and cabinet material used

**Water Efficiency:**

- Type of plumbing features (low-flow vs. standard)
- Landscaping and water use

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **Ecological Planning:**

- Include recharging system for electric vehicles
- Permanent recycling bins
- Availability of public transportation

The effect of the program results in reductions in energy usage and peak demand as well as a positive environmental impact. Gulf Power Company identifies potential program participants through existing builder/developer relationships as well as through educational and promotional activities.

The GoodCents Environmental Home consists of energy and environmental components. The energy components evaluate the building envelope and mechanical systems of the home with respect to energy efficiency. The environmental components of the program include measures which also evaluate thermal energy loss, alternative energy sources, embodied energy and design strategies that affect energy usage in the home.

- **Program Guidelines**

A Gulf Power Company Residential Energy Consultant works with prospective participants by assisting with the completion of a GoodCents Environmental Home Survey. The survey identifies the participant's current design and building practices compared with proposed design and practices. The proposed design incorporates changes the participant agrees to make in order to reach certification.

The Residential Energy Consultant utilizes computer software to further evaluate current and proposed designs for GoodCents Environmental Home Certification. Because of the high relative weighting of the energy portion of the program, lofty energy standards are required to be met.

Gulf Power Company gives preliminary certification to homes meeting the GoodCents Environmental Home Program standards before construction or during early construction activities. Gulf Power Company monitors activities during the construction process and inspects the home upon completion to ensure

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

program compliance. Homes meeting program guidelines upon completion are awarded GoodCents Environmental Home Certification. Each homeowner is presented with a certificate of compliance and a user's manual to help guide lifestyle and usage patterns that are more environmentally and energy efficient.

- **Participation Standards**

The GoodCents Environmental Home Program is available to individuals or entities constructing new residential buildings served by Gulf Power Company.

- **Benefits and Costs**

Through Gulf Power Company's GoodCents Environmental Home Program, participating customers experience many benefits. Reduced kWh consumption due to high-energy efficiency standards enable participants to lower their utility bills. Buyers are also eligible for energy efficient mortgages. Home values are enhanced because of energy and environmental efficiency. Internal/external air quality is improved creating a safer and healthier environment for owners as well as the community as a whole.

For Gulf Power Company, benefits include kWh reduction, kW demand savings, increased customer satisfaction, consumer education, and environmental responsibility. The kWh and kW demand savings are based on Residential Building Energy Program (RBEP) computer simulations. Estimates assume an 1,858 square feet home (average size home in the service territory) built to the standards set forth by the 1993 Energy Efficiency Code for Building Construction compared to a home meeting the GoodCents Environmental Home Energy Standards.

	<u>Code Home</u>	<u>GoodCents Environmental Home</u>
Ceiling Insulation	R-30	R-38
Wall Insulation	R-11	R-19
Slab Insulation	R-0	R-0
Window Type	Double Pane Insulated	Double Pane Insulated
Exterior Door Type	Solid Wood	Metal Insulated
HVAC Equip. Efficiency	A/C & Furnace/Heat Pump	A/C & Furnace/Heat Pump
Cooling	10.0 SEER	13.0 SEER
Heating	.78 AFUE/3.1 COP	.90 AFUE/3.5 COP

# GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN

RBEP comparisons based on these assumptions give the following results:

BTUH Heat loss reduction	3,850
BTUH Heat gain reduction	2,903
Annual kWh reduction	2,213
kW demand reduction (summer)	1.0 kW
kW demand reduction (winter)	1.3 kW

- **Monitoring and Evaluation**

Gulf Power Company will utilize its Gulf Account Reporting System (GARS) which enables the tracking of homes meeting the GoodCents Environmental Home guidelines. Gulf Power Company validates engineering analysis of energy and demand savings with billing data and sample metering of customer equipment. Dependent upon the level of program participation, interviews may be performed with participants and non-participants, including both builders and homeowners, to establish acceptance and customer satisfaction with the program.

- **Cost-Effectiveness**

Gulf Power Company intends to keep the GoodCents Environmental Home as part of its Environmental Initiatives portfolio available to homeowners and builders. Since the program is not actively promoted as a stand-alone product, the Company does not anticipate any expense over the life of the demand side management plan.

- **Goal Achievement**

While Gulf Power Company recognizes the conservation benefits of the GoodCents Environmental Home program, the Company has experienced low participation in this program. For goal achievement purposes, Gulf Power Company is not projecting any numeric goals for the period 2000 to 2009.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **LOW INCOME**

Gulf Power Company has provided customers benefits through energy conservation programs for many years without discrimination. However, it is recognized that low-income customers may be less likely to participate in particular programs due to a lack of disposable income.

Noted below are the programs and services Gulf Power Company currently offers or plans to offer that are readily available to low income customers.

- **GoodCents Energy Surveys: Tailored Low-Income Pilot Program**

The GoodCents Energy Survey (formally known as the Residential Energy Audit) will continue to focus on increasing awareness and understanding of factors that influence energy purchases such as a home's thermal envelope, equipment, and lifestyle. The low-income program residential audit program is identical to the GoodCents Energy Survey program described in the residential program section of the Demand Side Management Plan. The auditor explains to the customer in detail the variables that significantly affect energy consumption, and first points out the low or no cost conservation measures the customer may implement. There is no charge to the customer for this service.

As an enhancement to the on-site energy survey, a computerized energy analysis program was developed in 1998 that provides additional energy consumption information to customers. Known as the Home Energy Profile, these results can be generated by the completion of a survey through either 'mail-in' or 'on line' internet versions of the survey. The computerized energy analysis can be used independent of or in conjunction with an on-site energy survey. Likewise, there is no charge to the customer for this service.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

In order to better reach a broader customer base, Gulf Power Company will expand its offerings to low income customers by partnering with Weatherization Assistance Programs (WAPs), and Affordable Housing Providers (AHPs) within Gulf Power Company's service territory. Gulf Power Company plans to increase its GoodCents Energy Survey participation among low-income families and educate homebuyers within the affordable housing sector on energy efficiency and conservation. Gulf Power Company will provide energy survey training to WAPs and AHPs so they may become qualified to conduct Gulf's walk-through and mail-in energy surveys for low-income residential customers.

To further increase energy consumption awareness, each on-site energy survey will be accompanied with a computerized energy analysis. Selected providers will assist customers in the completion of the survey necessary for generating the results or Home Energy Profile for each customer. As a value-added service, the results of the computerized energy analysis will be made available on-line in the near future.

- **Participation Standards**

The GoodCents Energy Survey Program continues to be available to all residential customers within Gulf Power Company's service area. The program provides participating customers with the information needed to determine which energy saving measures are best suited to their individual needs and requirements. Using Weatherization Assistance Programs (WAPs) and Affordable Housing Providers (AHPs) is specifically intended to increase participation among low-income residents and homebuyers.

- **Benefits and Costs**

The Residential Building Energy Program (RBEP) was used to estimate energy consumption impacts. Based on the RBEP analysis for a typical Northwest Florida home, it is estimated that the GoodCents

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

Energy Survey Program yields an approximate reduction in demand of 0.1 kW per customer, and an energy reduction of 211 kWh per customer on an annual basis.

Costs for the program are based on typical costs incurred for upgrading attic insulation from R-19 to R-38 and upgrading cooling system efficiency from 7.0 SEER to an average of 10.5. Estimated costs per customer are \$1,019.

Gulf Power Company does not have any research or field data that differentiates energy savings by income or other demographic characteristics.

- **Monitoring and Evaluation**

Initially, Gulf Power Company will identify and select two WAPs to participate. Gulf Power Company will train and contract with the selected WAPs to conduct walk-through and mail-in audits in accordance with Gulf Power Company's GoodCents Energy Survey program standards. Gulf Power Company will reimburse the agency for the energy survey at an amount not less than 90% of Gulf Power Company's avoided cost of conducting the audit. If the program reduces utility staff time and increases the number of low-income customers participating in the audit programs, Gulf Power Company will offer all WAPs in its territory the opportunity to participate by 2004.

Availability of the audit program to residential customers is communicated through bill stuffers, newspaper advertisements, and other media. Each participating customer is presented with an assessment of his or her current energy situation and recommendations for improvement. Assistance with locating qualified contractors and the proper installation of audit features is provided.

Follow-up audits are performed to ensure implementation of recommended measures. In addition, data regarding the installations is accumulated to reflect more accurately, the impact of the energy audit.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Cost Effectiveness**

Not applicable.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Project SHARE**

In 1991, the Gulf Power Company adopted the SHARE Program to benefit its low-income customers. SHARE is a program designed to assist low income and elderly customers by providing cash payments for emergency needs. Gulf Power Company's customers receive information about the program through the customer newsletter included in their monthly bills. They may elect to contribute to the program monthly along with their electric service payment or they may make a one-time contribution. The funds that are collected are forwarded to the Salvation Army for distribution. No administrative costs or salaries for Gulf Power Company or any other agency are deducted from the SHARE funds. All money goes directly to those customers in need. Gulf Power Company acts as a collection agency and absorbs any administrative costs associated with the collection of the money. As a result of Gulf Power Company's offering of SHARE, over \$100,000 is collected each year with a program to date total of \$938,364. Gulf Power Company plans to continue its support of this highly successful low-income program.

- **Energy Education – Low Income**

Gulf Power Company presently has energy education programs that identify low cost and or no cost energy conservation measures. In order to better assist low-income customers in managing their energy purchases, the presentation and format of these energy education programs are tailored to the audience. These programs provide basic energy education, as well as inform the customers of other specific services, such as free energy surveys, that Gulf Power Company currently offers.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Affordable Housing Builders and Providers**

Gulf Power Company will identify the affordable housing builders within the service area and will encourage them to attend education seminars and workshops related to energy efficient construction, retrofit programs, financing programs, etc., and to participate in the GoodCents Home program. Gulf Power Company will work with the Florida Energy Extension Service and other seminar sponsors to offer a minimum of four seminars and/or workshops per year. Gulf Power Company will work with all sponsors to reduce or eliminate attendance fees for affordable housing providers.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

## **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 will enhance and complement the successful 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.

- **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 tests or pilot projects requires funding beyond the scope of the CDD program are warranted, Gulf Power Company will petition the Florida Public Service Commission for approval to conduct the project as a Energy Conservation Cost Recovery program.

## **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

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 Florida Public Service Commission of any project that exceeds \$25,000. Funding for research and development meeting the minimum program criteria will be charged to conservation cost recovery.

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 pre-quantify the demand or energy reductions that might result from these programs.

- **Monitoring and Evaluations**

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 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 Florida Public Service Commission staff for consideration.

# **GULF POWER COMPANY DEMAND SIDE MANAGEMENT PLAN**

- **Benefits and Costs**

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 test, 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 is important in that customer response will ultimately be the determining factor in any new idea or product regardless of the demand or energy conservation.