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A Focus Ahead of Its Time: *Tampa Electric was the first utility in Florida to launch conservation goals and to meet all required conservation goals.*

ENERGY EFFICIENCY

Tampa Electric's commitment to the environment also involves encouraging customers to use energy wisely. Through conservation efforts, the company can postpone the building of future generation facilities. To date, nearly 400,000 customers have participated in the company's energy efficiency programs.

Since 1981, the company's conservation programs have reduced the summer demand by 222 megawatts (enough to supply 60,000 homes annually) and the winter demand by 659 megawatts (enough to supply 145,000 homes annually).

Tampa Electric began its conservation program initiatives in the late 1970s prior to any federal or state energy conservation requirements. The company started by offering its customers a computer-assisted energy audit.

From 1979 to 2007, the company's conservation programs have offset the need to generate enough electricity to serve more than 550,000 average-size homes over a 12-month period.

When the Florida Legislature passed the 1980 Florida Energy Efficiency and Conservation Act, Tampa Electric developed an expanded conservation program portfolio in 1981. The company focused on residential customers and specifically targeted the reduction of the winter energy use, when it experiences the greatest demand for energy. A limited number of commercial and industrial programs were also developed.

By 1989, Tampa Electric was the only utility in Florida to have met its conservation goals. Since that time, the company has evaluated hundreds of potential residential and commercial conservation programs for cost-effectiveness and many programs have been added to the company's original conservation programs that have remained mainstays for the company for almost 30 years.

Residential Energy Audit Program



In October 2007, the company received permission from the Florida Public Service Commission to expand its existing portfolio of energy efficiency programs by modifying nine existing programs and adding 13 new programs.

Through 2007, Tampa Electric had spent over \$400 million delivering cost-effective conservation programs to the marketplace. The resulting energy and cost savings benefit everyone because the utility can delay building costly generation and customers save on their energy bills.

Residential Energy Efficiency Programs

Tampa Electric's Energy Audit Programs

These offer convenient ways to help customers identify and evaluate cost-effective and energy efficient measures for their home through direct contact with the company's energy analysts. With each audit, Tampa Electric also will make a free pack of eight energy-efficient compact fluorescent light bulbs available to customers who participate.

- **On-site Audit:** This program consists of a free walk-through audit where data on the structure of the residence and the customer's lifestyle are collected. Trained analysts use data gathered to present only those recommendations that apply to the residence.
- **Online Audit:** Customers are supplied with energy data collection forms via the company's Web site that gather data on the structure of the residence and the customer's lifestyle. This information is analyzed and returned to the customer.

- **Residential Phone Assisted Audit:** Customers speak directly with a Tampa Electric representative to answer questions about their home and energy use. This information is analyzed and returned to the customer.
- **Residential Conservation Service Audit:** This program consists of a comprehensive audit where specific data on the structure of the residence and the customer's lifestyle are collected. Trained analysts enter data into a computer program that calculates installation cost, investment, payback period and estimated energy savings of available conservation measures. There is a nominal charge for the audit.

“We believe that conservation and energy efficiency are key resources to meet our customers' future energy needs while controlling costs and the environmental impact of our energy supply. Conservation and energy efficiency programs also help us reduce, offset or avoid greenhouse gas emissions and reach other environmental goals.”

- TECO Energy Environmental Policy

Energy PlannerSM Program

This program is designed to save demand and energy through a multi-tiered rate structure combined with price signals conveyed to participating customers during the day. This price information is designed to encourage customers to make behavioral or equipment usage changes to their energy consumption, thereby achieving the desired high-cost period load reduction to assist in meeting system peak. Price information from the utility is used by the customer to program a "smart" thermostat to preset actions based on the level of pricing. Equipment may be turned on, turned off or changed to a different temperature setting automatically by the smart thermostat or manually by the customer in response to either the multi-tiered rates or critical price signals.



Residential Building Envelope

This program is designed to reduce demand and save energy by decreasing the load on residential air conditioning and heating (HVAC) equipment. Eligible customers can receive incentives to add ceiling insulation, exterior wall insulation, window replacement and window film.

Ductwork

This program is designed to reduce demand and save energy by decreasing the load on HVAC equipment. The program eliminates or reduces HVAC losses by sealing and repairing the air distribution system (ADS). Repairs are assigned to a Tampa Electric-appointed HVAC contractor. The customer's fee is \$50 for a typical single-family application; however, extensive repairs or replacement of an existing ADS can result in a higher fee. Customers are provided with an estimate prior to work being performed.

Heating and Cooling

This rebate program is aimed at reducing the growth of weather-sensitive peak demand and energy through two types of HVAC replacement. Type one is a heat pump replacing resistance heat and type two is a heat pump replacing a heat pump. Both types of equipment replacement have a threshold for qualification of 14 Seasonal Energy Efficiency Ratio (SEER).

New Construction Program

This program is designed to reduce peak demand and energy in the residential new construction market through the installation of high-efficiency equipment and building envelope options. The program uses 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.

Residential
Ductwork



Residential
Heating & Cooling Program



Low Income Program

This program is designed to reduce demand and save energy by decreasing the energy consumption at a residence. Aimed at low-income customers, the following will be provided at no cost to qualified customers (*where applicable*):

- Eight compact fluorescent light bulbs
- One water heater wrap
- Three low-flow faucet aerators and two showerheads
- Window HVAC weather-stripping kit
- Wall plate thermometers
- HVAC filters, weather-stripping and caulking
- Ceiling insulation

Educational Awareness (pilot)

This program is designed to reduce demand and save energy by increasing customer awareness of available conservation measures and practices that can reduce their energy use. Tampa Electric will partner with schools within its service area at the eighth grade level to teach students the benefits of energy efficiency.



Energy efficiency blitz. Tampa Electric team members took to the streets in the spring of 2008, joining forces with a local social service organization and a national retail chain to deliver energy-saving products to low-income residents in the Tampa area. During the two-day blitz, more than 100 households received home energy audits and weatherization kits at no cost.

Residential New Construction Program



Residential Low Income Program



Commercial/Industrial Energy Efficiency Programs

Energy Audit – Free

At no charge to customers, this program is designed to reduce demand and energy consumption by increasing customer awareness of energy use in his or her facilities. Recommendations are based on the replacement of less efficient equipment and systems or modifications to operations to enhance the customer's overall efficiency. 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.

Energy Audit

This program is designed to reduce demand and energy consumption by increasing customer awareness of energy use in his or her facilities. It is a more detailed audit that may involve the monitoring of specific equipment within a customer's facility to determine its electric usage with respect to time of operation. Based on results, recommended changes to save energy from equipment and/or operation are made.

Duct Repair

This program is designed to reduce demand and energy by decreasing the load on HVAC equipment. This program eliminates or reduces HVAC losses by sealing and repairing the air distribution system. Repairs are assigned to a Tampa Electric-appointed HVAC contractor. Tampa Electric will provide incentives to customers who take advantage of this program.

Building Envelope

This program is designed to reduce demand and save energy by decreasing the load on HVAC equipment. Eligible customers can receive incentives to add ceiling insulation, exterior wall insulation and window film.

Lighting Program

This program is designed to reduce demand and save energy by encouraging investment in more efficient fluorescent lighting technology. The customer receives an incentive by achieving a minimum of one kilowatt in lighting reduction from any lighting source retrofitted with more efficient fluorescent lighting systems (ballast and lamps).

Load Management Program

This program is designed to control summer and winter peak demand. Monthly credits are paid, based on duration of interruption, for control of specified end-use equipment. Large loads, such as walk-in freezers, are interrupted for up to three hours, and commercial air conditioning equipment is cycled off for 15 minute intervals during summer control periods.

Standby Generator Program

This program is designed to utilize the on-site generation at customer's facilities in order to reduce the utility's weather-sensitive peak demand. Participating customers are given a 30-minute notice to start their generators and arrange for the orderly transfer of load. The standby

Commercial Energy Audit



Commercial Lighting Program



generators are typically metered to determine the average portion of customer load served by the generators when called on by Tampa Electric.

Conservation Value Program

This program provides incentives to encourage investments in measures that substantially reduce or shift demand, but which have limited application within the commercial sector and are consequently not covered under other Demand Side Management programs offered by Tampa Electric. To be approved, the measure must have a minimum summer and/or winter average demand savings of five kilowatts.

Cooling Program

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

Chillers Program

This program is aimed at reducing the growth of peak demand and energy by encouraging customers to replace worn out, inefficient cooling equipment with high-efficiency equipment that exceeds minimum product manufacturing standards. High-efficiency replacement equipment meeting program standards is eligible for an incentive.

Industrial Load Management Program

This is a load management program for large industrial customers with interruptible loads of 500 kilowatts or greater. The contracted credit value paid for this service is established every year.

Energy Efficient Motors

This program is designed to encourage customers to install premium-efficiency motors in new or existing facilities through incentives. The program is aimed at reducing the growth of peak demand and energy by encouraging customers to replace worn out, inefficient equipment with high-efficiency equipment that exceeds minimum product manufacturing standards. Replacement motors meeting program standards are eligible for an incentive.

Demand Response Program

This program is intended to help alter the company's system load curve by reducing summer and winter demand peaks. The company has contracted with an energy service vendor to help customers reduce their demand for electricity in response to market signals. Reductions will be achieved through a mix of emergency backup generation, energy management systems, cooling set-point adjustments and lighting and signage adjustments.

Commercial Standby Generator Program



Commercial Load Management Program



Lighting Occupancy Sensor Program

This program is aimed at reducing the growth of peak demand and energy by providing an incentive to encourage customers to install occupancy sensors in any area where indoor lights would be used on peak. Tampa Electric will provide incentives to customers who install qualifying controls and equipment that reduce lighting usage.

Refrigeration (Anti-condensate)

This program is designed to reduce the peak demand and energy consumption for customers by increasing the use of efficient refrigeration controls and equipment. Tampa Electric will provide incentives to customers who install qualifying controls and equipment that reduce electric strip heater usage in refrigeration equipment.

Water Heating Program

This program is designed to encourage customers to install high-efficiency water heating systems, thereby reducing future growth of peak demand and energy consumption. Two technologies covered under this program are heat recovery units and heat pump water heaters. Tampa Electric will provide incentives to customers who install qualifying water heating systems that reduce electric strip heater usage.

Cogeneration

This program provides incentives for development of cost-effective commercial and industrial cogeneration facilities. These facilities serve the needs of the customer, either by using waste heat from the customer’s own process to power a turbine generator or by using waste heat from the turbine generator in the customer’s process. These facilities require significant capital investments. In each case, any excess energy is sold back to the company.

Customer Participation Levels

PROGRAM	CUSTOMERS
Residential and Commercial/Industrial On-Site Audits	262,000
Residential and Commercial Computer-Assisted Audits (Online or Mail-in)	112,000
Heating and Cooling Rebates	162,000
Ceiling Insulation Incentives	81,000
Duct Repair Incentives	60,000
Energy Plus Homes Incentives	40
Residential Load Management (Prime Time Participants)	54,000
Commercial Load Management Participants	15
Commercial Indoor Lighting Incentives	1,100
Standby Generator Participants	40
Conservation Value Incentives	30
Commercial Cooling Rebates	620
Energy Planner sm	170
Cogeneration	12

Peoples Gas Programs

Peoples Gas has offered programs for over 25 years that increase energy efficiency, encourage the development of gas-fired cogeneration and increase conservation of petroleum fuels by promoting direct use of natural gas. An electric home converting an electric water heater to a gas-fired heater saves more than 2,700 pounds of carbon annually. The conversion of an electric range and electric dryer to gas saves 1,100 pounds of carbon annually. (The figures are based on calculations for electric generation in Florida.)

Peoples Gas offers incentives to customers to help reduce the cost of piping and venting and assist customers in paying less when purchasing new appliances. Many residential customers participate in the Appliance Replacement Program and the Appliance Retention Program, which offer rebates for natural gas water heating, home heating, cooking and clothes drying. In addition, a new homebuilder can receive up to \$1,000 for the purchase and installation of certain natural gas appliances. The schedules also include rebates for customers who replace their existing natural gas water heater with a tankless water heater, an innovative appliance that provides continuous hot water but uses less water and less energy.

Since 1981, Peoples Gas has spent over \$150 million providing rebates for more than 700,000 appliances to more than 200,000 customers.

Through its membership in the Florida Natural Gas Association, Peoples Gas is participating in research to study the feasibility of installing combination solar and natural gas water heating systems in multifamily residences. Conceptually, the installation would consist of solar water heating equipment with tankless gas water heaters to back up the production of solar hot water on days where the demand for hot water cannot be met by solar energy.

RENEWABLE ENERGY

Traditional methods of electricity generation rely on non-renewable fuel sources called fossil fuels, such as coal, oil and natural gas. Renewable energy is electricity produced from sources such as the sun, wind, biomass (plant material) and water.

Using renewable resources is another way Tampa Electric helps preserve the environment, by further reducing the amounts of air emissions and greenhouse

“Tampa Electric believes renewables should be considered as part of a diverse energy supply portfolio, and we are pursuing options that can help us continue to provide reliable and affordable energy to customers. Tampa Electric’s renewable energy program offers to sell renewable energy as an option to customers and utilizes real energy generated in the state from renewable sources (e.g., biomass and solar.)”

-TECO Energy Environmental Policy

gases associated with traditional generation methods.

In late 2000, Tampa Electric began its Renewable Energy program, which allows residential and business customers to buy a portion of their energy requirements from renewable resources.

Tampa Electric’s Renewable Energy program uses energy from several resources to support customer demand for its renewable program, including:

(1) *Biomass*, which is organic plant material from yard clippings and other vegetation. Tampa Electric has tested Bahia grass as a fuel to generate electricity at its Polk Power Station. More than 60 tons of Bahia grass, grown and harvested on the 4,300-acre plant site, have been ground and mixed with the pulverized coal slurry used in the plant’s gasifier.

(2) *Solar*, photovoltaic panels located at the Museum of Science and Industry (18,000 watts), Tampa Electric’s

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Below left: Tarpon Key Oyster Habitat Creation Center: Fantasy Island Right: Osprey



Manatee Viewing Center in Apollo Beach (7,000 watts) and Walker Middle School in Odessa (4,000 watts), which harness energy from the sun. In April 2007, the company installed a 10,500-watt solar array, the largest at a public school in Florida, Middleton High School. The array is part of the school's curriculum. In case of a natural disaster or other emergency, the array provides supplemental power for the Red Cross shelter located at the school.

Under the Renewable Energy program, residential and business customers can purchase "blocks" of renewable energy for \$5 per month, added to the monthly electric bill. For each block purchased, Tampa Electric distributes 200 kilowatt-hours of energy generated from renewable resources. Since 2004, customer participation in the program has increased from 233 to 1,552 participants.

One block of renewable energy per year offsets the same amount of CO₂ as not driving an average passenger car for three months. Three blocks for a year reduce the same amount of CO₂ as planting about an acre of trees.

Through the end of 2007, the environmental impacts of customer participation in the program have been significant:

- More than 10 million kilowatt-hours of renewable energy have been produced to support participating customer requirements.
- CO₂ reductions from using renewable resources are the equivalent of planting more than 2,000 acres of trees or removing more than 1,000 cars from the street.

Tampa Electric is also in the final stages of evaluating responses to its request for proposals for 150 megawatts of energy from renewable sources.

STEWARDSHIP

Tampa Electric was recognized by the Hillsborough County Environmental Protection Commission in 2007 with a proclamation for Clean Air Month and in 2008 with a proclamation for Pollution Prevention Week. Specific stewardship initiatives include:

Oyster Habitat Creation. Tampa Electric has worked with Tampa Bay Watch to create oyster habitat and plant salt marshes on both sides of Tampa Bay at Mullet Key, Whiskey Stump Key and Tarpon Key.

Fantasy Island. Tampa Electric, the Florida Aquarium and the Tampa Port Authority joined forces to restore habitat on a man-made, three-acre dredge material spoil island just north of the Alafia River in Hillsborough Bay. Exotic (non-native) plant species were removed from the island and replaced with native species. A dock and science classroom also were constructed on the island.

Avian Protection Program. In 2004, the Osprey Program (initiated in 1988) was expanded to become an overall avian protection program. Tampa Electric's service area is located amid one of the state's and the nation's most important avian migration thruways, and is home to seasonal nesting sites for dozens of bird species. The program is designed to help prevent large birds of prey, such as ospreys and hawks, from electrocution and collisions with electric infrastructure, and to guide the company on nest removal and relocation for all species of birds.

This program helps Tampa Electric identify at-risk species of birds, document bird use of high-risk electric infrastruc-

ture equipment, recommend appropriate equipment retrofits to minimize electrocution risk and develop bird-friendly standards for new construction.

It has identified potential problem areas based on field surveys within the service territory. The retrofit project will be implemented through 2009 and was developed for Tampa Electric by a nationally-recognized wildlife biologist.

The company has donated nesting sites within its service area and worked with the City of Tampa to install four nesting sites in city parks.

Newman Branch Restoration Project. Tampa Electric, in partnership with the National Oceanic and Atmospheric Administration, the Southwest Florida Water Management District (Swiftmud) and the Pinellas County Environmental Fund restored 11 acres of coastal marsh, mangrove forest and saltern habitats along Newman Branch Creek. This innovative public and private partnership restored environmentally sensitive lands and helped improve the water quality of Tampa Bay.

To date, volunteers have planted thousands of native wetland and upland plants along the newly restored coastal shorelines, which provides habitat for foraging



Renewable energy. Among Tampa Electric's renewable resources is this new photovoltaic array installed at the company's Manatee Viewing Center. It joins other installations at local public schools and the Museum of Science and Industry.

shorebirds, shoreline invertebrates, juvenile fish and other aquatic animal species. Local students use the Newman Branch site as an outdoor classroom, learning about the importance of salt marsh ecosystems and mangrove habitats.



Manatee Viewing Center

Overlooking Big Bend Power Station's warm water discharge canal and serving as one of the area's most popular environmental sanctuaries, Tampa Electric's Manatee Viewing Center has attracted over 2 million visitors since Tampa Electric initiated it in 1986. Endangered manatees gather in the warm waters of the canal each winter, and visitors can view them from the center's 900-foot walkway and numerous observation platforms.

The center also houses the Manatee Museum, an environmental education facility that raises awareness about Florida's natural avian and aquatic life and power plant operations. Displays include a full-sized manatee skeleton, an Audubon bird photography exhibit, mini-theaters, a children's interactive area and other educational materials.

The facility also has a butterfly garden and a demonstration garden highlighting "Florida-friendly" landscaping principles. Recently, Tampa Electric added a photovoltaic array to the roof of the Manatee Museum.

Two Webcams, focused on the canal waters and the manatees, make it possible to observe manatees across the Internet in their natural habitat.



In 2008, this project was honored with an award of Environmental Excellence by the Hillsborough County Planning Commission and recognized by Swiftmud's Conservation Lands Program.

Environmental Education Curriculum. Tampa Electric partners with Swiftmud to educate children and adults on the role fresh water plays in an estuarine system. The program includes the distribution of booklets targeting teachers of grades 2-5 who visit the Manatee Viewing Center.

TECO Coal

TECO Coal's reforestation efforts have increased aesthetic land values and provided an enhanced habitat for wildlife.

In some cases, such as the threatened Indiana Bat (*Myotis sodalist*), new habitats have been created. The Indiana Bat is an IUCN Red List species in category E, which means it has a 10 percent probability of extinction within 100 years. Pre-mine bat counts are required and performed prior to the start of mining operations, and accommodations are made during active mining for the use of their "maternity trees." Post-mining land use requirements establish Indiana Bat roosts and maternity tree stands.

TECO Coal also is committed to a PRIDE program (Personal Responsibility in a Desirable Environment), established in 1997 by Congressman Hal Rogers and the late General James Bickford, former Kentucky Secretary of Natural Resources and Environmental Protection.

The goal of PRIDE is to eliminate pollution of the land and water in eastern and southeastern Kentucky. In conjunction with PRIDE, TECO Coal team members are involved in a variety of clean-up activities, ranging from eliminating illegal dump sites that threaten the integrity of the local water supplies to picking up trash along roadways. The company also sponsors a televised Volunteer of the Month recognition program on behalf of PRIDE.

TECO Coal received the prestigious Rogers-Bickford Environmental Leadership Award in 2002. The award is given to the individual, civic group or business in Kentucky that has demonstrated environmental leadership for others to follow.

COMMUNITY INVOLVEMENT

The company's commitment to the community is backed by actions that demonstrate support for organizations that enhance the quality of the environment. Team members also participate in groups that enhance and improve the area's quality of life, including the following:

Tampa Electric Environmental Sponsorships and Involvement:

Egmont Key Alliance

Mote Marine Laboratory

Pinellas County Environmental Fund

Keep Hillsborough County Beautiful

Save Our Seabirds



Tampa Electric Environmental Sponsorships and Involvement, continued:

- Suncoast Earth Force*
- Tampa Bay Watch*
- Manatee Menagerie*
- The Florida Fish and Wildlife Research Institute*
Manatee Photo Identification Program
- Tampa Audubon Society*
- Audubon of Florida*
- National Audubon Society*
- Lowry Park Zoo*
- Florida Lake Management Society*
- Florida Native Plant Society*
- Agency on Bay Management*
- Hillsborough Greenways Program*
- Hillsborough River Watershed Alliance*
- Invasive Species Task Force of Hillsborough County*
- Florida Exotic Pest Plant Council*
- Save the Manatee Club*
- Mayor's Annual Hillsborough River Cleanup*
- Manatee Awareness Coalition*
- Tampa Bay Group of the Sierra Club*
- Southwest Florida Water Management*
 - *District Alafia River Basin Board*
 - *Tampa Bay Estuary Program*

Professional Groups and Associations

- The Auditing Roundtable*
- Academy of Board Certified Environmental Professionals*
- American Academy of Environmental Engineers*
- Board of Environmental, Health and Safety Auditor Certification*
- American Society of Board of Environmental, Health and Safety Auditor Certification*
- Edison Electric Institute*
- EHS Auditing Task Force Global Climate Change Committee*
- Utility Solid Waste Activities Group*
- Utility Water Act Group*
- Florida Air & Waste Management Association*
- Florida Society of Environmental Analysts*
- National Association of Environmental Professionals*
- National Registry of Environmental Professionals*
- Recycle Florida Today*
- Source Evaluation Society*
- Tampa Bay Association of Environmental Professionals*
- Tampa Bay Estuary Program Nitrogen Management Consortium*
- Tampa Bay Spill Committee*
- Society of Wetland Scientists*



Appendix A | Emissions Reduction Charts



