

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Petition for approval of modifications to residential heating and cooling and new construction programs, by Tampa Electric Company.

DOCKET NO. 050876-EG
ORDER NO. PSC-06-0127-PAA-EG
ISSUED: February 16, 2006

The following Commissioners participated in the disposition of this matter:

LISA POLAK EDGAR, Chairman
J. TERRY DEASON
ISILIO ARRIAGA
MATTHEW M. CARTER II
KATRINA J. TEW

NOTICE OF PROPOSED AGENCY ACTION
ORDER APPROVING MODIFICATIONS TO
DEMAND SIDE MANAGEMENT PROGRAMS

BY THE COMMISSION:

NOTICE is hereby given by the Florida Public Service Commission that the action discussed herein is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for a formal proceeding, pursuant to Rule 25-22.029, Florida Administrative Code.

BACKGROUND

As part of its Commission-approved Demand-Side Management (DSM) Plan, Tampa Electric Company (TECO) offers a Residential Heating and Cooling and a Residential New Construction program. The programs provide information, education and advice to homeowners, home builders and contractors on energy-related issues and efficiency measures. The Residential Heating and Cooling program promotes the replacement of resistance heat and old heat pumps with new energy-efficient heat pumps. TECO also provides incentives of up to \$250 dollars to be paid to the contractor performing the work. The New Construction program promotes duct sealing measures, insulation, and energy-efficient electric heat pumps.

On November 16, 2005, TECO petitioned the Commission for approval of modifications to its Residential Heating and Cooling and Residential New Construction programs. For the Residential Heating and Cooling program, TECO aimed at reducing the growth of peak demand and energy through the replacement of two types of equipment. Type one is described as a heat

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pump replacing resistance heat, and type two is described as a heat pump replacing a heat pump. Both types have a threshold for qualification, and TECO offers a rebate for the program which is paid to the contractor performing the installation. TECO's Residential New Construction program is a conservation program designed to reduce the growth of peak demand and energy in the residential new construction market through the installation of high efficiency equipment and building envelope options. The program utilizes incentives to encourage the construction of new homes to be above the minimum energy efficiency levels required in the State of Florida Energy Efficiency Code for New Construction. Currently, TECO's minimum efficiency threshold for Heating, Ventilation and Air Conditioning (HVAC) equipment in both programs is a Seasonal Energy Efficiency Rating (SEER) value of 12.0. The federal manufacturing efficiency standard effective January 23, 2006, will increase the minimum SEER value of equipment available in the marketplace to 13.0. To keep pace with federal standards and to continue encouraging customers to cost-effectively invest in HVAC equipment with efficiencies greater than federal or state guidelines, TECO wants to increase the minimum equipment efficiency threshold for participation in its two programs to a SEER value of 14.0.

We have reviewed TECO's petition to modify its residential Heating and Cooling and Residential New Construction programs. As we explain in detail below, we approve the petition. We have jurisdiction pursuant to Sections 366.81 and 366.82, Florida Statutes.

DECISION

TECO has offered its Residential Heating and Cooling program since January 1981 and its residential new construction program since July 2000. During that time, we have approved program modifications to accommodate market needs and changing manufacturing conditions. We approved both programs again most recently as an integral component of the company's 2005-2014 Ten Year Demand Side Management ("DSM") Plan in Order No. PSC-05-0181-PAA-EG, issued February 16, 2005, in Docket No. 040033-EG, In re: Petition for approval of numeric conservation goals by Tampa Electric Company. The Residential Heating and Cooling program uses a rebate to encourage customers to install high efficiency HVAC systems in existing single family detached dwellings. The Residential New Construction Program uses incentives to encourage the installation of high efficiency HVAC equipment and other construction practices that exceed the Florida Building Code requirements for new single family detached dwellings.

When we review conservation programs, we consider three criteria:

- Whether the program advances the policy objectives of Rule 25-17.001, Florida Administrative Code, and Sections 366.80-.85, Florida Statutes, also known as the "Florida Energy Efficiency and Conservation Act" (FEECA);
- Whether the program is directly monitorable and yields measurable results; and
- Whether the program is cost-effective.

We find that TECO's Residential Heating and Cooling and Residential New Construction programs, as modified, will allow TECO to continue to meet our criteria and achieve the goals of FEECA.

As shown in Attachment A to this Order, the proposed modifications to the Residential Heating and Cooling program are expected to increase demand and energy savings. For customers with existing strip heat systems, per-customer savings are forecasted to be 2.54 kW winter peak demand, 0.15 kW summer peak demand, and 1,347 kWh of annual energy consumption. For customers with existing heat pump systems, per-customer savings are forecasted to be 0.10 kW winter peak demand, 0.15 kW summer peak demand, and 511 kWh of annual energy consumption.

Attachment B to this Order shows the proposed modifications to the Residential New Construction program. The incremental savings associated with the new heat pump requirement for both the Residential Heating and Cooling and Residential New Construction programs are .10 kW winter and .15 kW summer demand. The Residential New Construction program has 4 levels of participation with corresponding projected efficiency savings. Level one includes adding additional duct taping to meet TECO's allowable duct leakage standard. Level two, includes meeting level one requirements plus adding a minimum 14.0 SEER heat pump. Level three includes meeting level one and two requirements plus installing R-30 ceiling insulation. Finally, level four includes meeting level one, two and three requirements plus the installation of a heat recovery unit or a heat pump water heater. The demand and energy savings will vary depending on which level of participation the customer chooses. For customers with electric heating systems, per-customer savings are forecasted to range from a level one of 0.278 kW to a level four of 0.467 kW winter peak demand, and from a level one of 0.341 kW to a level four of 0.750 kW summer peak demand. The annual energy consumption range for these customers range from a level one of 691 kWh to a level four of 1,850 kWh. Combined with forecasted increases in customer participation, the program is expected to decrease overall peak demand and energy usage on TECO's system.

TECO's Residential Heating and Cooling and Residential New Construction programs, as modified, allow for direct monitoring and will continue to yield measurable results. TECO's programs as modified are cost-effective. The increase in the minimum SEER rating for heat pumps is expected to increase the program's cost-effectiveness, and TECO forecasts a benefit-cost ratio under the RIM test of 1.09 for the Residential Heating and Cooling and 1.24 for the Residential New Construction programs respectively. This means that, for participants and non-participants alike, the Residential Heating and Cooling and Residential New Construction programs are expected to be less costly than TECO's next identified power plant, a 180 MW combustion turbine scheduled for 2009. For all the above reasons, we approve the proposed modifications to TECO's Residential Heating and Cooling and Residential New Construction programs.

It is therefore,

ORDERED by the Florida Public Service Commission that Tampa Electric Company's Petition for approval of modifications to its residential heating and cooling and new construction programs is granted. It is further


ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective upon the issuance of a Consummating Order unless an appropriate petition, in the form provided by Rule 28-106.201, Florida Administrative Code, is received by the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the "Notice of Further Proceedings" attached hereto. It is further

ORDERED that in the event this Order becomes final, this docket shall be closed.

By ORDER of the Florida Public Service Commission this 16th day of February, 2006.

BLANCA S. BAYÓ, Director
Division of the Commission Clerk and
Administrative Services

By:



Kay Flynn, Chief
Bureau of Records

(S E A L)

MCB

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing that is available under Section 120.57, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

The action proposed herein is preliminary in nature. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, in the form provided by Rule 28-106.201, Florida Administrative Code. This petition must be received by the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on March 9, 2006.

In the absence of such a petition, this order shall become final and effective upon the issuance of a Consummating Order.

Any objection or protest filed in this/these docket(s) before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

**Tampa Electric Company
Exhibit A
Heating & Cooling Program Description**

Program: Residential Heating & Cooling

Program Start Date: January 1981

Program Description

A conservation program that uses a rebate to encourage the installation of high efficiency heating and cooling systems in existing single family detached dwellings. The program is aimed at reducing the growth of peak demand and energy through two types of equipment replacement. Type one equipment replacement is defined as a heat pump replacing resistance heat and type two equipment replacement is defined as a heat pump replacing a heat pump. Both types of equipment replacement have a threshold for qualification of 14.0 SEER. Tampa Electric's rebate is paid to the contractor performing the installation.

Program Participation Standards

1. The residential dwelling must be an existing single family detached structure (no mobile homes or multi - family units, condominiums, apartments or townhouses) in Tampa Electric's service area.
2. The system must be ducted.
3. Effective May 1, 2006, the minimum qualifying efficiency rating (ARI rating only) is 14.0 SEER.
4. For a heat pump, the maximum supplemental strip heating physically contained in the system shall not exceed 2 kW per nominal ton. On a system less than 2.5 tons, a 5 kW heat strip will be allowed.
5. For a heat pump utilizing supplemental strip heating, a two-stage indoor thermostat is required.
6. For straight cool systems, oil or electric resistance heat cannot be the primary heat source.
7. In the situation where a heating and cooling system qualifies for two rebates (Tampa Electric and a gas company), Tampa Electric will not pay its rebate so that a double payment is avoided.
8. The contractor will subtract the rebate paid by Tampa Electric from the customer's total cost of equipment and installation. In the event of a customer installation with no contractor involvement, Tampa Electric will issue the rebate to the customer.

9. The HVAC contractor or customer submits a rebate request form to Tampa Electric. The form will be signed by the contractor or customer certifying that the equipment installed is in accordance with the program standards. The customer will sign the form verifying that the equipment was installed and that the contractor deducted the rebate amount from the total installed cost of the new HVAC unit.
10. Heating and Cooling rebate forms must be received within 30 days of installation date of the unit to assure payment to the dealer. Rebate forms must be filled out completely and correctly to be redeemed. Tampa Electric reserves the right to deny payment to contractors who fail to comply.
11. Tampa Electric will randomly perform full field verifications on a minimum of 10% of the participating homes. Forms not selected for field review will have an office verification to validate information.
12. No payment will be made until Tampa Electric verifies or validates rebate requests.
13. Rebates:

Type One	\$250.00
Type Two	\$100.00
14. The reporting requirements for this program will follow Rule 25-17.0021 (5), F.A.C. Additionally, program expenses will be identified in the ECCR True-Up and Projection Filings.

Program Savings and Costs

Historically, central A/C units with resistance heat and central heat pumps comprise 24% and 76% participation, respectively. Additionally, the analysis from DOE2 simulations of heating and cooling replacement savings for the HVAC systems is as follows:

<u>Type System</u>	<u>Winter Demand (kW)</u>	<u>Summer Demand (kW)</u>	<u>Annual Energy (kWh)</u>
Central A/C with Strip	2.54	0.15	1,347
Central Heat Pump	0.10	0.15	511

By weighting these savings across system types, the following reductions are rendered:

Winter Demand:

Strip heat	(2.54) (0.24)	=	0.609
Heat Pump	(0.10) (0.76)	=	<u>0.076</u>
Average winter demand reduction		=	0.685 kW

Summer Demand:

Straight A/C	(0.15) (0.24)	=	0.036
Heat Pump	(0.15) (0.76)	=	<u>0.114</u>
Average summer demand reduction		=	0.150 kW

Energy:

Straight A/C	(1,347) (0.24)	=	323
Heat Pump	(511) (0.76)	=	<u>388</u>
Average annual energy savings		=	711 kWh

Costs (weighted):

Rebate cost per participant:	\$136.00
Administrative cost per participant:	\$35.00

Program Monitoring and Evaluation

Tampa Electric utilized the engineering estimates and computer modeling from the SRC study for the demand and energy savings of the program. Tampa Electric will monitor and evaluate this program through cost-effective techniques approved in the company's previously filed Demand Side Management Monitoring and Evaluation Plan, Docket No. 941173-EG

**Tampa Electric Company
Exhibit B
Heating & Cooling Program Cost-Effectiveness
Tests**

INPUT DATA - PART 1
PROGRAM TITLE: Heating & Cooling

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PROGRAM DEMAND SAVINGS & LINE LOSSES

I. (1) CUSTOMER KW REDUCTION AT THE METER	0.685 KW /CUST
I. (2) GENERATOR KW REDUCTION PER CUSTOMER	0.267 KW GEN/CUST
I. (3) KW LINE LOSS PERCENTAGE	6.6 %
I. (4) GENERATION KWH REDUCTION PER CUSTOMER	756 KWH/CUST/YR
I. (5) KWH LINE LOSS PERCENTAGE	6.0 %
I. (6) GROUP LINE LOSS MULTIPLIER	1
I. (7) CUSTOMER KWH PROGRAM INCREASE AT METER	0 KWH/CUST/YR
I. (8)* CUSTOMER KWH REDUCTION AT METER	711 KWH/CUST/YR

ECONOMIC LIFE & K FACTORS

II. (1) STUDY PERIOD FOR CONSERVATION PROGRAM	15 YEARS
II. (2) GENERATOR ECONOMIC LIFE	26 YEARS
II. (3) T & D ECONOMIC LIFE	26 YEARS
II. (4) K FACTOR FOR GENERATION	1.6926
II. (5) K FACTOR FOR T & D	1.6926
II. (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

UTILITY & CUSTOMER COSTS

III. (1) UTILITY NONRECURRING COST PER CUSTOMER	35.00 \$/CUST
III. (2) UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
III. (3) UTILITY COST ESCALATION RATE	2.2 %
III. (4) CUSTOMER EQUIPMENT COST	395.00 \$/CUST
III. (5) CUSTOMER EQUIPMENT ESCALATION RATE	2.2 %
III. (6) CUSTOMER O & M COST	0 \$/CUST/YR
III. (7) CUSTOMER O & M ESCALATION RATE	2.2 %
III. (8)* CUSTOMER TAX CREDIT PER INSTALLATION	0 \$/CUST
III. (9)* CUSTOMER TAX CREDIT ESCALATION RATE	0 %
III. (10)* INCREASED SUPPLY COSTS	0 \$/CUST/YR
III. (11)* SUPPLY COSTS ESCALATION RATE	0 %
III. (12)* UTILITY DISCOUNT RATE	0.0909
III. (13)* UTILITY AFUDC RATE	0.0779
III. (14)* UTILITY NON RECURRING REBATE/INCENTIVE	136.00 \$/CUST
III. (15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
III. (16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0 %

AVOIDED GENERATOR, TRANS. & DIST COSTS

IV. (1) BASE YEAR	2006
IV. (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2009
IV. (3) IN-SERVICE YEAR FOR AVOIDED T & D	2009
IV. (4) BASE YEAR AVOIDED GENERATING UNIT COST	230.56 \$/KW
IV. (5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
IV. (6) BASE YEAR DISTRIBUTION COST	0 \$/KW
IV. (7) GEN, TRAN, & DIST COST ESCALATION RATE	2.3 %
IV. (8) GENERATOR FIXED O & M COST	2.623 \$/KW/YR
IV. (9) GENERATOR FIXED O&M ESCALATION RATE	2.2 %
IV. (10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
IV. (11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
IV. (12) T&D FIXED O&M ESCALATION RATE	2.2 %
IV. (13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.8394 CENTS/KWH
IV. (14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.2 %
IV. (15) GENERATOR CAPACITY FACTOR	6.5 %
IV. (16) AVOIDED GENERATING UNIT FUEL COST	8.72 CENTS/KWH
IV. (17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.2043 %
IV. (18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
IV. (19)* CAPACITY COST ESCALATION RATE	0 %

NON-FUEL ENERGY AND DEMAND CHARGES

V. (1) NON-FUEL COST IN CUSTOMER BILL	4.342 CENTS/KWH
V. (2) NON-FUEL ESCALATION RATE	1 %
V. (3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
V. (4) DEMAND CHARGE ESCALATION RATE	1 %
V. (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	0

CALCULATED BENEFITS AND COSTS

(1)* TRC TEST - BENEFIT/COST RATIO	1.08
(2)* PARTICIPANT NET BENEFITS (NPV)	603
(3)* RIM TEST - BENEFIT/COST RATIO	1.08

TOTAL RESOURCE COST TESTS
PROGRAM: Heating & Cooling

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2006	0	35	395	0	430	0	0	20	0	20	(410)	(410)
2007	0	31	355	0	387	0	0	50	0	50	(336)	(718)
2008	0	28	314	0	341	0	0	90	0	90	(252)	(930)
2009	0	0	0	0	0	62	0	93	0	155	155	(810)
2010	0	0	0	0	0	63	0	97	0	160	160	(697)
2011	0	0	0	0	0	65	0	89	0	154	154	(597)
2012	0	0	0	0	0	67	0	94	0	161	161	(502)
2013	0	0	0	0	0	69	0	97	0	166	166	(412)
2014	0	0	0	0	0	71	0	94	0	165	165	(330)
2015	0	0	0	0	0	73	0	100	0	173	173	(251)
2016	0	0	0	0	0	75	0	99	0	174	174	(178)
2017	0	0	0	0	0	77	0	110	0	187	187	(106)
2018	0	0	0	0	0	79	0	115	0	194	194	(37)
2019	0	0	0	0	0	81	0	120	0	202	202	28
2020	0	0	0	0	0	84	0	129	0	213	213	91
NOMINAL	0	94	1,064	0	1,158	866	0	1,398	0	2,264	1,106	
NPV:	0	87	984	0	1,071	420	0	742	0	1,162	91	
Discount Rate		0.0909	Benefit/Cost Ratio - [col (11)/col (6)]:				1.08					

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PARTICIPANT COSTS AND BENEFITS
PROGRAM: Heating & Cooling

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2006	31	0	136	0	167	395	0	0	395	(228)	(228)
2007	89	0	120	0	208	355	0	0	355	(147)	(363)
2008	137	0	103	0	241	314	0	0	314	(73)	(424)
2009	161	0	0	0	161	0	0	0	0	161	(300)
2010	166	0	0	0	166	0	0	0	0	166	(183)
2011	166	0	0	0	166	0	0	0	0	166	(75)
2012	168	0	0	0	168	0	0	0	0	168	24
2013	168	0	0	0	168	0	0	0	0	168	115
2014	169	0	0	0	169	0	0	0	0	169	200
2015	172	0	0	0	172	0	0	0	0	172	278
2016	173	0	0	0	173	0	0	0	0	173	351
2017	178	0	0	0	178	0	0	0	0	178	419
2018	184	0	0	0	184	0	0	0	0	184	484
2019	190	0	0	0	190	0	0	0	0	190	546
2020	195	0	0	0	195	0	0	0	0	195	603
NOMINAL	2,348	0	359	0	2,707	1,064	0	0	1,064	1,643	
NPV:	1,255	0	333	0	1,587	984	0	0	984	603	
In service year of gen unit:			2004								
Discount rate:			0.0909								

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**Tampa Electric Company
Exhibit C
Residential New Construction Program
Description**

Program: Residential New Construction Program

Program Start Date: July 2000

Program Description

Residential New Construction is a conservation program designed to reduce the growth of peak demand and energy in the residential new construction market through the installation of high efficiency equipment and building envelope options. The program utilizes incentives to encourage the construction of new homes to be above the minimum energy efficiency levels required in the State of Florida Energy Efficiency Code for New Construction. This will be achieved through the actions listed below.

1. The certification of new home construction that meets or exceeds the standards used in the Environmental Protection Agency's Energy Star Program.
2. Promoting the construction and purchase of energy efficient housing by educating builders (for profit and not-for-profit), trade groups, architects, realtors, lenders and home buyers in a manner designed to transform the residential new construction market by influencing decisions toward energy efficiency in building techniques and practices.
3. Placing an emphasis on securing participation by affordable housing builders and buyers through educational efforts, coordinated through affordable housing financiers and affordable housing builders.
4. Encouraging the use of environmentally friendly building techniques.

Program Participation Standards

1. Incentives for qualifying levels will be offered to the home buyer for the following installations:

<u>Level</u>	<u>Incentive</u>	<u>Requirement</u>
One	\$00.00	Duct closure with mastic that meets Tampa Electric guidelines for allowable duct leakage.

<u>Level</u>	<u>Incentive</u>	<u>Requirement</u>
Two	\$100.00 (per unit)	Meet Level One requirements plus installation of a heat pump with a minimum 14.0 SEER and a minimum 7.7 HSPF. OR Meet Level One requirement plus installation of an air conditioning system that has a minimum 14.0 SEER and heating source must not be electric resistance heat or fuel oil.
Three	\$100.00	Meet level One and Two requirements plus install R-30 ceiling insulation.
Four	\$100.00 (per unit)	Meet level One, Two, and Three requirements plus installation of heat recovery unit or a heat pump water heater (applicable only when used with an electric water heater).

The SEER values above are effective May 1, 2006.

2. The home must be single family detached. The HVAC system must be ducted.
3. The home and equipment must be accessible during construction and after construction for verification of program standards.
4. The home must be located in Tampa Electric's service area and be metered by Tampa Electric to receive incentives.
5. Only one incentive payment will be issued per home. The payment will be based on equipment or measures purchased prior to the certificate of occupancy.
6. Equipment specifications shall be according to Air Conditioning and Refrigeration Institute ("ARI") and the Gas Appliance Manufacturers Association standards (where applicable). Heat recovery water heaters must be equipped with a circulating pump and must be certified by the Association of Refrigeration Desuperheater Manufacturers.
7. The certification of new home construction that meets or exceeds the standards used in the EPA's Energy Star Program will follow the Guidelines for Uniformity, Voluntary Procedures for Home Energy Ratings, prepared by the Home Energy Rating Systems ("HERS") Council and the Florida Addendum to the National HERS Council Guidelines, December

1998. Certification will be provided at no cost to participating builders or homeowners.

8. Tampa Electric guidelines for allowable duct leakage are based on the procedures set by the Department of Community Affairs used to measure acceptable HERS duct leakage standards. Mastic approved by the State of Florida Energy Efficiency Code for New Construction must be used on all duct closures.
9. The homebuyer will be responsible for installation of qualifying equipment or measures as well as the correction of any items necessary to meet the program standards. The homebuyer will receive the incentive payment when program standards have been met.
10. The builder or homebuyer submits a rebate request form to Tampa Electric. The builder will sign the form certifying that the equipment or measures installed are in accordance with the program standards. The homebuyer will sign the form verifying that the equipment and upgrades were installed and the incentive recipient's name and mailing address are correct.
11. Tampa Electric will randomly perform full field verification on a minimum of 10% of the participating homes. Forms not selected for field review will have an office verification to validate information.
12. All applications will receive either field verification or office validation prior to payment being made.
13. To determine eligibility for participation, building permits must be dated subsequent to program implementation.
14. The reporting requirements for this program will follow Rule 25-17.0021 (5), F.A.C. Additionally, program expenses will be identified in the ECCR True-Up and Projection Filings.

Program Savings and Costs

Tampa Electric used the data from SRC to determine the savings for new construction. The savings for the levels of customer participation are as follows:

Savings:

Level One

	Summer kW	Winter kW	Annual kWh
Electric	0.341	0.278	691
Gas	0.341	0.000	518

Level Two

	Summer kW	Winter kW	Annual kWh
Electric	0.491	0.378	1,156
Gas	0.491	0.000	814

Level Three

Electric	0.559	0.467	1,300
Gas	0.559	0.000	914

Level Four

Electric	0.750	0.467	1,850
Composite	0.669	0.467	1,614

Composite cost estimates are as follows:

Administrative costs per participant:	\$166.00
Incentive costs per participant:	\$257.00

Program Monitoring and Evaluation

Tampa Electric utilized the engineering estimates and computer modeling from the SRC Study for the demand and energy savings. Tampa Electric will monitor and evaluate this program through cost-effective techniques approved in the company's previously filed Demand Side Management Monitoring and Evaluation Plan, Docket No. 941173-EG.

**Tampa Electric Company
Exhibit D
Residential New Construction Program Cost-
Effectiveness Tests**

INPUT DATA - PART 1
PROGRAM TITLE: Residential New Construction

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PROGRAM DEMAND SAVINGS & LINE LOSSES

I. (1) CUSTOMER KW REDUCTION AT THE METER	0.869 KW /CUST
I. (2) GENERATOR KW REDUCTION PER CUSTOMER	0.703 KW GEN/CUST
I. (3) KW LINE LOSS PERCENTAGE	6.6 %
I. (4) GENERATION KWH REDUCTION PER CUSTOMER	1717 KWH/CUST/YR
I. (5) KWH LINE LOSS PERCENTAGE	6.0 %
I. (6) GROUP LINE LOSS MULTIPLIER	1
I. (7) CUSTOMER KWH PROGRAM INCREASE AT METER	0 KWH/CUST/YR
I. (8)* CUSTOMER KWH REDUCTION AT METER	1614 KWH/CUST/YR

ECONOMIC LIFE & K FACTORS

II. (1) STUDY PERIOD FOR CONSERVATION PROGRAM	15 YEARS
II. (2) GENERATOR ECONOMIC LIFE	26 YEARS
II. (3) T & D ECONOMIC LIFE	26 YEARS
II. (4) K FACTOR FOR GENERATION	1.6926
II. (5) K FACTOR FOR T & D	1.6926
II. (6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

UTILITY & CUSTOMER COSTS

III. (1) UTILITY NONRECURRING COST PER CUSTOMER	166.00 \$/CUST
III. (2) UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
III. (3) UTILITY COST ESCALATION RATE	2.2 %
III. (4) CUSTOMER EQUIPMENT COST	1021.00 \$/CUST
III. (5) CUSTOMER EQUIPMENT ESCALATION RATE	2.2 %
III. (6) CUSTOMER O & M COST	0 \$/CUST/YR
III. (7) CUSTOMER O & M ESCALATION RATE	2.2 %
III. (8)* CUSTOMER TAX CREDIT PER INSTALLATION	0 \$/CUST
III. (9)* CUSTOMER TAX CREDIT ESCALATION RATE	0 %
III. (10)* INCREASED SUPPLY COSTS	0 \$/CUST/YR
III. (11)* SUPPLY COSTS ESCALATION RATE	0 %
III. (12)* UTILITY DISCOUNT RATE	0.0909
III. (13)* UTILITY AFUDC RATE	0.0779
III. (14)* UTILITY NON RECURRING REBATE/INCENTIVE	257.00 \$/CUST
III. (15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
III. (16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0 %

AVOIDED GENERATOR, TRANS. & DIST COSTS

IV. (1) BASE YEAR	2006
IV. (2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2009
IV. (3) IN-SERVICE YEAR FOR AVOIDED T & D	2009
IV. (4) BASE YEAR AVOIDED GENERATING UNIT COST	230.56 \$/KW
IV. (5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
IV. (6) BASE YEAR DISTRIBUTION COST	0 \$/KW
IV. (7) GEN, TRAN, & DIST COST ESCALATION RATE	2.3 %
IV. (8) GENERATOR FIXED O & M COST	2.623 \$/KW/YR
IV. (9) GENERATOR FIXED O&M ESCALATION RATE	2.2 %
IV. (10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
IV. (11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
IV. (12) T&D FIXED O&M ESCALATION RATE	2.2 %
IV. (13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.8394 CENTS/KWH
IV. (14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.2 %
IV. (15) GENERATOR CAPACITY FACTOR	6.5 %
IV. (16) AVOIDED GENERATING UNIT FUEL COST	8.72 CENTS/KWH
IV. (17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.2043 %
IV. (18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
IV. (19)* CAPACITY COST ESCALATION RATE	0 %

NON-FUEL ENERGY AND DEMAND CHARGES

V. (1) NON-FUEL COST IN CUSTOMER BILL	4.342 CENTS/KWH
V. (2) NON-FUEL ESCALATION RATE	1 %
V. (3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
V. (4) DEMAND CHARGE ESCALATION RATE	1 %
V. (5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	0

CALCULATED BENEFITS AND COSTS	
(1)* TRC TEST - BENEFIT/COST RATIO	1.05
(2)* PARTICIPANT NET BENEFITS (NPV)	16
(3)* RIM TEST - BENEFIT/COST RATIO	1.24

TOTAL RESOURCE COST TESTS
PROGRAM: Residential New Construction

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)	
2006	0	3	20	0	24	0	0	1	0	1	(23)	(23)	
2007	0	3	16	0	18	0	0	2	0	2	(16)	(37)	
2008	0	2	11	0	12	0	0	4	0	4	(8)	(44)	
2009	0	0	0	0	0	3	0	4	0	7	7	(39)	
2010	0	0	0	0	0	3	0	4	0	7	7	(34)	
2011	0	0	0	0	0	3	0	4	0	7	7	(29)	
2012	0	0	0	0	0	3	0	4	0	7	7	(25)	
2013	0	0	0	0	0	3	0	4	0	8	8	(20)	
2014	0	0	0	0	0	4	0	4	0	8	8	(17)	
2015	0	0	0	0	0	4	0	4	0	8	8	(13)	
2016	0	0	0	0	0	4	0	4	0	8	8	(10)	
2017	0	0	0	0	0	4	0	5	0	9	9	(6)	
2018	0	0	0	0	0	4	0	5	0	9	9	(3)	
2019	0	0	0	0	0	4	0	5	0	9	9	(0)	
2020	0	0	0	0	0	4	0	6	0	10	10	3	
NOMINAL	0	8	47	0	54	43	0	61	0	104	50		
NPV:	0	7	44	0	51	21	0	32	0	53	3		
Discount Rate		0.0909	Benefit/Cost Ratio - [col (11)/col (6)];					1.05					

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PARTICIPANT COSTS AND BENEFITS
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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2006	1	0	5	0	7	20	0	0	20	(14)	(14)
2007	4	0	4	0	8	16	0	0	16	(8)	(21)
2008	6	0	3	0	8	11	0	0	11	(3)	(23)
2009	6	0	0	0	6	0	0	0	0	6	(19)
2010	6	0	0	0	6	0	0	0	0	6	(14)
2011	6	0	0	0	6	0	0	0	0	6	(10)
2012	7	0	0	0	7	0	0	0	0	7	(6)
2013	6	0	0	0	6	0	0	0	0	6	(2)
2014	7	0	0	0	7	0	0	0	0	7	1
2015	7	0	0	0	7	0	0	0	0	7	4
2016	7	0	0	0	7	0	0	0	0	7	7
2017	7	0	0	0	7	0	0	0	0	7	9
2018	7	0	0	0	7	0	0	0	0	7	12
2019	7	0	0	0	7	0	0	0	0	7	14
2020	8	0	0	0	8	0	0	0	0	8	16
NOMINAL	92	0	12	0	103	47	0	0	47	56	
NPV:	49	0	11	0	60	44	0	0	44	16	
In service year of gen unit:			2004								
Discount rate:			0.0909								

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