

discussion and analysis

INTRODUCTION

Tampa Electric is committed to protecting and enhancing the environment and conducting business with the highest regard for ethics, regulatory authority, and the spirit as well as the letter of the law.

The company's commitment to the environment can be summed up in six key strategies:

1. Reduction of emissions from major power plants using state-of-the-art technology and innovative techniques.
2. Ongoing monitoring of compliance with local, state and national regulations.

3. Regular monitoring of the cost of future requirements, including for greenhouse gas reductions, to customers of Tampa Electric and shareholders of TECO Energy.

4. Maintenance of a diverse fuel mix, which includes the responsible use of coal, a plentiful, cost-efficient and reliable source of energy.

5. Active participation in legislative and global movements addressing environmental concerns.

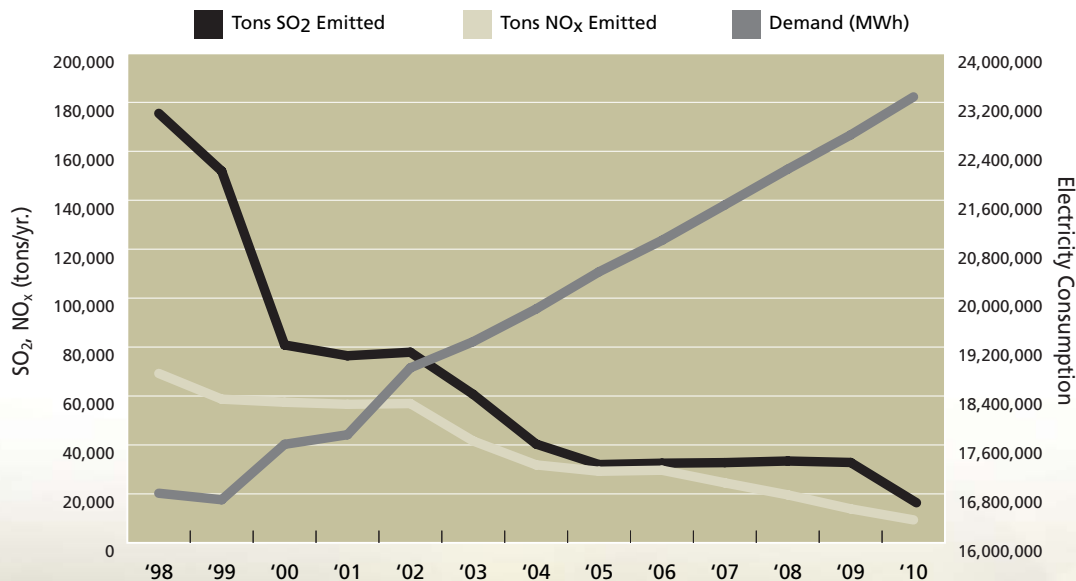
6. Evaluation and development of conservation programs, as well as renewables and green power.

Strategy One: Emissions Reduction Using State-of-the-Art Technology

Tampa Electric's emissions reduction efforts are focused on its three major power plants: H.L. Culbreath Bayside Power Station (Bayside); Big Bend Power Station (Big Bend); and Polk Power Station (Polk).

In terms of what it has already achieved in emissions reduction, it is significant that while the company's production of electricity has increased due to growth in customer demand, the overall emission reduction levels for sulfur dioxide (SO₂) and nitrogen oxides (NO_x) have decreased, as shown in the chart below.

SO₂ and NO_x Emissions Compared to Electricity Consumption



*Future emissions are based on projected values and are subject to change. Emissions include Big Bend Power Station, Gannon/H. L. Culbreath Bayside Power Station, Hookers Point, Dinner Lake, Phillips and Polk power stations.

As of 2004, Tampa Electric had reduced annual SO₂, NO_x and particulate matter (PM) from its facilities by 161,600 tons, 39,500 tons and 4,300 tons, respectively, from 1998 levels.

The reduction of emissions over the past five to ten years has centered around the following:

- Repowering of the 50-year-old Gannon Station to the natural gas-fired Bayside facility;
- Continuing employment of the flue gas desulfurization (“scrubber”) systems at Big Bend; and
- Combustion optimization and optimization of electrostatic precipitator equipment at Big Bend to reduce PM.

Bayside Repowering

Tampa Electric’s decision to repower Bayside and to switch to natural gas was based on several factors: (1) the company’s need to satisfy increasing customer demand for reliable electricity at reasonable costs; (2) the ability to continue meeting environmental compliance regulations; (3) utilization of existing substations and transmission facilities; (4) the availability of natural gas from existing and proposed natural gas pipelines in the area; and (5) the opportunity to reuse existing plant equipment.

The repowering in April 2003 (Unit 1) and January 2004 (Unit 2) has resulted in significant reductions in emissions of all pollutant types. Shutting down the coal-fired Gannon has reduced the facility’s NO_x and SO₂ emissions by approximately 99 percent. Particulate matter emissions have decreased approximately 92 percent from 1998 levels.

The project also resulted in decreases in other pollutants such as carbon dioxide (CO₂). Reductions of over 53 percent have been realized since 1998. The repowering is credited as a significant factor contributing to the Tampa Bay area’s current attainment of National Ambient Air Quality Standards.

Big Bend Station

Reductions in SO₂ emissions were accomplished by installing scrubbers on Units 1 and 2 in 1999. Unit 4 was originally constructed with a scrubber, which was modified in 1994 to allow it to scrub emissions from Unit 3 as well. Currently, the scrubbers at Big Bend Station remove more than 95 percent of the SO₂ emissions from the flue gas streams.

In addition, the company conducted a study of improved particulate removal and monitoring at Big Bend, and made improvements based on the results. Improvements included upgrading and enhancing the electrostatic precipitators used to control PM. The company implemented rigorous electrostatic precipitator operation and maintenance procedures to improve the effectiveness of these control devices.

The company has also completed further reduction of SO₂ emissions by investing more than \$23 million in scrubber upgrades, adding to reductions previously achieved through the installation of scrubbers on Big Bend Units 1 and 2 for a total reduction of more than 88 percent from 1998 levels.

For PM, the company completed an optimization of its electrostatic precipitators in 2004 to minimize these emissions, adding to the significant PM reductions achieved through the Bayside repowering for a total system-wide reduction of approximately 73 percent when compared to 1998 levels.

Future Emission Reductions

Using a variety of proven technologies, Tampa Electric expects to reduce both SO₂ and NO_x emissions system-wide by about 89 percent from 1998 levels by the year 2010 (See *charts on pages 20 and 21.*)

Central to future emissions reduction efforts is the installation of selective catalytic reduction (SCR) technology on each Big Bend unit at a cost of \$330 million. This technology is expected to reduce NO_x emissions at the plant by roughly 85 percent.

Big Bend generates about 1,700 megawatts of electricity from coal. Increasing customer growth in Tampa Electric's market requires a reliable supply of electricity, and coal is an abundant and affordable fuel with which to produce it. SCR technology is the best available control technology in the industry to ensure emissions reductions and fuel diversity.

The project timeline for the installation of the SCR is:

- Unit 4 completion, June 1, 2007
- Unit 3 completion, May 1, 2008
- Unit 2 completion, May 1, 2009
- Unit 1 completion, May 1, 2010

The SCR, combined with the existing scrubbers, will also help reduce mercury (Hg) levels. At Big Bend, the company expects a reduction of more than 70 percent of Hg emissions from 1998 levels by 2010 because the SCR technology at Big Bend oxidizes the Hg to a compound more readily removed in the scrubber system. The company doesn't expect to require additional control equipment beyond what is currently planned until 2018, when Phase II of the Clean Air Mercury Rule takes effect.

To further address NO_x, the company has made combustion modifications to all four units, which will result in early NO_x emissions reductions of 15,000 tons by June 2007. By the end of 2010, Big Bend's NO_x emissions will be reduced by roughly 85 percent from uncontrolled emission levels through combustion modifications and the installation of SCR technology on each unit.

Polk Power Station

Central to the Polk Power Station is a 260-megawatt integrated coal gasification combined-cycle (IGCC) unit (Unit 1) that began commercial operation in the fall of 1996. Polk also has two 180-megawatt simple-cycle combustion turbines that use natural gas and distillate oil to generate electricity. Construction on Unit 2 began in 1998 and Unit 3 in 1999. Units 2 and 3 started commercial operation in July 2000 and May 2002, respectively.

Polk is among the nation's cleanest, most efficient and most economical power generation units. Canadian think tank Energy Probe Research Foundation named the plant the cleanest coal-fired power plant in North America after studying 403 coal plants in Canada, the United States and Mexico. The plant is a first-of-its-kind utilizing clean coal technology called coal gasification, which uses coal to create a clean-burning gas, along with combined-cycle technology.

The coal gasification unit provides clean, coal-fueled power, with a minimum removal of 95 percent of the sulfur from the coal gas prior to combustion. Furthermore, NO_x emissions are also lower than many of today's most advanced coal-fired generating units.

The plant combines coal with oxygen in the gasifier to produce the gaseous fuel. After processing, the synthesis gas or "syngas" is used in the combustion turbine to produce electricity. Combined-cycle technology is one of the most efficient methods of producing electricity commercially available today. It increases efficiency because it reuses exhaust heat to produce additional electricity.

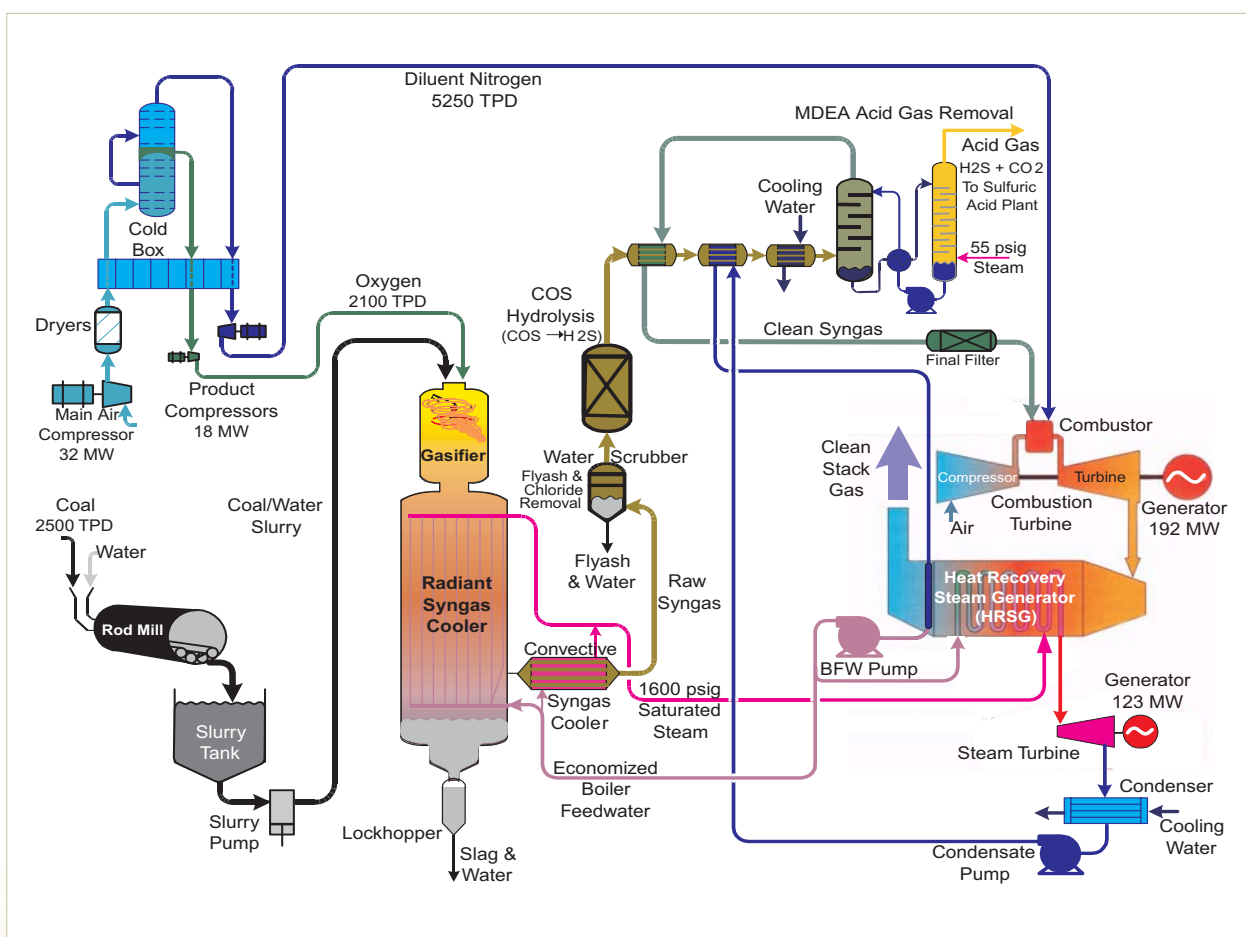
Combined-cycle design consists of a combustion turbine, a heat recovery steam generator and a steam turbine. The exhaust heat from the combustion turbine is recovered in the heat recovery steam generator to produce steam.



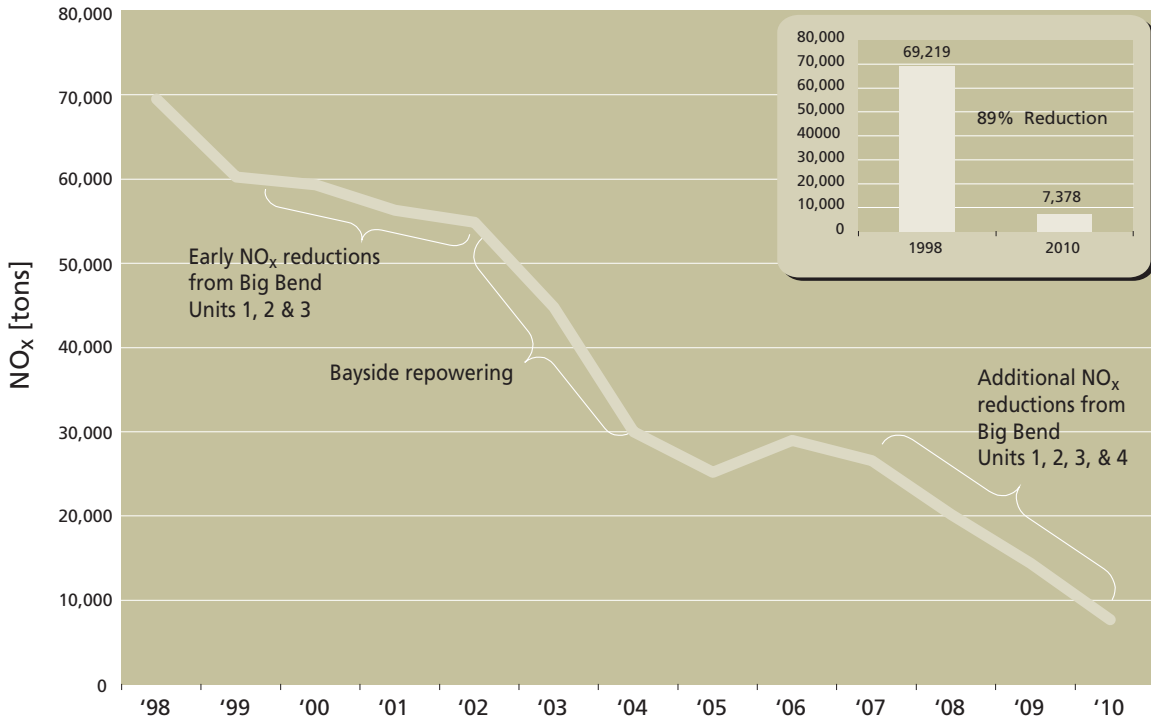
This steam then passes through a steam turbine to produce more electricity. The combined-cycle technology requires much less cooling water than conventional technology, reducing overall water use at the facility.

TECO Energy was awarded \$150 million from the U.S. Department of Energy (DOE) for the development of the Polk 1 project using clean coal technology. As part of a cooperative agreement with the DOE, TECO Energy has successfully commercialized this IGCC technology.

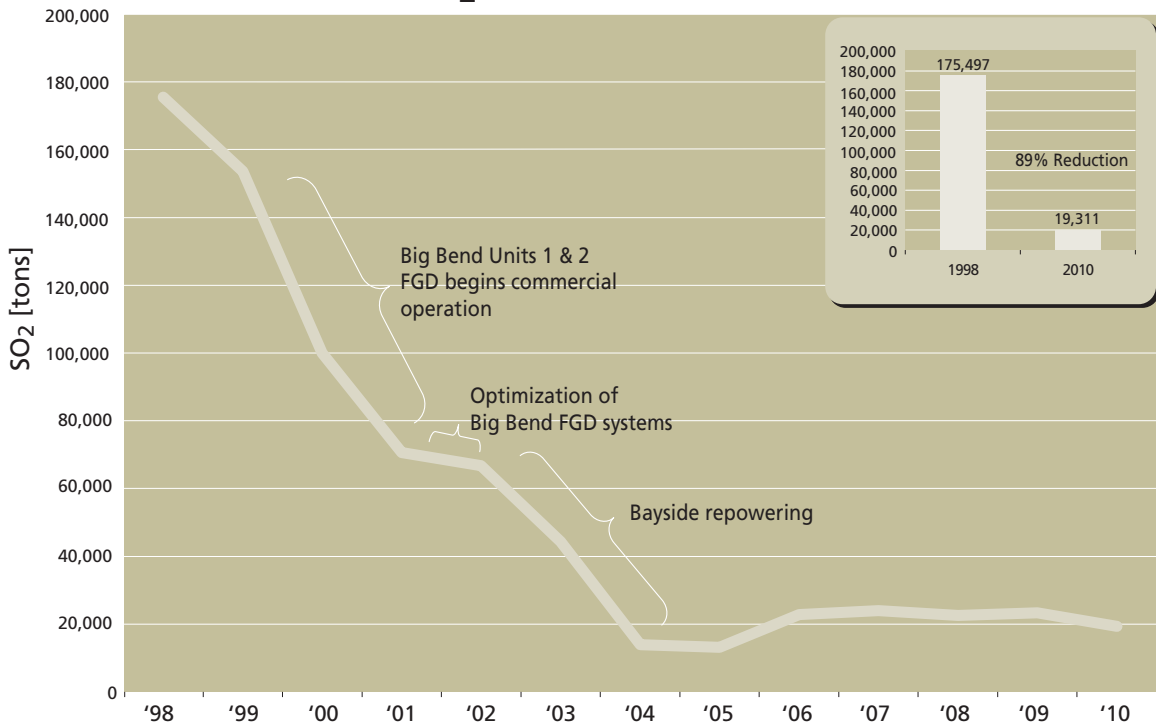
Integrated Gasification Combined-Cycle Facility: Polk Power Station



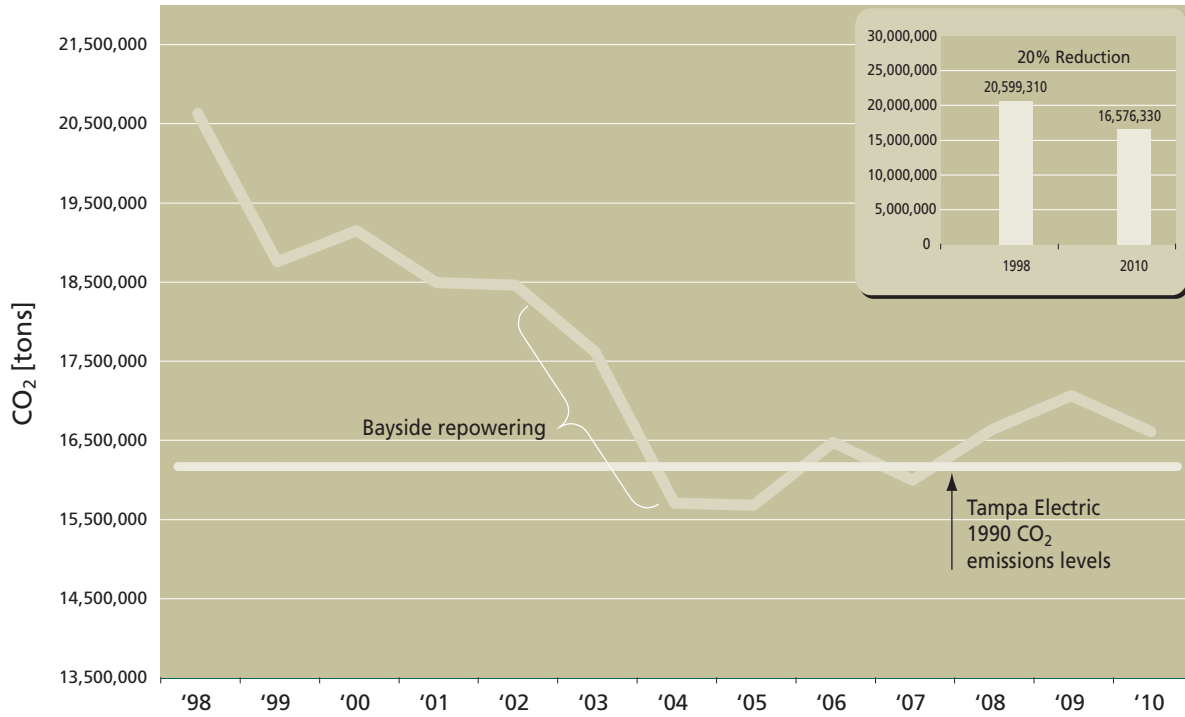
Tampa Electric Historic & Projected Nitrogen Oxides (NO_x) Emissions



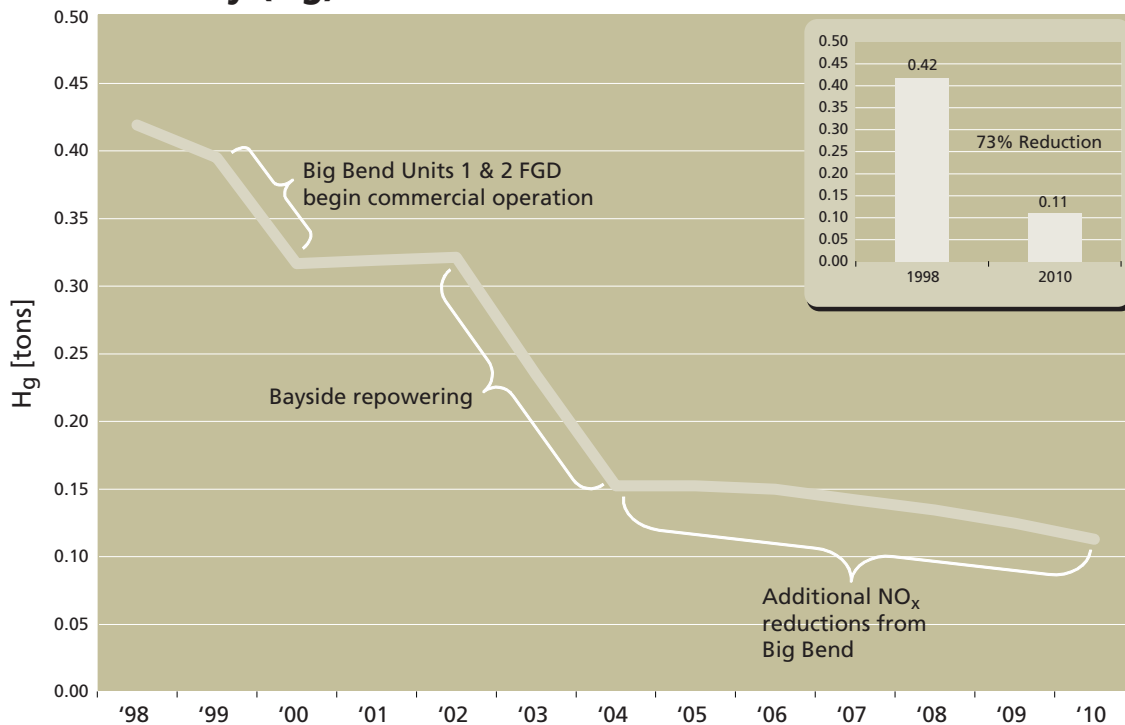
Tampa Electric Historic & Projected Sulfur Dioxide (SO₂) Emissions



Tampa Electric Historic & Projected Carbon Dioxide (CO₂) Emissions



Tampa Electric Historic & Projected Mercury (Hg) Emissions



Strategy Two: **Compliance with Environmental Regulations**

Electric power plants are subject to many local, state and federal environmental regulations intended to protect human health and the environment. Tampa Electric is committed to compliance with these regulations and has implemented environmental measures and controls that go well beyond regulatory compliance.

Air Regulations

Most of the recent regulations are in place as a result of the Clean Air Act and the 1990 amendments to this act.

The Clean Air Act establishes two types of national air quality standards:

- **Primary standards** set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children and the elderly; and
- **Secondary standards** set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The company's air permits contain emissions limits and reporting requirements to help ensure the company does not exceed these standards.

Tampa Electric is well-positioned to meet the requirements of new regulations, thanks to the company's 1999 agreement with EPA and the FDEP. The agreement included the repowering of the company's coal-fired Gannon facility with natural gas and the installation of state-of-the-art control technology on other units. It made the company a leader in emissions reductions, while maintaining the fuel diversity necessary to meet the energy needs of Tampa Electric's customers affordably.

In addition, the company is subject to EPA's Acid Rain Program, a market-based approach to controlling acid rain emissions. The program capped nationwide SO₂ emissions and issues annual allowances (one allowance is equivalent to one ton of emissions) to program participants to offset actual

emissions. If a facility has extra allowances after subtracting for actual emissions, the facility may sell the extra allowances to other facilities that need them. Significant SO₂ emissions reductions by Tampa Electric have allowed the company to sell some allowances to offset recent increases in fuel costs and limit the impact of these rising costs to its customers.

Clean Air Interstate Rule

The Clean Air Interstate Rule (CAIR) is the most significant air regulation in more than a decade. After implementation in 2009, CAIR is expected to significantly reduce SO₂ and NO_x emissions, which contribute to fine particle (PM_{2.5}) pollution and ground level ozone.

For areas not able to meet National Ambient Air Quality Standards, the rule considered the air quality impacts from neighboring states and capped the allowable emissions of sources of pollution to levels that will result in improvement in the affected areas.

The rule has an aggressive schedule for implementation that will be challenging for the electric power industry. Tampa Electric's earlier strategic decisions to install pollution control equipment have put it in a position to meet the new regulations in a timely manner.

At Big Bend, scrubbers have already been installed to reduce SO₂ to levels required by the new regulations.

Various other NO_x reduction projects have also been completed, and the company is well under way with installation of state-of-the-art SCR technology. These SCR units will be phased in beginning in 2007 and by 2010 will contribute to a system-wide reduction in NO_x emissions of 89 percent below 1998 levels. Phase II of CAIR brings a further reduction in NO_x and SO₂ caps for each state in the program. FDEP has until September 2006 to finalize their state implementation plan, which will determine how the NO_x credit allocation and trading program will be structured in Florida.

Due to repowering of the Gannon Station to natural gas and significant SO₂ reductions at Big Bend, the company expects to have sufficient SO₂ allowances to cover its system (including expansion needs) when Phase II of CAIR goes into effect. Tampa Electric has already significantly reduced SO₂ emissions from 1998 levels. These reductions were achieved alongside a 40 percent increase in electricity consumption by customers.

Ambient Air Quality Standards

The Clean Air Act, last amended in 1990, requires EPA to set National Ambient Air Quality Standards for widespread pollutants from numerous and diverse sources considered harmful to public health and the environment. EPA has set these standards for six principal pollutants, which are called criteria pollutants. The criteria pollutants include ozone, PM, CO₂, SO₂, NO_x and lead. The areas served by Tampa Electric are currently in attainment with all of these standards.

Clean Air Mercury Rule

The Clean Air Mercury Rule (CAMR) will build on EPA's CAIR to significantly reduce Hg emissions from coal-fired power plants. Phase I of CAMR calls for a 20 percent reduction from 2000 levels, and Phase II calls for a 70 percent reduction of those levels.

Again, the decisions that Tampa Electric made in 1999 are expected to allow Tampa Electric to meet the first phase of the CAMR, which will be implemented in 2010. A co-benefit of Hg reduction results from installation of the SCR units in combination with the scrubbers. A significant reduction in Hg emissions is realized because the SCR oxidizes Hg to a compound more readily removed in the emission controls.

In 2018, Phase II of the CAMR will likely require additional control equipment to meet the stricter standards. At Polk, the IGCC process has a distinct advantage over traditional coal-fired plants because the gasification process provides

unique opportunities for Hg removal. The repowering of Bayside to natural gas eliminated its Hg emissions. It should be noted, however, that there are currently no proven Hg removal technologies for pulverized coal units.

Clean Air Visibility Rule

Haze, one of the most basic forms of air pollution, degrades visibility in many American cities and scenic areas. Haze is caused when sunlight encounters tiny pollution particles in the air, which reduce the clarity and color of what we see, and particularly during humid conditions. Regional haze has been identified by many as caused by multiple sources over a wide area. Visibility is affected by different sources at different times of the year and under different weather conditions.

In addition to industrial facilities and power plants, other significant contributors to visibility impairment include car and truck emissions, area sources (broadly distributed and numerous small sources), wildfires, agricultural fires, and wind-blown dust. The same pollution that causes haze also poses serious health risks for people with chronic respiratory diseases. These pollutants include fine particle pollution, and compounds, which contribute to its formation, such as oxides of NO_x, SO₂, and certain volatile organic compounds.

The Clean Air Act established a long-term goal of achieving natural background visibility conditions at specially protected, or Class I, areas. The Chassahowitzka National Wildlife Refuge in Crystal River, Florida, is the nearest Class I area to Tampa Electric's service area. Before 2008, states must identify the facilities required to install Best Available Retrofit Technology (BART) controls.

Big Bend has been identified as one of the facilities subject to this rule. The combination of currently installed pollution control technology, including state-of-the-art PM control equipment and the SCR systems currently being installed have been deemed by the regulatory agencies to be better than the requirements of BART for NO_x and SO₂.

Land Regulations

The FDEP has established standards for the construction, operation and closure of solid waste management units. Those regulations are found in Chapter 62-701 of the Florida Administrative Code (FAC). Various aspects of Tampa Electric's operations are subject to these regulations, impacting the materials management practices associated with coal combustion byproducts, including slag, fly ash and gypsum.

Big Bend Comprehensive Environmental Improvements

Each unit at Big Bend was permitted and constructed in accordance with all applicable regulations in place at the time of their construction (1970s for Units 1-3 and 1980s for Unit 4). Although each component of the station met all of the applicable regulations when it was constructed, additional design requirements and standards have since been put into place. Tampa Electric has been working with the FDEP to address current regulations and current construction practices. Tampa Electric conducted a comprehensive environmental study in 2002 and 2003 to develop a plan to address land and water issues at Big Bend.

Land regulations are closely related to industrial waste water and storm water regulations, as they affect operations and overall compliance with applicable requirements at Tampa Electric's facilities.

Based on the results of the comprehensive environmental study, Tampa Electric is voluntarily completing a number of large projects at Big Bend to enhance environmental operations at the site, including upgrades to the settling/recycle ponds, new slag de-watering bins that will replace the existing industrial wastewater-permitted slag pond system, a new gypsum storage area, and upgrades to the storm water system. In addition, the company will remove the vast majority of coal combustion product source material from the existing systems in conjunction with construction of the new or replacement systems. Based on the opportunity to

continue groundwater monitoring, coupled with enhanced engineering controls (i.e., impervious settling/recycle ponds), Tampa Electric believes that appropriate due diligence is taking place with the planned actions going forward.

Tampa Electric's individual environmental enhancement projects are discussed below along with the proposed regulatory action.

Settling and Recycle Pond System

Current power plant design practices may require the lining of solids settling ponds and recycle water ponds with an impervious material. Tampa Electric will line/redesign these ponds or construct new ponds with impervious bases and side walls and modify, remove or eliminate the existing pond systems from the industrial wastewater management system. The lining of the ponds should minimize any future potential impacts to groundwater or surface water and should ensure compliance with groundwater standards as contained in Chapters 62-520 and Chapter 62-302, FAC.

The new impervious recycle and settling ponds will be constructed while the existing pond systems remain in place, so the plant can continue uninterrupted operations.

Slag Storage Area

Current power plant design practices require that some solid waste management units be lined to ensure compliance with groundwater and surface water standards contained in Chapters 62-520 and 62-302, FAC. The company is proceeding with a project that replaces the slag pond with totally enclosed above-ground slag bins. The slag dewatering bins and piping system will be constructed while the existing slag pond system remains in service so the plant can continue uninterrupted operations. Following completion of the slag bins, Tampa Electric plans to dredge out the slag ponds to ensure remaining slag is removed.



Flue Gas Desulfurization Byproduct Storage Area

Current power plant design practices require storage areas to be lined to ensure compliance with groundwater and surface water standards as contained in Chapters 62-520 and 62-302, FAC. Tampa Electric will line and/or remediate both the gypsum conveyor and scrubber byproduct storage area.

The scrubber byproduct storage area may be relocated to another area on the Big Bend site and would contain an impervious pad, series of storage bins, a building, or other approved system designed to minimize groundwater/surface water impacts due to runoff or leaching from this storage area. The newly constructed areas will function as an industrial byproduct management area. A new conveyor system will be built to transport gypsum to the new handling area. The new conveyor system will be designed to minimize the spillage or discharge of byproduct from the unit during operation. The current scrubber byproduct storage area will be mined of remaining gypsum with final destination as an approved beneficial use product, or disposal to permitted disposal site, if a beneficial use market is not available.

Storm Water System Improvements

The Big Bend Comprehensive Study identified storm water as an issue needing to be addressed at the site. The site has had several reportable releases of storm water in the past several years. The results of the study were communicated to the FDEP as recommended actions to resolve the releases of storm water. Subsequently, the requirement to perform storm water improvements to handle a 25-year, 24-hour rainfall event without a discharge of storm water from the site was incorporated into Big Bend's permit.

Water Regulations

Water is an essential component in electricity production. The Clean Water Act establishes the basic structure for

regulating discharges of pollutants into the waters of the United States. It gave the EPA the authority to implement pollution control programs, such as setting wastewater standards for the industry. The Clean Water Act also continued requirements to set water quality standards for all contaminants in surface waters.

The following sections discuss Tampa Electric's ongoing efforts to comply with the key sections of the Clean Water Act currently affecting the utility industry, while continually looking for new and innovative ways to enhance water quality and reduce sources of water pollution.

Clean Water Act, Section 316(b) (Impingement Mortality and Entrainment)

Section 316(b) of the Clean Water Act requires that cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts to aquatic organisms. The final 316(b) Phase II rule, effective September 7, 2004, imposed significant new federal requirements on existing electric generating units, including Tampa Electric's Bayside and Big Bend stations. At issue are "impingement mortality" and "entrainment" (IM&E).

Impingement is the entrapping of organisms against screens and other exclusion devices, which sometimes causes injury or death. Entrainment is the passage of organisms through the cooling system and/or the pulling of them into cooling water systems and resulting thermal, physical or chemical stresses.

The rule sets technology-based performance standards aimed at minimizing adverse environmental impacts, including reducing IM by 80 to 95 percent, and reducing E by 60 to 90 percent over baseline technologies, as identified by EPA.

The final Phase II rule requires the company to submit a Comprehensive Demonstration Study (CDS) concurrent with the submittal of the regularly scheduled National Pollutant

Discharge Elimination System permit renewal (or modification) by January 7, 2008. The CDS must evaluate the impact of intake structures on the aquatic environment and:

- Provide a determination of whether the facility meets the performance standards, and/or
- Recommend a basis for determining the Best Technology Available (BTA) for minimizing adverse environmental impact.

At Bayside, IM&E sampling commenced in April 2005, with Tampa Electric being the first utility in Florida to start the process. The CDS will be based significantly on the findings of the IM&E sampling. The facility will need to be in compliance with the standards in accordance with the schedule proposed by Tampa Electric in the CDS.

Based on a preliminary screening analysis, Tampa Electric believes that it will be necessary to design and construct technologies, operation and/or restoration measures to meet the performance standards. Five technologies were identified in the preliminary screening that will be further evaluated to reduce IM&E at Bayside: bar racks (IM only); barrier net around intake (IM only); fine-mesh modified traveling screens with a fish handling and return system (IM&E); and behavioral systems (e.g., light and sound systems) (IM only).

Additionally, habitat restoration will be evaluated to determine if and how it can be used to offset IM&E losses. Habitat restoration could be a very viable option to offset IM&E or provide additional credit to meet the performance standards.

Big Bend's IM&E sampling plan was submitted to FDEP in December 2005. Sampling commenced in March 2006. The CDS is due in September 2009 and will be based significantly on the findings of the IM&E sampling. The facility will need to be in compliance with the standards in accordance with the schedule proposed by Tampa Electric in the CDS. As part of Unit 4 construction, Tampa Electric installed fine-mesh screens with a fish handling and return system on Units 3 and 4. Tampa Electric believes these units may already meet the performance standards; this will be verified as part of the IM&E sampling plan.

Further, Tampa Electric believes that it will be necessary to implement design and construction technologies, operation and/or restoration measures on Big Bend Units 1 and 2 to meet the performance standards. Three technologies were identified in the preliminary screening that will be further evaluated to reduce IM&E at Big Bend: bar racks (IM only); fine-mesh modified traveling screens with a fish handling and return system (IM&E); and behavioral (light and sound) systems (IM only).

Additionally, habitat restoration will be evaluated to determine if and how it can be used to offset IM&E losses. Habitat restoration could be a very viable option to offset IM&E or provide additional credit to meet the performance standards.

Clean Water Act, Section 303 (d) (Total Maximum Daily Loads)

Under Section 303(d) of the Clean Water Act, states, territories and authorized tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that those states, territories and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop Total Maximum Daily Loads (TMDLs) for these waters.

A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the state has designated. The calculation must also account for seasonal variation in water quality.

The Tampa Bay watershed was initially identified as impaired for nutrients (nitrogen), but was eliminated from the impairment list since the EPA and FDEP believe the nutrient impairment will be addressed by the Tampa Bay Estuary Program. The estuary program has implemented a Comprehensive Conservation and Management Plan for Tampa Bay, which focuses on repairing and restoring the bay.



Environmental improvements related to Tampa Electric's SCR installation at Big Bend and the repowering of Bayside will be beneficial in repairing and restoring Tampa Bay.

Big Bend Dissolved Oxygen Pilot Study

Dissolved oxygen at the compliance monitoring station in the discharge canal has been occasionally below Florida's

water quality standards during the summer months. Tampa Electric entered into an agreement with FDEP to assess the feasibility of operating an aeration system in the discharge canal to increase the dissolved oxygen to the permitted levels. Big Bend is the first once-through cooling power plant in the nation to address this issue. Ideally, the dissolved oxygen solution should have a net environmental gain.



Strategy Three: **Projecting the Cost of Future Requirements** (Greenhouse Gas Reductions)

Background

Other parts of this report detail the various programs and capital investments the company has instituted to achieve its advanced environmental programs and its compliance activities. This section is focused on the cost of reducing greenhouse gas emissions if such a program were adopted.

The only greenhouse gas emitted by Tampa Electric in any material quantity is CO₂. In connection with its environmental program aimed at improved air quality through significantly reduced emissions, Tampa Electric has reduced CO₂ emissions by 24 percent from 1998 to 2005 (see Strategy One: Emissions Reduction Using State-of-the-Art Technology, page 16, for more details).

With Tampa Electric's projected load growth of over 2 percent per year, the company will need to add additional baseload capacity in the coming years. At this time, we expect that this capacity will be made up of clean coal units.

Like the Polk IGCC unit, it is anticipated that these units will use approximately 10 percent less fuel to generate the same number of megawatts, therefore generating approximately 10 percent less CO₂ than a conventional coal-fired steam unit.

In addition, the CO₂ generated by clean coal units is more readily removed than from conventional coal-fired units. Tampa Electric is currently studying progress in removal

and sequestration technologies and opportunities and other approaches to CO₂ reductions.

The following analysis details the impacts to Tampa Electric should Congress or the state pass legislation requiring limits on CO₂ emissions. Tampa Electric coal-fired generating units are Big Bend Units 1-4, which are pulverized coal-fired steam units equipped with desulfurization scrubbers, and Polk Unit 1, which is an IGCC unit.

Other generation units consist of combined-cycle units, combustion turbine peaking units and internal combustion diesel units. Tampa Electric's current capacity mix consists of approximately 48 percent gas, 47 percent coal and 5 percent oil.

Price Signal Scenarios

As part of Tampa Electric's environmental update process, a CO₂ economic evaluation was completed for various greenhouse gas reduction policies currently being discussed. This analysis is comprised of three different scenarios for CO₂ reductions, each one with a specific price (price signal). These price signals range from \$5 to \$30 per ton of CO₂, with a 5 percent yearly escalation and a 2010 start date. This wide range was chosen since it is not known the exact detail of any CO₂ emissions policy, if any at all. These could be either through a market-based cap-and-trade program, a specific tax, technology mandates, or no policy at all.



Based on a coal unit coming online in 2013, a base case was developed with no price signal, with the assumption that no policy will be mandated. The other three price signals reflect that some type of program will be implemented in 2010, such as a cap-and-trade or through an explicit tax. The following outlines the price scenario used:

No price signal (base case) – Does not put a price on CO₂ emissions.

\$5 price signal – This price signal begins at \$5 per ton of CO₂ in 2010 and rises 5 percent per year until 2020.

\$15 price signal – This price signal begins at \$15 per ton of CO₂ in 2010 and rises 5 percent per year until 2020.

\$30 price signal – This price signal begins at \$30 per ton of CO₂ in 2010 and rises 5 percent per year until 2020.

Tampa Electric Results

Emissions

Tampa Electric currently emits approximately 15 million tons of CO₂ per year. With a projected annual growth of electricity demand of 2.5 percent, Tampa Electric estimates an approximately 30 percent increase in 2020.

Impacts to Customers

Adding mandates on CO₂, such as a cap-and-trade program or through an explicit tax to offset 100 percent of the CO₂ emitted, would increase the price of electricity that current Tampa Electric customers pay based on today's regulatory structure. Other scenarios could include percentage reductions from a baseline level which could result in different economic results. The results below represent the most extreme case applying the hypothetical price signals unless a price signal greater than \$30 per ton was adopted. The following outlines the impact for each hypothetical price signal:

With 2006 Ten-Year Site Plan (Coal Unit in 2013)

\$5 price signal – Ranges from \$27 million in 2010 to \$68 million in 2020.

\$15 price signal – Ranges from \$78 million in 2010 to \$202 million in 2020.

\$30 price signal – Ranges from \$159 million in 2010 to \$404 million in 2020.

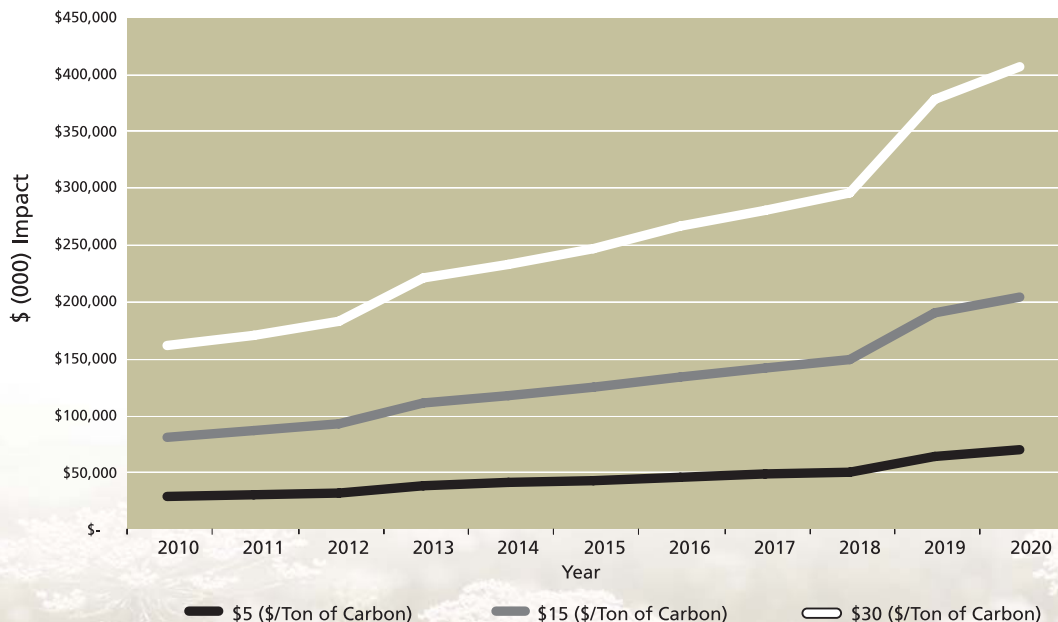
Customer Bill Impact (Coal Unit in 2013)

\$5 price signal – Ranges from \$1.20/1,000 kWh in 2010 to \$2.30/1,000 kWh in 2020.

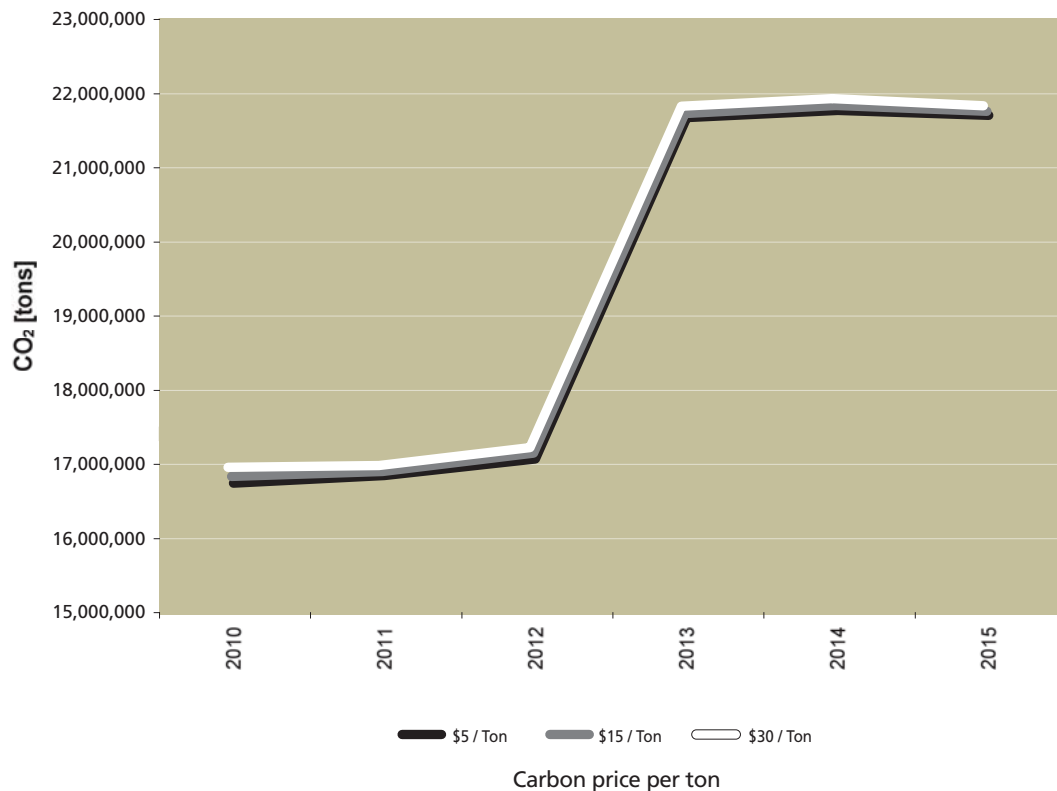
\$15 price signal – Ranges from \$3.60/1,000 kWh in 2010 to \$7.00/1,000 kWh in 2020.

\$30 price signal – Ranges from \$7.20/1,000 kWh in 2010 to \$14.00/1,000 kWh in 2020.

Carbon Price Scenario Signals



Tampa Electric Projected Carbon Dioxide (CO₂) Emissions



In its ten-year site plan filed in 2006, Tampa Electric identified preliminary plans to build a 630-megawatt IGCC unit in 2013, in addition to two 180-megawatt natural gas-fired peaking units in 2007. The company would continue to run its existing coal- and natural gas-fired capacity. As shown in this diagram, company projections do not show a significant CO₂ reduction under either a carbon tax or cap-and-trade scenario with hypothetical price signals of \$5, \$15 or \$30 due to price elasticity among customers, to whom fuel costs are passed through. This projection assumes no CO₂ reduction technology would be mature enough in the time-frame shown to make a significant decrease in emissions. This projection also assumes the tax or cap-and-trade scenario would apply to all carbon emissions and that no baseline emissions level is established.

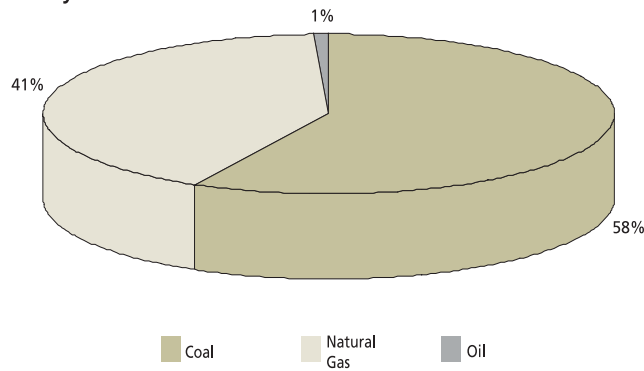
Since it is not known the exact detail on what CO₂ emissions policy, if any, could be implemented, a wide range

of carbon price signals was utilized in this analysis. If the greenhouse gas reduction debate draws closer and more carbon assumptions are validated, Tampa Electric's future generating units would need to be scrutinized with the impacts of future carbon emission price policies.

Tampa Electric has supported voluntary efforts for reductions in CO₂ and has successfully taken steps to significantly reduce its overall emissions at its facilities, making it one of the most progressive utilities in the country. Because of these reductions, Tampa Electric is in good position for the carbon policy debate. The repowering of Tampa Electric's Gannon coal facility to natural gas reduced system-wide CO₂ emissions by 24 percent. In addition, the potential for carbon sequestration at Polk may provide an opportunity to develop future carbon capture technologies. If advances are made in appropriate storage techniques, such technology could be used at the Polk site.

Strategy Four: **Maintenance of a Diverse Fuel Mix**

Tampa Electric 2005 Generation
by Fuel Source



Tampa Electric works to minimize the cost of fuel, maintain reliable supplies of fuel and dependable transportation, and maximize fuel price stability.

To minimize fuel costs, Tampa Electric maintains a balanced fuel mix. For 2005, the company's power was generated from a mix of 58 percent coal and 41 percent natural gas, and one percent oil. Sixteen percent of the company's power was purchased from other providers. In current natural gas markets, the company works hard to maximize the use of coal, a lower-cost fuel source.

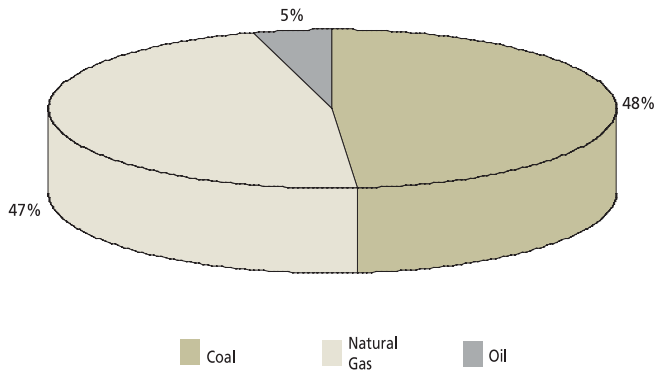
To promote price stability, Tampa Electric's fuels experts work to achieve a mix of short- and long-term fuel contracts to maximize cost savings and reduce price volatility and risk. Fuel hedging is an important component of the company's everyday business operations.

The company's next announced generating units will be two 180-megawatt natural gas-fueled units at Polk Power Station, Polk 4 and Polk 5. They are expected to begin operation in 2007.

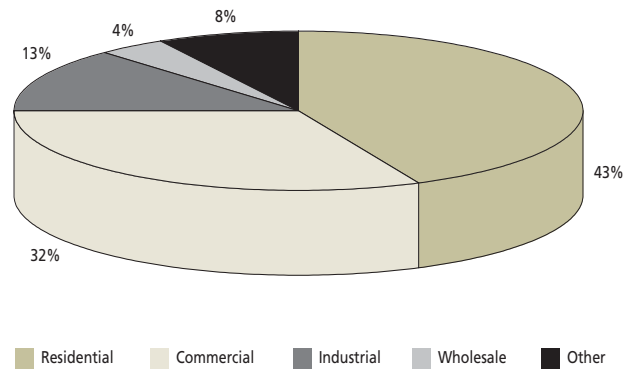
The company's 10-year site plan includes a 630-megawatt coal-fired unit coming online in 2013.

Tampa Electric currently owns and operates approximately 4,386 megawatts of electric generating facilities (2005 summer net capability). These units are fueled by coal, natural gas, and oil as illustrated below and produced approximately 5 million megawatt-hours of electricity in 2005.

Tampa Electric 2005 Capability by Fuel Source



Tampa Electric 2005 Energy Sales by Customer Type



Strategy Five: **Environmental Policy Initiatives**

Tampa Electric is in an enviable position on emissions reductions. Having accomplished more than a 64 percent reduction in NO_x, a 93 percent reduction in SO₂, more than a 70 percent reduction in Hg and more than a 24 percent reduction in CO₂, the company is positioned well for the national policy debate on multi-emission reductions. The company meets, if not exceeds, most proposals being considered. However, various competitive and structural debates are under way that could impact the company.

Tampa Electric's parent company, TECO Energy, supports the following policy initiatives to ensure credit is given for the steps the company has taken to reduce emissions.

1. TECO Energy favors a voluntary, market-based approach for carbon reduction that applies to all sectors of the economy. TECO Energy participates in the Chicago Climate Exchange, which is a voluntary, but legally binding market-based system for greenhouse gas reductions. This program works because it is a voluntary system, but provides incentives for carbon reductions and a mechanism for an economic benefit to many different sectors of the economy.

2. TECO Energy stands by its commitment to emissions reductions and technologies that provide a viable future for coal. TECO Energy is a supporter of coal, as a plentiful, cost-effective and reliable source of energy. With environmental controls in place and the successful operation of coal gasification for the production of electricity, Tampa Electric has demonstrated that coal is an environmentally sound electric generation source that will continue to have a viable future.

Shutting down coal plants to achieve carbon reductions is not a policy TECO Energy would endorse on a nationwide basis. Repowering the Gannon facility from coal to natural

gas worked for that particular business situation. Carbon reductions gained by that effort should be recognized, but not as the sole means to achieve carbon reductions.

The company believes research and development efforts aimed at carbon reduction or carbon capture technologies, including carbon sequestration, form a more realistic policy. TECO Energy supports coal and believes it can and should be utilized, even in a carbon-constrained environment. Coal plants can be run cleanly, efficiently and cost effectively.

Tampa Electric's retention of Big Bend as a coal-fired plant and the investment in its pollution control equipment is proof of that effort. In addition, Polk Unit 1, the IGCC facility, is recognized worldwide for its low emission levels, reliability and efficiency. Through technology development, including carbon sequestration, efforts can be pursued to ensure IGCC remains a viable alternative for the future of coal.

3. TECO Energy seeks participation in a national cap-and-trade program. The company remains supportive of the administration's proposal on Clear Skies, which calls for 70 percent reductions in SO₂, NO_x and Hg. The majority of legislation, including Clear Skies, calls for a national cap-and-trade program for emission reduction credits. Tampa Electric's 1999 consent decree prohibits trading of certain credits received for reduction in our omissions. At the time of Tampa Electric's consent decree, a national cap-and-trade program was not anticipated. TECO Energy believes, given the company's significant reduction in emissions, participation in such a program should be allowed.

4. TECO Energy supports emissions credits for reductions occurring after January 1, 2003. Upon review of several congressional bills under consideration, Tampa Electric not only meets, but also in some cases, exceeds, the proposed emission reduction levels. While most of the bills



give credit for early action, they only recognize actions taken after the bill passes (after 2006). Tampa Electric's emission reductions under this scenario would not qualify. In other words, TECO Energy would not receive credit for its early emission reduction actions because these reductions occurred too soon. If these bills moved forward with their current language, TECO Energy could be required to invest even further to meet the levels prescribed. It seems ironic that the utility with some of the most significant emissions reductions in the country would not be allowed credit for those reductions.

5. TECO Energy supports input-based standards.

Efforts to move to an emissions reduction bill forward have been stymied due to disagreements on credit allocations. TECO Energy is watching the credit allocation debate closely, as the policy on how credits are determined, allocated and traded will determine competitive winners and losers in the clean air debate. TECO Energy supports a standard based on input, meaning that an entity is rewarded for reducing emissions based on the level of fuel that was put into a given facility, as opposed to the level of energy that was emitted at the end of the process. This approach favors those utilities that use coal and provides incentives for emissions reductions.



Strategy Six: **Conservation, Renewables and Green Power**

One of Tampa Electric's strongest beliefs is that energy should be used wisely. To that end, the company has a long history of conservation programs, and of promoting alternative and renewable sources of fuel.

Conservation

Tampa Electric began its conservation program initiatives in the late 1970s, prior to any federal or state energy conservation requirements becoming law. The company anticipated that conservation would be in the forefront of upcoming legislation and wanted to be recognized as an innovative leader regarding conservation activities in the state of Florida.

Tampa Electric's initial foray into conservation offerings was a residential computer-assisted energy audit. This early experience established the company as a leader in developing conservation activities that helped influence the creation of state and federal energy policies.

In 1980, the Florida legislature enacted the Florida Energy Efficiency and Conservation Act (FEECA), which

directed the Florida Public Service Commission (FPSC) to adopt statewide goals to reduce electric demand and energy. As a result of FEECA, the FPSC required utilities to develop demand-side management plans containing programs that would increase energy efficiency and promote energy conservation. The original plans presented by the utilities for FPSC approval were designed to avoid or postpone future generation facilities while being cost-effective for both the program participants and the other customers of the utilities who were funding the conservation efforts through a type of surcharge on their electric bills.

In response to FEECA legislation, Tampa Electric developed its initial conservation program portfolio in 1981. The company's vision was to motivate customers to participate through advertising campaigns offering rebates and incentives to encourage participation. The main focus of the company's plan was on residential customers and specifically targeted winter demand reductions; however, a limited number of commercial/industrial programs were also developed.

The specific residential and commercial programs Tampa Electric offered customers in its first conservation program portfolio are discussed in the narrative section of this report.

By 1989, Tampa Electric was the only utility in Florida to have met its conservation goals.

In 1995, the FPSC modified the process of setting conservation goals for the residential and commercial segments of each utility. As a result of that process change, which is still in effect today, Tampa Electric has evaluated hundreds of potential residential and commercial conservation programs for cost effectiveness. Although some programs have been added, many of the company's original conservation programs have remained mainstays for the company over the past two decades.

In addition, a pilot project began in February of 2005, known as the Residential Price Responsive Load Management (PRLM). This program offers customers a time-sensitive multi-tiered rate structure as an incentive to alter their electric consumption during higher cost or critical periods of generation.

Tampa Electric has installed a communication device along with a "smart" thermostat at homes of the participants. The thermostat can control the operation of selected appliances such as space heating, air conditioning, water heating

and pool pumps. Customers can program the operation of this equipment and alter their energy consumption based on the price tiers occurring at specific times of the day.

Eligibility for the pilot consists of single-family residences only. The duration of the pilot project will depend on the consistency of normal winter and summer weather patterns. However, it is anticipated the maximum period of time will be 24 months.

Total participation in the pilot program is 250 customers. This group is divided into a subgroup of 125 customers that have never participated in any form of load management. A second subgroup consists of 125 Prime Time customers who have agreed to switch to PRLM. For baseline comparisons and analyses, representative control groups will be identified for determining demand and energy reductions.

Expenses

Through 2004, Tampa Electric spent \$370 million in delivering cost-effective conservation programs to the marketplace. The programs have produced demand and energy savings. Through 2004, the summer demand has been reduced by 251 MW; the winter demand by 731 MW; providing an annual energy savings of 7,140 GWH.



Renewables

Tampa Electric's Renewable Energy program invests in solar, landfill gas and biomass (energy made from plant clippings), which offsets the use of coal to generate electricity. Residential and business customers sign up online by purchasing blocks in increments of \$5 per month, which are added to the monthly electric bill. Tampa Electric supports these renewable energy sources and the research and development of other cleaner energy sources.

Tampa Electric partnered with several government agencies and corporations to demonstrate a microturbine, which produces electricity using methane gas as fuel. This unique technology produces enough electricity to power over 13 homes, using a fuel source that otherwise would be released into the atmosphere.

The 30-kilowatt microturbine generator works by turning a portion of the methane gas collected at a landfill into electrical energy. The microturbine destroys the gases and

their odors more effectively than flaring, and creates grid-quality power. This is the first installation in Florida of a Capstone microturbine to operate exclusively on landfill gas. Tampa Electric has proved microturbines like this can create clean power at hundreds more landfills around the country.

Biomass

Grass from lawn clippings is part of a group of plant materials known as biomass, considered a renewable energy source that reduces air emissions and greenhouse gases released from traditional fuel sources such as oil and coal.

The FDEP granted permission for Tampa Electric to test bahia grass as a fuel to generate electricity at the Polk Power Station. More than 60 tons of bahia grass, grown and harvested on the 4,300-acre plant site near Mulberry, are ground and mixed with pulverized coal slurry used in the gasifier.



Toxics Release Inventory

BIG BEND STATION – TOTAL RELEASES (LBS)							
CHEMICALS	1998	1999	2000	2001	2002	2003	2004
Hydrochloric Acid	1,500,000	3,400,000	440,000	333,023	277,714	323,157	284,297
Hydrogen Fluoride	130,000	220,000	30,000	30,328	23,063	21,175	24,401
Sulfuric acid Aerosol	740,774	688,001	875,134	913,395	837,407	766,112	709,817
Arsenic Compounds	3,904	2,222	1,590	5,467	449	256	412
Barium Compounds	16,520	7,410	8,750	80,394	4,207	4,261	21,452
Beryllium Compounds	N/R	480	390	2,405	170	153	495
Chromium Compounds	13,200	4,600	5,300	67,019	4,151	3,514	9,377
Cobalt Compounds	2,750	1,040	1,270	17,763	598	514	2,569
Copper Compounds	4,720	1,060	1,442	14,567	614	528	3,800
Lead Compounds	8,201	3,900	6,000	14,791	2,470	1,767	3,560
Manganese Compounds	35,700	27,600	28,800	53,990	9,213	8,684	17,180
Molytrioxide Compounds	3,074	870	1,090	11,060	441	363	N/R
Mercury Compounds	N/R	N/R	191	178	153	160	156
Nickel Compounds	18,000	6,500	13,108	35,571	7,337	3,738	26,313
Vanadium Compounds	N/R	N/R	13,400	107,507	12,319	7,996	43,235
Zinc Compounds	50,082	23,535	35,363	80,410	11,241	13,174	33,489
Dioxin and Dioxin-like Compounds (grams)	N/R	N/R	7.29	6.469	6.07	6.19	2
Polyaromatic Compounds	N/R	N/R	5.36	4.745	4.42	4.49	N/R
Total (pounds):	2,526,925	4,387,218	1,461,833	1,767,872	1,191,552	1,155,558	1,180,553
POLK POWER STATION – TOTAL RELEASES (LBS)							
CHEMICALS	1998	1999	2000	2001	2002	2003	2004
Ammonia	60,300	214,600	295,170	78,500	321,700	647,538	203,593
Hydrochloric Acid	800	800	2,700	2,400	1,000	622	997
Hydrogen Fluoride	170	170	170	140	210	N/R	208
Sulfuric Acid Aerosol	360,000	320,000	250,000	220,000	300,000	226,311	239,042
Barium Compounds	22	21	66	65,635	12,044	N/R	13,397
Chromium Compounds	7	6	37	54,242	10,123	N/R	N/R
Lead Compounds	N/R	N/R	N/R	8,005	1,721	707	1,631
Manganese Compounds	N/R	599	1,890	39,140	N/R	N/R	8,259
Mercury Compounds	N/R	N/R	91	64	121	104	98
Nickel Compounds	N/R	N/R	215	21,613	5,816	3,568	4,034
Vanadium Compounds	N/R	N/R	8	81,407	15,010	3,822	16,578
Zinc Compounds	14	41	362	54,308	N/R	N/R	10,907
Dioxin and Dioxin-like Compounds (grams)	N/R	N/R	1.21	1.01	1.13	0.85	0.31
Polyaromatic Compounds	N/R	N/R	0.96	0.81	0.90	0.67	N/R
Sodium Nitrite	N/R	N/R	3,336	N/R	N/R	N/R	N/R
Nitrate Cmpds	N/R	N/R	3,322	N/R	N/R	N/R	N/R
Total:	421,313	536,237	557,368	625,455	667,746	882,672	498,745
J.H. PHILLIPS STATION – TOTAL RELEASES (LBS)							
CHEMICALS	1998	1999	2000	2001	2002	2003	2004
Sulfuric Acid Aerosol	61,000	N/R	71,000	84,000	84,000	97,032	N/R
Polyaromatic Compounds	N/R	N/R	0.0840	0.1000	0.0990	0.1154	N/R
Total:	61,000	0	71,000	84,000	84,000	97,032	N/R

Note: * In the table above, data for Dioxin and Dioxin-like compounds in grams (as required by EPA) was reported by the facility. TEC has excluded them in the Total Releases (in pounds).

* Phillips was exempt from TRI Reporting for 1999 and 2004.