



070467-EI  
ORIGINAL

BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 07\_\_\_\_-EI  
IN RE: TAMPA ELECTRIC'S  
PETITION TO DETERMINE NEED FOR  
POLK POWER PLANT UNIT 6

TESTIMONY AND EXHIBIT  
OF  
HOWARD T. BRYANT

DOCUMENT NUMBER-DATE

06170 JUL 20 5

FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

HOWARD T. BRYANT

**ORIGINAL**

1  
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3  
4  
5  
6 Q. Please state your name, business address, occupation and  
7 employer.

8  
9 A. My name is Howard T. Bryant. My business address is 702  
10 North Franklin Street, Tampa, Florida 33602. I am  
11 employed by Tampa Electric Company ("Tampa Electric" or  
12 "company") as Manager, Rates in the Regulatory Affairs  
13 Department.

14  
15 Q. Please provide a brief outline of your educational  
16 background and business experience.

17  
18 A. I graduated from the University of Florida in June 1973  
19 with a Bachelor of Science degree in Business  
20 Administration. I have been employed at Tampa Electric  
21 since 1981. My work has included various positions in  
22 Customer Service, Energy Conservation Services, Demand  
23 Side Management ("DSM") Planning, Energy Management and  
24 Forecasting, and Regulatory Affairs. In my current  
25 position I am responsible for the company's Energy

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1 Conservation Cost Recovery ("ECCR") clause, the  
2 Environmental Cost Recovery Clause ("ECRC"), and retail  
3 rate design.

4  
5 **Q.** What is the purpose of your testimony?

6  
7 **A.** The purpose of my testimony is to describe Tampa  
8 Electric's DSM programs and initiatives. I will provide  
9 an overview of the company's historical and current DSM  
10 programs including recently filed program modifications  
11 and additions that will substantially increase demand and  
12 energy savings going forward.

13  
14 I will also discuss the process used by Tampa Electric in  
15 setting its DSM goals and how the proposed program  
16 modifications and additions will increase the previously  
17 approved DSM goals for both demand and energy.  
18 Additionally, I will address Tampa Electric's renewable  
19 energy initiatives. Finally, with these increased DSM  
20 goals pending approval by this Commission, I will discuss  
21 why the company's comprehensive DSM program offerings  
22 cannot be utilized to eliminate the 2013 capacity need.

23  
24 **Q.** Have you prepared an exhibit to support your testimony?

25

1 **A.** Yes, Exhibit No. \_\_\_\_\_ (HTB-1) was prepared under my  
2 direction and supervision. It consists of the following  
3 five documents:  
4 Document No. 1 Tampa Electric Current DSM Programs  
5 Document No. 2 Tampa Electric Proposed New and  
6 Modified DSM Programs  
7 Document No. 3 Tampa Electric Current DSM Goals  
8 Document No. 4 Tampa Electric Proposed DSM Goals  
9 Document No. 5 Tampa Electric 2005-2014 DSM Goals  
10 Accomplishments

11  
12 **Q.** Are you sponsoring any sections of Tampa Electric's  
13 Determination of Need Study for Electrical Power: Polk  
14 Unit 6 ("Need Study")?

15  
16 **A.** Yes. I sponsor sections of the Need Study pertaining to  
17 DSM. Specifically I sponsor sections III.A.3 "Demand Side  
18 Management and Renewable Energy", III.A.4 "Renewable  
19 Energy Initiative", III.F.1 "Demand Side Alternatives  
20 Considered", and IV.A.2 "Demand Side Management and  
21 Renewable Energy".

22  
23 **HISTORICAL OVERVIEW OF TAMPA ELECTRIC'S DSM PROGRAMS**

24 **Q.** Please describe the phrase "demand side management  
25 programs" as used by Tampa Electric?

1 **A.** Tampa Electric utilizes the term demand side management  
2 ("DSM") to describe the planning, development,  
3 implementation, monitoring and evaluation of conservation  
4 and load management programs designed to cost-effectively  
5 reduce weather sensitive peak demand and overall energy  
6 consumption on the company's system.

7  
8 **Q.** How does Tampa Electric measure the cost-effectiveness of  
9 DSM programs?

10  
11 **A.** Tampa Electric measures the cost-effectiveness of DSM  
12 programs by using the Commission-approved methodology,  
13 which consists of three specific tests: the Rate Impact  
14 Measure ("RIM") Test, the Participants' Test and the  
15 Total Resource Cost ("TRC") Test.

16  
17 Tampa Electric offers DSM programs that are cost-  
18 effective as measured by all three tests. For each test,  
19 program cost-effectiveness is expressed as the benefit-  
20 cost-ratio ("BCR") being greater than 1.0. Therefore,  
21 programs that have a BCR greater than 1.0 under the RIM  
22 Test provide benefits to all customers by the deferral or  
23 avoidance of new capacity which thereby results in lower  
24 rates than would otherwise occur in the absence of the  
25 programs. Similarly, programs that have a CBR greater

1 than 1.0 under the Participants' Test ensure that the  
2 programs are economical for customers who choose to  
3 become participants in the programs. Finally, programs  
4 that have a BCR greater than 1.0 under the TRC Test  
5 ensure that society as a whole is not harmed by the  
6 transfer of costs between individuals.  
7

8 **Q.** When did Tampa Electric begin offering DSM programs to  
9 its customers?  
10

11 **A.** Tampa Electric has long been a leader in offering its  
12 customers cost-effective DSM programs coupled with a  
13 comprehensive educational emphasis on the efficient use  
14 of energy. This effort began in the mid-1970s when Tampa  
15 Electric offered its first DSM program, the Energy Answer  
16 Home, to curb heating and air-conditioning requirements  
17 in new homes by encouraging the use of high-efficiency  
18 heat pumps instead of conventional air-conditioning with  
19 resistance heating. Within two years, the company  
20 introduced a computer-based home energy audit well in  
21 advance of the legislation that ultimately required this  
22 level of home energy analysis.  
23

24 **Q.** Please describe Tampa Electric's DSM efforts over time.  
25

1 **A.** In 1980, the Florida Energy Efficiency Conservation Act  
2 ("FEECA") was passed by the Florida legislature. In  
3 response to that legislation, Tampa Electric filed its  
4 DSM plans with the Commission and became the first  
5 Florida utility to have its DSM programs for both  
6 residential and commercial customers approved.  
7 Subsequent to that first DSM plan, Tampa Electric has  
8 filed and gained Commission approval of numerous DSM  
9 programs designed to promote new energy efficient  
10 technologies and to change customer behavioral patterns  
11 such that energy savings occur with minimal affect on  
12 customer comfort. Additionally, the company has modified  
13 existing DSM programs over time to promote evolving  
14 technologies and to maintain program cost-effectiveness.  
15 Document No. 1 of my Exhibit No. \_\_\_\_\_ (HTB-1) identifies  
16 Tampa Electric's current DSM programs.

17  
18 Recently, Tampa Electric filed for Commission approval of  
19 several new and modified DSM programs for delivery to  
20 residential and commercial/industrial customers. This  
21 filing and its various components were driven by  
22 increased avoided costs and the resulting increased  
23 benefits to participants and non-participants. Upon  
24 Commission approval of these program additions and  
25 modifications in Docket No. 070375-EG, Tampa Electric

1 will under take an aggressive implementation schedule.  
2 Document No. 2 of my Exhibit No. \_\_\_\_\_ (HTB-1) provides a  
3 listing of the new and modified DSM programs currently  
4 before the Commission. Also, a description of the  
5 company's current and proposed DSM programs is provided  
6 later in my testimony.  
7

8 **Q.** Has Tampa Electric been successful implementing its DSM  
9 initiatives over time?

10  
11 **A.** Yes. Tampa Electric has experienced great success with  
12 its DSM initiatives. Since the inception of its programs  
13 through the end of 2006, Tampa Electric has achieved 659  
14 MW of winter reduction, 222 MW of summer reduction and  
15 600 GWH of annual energy savings.  
16

17 This amount of peak load reduction has eliminated the  
18 need for the equivalent of more than three power plants  
19 of 180 MW of winter capacity. Of greater significance is  
20 the fact that this accomplishment was achieved without  
21 subsidizing or penalizing customers who were not  
22 participants. Tampa Electric achieved this level of  
23 reduction by offering only those DSM programs that reduce  
24 rates for all customers; both DSM participants and non-  
25 participants alike.



1 Furthermore, the company's DSM program results compare  
2 quite favorably to other utilities across the nation.  
3 The Energy Information Administration of the United  
4 States Department of Energy reports annually on the  
5 effectiveness of utility DSM initiatives. Based on  
6 available data reported for the 2001 through 2005 period,  
7 Tampa Electric has ranked nationally as high as the 96<sup>th</sup>  
8 percentile for cumulative conservation and the 90<sup>th</sup>  
9 percentile for load management achievements.

10  
11 **OVERVIEW OF TAMPA ELECTRIC'S CURRENT AND PROPOSED DSM PROGRAMS**

12 **Q.** What are Tampa Electric's current Commission-approved  
13 residential DSM programs?

14  
15 **A.** Tampa Electric's current DSM plan consists of eight  
16 comprehensive residential programs several of which  
17 provide customers with a multitude of program offerings  
18 to better manage their energy consumption. A description  
19 of these various programs is provided below.

20  
21 **Energy Audit:** A comprehensive program offered to all  
22 residential customers designed to save demand and energy  
23 by increasing customer awareness of energy use in  
24 personal residences. Savings are dependent on the  
25 customer implementing energy saving recommendations.

1 Recommendations are the same across the three types of  
2 audits offered and include an estimated range of savings.

3  
4 **Heating and Cooling:** A conservation program that uses a  
5 rebate to encourage the installation of high efficiency  
6 heating and cooling systems in existing residential  
7 dwellings. The program is aimed at reducing the growth  
8 of weather sensitive peak demand and energy through two  
9 types of equipment replacement. Both types of equipment  
10 replacement have a minimum threshold for qualification of  
11 14.0 Seasonal Energy Efficiency Ratio ("SEER").

12  
13 **Duct Repair:** A conservation incentive program designed to  
14 reduce demand and energy by decreasing the load on  
15 residential air conditioning and heating ("HVAC")  
16 equipment. This program eliminates or reduces areas of  
17 HVAC air distribution losses by sealing and repairing the  
18 air distribution system ("ADS"). The ADS is defined as  
19 the air handler, air ducts, return plenums, supply  
20 plenums and any connecting structure.

21  
22 **Ceiling Insulation:** A conservation program designed to  
23 reduce demand and energy by decreasing the load on  
24 residential air conditioning and heating equipment.  
25 Qualifying residential structures are eligible for an

1 incentive which is in the form of a certificate.  
2 Customers use the certificate as partial payment for the  
3 ceiling insulation installed.  
4

5 **New Construction Program:** A conservation program designed  
6 to reduce the growth of peak demand and energy in the  
7 residential new construction market through the  
8 installation of high efficiency equipment and building  
9 envelope options. The program utilizes incentives to  
10 encourage the construction of new homes that exceed the  
11 minimum energy efficiency levels required in the State of  
12 Florida Energy Efficiency Code for New Construction.  
13

14 **Prime Time:** A residential load management program  
15 designed to alter Tampa Electric's system load curve by  
16 reducing summer and winter demand peaks. Residential  
17 loads such as heating, air conditioning, water heaters  
18 and pool pumps are controlled from a radio signal  
19 initiated by Tampa Electric's Energy Control Center.  
20 This signal operates switches located on individual  
21 customer homes that are wired directly to the controlled  
22 appliances. Customers participating in Prime Time  
23 receive monthly credits on their electric bill.  
24 Appliances are interrupted on a prescribed schedule  
25 unless a system emergency occurs. Currently, Prime Time

1 is closed to the addition of new customers.

2

3 **Price Responsive Load Management Pilot:** A pilot  
4 conservation and load management program that relies on a  
5 multi-tiered rate structure combined with price signals  
6 conveyed to participating customers during the day. This  
7 price information is designed to encourage customers to  
8 make behavioral or equipment usage changes to their  
9 energy consumption thereby achieving the desired high  
10 cost period load reduction to assist in meeting system  
11 peak. Price information from the utility is used by the  
12 customer to program a smart thermostat into preset  
13 actions based on the level of pricing. Equipment may be  
14 turned on, turned off or changed to a different  
15 temperature setting automatically by the smart thermostat  
16 or manually by the customer through the smart thermostat  
17 in response to either the multi-tiered rates or critical  
18 price signals.

19

20 **Renewable Energy Program:** A program designed to allow  
21 customers the option of paying an additional charge for  
22 incremental renewable energy delivered to the company's  
23 grid system. The customer can elect to pay \$5.00 for a  
24 200 kWh block of renewable energy generated from biomass,  
25 landfill gas or photovoltaic resources.

1 Q. What are Tampa Electric's current Commission-approved  
2 commercial DSM programs?

3  
4 A. Tampa Electric's current DSM plan consists of eight  
5 comprehensive commercial programs which provide customers  
6 with a multitude of offerings to better manage their  
7 energy consumption. A description of these various  
8 programs is provided below.

9  
10 **Energy Audit:** A conservation program designed to reduce  
11 demand and energy consumption by increasing customer  
12 awareness of energy use in their facilities. The savings  
13 are dependent upon customer implementation of audit  
14 recommendations. Recommendations are based on the  
15 replacement of less efficient equipment and systems or  
16 modifications to operations to enhance the customer's  
17 overall efficiency. Recommendations are primarily  
18 standardized and encourage the customer to implement  
19 measures that, if cost-effective, move the customer  
20 beyond the efficiency level typically installed in the  
21 marketplace.

22  
23 **Commercial Cooling:** A commercial conservation program  
24 that uses incentives for the installation of high  
25 efficiency cooling systems in commercial buildings. The

1 program is aimed at reducing the growth of peak demand  
2 and energy by encouraging customers to replace worn out,  
3 inefficient cooling equipment with high efficiency  
4 equipment that exceeds minimum product manufacturing  
5 standards.

6  
7 **Commercial Indoor Lighting:** An incentive program for  
8 existing commercial facilities to encourage investment in  
9 more efficient lighting technologies located in  
10 conditioned space. Specifically, this program is  
11 designed to: 1) affect a significant number of eligible  
12 customers; 2) recognize the most probable lighting  
13 investment opportunities; and 3) contribute toward  
14 weather-sensitive peak demand reduction.

15  
16 **Conservation Value:** An incentive program available for  
17 all commercial/industrial customers on firm rates to  
18 recognize and encourage investments in demand shifting or  
19 demand reduction measures. Measures funded in this  
20 program are not covered under other Tampa Electric  
21 commercial/industrial conservation programs. Candidates  
22 are identified through the energy audit, or their  
23 engineering consultants can submit proposals for funding  
24 which offer energy reduction during weather sensitive  
25 peak times.

1       **Commercial Load Management:** A load management program  
2       intended to help alter the company's system load curve by  
3       reducing summer and winter demand peaks. Large loads  
4       such as walk-in freezers are interrupted for up to three  
5       hours by radio controlled switches similar to those used  
6       in the residential load management. Commercial air  
7       conditioning equipment is cycled during summer control  
8       periods. Monthly incentive credits are paid to customers  
9       participating in this program.

10  
11       **Industrial Load Management:** A load management program for  
12       large industrial customers with interruptible loads of  
13       500 kW or greater. In accordance with the Florida  
14       Administrative Code, assessments for customer  
15       participation are conducted every six months.

16  
17       **Standby Generator:** A program designed to utilize the  
18       emergency generation capacity of commercial/industrial  
19       facilities in order to reduce weather sensitive peak  
20       demand. Tampa Electric provides participating customers  
21       a thirty minute notice that their generation will be  
22       required. This allows customers time to start generators  
23       and arrange for orderly transfer of load. Tampa Electric  
24       meters and issues monthly credits for that portion of the  
25       generator's output that could serve normal building load

1 after the notification time. Normal building load is  
2 defined as load (type, amount and duration) that would  
3 have been served by Tampa Electric if the emergency  
4 generator did not operate. Under no circumstances will  
5 the generator deliver power to Tampa Electric's grid.

6  
7 **Renewable Energy Program:** A program designed to allow  
8 customers the option of paying an additional charge for  
9 incremental renewable energy delivered to the company's  
10 grid system. The customer can elect to pay \$5.00 for a  
11 200 kWh block of renewable energy generated from biomass,  
12 landfill gas or photovoltaic resources.

13  
14 **Q.** What are the proposed new and modified residential DSM  
15 programs Tampa Electric filed for Commission approval to  
16 implement?

17  
18 **A.** In Docket Nos. 070375-EG and 070056-EG, Tampa Electric  
19 has placed before the Commission nine new and modified  
20 residential DSM programs that provide customers  
21 additional options to better manage their energy  
22 consumption.

23  
24 A description of the new programs proposed by the company  
25 is provided below.



1       **Energy Audit:** A conservation program previously described  
2       but now containing a request for approval of an  
3       additional type of audit, the telephone audit, to  
4       overcome the scheduling difficulties sometimes  
5       encountered with a face-to-face field audit.

6  
7       **Residential Building Envelope:** A conservation program  
8       designed to encourage customers to make cost-effective  
9       improvements to existing residences in the areas of  
10      ceiling insulation, wall insulation, and window  
11      improvements. The goal is to offer customer incentives  
12      for making these improvements while helping them reduce  
13      energy consumption and reducing Tampa Electric's peak  
14      demand. The following measures are a part of this  
15      program: ceiling insulation, wall insulation, window  
16      replacement and reflective window film.

17  
18      **Price Responsive Load Management:** A conservation and load  
19      management program previously described as a pilot  
20      research and development effort that the company is now  
21      seeking to offer to customers on a permanent basis. This  
22      request is currently before the Commission in Docket No.  
23      070056-EG.

24  
25      **Low Income Weatherization:** A program designed to assist

1 low-income families in reducing their energy usage. The  
2 goal of the program is to establish a package of  
3 conservation measures at no cost to the customer. In  
4 addition to providing and/or installing the necessary  
5 materials for the various conservation measures, a key  
6 component will be educating families on energy  
7 conservation techniques and to promote behavioral changes  
8 to help customers control their energy usage. Customers  
9 would become eligible for this program by means of  
10 referral through participating agencies which provide  
11 assistance to low-income households.

12  
13 **Educational Energy Awareness Pilot:** A three-year pilot  
14 program designed to save demand and energy by increasing  
15 customer awareness of energy use in personal residences.  
16 This program is aimed at schools within the Tampa  
17 Electric service area and designed to educate students on  
18 energy awareness through scripted, professionally written  
19 presentations using humor, interactive theater and  
20 classroom guides to teach students the benefits of energy  
21 efficiency. As part of the curriculum, students will  
22 conduct on-line or telephone audits on their homes to  
23 learn what low cost energy saving practices can be  
24 implemented. In addition, parents will receive audit  
25 results outlining information on other residential

1 conservation programs that offer incentives or rebates  
2 which may be applicable to their residences. The program  
3 will target eighth grade students, enhancing the current  
4 science curriculum covering conservation and energy  
5 efficiency solutions. At the end of the three-year pilot  
6 period, Tampa Electric will evaluate the overall  
7 effectiveness of the program to determine if a permanent  
8 program aimed at eighth grade students is cost-effective.

9  
10 A description of the modified programs proposed by the  
11 company is provided below.

12  
13 **Energy Audit:** A conservation program previously described  
14 but now containing a request for approval of providing  
15 participants with six compact fluorescent lamps.

16  
17 **Heating and Cooling:** A conservation program previously  
18 described but now containing a request for approval of  
19 increased rebates for qualified HVAC units as well as the  
20 inclusion of multi-family and mobile home residences for  
21 participation.

22  
23 **Duct Repair:** A conservation program previously described  
24 but now containing a request for approval of an increased  
25 incentive for qualified participants.

1       **New Construction Program:** A conservation program  
2       previously described but now containing a request for  
3       approval of increased incentives and additional measures  
4       that qualify for incentives.

5  
6       **Q.** What are Tampa Electric's proposed new and modified  
7       commercial DSM programs awaiting Commission approval?

8  
9       **A.** In Docket No. 070375-EG, Tampa Electric has placed before  
10       the Commission 13 new and modified commercial DSM  
11       programs that provide customers additional options to  
12       better manage their energy consumption. A description of  
13       the new programs proposed by the company is provided  
14       below.

15  
16       **Commercial Duct Repair:** A conservation incentive program  
17       designed to reduce demand and energy by decreasing the  
18       load on commercial air conditioning and heating ("HVAC")  
19       equipment. This program eliminates or reduces areas of  
20       HVAC air distribution losses by sealing and repairing the  
21       ADS. Customers call Tampa Electric to request  
22       appointments for duct repair, and a HVAC contractor  
23       appointed by Tampa Electric seals and repairs all  
24       accessible components of the ADS in the facility. Tampa  
25       Electric's incentive is included in the payment to the

1 participating contractor performing ADS repairs.

2  
3 **Commercial Building Envelope:** A conservation program  
4 designed to reduce demand and energy by decreasing the  
5 load on commercial HVAC equipment. Through incentives,  
6 the program will encourage commercial/industrial  
7 customers to invest in energy efficiency building  
8 envelope improvements. The improvements include solar  
9 window film and ceiling and wall insulation. The program  
10 will be promoted during commercial/industrial energy  
11 audits in an effort to inform and educate customers.  
12 Certificates for participation will be issued through  
13 energy audits or by direct evaluation of existing  
14 building envelope conditions.

15  
16 **Energy Efficient Motor:** A conservation program designed  
17 to encourage commercial/industrial customers to install  
18 premium-efficiency motors in new or existing facilities  
19 through incentives. The program is aimed at reducing the  
20 growth of peak demand and energy by encouraging customers  
21 to replace worn out, inefficient equipment with high  
22 efficiency equipment that exceeds minimum product  
23 manufacturing standards.

24  
25 **Commercial Demand Response:** A conservation and load

1 management program intended to help alter the company's  
2 system load curve by reducing weather sensitive summer  
3 and winter demand peaks. The company will contract for a  
4 turn-key program that will provide incentives to  
5 commercial/industrial customers to reduce their peak  
6 demands for electricity. Reductions will be achieved  
7 through a mix of emergency backup generation, energy  
8 management systems, raising cooling set points and  
9 turning off or dimming items such as lights and signage.

10  
11 **Commercial Chiller:** A commercial conservation program  
12 that uses incentives for the installation of high  
13 efficiency electric water-cooled chillers and electric  
14 air-cooled chillers in commercial buildings. The program  
15 is aimed at reducing the growth of peak demand and energy  
16 by encouraging customers to replace worn out, inefficient  
17 cooling equipment with high efficiency equipment that  
18 exceeds minimum product manufacturing standards.

19  
20 **Commercial Lighting Occupancy Sensor:** A conservation  
21 program that will provide an incentive to encourage  
22 commercial/industrial customers to install occupancy  
23 sensors in any area where indoor lights would be used at  
24 the time of peak demand.

25

1       **Commercial Refrigeration:** A program designed to reduce  
2       the peak demand and energy consumption for  
3       commercial/industrial customers by increasing the use of  
4       efficient refrigeration controls and equipment. Tampa  
5       Electric will provide incentives to customers who install  
6       qualifying controls and equipment that reduce electric  
7       strip heater usage in refrigeration equipment.

8  
9       **Commercial Water Heating:** A conservation program designed  
10      to encourage commercial/industrial customers to install  
11      high efficiency water heating systems thereby reducing  
12      future growth of demand and energy consumption.  
13      Incentives will be provided for two technologies covered  
14      under this program, namely, heat recovery units and heat  
15      pump water heaters.

16  
17      A description of the modified programs proposed by the  
18      company is provided below.

19  
20      **Commercial Cooling:** A conservation program previously  
21      described but now containing a request for approval of  
22      larger sized direct expansion cooling units and package  
23      terminal air conditioners to be eligible for incentives.

24  
25      **Commercial Lighting:** A conservation program previously

1 described but now containing a request for approval of  
2 efficient lighting installations in non-conditioned space  
3 to be eligible for incentives.

4  
5 **Conservation Value:** A conservation program previously  
6 described but now containing a request for approval of an  
7 increased incentive for qualified measures.

8  
9 **Commercial Load Management:** A load management program  
10 previously described but now containing a request for  
11 approval of higher monthly incentives for participating  
12 customers.

13  
14 **Standby Generator:** A load management program previously  
15 described but now containing a request for approval of  
16 higher monthly incentives for participating customers.

17  
18 **Q.** Why is Tampa Electric seeking approval to include these  
19 new and modified DSM initiatives in its DSM program  
20 offerings to customers?

21  
22 **A.** Annually, Tampa Electric reviews its existing DSM  
23 programs for cost-effectiveness and examines the  
24 potential for adding new offerings and the need for any  
25 existing program modifications. Avoided costs have risen



1 to the level where new programs and modifications to  
2 existing programs have become cost-effective.  
3 Additionally, the company has completed its research and  
4 development ("R&D") work associated with residential  
5 demand response and the results indicate a viable program  
6 can be offered. The modifications to these programs  
7 include increased incentive levels for participation,  
8 additional technologies that qualified for incentives, a  
9 broader customer base eligible for participation and  
10 streamlining of customer requirements to participate.

11  
12 Finally, in Docket No. 070056-EG, Tampa Electric is  
13 requesting Commission approval of the company's  
14 residential price responsive load management pilot  
15 program for permanent program status. This program shows  
16 excellent potential for demand reduction and energy  
17 conservation for residential customers. Once this  
18 program is fully launched, the company anticipates  
19 exploring a similar pilot program offering to its  
20 expanding non-demand commercial customers.

21  
22 **Q.** Does Tampa Electric engage in other activities closely  
23 associated with DSM programs?

24  
25 **A.** Tampa Electric has a longstanding practice of engaging in

1 relevant commercial and residential R&D to discover  
2 measures that would return DSM savings for customers and  
3 the company and therefore become integral to DSM  
4 programs. The company's R&D projects have included  
5 renewable energy generating technology investigations,  
6 renewable energy program development, desiccant  
7 technologies for moisture removal from buildings,  
8 ventilation designs for fresh air intake on commercial  
9 buildings, chiller and motor efficiency testing, anti-  
10 condensate controls for refrigerator and freezer doors,  
11 thermal energy storage, commercial load management  
12 experimentation, heat recovery technology for ice makers  
13 and residential demand response through time specific  
14 pricing tiers. From these R&D efforts, Tampa Electric  
15 has developed or enhanced the following programs:  
16 Renewable Energy Program, Energy Planner, Conservation  
17 Value, Commercial Refrigeration and Commercial Load  
18 Management.

19  
20 **TAMPA ELECTRIC'S RENEWABLE ENERGY INITIATIVES**

21 **Q.** Has Tampa Electric engaged in DSM activities that support  
22 renewables?

23  
24 **A.** Yes it has. Some of Tampa Electric's initial work in the  
25 area of renewables has included photovoltaic ("PV")

1 arrays. Early work included utilizing PV arrays to  
2 charge batteries that would power parking lot lighting.  
3 An R&D effort was also undertaken to evaluate the use of  
4 PV arrays to provide emergency lighting at a strategic  
5 storm shelter.

6  
7 In the mid 1990s, Tampa Electric partnered with the  
8 transit authority in the City of Tampa to install PV  
9 arrays for the purpose of recharging batteries for use in  
10 the transit authority's electric bus fleet. Although the  
11 electric bus fleet failed to materialize, the large PV  
12 array supplied energy to Tampa Electric's grid and today  
13 is an integral resource for the company's renewable  
14 energy program.

15  
16 Tampa Electric's commitment to a more formalized  
17 renewable energy program began in 2001. The company  
18 implemented a pilot renewable energy program with the  
19 following goals: 1) determine the level of program  
20 interest among customers and their willingness to pay a  
21 higher cost for renewable energy; 2) examine marketing  
22 methods to identify the most cost-effective manner to  
23 secure residential and commercial program participants;  
24 3) determine the longevity of customer participation; 4)  
25 determine the functionality of certain renewable

1 generation; and 5) determine the sustainability of  
2 renewable fuel resources.

3

4 Due to the R&D effort put forth on the pilot program,  
5 today Tampa Electric offers a permanent renewable energy  
6 program that is growing steadily with both residential  
7 and commercial customers. The program continues to offer  
8 incremental renewable energy that is produced locally and  
9 within the state such that the environmental benefits  
10 accrue to the citizens of Florida.

11

12 Another key area of renewable energy activity centers on  
13 the Solar for Schools initiative advanced by the Florida  
14 Solar Energy Center ("FSEC"). Tampa Electric has been a  
15 participant with FSEC and the Hillsborough County School  
16 District in the deployment of PV arrays on schools where  
17 science students can engage in studies of renewable  
18 energy production and technology reliability. Recently,  
19 Tampa Electric unveiled the largest PV system installed  
20 to date in the Solar for Schools program, a 10 kW array  
21 deployed on a local high school. Furthermore, the  
22 company has initiated discussions with FSEC in support of  
23 continued maximum annual participation in the Solar for  
24 Schools program.

25

1 Tampa Electric has announced a major thrust toward  
2 renewable energy with its PV for Schools program designed  
3 to systematically install PV arrays on selected schools  
4 and allow students the opportunity to gain "hands-on"  
5 experience with the technology and explore the  
6 possibilities of future utilization. The company is  
7 committed to exploring other opportunities to partner  
8 with local school districts and businesses for additional  
9 PV installations.

10

11 **Q.** Please describe other Tampa Electric activities in the  
12 area of renewable energy.

13

14 **A.** Tampa Electric engages in a number of other renewable  
15 energy activities aimed at increasing the amount of  
16 clean, renewable energy on its system. Annually, the  
17 company purchases over 125,000 MWH of renewable energy  
18 produced from the waste heat of phosphate production.  
19 Tampa Electric also has 42 MW of firm capacity under  
20 contract from the municipal solid waste ("MSW") industry.  
21 Early discussions are underway concerning the expansion  
22 of an existing MSW facility in the service area.

23

24 Tampa Electric recently gained Commission approval of its  
25 renewable standard offer contract ("SOC"). The renewable

1 SOC includes the following features: 1) the customer can  
2 select any of the fossil fuel generating units in the  
3 company's 10-year expansion plan; 2) the renewable SOC  
4 will be continuously available; 3) the subscription limit  
5 has been removed; 4) the renewable generator can select  
6 the term of the contract; and 5) flexibility on capacity  
7 and energy payments to the customer now exist.

8  
9 Tampa Electric also owns PV arrays scattered throughout  
10 its service area. Two PV arrays are located on local  
11 schools, one array is positioned at the company's Manatee  
12 Viewing Center and the largest array is strategically  
13 located at the entrance to the Museum of Science and  
14 Industry in Tampa, Florida. These latter two arrays have  
15 been placed in high traffic areas to maximize their  
16 exposure and awareness as a viable energy source.

17  
18 Finally, Tampa Electric is generating renewable energy  
19 through a landfill gas facility utilizing a micro-turbine  
20 as the generating unit. Currently experimental in  
21 nature, the company is testing the long-term viability of  
22 a micro-turbine as a small but bona fide base load  
23 generating resource.

24  
25 Q. Please describe Tampa Electric's recent request for

1 proposal ("RFP") for the purchase of renewable energy?  
2  
3 A. Tampa Electric recognizes the growing importance of  
4 renewable energy as a vital component of its resources to  
5 meet customer load. Recently, the company issued an RFP  
6 for renewable energy that includes new or existing  
7 generating sources on a firm or as-available basis. The  
8 type of renewable energy being sought is consistent with  
9 the definition found in the Florida Statutes. In order  
10 to maximize the number of potential bidders, the company  
11 has not placed limits on the size of the proposals, and  
12 proposals may originate inside or outside the company's  
13 service area.

14  
15 **DSM GOALS SETTING PROCESS**

16 Q. Why are DSM goals established for Tampa Electric?  
17  
18 A. Investor-owned utilities like Tampa Electric have DSM  
19 goals established by the Commission as a requirement of  
20 FEECA and the Florida Administrative Code. Further, DSM  
21 goals are established and utilized in the cost-effective  
22 planning to meet future generating needs.  
23  
24 Q. How frequently are Tampa Electric's DSM goals  
25 established?

1 **A.** Tampa Electric's DSM goals are established by the  
2 Commission every five years for a 10-year period. Every  
3 five years, the existing goals are re-examined for  
4 appropriateness and often adjusted to reflect levels of  
5 accomplishment as well as the changing potential of  
6 customer participation based on DSM technology  
7 development and customer willingness to participate.  
8 Tampa Electric's current Commission-approved and proposed  
9 DSM goals are shown in Document No. 3 and 4 of my Exhibit  
10 No. \_\_\_\_\_ (HTB-1), respectively.

11  
12 **Q.** How has Tampa Electric performed relative to its DSM  
13 goals?

14  
15 **A.** Since 1980, Tampa Electric has met or exceeded its DSM  
16 demand and energy goals in every period but one.  
17 Document No. 5 of my Exhibit No. \_\_\_\_\_ (HTB-1) clearly  
18 demonstrates Tampa Electric is meeting its DSM goals for  
19 the current period.

20  
21 **Q.** How were Tampa Electric's current Commission-approved DSM  
22 goals developed?

23  
24 **A.** Tampa Electric's process to develop its DSM goals used  
25 multiple steps. The first step was to identify the



1 measures to be evaluated for cost-effectiveness. Tampa  
2 Electric identified 267 measures for evaluation. The  
3 next step was to perform the cost-effectiveness  
4 evaluation on each measure across the various market  
5 segments where potential acceptance could occur. This  
6 resulted in over 1,000 individual measure cost-  
7 effectiveness evaluations being performed. Next, Tampa  
8 Electric examined those measures that were cost-effective  
9 to determine their potential for program development.  
10 Once the results from this step were identified, the  
11 cost-effective measures were separated into residential  
12 and commercial categories and became the foundation for  
13 DSM goals proposed to the Commission.

14  
15 **Q.** What impact will the requested modifications and  
16 additions to Tampa Electric's DSM programs in Docket Nos.  
17 070375-EG and 070056-EG have on the company's currently  
18 approved DSM goals?

19  
20 **A.** With the approval of the company's new and modified DSM  
21 programs requested in Docket Nos. 070375-EG and 070056-  
22 EG, the increase to Tampa Electric's residential and  
23 commercial demand goals for the 2007 through 2014 period  
24 will roughly double the demand goals currently approved  
25 for the same period. The increase to the residential and

1 commercial energy goal will be over 40 percent higher  
2 than the currently approved goal for the same period.  
3 Although these increased goals present a challenge, the  
4 company anticipates their accomplishment during the  
5 prescribed time period.  
6

7 **ABILITY TO SATISFY 2013 CAPACITY NEED THROUGH DSM**

8 **Q.** Has Tampa Electric identified all of the cost-effective  
9 DSM program potential for the 2007 through 2014 period?  
10

11 **A.** Yes. Through the exhaustive DSM goals setting process  
12 that culminated in the demand and energy goals for the  
13 2005 through 2014 period, and with the company's recent  
14 DSM measure evaluations and subsequent request to this  
15 Commission for the company's DSM goals to be increased,  
16 Tampa Electric has identified all the cost-effective DSM  
17 program potential for the 2007 through 2014 period.  
18

19 **Q.** In 2007, a modification was made to subsection (4) of  
20 Section 403.519, Florida Statutes, that requires the  
21 Commission, in making its determination of need for a  
22 requesting utility, to consider "...whether renewable  
23 energy sources and technologies, as well as conservation  
24 measures, are utilized to the extent reasonably  
25 available." Has Tampa Electric met this requirement?

1 **A.** Yes. Tampa Electric has conducted an extensive  
2 evaluation of all conservation measures and renewable  
3 energy resources reasonably available. The company's  
4 current 2005-2014 DSM goals were established utilizing a  
5 comprehensive set of DSM measures. Through the company's  
6 efforts, these goals are being met. In fact, additional  
7 programs and increased DSM goals are before this  
8 Commission in Docket Nos. 070375-EG and 070056-EG  
9 awaiting approval.

10  
11 Concerning reasonably available renewable energy  
12 resources, Tampa Electric has engaged in several  
13 activities aimed at increasing the amount of renewable  
14 energy on its system. These activities include:  
15 developing and implementing a renewable energy program  
16 utilizing resources native to the state such as biomass,  
17 landfill gas and PV arrays for energy production;  
18 securing MSW under firm contracts and participating in  
19 current discussions aimed at increasing that capacity;  
20 purchasing as-available energy produced from waste heat;  
21 and issuing a renewable energy RFP. Finally, the company  
22 has strategically placed PV arrays at key visibility  
23 locations such as Tampa's Museum of Science and Industry  
24 as well as local schools with a plan to expand to several  
25 more school sites.

1 Q. Will Tampa Electric's current DSM efforts, including its  
2 recent request for Commission approval of program  
3 modifications and additions, provide sufficient potential  
4 such that the capacity identified in this determination  
5 of need can be deferred?

6  
7 A. No. Tampa Electric has identified all reasonably  
8 achievable DSM demand and energy reductions and utilized  
9 that potential in the assessment of this determination of  
10 need. Even with the additional 41 MW of summer reduction  
11 and 48 MW of winter reduction proposed by Tampa Electric  
12 through its pending DSM programs modifications, the  
13 company will not be able to meet the capacity identified  
14 in this determination of need. Therefore, Tampa  
15 Electric's evaluation of future generating capacity has  
16 already captured all the cost-effective DSM potential  
17 available on the company's system, and there are no DSM  
18 alternatives that could defer the need for additional  
19 generating capacity in 2013.

20  
21 Q. Please summarize your testimony.

22  
23 A. Tampa Electric has been successfully implementing cost-  
24 effective DSM programs since the 1970s. Recently, the  
25 company's national ranking has been as high as the 96<sup>th</sup>

1 percentile in cumulative conservation and the 90<sup>th</sup>  
2 percentile in load management achievements. Through  
3 2012, Tampa Electric will have implemented 707 MW of  
4 winter DSM and 263 MW of summer DSM which equates to  
5 approximately four 180 MW power plants.

6  
7 Tampa Electric has been very consistent at meeting or  
8 exceeding its DSM goals set by the Commission.  
9 Furthermore, Tampa Electric assesses its DSM potential on  
10 an annual basis and seeks Commission approval of those  
11 programs that will cost-effectively help the company  
12 reach its DSM goals while providing customers with  
13 opportunities to better manage their energy usage. Tampa  
14 Electric's recent request for Commission approval of  
15 additions and modifications to its DSM programs will  
16 provide additional energy management capabilities to the  
17 benefit of customers.

18  
19 Tampa Electric has routinely engaged in the evaluation  
20 and utilization of renewable energy. Early efforts  
21 focused on R&D activities at the customer level but also  
22 included the development and implementation of a  
23 renewable energy program that utilizes native resources  
24 to the State of Florida. The company has made available  
25 a renewable SOC, established firm contracts with MSW

1 facilities, deployed PV arrays within its service area  
2 and issued a renewable energy RFP. Also, the company is  
3 exploring additional PV arrays in partnership with the  
4 county school systems, participating in discussions to  
5 expand contracts with MSW facilities and purchasing as-  
6 available energy from waste heat resources.

7

8 In spite of Tampa Electric's efforts and significant  
9 accomplishments in the areas of DSM and renewables, the  
10 company is not able to meet the 2013 capacity need  
11 through additional conservation measures.

12

13 **Q.** Does this conclude your testimony?

14

15 **A.** Yes it does.

16

17

18

19

20

21

22

23

24

25

**Tampa Electric  
Current DSM Programs**

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**Residential**

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Energy Audits: Walk-Through Audit (Free)  
Computer Assisted Audit (Paid)  
On-Line Audit

Heating and Cooling

Duct Repair

Ceiling Insulation

New Construction Program

Prime Time

Price Responsive Load Management (Pilot)

Renewable Energy

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**Commercial**

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Energy Audits: Standard Commercial/Industrial Audit (Free)  
Detailed Commercial/Industrial Audit (Paid)

Commercial Cooling

Commercial Indoor Lighting

Conservation Value

Commercial Load Management

Industrial Load Management

Standby Generator

Renewable Energy

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**Tampa Electric  
Proposed New and Modified DSM Programs**

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**Residential**

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**New:**

Energy Audits: Phone-Assisted Audit  
Residential Building Envelope  
Price Responsive Load Management  
Low Income Weatherization  
Educational Energy Awareness (Pilot)

**Modified:**

Energy Audits: Walk-Through (Free)  
Computer Assisted (Paid)  
Heating & Cooling  
Duct Repair  
New Construction Program

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**Commercial**

---

**New:**

Commercial Duct Repair  
Commercial Building Envelope  
Energy Efficient Motors  
Commercial Demand Response  
Commercial Chillers  
Commercial Lighting Occupancy Sensors  
Commercial Refrigeration (Anti-Condensate)  
Commercial Water Heating

**Modified:**

Commercial Cooling  
Commercial Lighting  
Conservation Value  
Commercial Load Management  
Standby Generator

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**Tampa Electric  
 Current DSM Goals**

**Residential:**

Year	Projected Summer Demand Savings (MW)		Commission Approved Summer MW Goal (Cum.)	Projected Winter Demand Savings (MW)		Commission Approved Winter MW Goal (Cum.)	Projected Annual Energy Savings (GWH)		Commission Approved Annual GWH Goal (Cum.)
	Incr.	Cum.		Incr.	Cum.		Incr.	Cum.	
2005	2.8	2.8	2.4	4.2	4.2	4.0	7.7	7.7	7.0
2006	3.3	6.1	4.4	4.0	8.2	6.7	8.6	16.3	12.6
2007	1.9	8.0	6.2	2.6	10.8	9.1	5.6	21.9	17.9
2008	1.7	9.7	7.9	2.3	13.1	11.4	5.1	27.0	22.7
2009	1.5	11.2	9.5	2.0	15.1	13.4	4.6	31.6	27.2
2010	1.3	12.5	10.9	1.7	16.8	15.2	3.9	35.5	31.2
2011	1.1	13.6	12.2	1.5	18.3	16.7	3.4	38.9	34.9
2012	1.0	14.6	13.3	1.2	19.5	18.1	3.0	41.9	38.2
2013	0.9	15.5	14.3	1.1	20.6	19.2	2.7	44.6	41.0
2014	0.8	16.3	15.2	0.9	21.5	20.1	2.3	46.9	43.5

**Commercial:**

Year	Projected Summer Demand Savings (MW)		Commission Approved Summer MW Goal (Cum.)	Projected Winter Demand Savings (MW)		Commission Approved Winter MW Goal (Cum.)	Projected Annual Energy Savings (GWH)		Commission Approved Annual GWH Goal (Cum.)
	Incr.	Cum.		Incr.	Cum.		Incr.	Cum.	
2005	4.3	4.3	2.1	3.4	3.4	1.0	7.9	7.9	6.7
2006	1.5	5.8	4.4	0.4	3.8	2.0	7.4	15.3	12.8
2007	2.0	7.8	6.0	1.0	4.8	2.9	6.1	21.4	18.4
2008	1.9	9.7	7.7	0.9	5.7	3.8	5.5	26.9	23.4
2009	1.7	11.4	9.3	0.9	6.6	4.7	5.0	31.9	27.8
2010	1.5	12.9	10.7	0.8	7.4	5.5	3.9	35.8	31.7
2011	1.3	14.2	12.1	0.8	8.2	6.2	3.3	39.1	35.0
2012	1.2	15.4	13.3	0.7	8.9	6.9	2.7	41.8	37.7
2013	1.1	16.5	14.3	0.7	9.6	7.6	2.2	44.0	39.9
2014	0.9	17.4	15.3	0.6	10.2	8.2	1.6	45.6	41.5

**Tampa Electric  
 Proposed DSM Goals**

**Residential:**

Year	Projected Summer Demand Savings (MW)		Commission Approved Summer MW Goal (Cum.)	Projected Winter Demand Savings (MW)		Commission Approved Winter MW Goal (Cum.)	Projected Annual Energy Savings (GWH)		Commission Approved Annual GWH Goal (Cum.)
	Incr.	Cum.		Incr.	Cum.		Incr.	Cum.	
2005	2.8	2.8	2.4	4.2	4.2	4.0	7.7	7.7	7.0
2006	3.3	6.1	4.4	4.0	8.2	6.7	8.6	16.3	12.6
2007	2.9	9.0	9.0	4.4	12.6	12.6	6.4	22.7	22.7
2008	3.9	12.9	12.9	5.7	18.3	18.3	6.4	29.1	29.1
2009	4.4	17.3	17.3	6.2	24.5	24.5	6.3	35.4	35.4
2010	4.9	22.2	22.2	6.7	31.2	31.2	6.2	41.6	41.6
2011	5.0	27.2	27.2	6.7	37.9	37.9	6.1	47.8	47.8
2012	5.2	32.4	32.4	6.7	44.6	44.6	6.0	53.7	53.7
2013	5.2	37.6	37.6	6.6	51.2	51.2	5.8	59.5	59.5
2014	5.1	42.7	42.7	6.3	57.5	57.5	5.5	65.0	65.0

**Commercial:**

Year	Projected Summer Demand Savings (MW)		Commission Approved Summer MW Goal (Cum.)	Projected Winter Demand Savings (MW)		Commission Approved Winter MW Goal (Cum.)	Projected Annual Energy Savings (GWH)		Commission Approved Annual GWH Goal (Cum.)
	Incr.	Cum.		Incr.	Cum.		Incr.	Cum.	
2005	4.3	4.3	2.1	3.4	3.4	1.0	7.9	7.9	6.7
2006	1.5	5.8	4.4	0.4	3.8	2.0	7.4	15.3	12.8
2007	4.7	10.5	10.5	4.0	7.8	7.8	4.2	19.5	19.5
2008	4.8	15.3	15.3	4.1	11.9	11.9	4.7	24.2	24.2
2009	4.9	20.2	20.2	4.1	16.0	16.0	5.1	29.3	29.3
2010	5.0	25.2	25.2	4.2	20.2	20.2	5.5	34.8	34.8
2011	5.1	30.3	30.3	4.2	24.4	24.4	5.5	40.3	40.3
2012	5.0	35.3	35.3	4.2	28.6	28.6	5.4	45.7	45.7
2013	4.9	40.2	40.2	4.2	32.8	32.8	4.8	50.5	50.5
2014	4.8	45.0	45.0	4.1	36.9	36.9	4.2	54.7	54.7

## Tampa Electric 2005-2014 DSM Goals Accomplishments

### Total Residential and Commercial/Industrial

Year	Winter Peak MW Reduction			Summer Peak MW Reduction			GWh Energy Reduction		
	Commission			Commission			Commission		
	Total Achieved	Approved Goal	% Variance	Total Achieved	Approved Goal	% Variance	Total Achieved	Approved Goal	% Variance
2005	7.6	5.0	152.0%	7.1	4.5	157.8%	15.6	13.7	113.9%
2006	12.0	8.7	137.9%	11.9	8.8	135.2%	31.6	25.4	124.4%

### Residential

Year	Winter Peak MW Reduction			Summer Peak MW Reduction			GWh Energy Reduction		
	Commission			Commission			Commission		
	Total Achieved	Approved Goal	% Variance	Total Achieved	Approved Goal	% Variance	Total Achieved	Approved Goal	% Variance
2005	4.2	4.0	105.0%	2.8	2.4	116.7%	7.7	7.0	110.0%
2006	8.2	6.7	122.4%	6.1	4.4	138.6%	16.3	12.6	129.4%

### Commercial/Industrial

Year	Winter Peak MW Reduction			Summer Peak MW Reduction			GWh Energy Reduction		
	Commission			Commission			Commission		
	Total Achieved	Approved Goal	% Variance	Total Achieved	Approved Goal	% Variance	Total Achieved	Approved Goal	% Variance
2005	3.4	1.0	340.0%	4.3	2.1	204.8%	7.9	6.7	117.9%
2006	3.8	2.0	190.0%	5.8	4.4	131.8%	15.3	12.8	119.5%

42