

# 1 | A Focus on Air

“Tampa Electric took bold and practical action to help build an international carbon reduction market at a time when leadership in this area was rare.”

- Richard Sandor, Chicago Climate Exchange  
Chairman and CEO, 2008

Long before it reaches the homes of Tampa Electric's 667,000 customers, the production and delivery of electricity starts somewhere else.

Even before some of those customers were born, the planning for electricity to serve them was already in progress. To keep homes cool or warm. To help businesses grow. To be available for future customers, like our children and their families.

The future is not distant fog, or vague assumptions. It's engineering and blueprints, concrete and steel, gas and coal. The electricity you use today required planning 20 years ago.

**We must build power plants well ahead of the time when they will be needed.**

Tampa Electric had another realization about its work that also was ahead of its time. We saw early that whatever our differences, whatever our power needs, we all thrive in the same ecosystem. That ecosystem, like building a power plant, requires long-term focus.

So, for the last 20 or more years, Tampa Electric has taken major steps to reduce air emissions from its plants. We repowered a coal-burning facility to natural gas with the creation of the H.L. Culbreath Bayside Power Station. We equipped the coal-fired Big Bend facility with a flue gas desulfurization system and are in the process of adding selective catalytic reduction equipment to all of its units. We built Polk Power Station's Unit 1 using state-of-the-art clean coal technology that set both a national and international standard.

By adding clean, efficient natural gas appliances to their homes, Peoples Gas customers can reduce their home's carbon footprint by as many as 4,000 pounds a year.

Energy needs and ecosystems have been entwined in the years that we have built our generating capacity. We are committed to seeing that they will continue to be part of an ever-evolving service to our customers.

**A Focus Ahead of its Time:** *TECO Energy's largest subsidiary, Tampa Electric Company, was the first utility in the nation to reach an agreement with the U.S. Department of Environmental Protection and the Florida Department of Environmental Protection on EPA's coal-fired utility initiative by launching a large-scale program to dramatically reduce emissions from power plants. Combining that record of environmental accomplishments with the environmental benefit of natural gas as a premium fuel, TECO Energy's utility businesses, Tampa Electric and Peoples Gas, are uniquely positioned to bring environmentally responsible energy to their customers.*

## AIR EMISSION REDUCTIONS

Tampa Electric Company, TECO Energy's principal subsidiary, is one of the cleanest utilities in the nation using coal and with no nuclear generation. This is the result of an industry-leading environmental improvement program that is currently in its final stages.

As of Dec. 31, 2007, Tampa Electric reported that it has reduced its systemwide air emissions as follows compared to 1998 levels:

- Sulfur dioxide (SO<sub>2</sub>) by 93 percent
- Nitrogen oxide (NO<sub>x</sub>) by 60 percent
- Particulate matter (PM) by more than 70 percent
- Mercury (Hg) by more than 70 percent
- Carbon dioxide (CO<sub>2</sub>) by 20 percent

By 2010, as a result of the installation of selective catalytic reduction (SCR) equipment at its Big Bend Power Station, the company expects overall reduction of NO<sub>x</sub> to be 90 percent. The company has already surpassed its original 2010 SO<sub>2</sub> projection of a 90 percent reduction from 1998 levels.

No other utility in the state, and very few in the nation, have achieved similar reductions in emissions. In Florida, of the 25 conventional coal-fired units in the state, only five are utilizing state-of-the-art controls for SO<sub>2</sub> and NO<sub>x</sub>. Two of these belong to Tampa Electric's Big Bend Power Station. The company's only other coal-fired unit, Polk 1, is a clean coal gasification unit, recognized as the cleanest coal unit in North America.



### **Big Bend Power Station - H.L. Culbreth Bayside Power Station - Polk Power Station**

*Tampa Electric's fleet of generating facilities showcases three diverse ways of producing power: pulverized coal with state-of-the-art emissions controls; natural gas; and clean coal technology complemented by natural gas peaking capacity.*

In January of 2008, Tampa Electric was honored by the Chicago Climate Exchange (CCX) for achieving its Phase I participation targets for CO<sub>2</sub> reduction. While the commitment required in Phase I was a reduction of 4 percent below the average of the years 1998-2001, Tampa Electric far surpassed this level (as described above) and recently committed to CCX Phase II for an additional 2 percent reduction by 2010.

As of the end of 2007, Tampa Electric has reduced annual SO<sub>2</sub>, NO<sub>x</sub> and PM from its facilities by 93%, 60% and more than 70%, respectively, from 1998 levels.

Though Tampa Electric's production of electricity continues to increase to meet growth in customer demand, the overall emission reduction levels for SO<sub>2</sub> and NO<sub>x</sub> have decreased, as shown in the chart below.

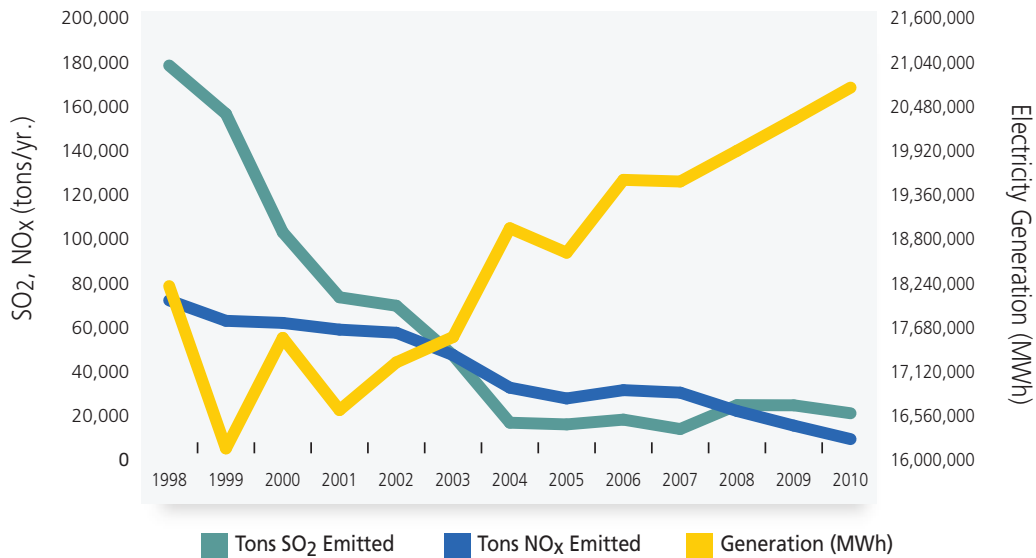
The reduction of emissions over the past five to 10 years has centered around the following:

**The repowering of the 50-year-old Gannon Power Station to the natural-gas fired Bayside facility:**

Tampa Electric's repowering of its Bayside station by switching to natural gas was based on several factors:

- First, the need to satisfy increasing customer demand for reliable electricity at reasonable costs;

SO<sub>2</sub> and NO<sub>x</sub> Emissions Compared to Electricity Generation



\*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.



**Tampa Electric's Big Bend Power Station - SCR Project**

Part of Tampa Electric's environmental commitment is the installation of state-of-the-art selective catalytic reduction technology on Big Bend to control nitrogen oxide (NO<sub>x</sub>) emissions.



**Tampa Electric's H.L. Culbreth Bayside Power Station**

The repowering of the former coal-fired Gannon Power Station was the centerpiece of Tampa Electric's environmental improvement plan.

- Second, the ability to continue meeting environmental compliance regulations;
- Third, the use of existing substations and transmission facilities;
- Fourth, the availability of natural gas from existing and proposed natural gas pipelines in the area; and
- Fifth, the opportunity to reuse existing plant equipment.

**The continuing employment of flue gas desulfurization ("scrubber") systems and optimization of electrostatic precipitator equipment at**

**Big Bend Power Station to reduce PM.**

**Installation of a \$330 million selective catalytic reduction (SCR) technology at Big Bend Power Station, which is central to the reduction of NO<sub>x</sub> emissions.**

GENERATING FACILITY	DESCRIPTION
 <p data-bbox="183 358 395 410"><b>H.L. Culbreath Bayside Power Station</b></p>	<p data-bbox="512 379 635 401"><b>Plant History</b></p> <p data-bbox="512 408 1505 520">The H.L. Culbreath Bayside Power Station is the centerpiece of an agreement reached in 1999 among Tampa Electric, the U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP). This effort is central to the 10-year, \$1.2 billion program now coming to fruition. Unit 1 was repowered in April 2003 and Unit 2 in January 2004.</p> <p data-bbox="512 536 722 559"><b>Environmental History</b></p> <p data-bbox="512 565 1505 648">The plant's creation meant retiring coal-fired boilers at the company's nearly 50-year old Gannon Power Station. Gannon was then repowered to become the \$730 million Bayside Power Station, fueled by natural gas. The plant is located near Tampa Bay and has a generating capacity of nearly 1,850 megawatts.</p> <p data-bbox="512 665 727 687"><b>Environmental Impact</b></p> <p data-bbox="512 700 1461 725">Bayside has changed Tampa Electric's fuel mix, previously dominated by coal. The fuel mix is now about half natural gas. In addition, Bayside has:</p> <ul data-bbox="512 768 1505 959" style="list-style-type: none"> <li>• Reduced its NO<sub>x</sub> and SO<sub>2</sub> emissions by nearly 99 percent.</li> <li>• Reduced its PM emissions by more than 90 percent.</li> <li>• Reduced Mercury (Hg) levels by 99 percent, generating virtually no Hg emissions.</li> <li>• Reduced its CO<sub>2</sub> emissions by over 50 percent to about 3.5 million tons below 1998 levels, bringing the company's emissions in line with its 1990 levels. The repowering is credited as a significant factor in the Tampa Bay area's current attainment of National Ambient Air Quality Standards.</li> </ul> <p data-bbox="512 969 1505 1025">Four new single-fuel natural gas peaking units will be built at Bayside, and are expected to be in commercial operation by the end of 2009.</p>
 <p data-bbox="183 1114 405 1137"><b>Big Bend Power Station</b></p>	<p data-bbox="512 1145 635 1168"><b>Plant History</b></p> <p data-bbox="512 1176 1505 1263">With its original unit built 38 years ago, the coal-fired Big Bend Power Station is located on about 1,500 acres in southeast Hillsborough County near Apollo Beach. It went into service in 1970 with the commercial operation of its Unit 1. This was followed by Unit 2 in 1973, Unit 3 in 1976, and Unit 4 in 1984. The plant generates more than 1,700 megawatts of power.</p> <p data-bbox="512 1274 1505 1330">A dual-fuel peaking unit (using natural gas and fuel oil) will be located at Big Bend after the completion of the installation of five peaking units, four of which will be at the Bayside plant. The unit is expected to be complete by the end of 2009.</p> <p data-bbox="512 1346 722 1369"><b>Environmental History</b></p> <p data-bbox="512 1375 1158 1400">Three environmental technologies help lessen Big Bend's environmental impact.</p> <ul data-bbox="512 1411 1505 1653" style="list-style-type: none"> <li>- <i>Scrubber technology.</i> Scrubber technology, formally known as a flue gas desulfurization, has been in use at Big Bend since 1985, when first installed on its Unit 4. In 1995, the Unit 4 scrubber began scrubbing Unit 3 as well. Scrubbers for Units 1 and 2 began operation at the end of 1999.</li> <li>- <i>Selective catalytic reduction technology.</i> Big Bend will have future emission reductions with the \$330 million installation of selective catalytic reduction (SCR) technology. SCR technology was completed on Big Bend Unit 4 in 2007. Unit 3's SCR technology was completed in June 2008. Unit 2 is set for completion in May 2009, and Unit 1 in May 2010.</li> <li>- <i>Electrostatic precipitators.</i> Tampa Electric has upgraded and enhanced the electrostatic precipitators used to control PM. PM emissions have been reduced by 73 percent throughout the entire system, compared to 1998 levels.</li> </ul> <p data-bbox="512 1670 722 1692"><b>Environmental Impact</b></p> <p data-bbox="512 1701 1505 1757">Big Bend's \$23 million investment in scrubber upgrades has reduced SO<sub>2</sub> emissions by more than 90 percent compared to 1998 levels.</p> <p data-bbox="512 1767 1107 1792">The scrubbers remove more than 95 percent of SO<sub>2</sub> from all four units.</p> <p data-bbox="512 1802 1505 1858">By 2010, with the completion of the SCR technology on all four of its units, Big Bend's emission reductions from 1998 levels will be 84 percent for SO<sub>2</sub>, 85 percent for NO<sub>x</sub> and 61 percent for PM.</p>

## GENERATING FACILITY

## DESCRIPTION

### Polk Power Station



#### Plant History

The Polk Power Station Unit 1 is a 260-megawatt integrated coal gasification combined cycle (IGCC) generating unit that was awarded \$150 million from the U.S. Department of Energy (DOE) for its use of clean coal technology. It began commercial operation in the fall of 1996. The station's four 160-megawatt simple-cycle combustion turbines use natural gas and distillate oil. Units 2 and 3 began commercial operation in 2000. More recently, Units 4 and 5 began operation in 2007.

#### Environmental History

In the mid-1980s, long before Polk Power Station began commercial operation, Tampa Electric assembled a Power Plant Siting Task Force from the environmental, business and educational communities in the area to select an environmentally friendly site for the plant's location. They chose the original 4,300 acres, former phosphate mining land in Polk County, Florida, on which the facility now stands. The company has plans underway to donate 1,500 acres of the original site for environmental purposes.

The Polk station's IGCC technology has been successfully commercialized, as part of Tampa Electric's agreement with DOE. Combined-cycle technology increases efficiency because it reuses exhaust heat to produce more electricity. Sulfur is removed from the gas prior to combustion. In addition to demonstrating superior environmental performance, Polk's IGCC unit has demonstrated that its unit availability can be as high as typical coal- or natural gas-fired units.

In October 2007, Tampa Electric deferred plans to construct its next baseload unit, Polk 6, as an IGCC unit. The company has been re-evaluating how best to meet the needs beginning as early as 2013 in the face of regulatory uncertainty and related potential cost increases. The company anticipates meeting its baseload need through a natural gas combined-cycle facility, complemented by energy efficiency and renewables.

#### Environmental Impact

The Polk Power Station IGCC unit provides clean coal-fueled power with a minimum removal of 95 percent of the sulfur from the coal gas prior to combustion. NO<sub>x</sub> emissions also are lower than many of today's most advanced coal-fired operating units. Polk Unit 1 has been named the cleanest coal-fired power plant in North America, and the world leader in producing electricity from environmentally friendly, coal-derived synthesis gas.

With volatile oil and natural gas prices, interest in clean coal technology continues. After a decade of successful commercial operation, Polk is the foundation on which subsequent IGCC applications will be based.

### A Focus Ahead of its Time:

*Tampa Electric was the first utility in the nation to commercialize integrated coal gasification combined-cycle (IGCC) technology in partnership with the U.S. Department of Energy's clean coal technology program. Polk Power Station Unit 1 is recognized as the world leader in clean coal technology.*

“ We believe the United States must promptly and actively pursue greenhouse gas reductions through strategies that recognize the interrelated nature of environmental, economic and energy policy. Effective global climate change policy can only be achieved if each of these priorities is properly balanced. ”

- TECO Energy Environmental Policy

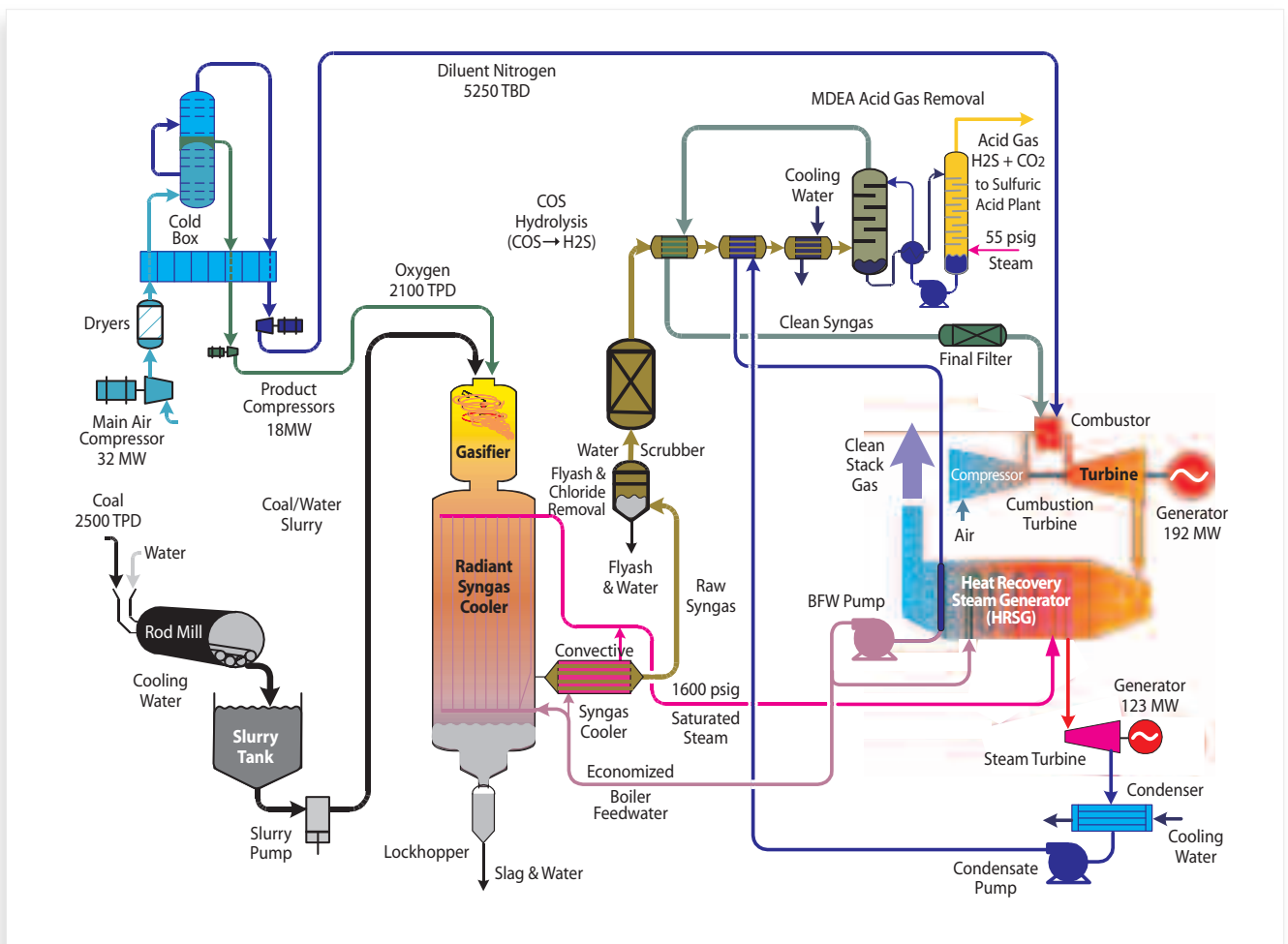
The coal gasification unit provides clean, coal-fueled power with a minimum removal of 95 percent of the sulfur from the coal gas prior to combustion. Furthermore, NO<sub>x</sub> emissions also are lower than many of today's most advanced coal-fired generating units.

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 pro-

duce electricity. Combined-cycle technology is one of the most efficient methods commercially available today for producing electricity. 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.

### Polk Power Station | Integrated Gasification Combined-Cycle Facility



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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.

#### **ADDITIONAL INVESTMENT**

During 2007, Tampa Electric announced other measures to meet demand, all of which have environmental implications.

#### **Baseload Capacity**

In late 2007, Tampa Electric announced that it would defer the use of IGCC clean coal technology beyond its next baseload need beginning around 2013. While the company remains steadfast in its belief in IGCC as the most responsible way to use coal – an abundant, economical and domestically-produced fuel – the uncertainty surrounding future regulations is presently too great. To use IGCC before regulations are in place would expose customers and shareholders to unknown risk.

Therefore, Tampa Electric expects to meet its customers baseload need through natural gas combined-cycle technology, complemented by energy efficiency and renewable energy. This is unfortunate for the State of Florida in terms of fuel diversity, but unavoidable given the lengthy lead-time needed before nuclear capacity is available.

#### **Peaking Power Units**

In February 2008, Tampa Electric announced that it would install five new 60-MW peaking units to serve its growing territory. The new peaking units will provide power in a reliable and environmentally friendly manner during periods of peak customer demand. The \$237 million project will assist the company in meeting the growing needs of customers in a cost-effective manner, while continuing to meet environmental responsibilities.

Four of the units will be single-fuel natural gas and will be located on the site of the existing Bayside Power Station in Tampa. One dual-fuel (natural gas and fuel oil) unit will be located at the Big Bend Power Station in Apollo Beach.

The simple-cycle turbines are expected to be in commercial operation by the fourth quarter of 2009 and will provide power to about 65,000 homes on a winter peak day.

Two of the new units will be equipped with black start capability. Black start capability will allow power from the peaking units to be used to start the other larger generating units at each of the stations, should power from the system not be readily available.

**Polk Power Station.** *The facility's Unit 1 has been named the cleanest coal-fired unit in North America based on a review of more than 400 plants in Canada, the United States and Mexico. The plant is the world leader in the production of electricity from clean, coal-derived synthesis gas.*



**A RESPONSIBLE FUEL MIX**

Tampa Electric currently owns and operates approximately 4,602 megawatts of electric generation facilities. The fuel mix powering those facilities has changed considerably in the last five years. Once almost exclusively fired by coal, a stable American fuel source, the company now

**A Focus Ahead of its Time:** *Tampa Electric was the first utility to organize a task force of business, educational, governmental and environmental leaders to site a power plant (which later became the Polk Power Station).*

has increased its fuel diversity with additional natural gas-fueled capacity, as shown in the graphs below.

**ENVIRONMENTAL COMPLIANCE**

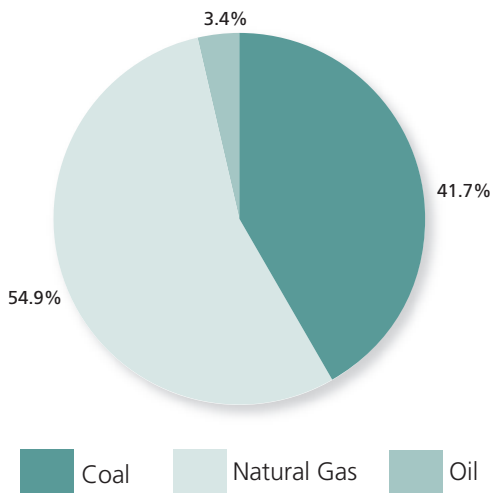
Electric power plants are subject to many local, state and federal environmental regulations intended to protect human health and the environment. Tampa Electric is committed to meeting or surpassing these regulations and has implemented environmental measures and controls that go well beyond regulatory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

Tampa Electric's responsibility for its power plants includes complying with – and frequently exceeding – expectations of various governing bodies and legislation enacted to control the operations of the power plants.

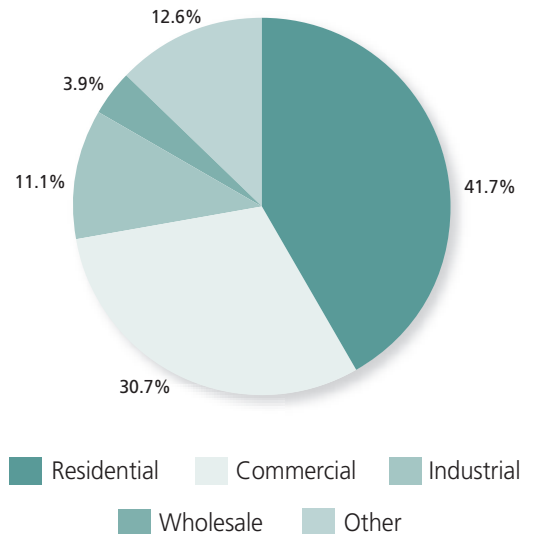
Tampa Electric's power plants are subject to major federal environmental laws, including the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act and many additional state and local regulations.

Operating permits, issued by EPA and FDEP, require that Tampa Electric limit releases to ensure protection of human health and the environment.

**Tampa Electric Generation by Fuel Source**



**Tampa Electric Energy Sales by Customer Type**



“ We support a realistic timeframe for addressing climate change with a policy that balances the environment, economics and energy and encourages fuel diversity and advanced clean coal technology, including IGCC, while avoiding fuel switching. Coal, natural gas, renewables and nuclear power all have a role in addressing greenhouse gas reductions. ”

- TECO Energy Environmental Policy

Tampa Electric reports to regulators on its compliance with its permits, and regulatory agencies regularly conduct inspections to verify these reports.

In 1988, the company initiated its Environmental Audit Program, which plays a major part in assessing the effectiveness of environmental procedures. The Audit Program also is a component of TECO Energy's Corporate Compliance Plan.

The objectives of the environmental self-audits are to:

- Chronicle each facility's compliance status with environmental regulations and permits, and communicate this status to company management;
- Maintain standards by ensuring that rules and procedures are in place and followed by facility personnel;
- Evaluate the effectiveness of environmental training by monitoring how it has improved work behavior;
- Increase environmental awareness and reveal weaknesses, if any, in the environmental program; and
- Provide for an exchange of information between facilities to assist with compliance with regulatory and permit requirements.

Tampa Electric audits operating power plants quarterly. The audits generally consist of an interview, records review and physical inspection of the facility. All distribution and transmission service areas are audited annually, and electric substations are audited every five years.

#### 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 air regulations for SO<sub>2</sub>, NO<sub>x</sub>, PM and Hg, 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 emissions control technology on other units. It made the company a leader in emissions reductions, while maintaining the fuel diversity necessary to affordably meet the energy needs of Tampa Electric's customers.

In addition, the company is subject to EPA's Acid Rain Program, a market-based approach to controlling emissions that contribute to acid rain. The program capped nationwide SO<sub>2</sub> 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 SO<sub>2</sub> emissions reductions by Tampa Electric have allowed the company to sell some allowances, offsetting recent increases in fuel costs and limiting the impact of these rising costs to its customers.

### Clean Air Interstate Rule

The Clean Air Interstate Rule (CAIR) is potentially the most significant air regulation in more than a decade. After implementation, CAIR is expected to significantly reduce SO<sub>2</sub> and NO<sub>x</sub> emissions, which contribute to fine particle (PM<sub>2.5</sub>) pollution and ground level ozone.

For areas not able to meet National Ambient Air Quality Standards (NAAQS), 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 challenge 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.

On July 11, 2008, the U.S. Court of Appeals for the District of Columbia Circuit ruled on several petitions related to CAIR and vacated the rule in its entirety. EPA and other stakeholders have filed an appeal for rehearing, delaying an official court mandate that could permanently vacate the rule. Although many electric utilities affected by CAIR are evaluating whether to delay or cancel pollution control projects as a result of the ruling, Tampa Electric will continue construction and fully implement the projects that would have led to CAIR compliance.

At Big Bend, scrubbers have already been installed to reduce SO<sub>2</sub> to levels required by the new regulations.

Various other NO<sub>x</sub> reduction projects have also been completed, and the company is well under way with installation of state-of-the-art SCR technology. Tampa Electric completed installation of the SCR unit on Big Bend Unit 4 in June 2007 and Unit 3 in June 2008. Additional units are being installed on the remaining units in the following timeframe: Unit 2 (May 1, 2009) and Unit 1 (May 1, 2010).

By 2010, the SCR system will contribute to a system-wide reduction in NO<sub>x</sub> emissions of 90 percent below 1998 levels. Phase II of CAIR would bring a further reduction in NO<sub>x</sub> and SO<sub>2</sub> caps for each state in the program.

Due to repowering of the Gannon Power Station to natural gas and significant SO<sub>2</sub> reductions at Big Bend, the company expects to have sufficient SO<sub>2</sub> allowances to cover its system (including expansion needs) for Phase II of CAIR. Tampa Electric has already significantly reduced SO<sub>2</sub> emissions from 1998 levels. These reductions were achieved alongside continued growth in electricity consumption by customers.

### Ambient Air Quality Standards

The Clean Air Act, last amended in 1990, requires EPA to set NAAQS for widespread pollutants from numerous and diverse sources considered harmful to public health



**Selective Catalytic Reduction.** SCR technology is a primary component in the company's removal of more than 90 percent of nitrogen oxide emissions by 2010, versus 1998 levels.

and the environment. EPA has set these standards for six principal pollutants, which are called criteria pollutants. The criteria pollutants include ozone, PM, CO, SO<sub>2</sub>, NO<sub>x</sub> and lead. The areas served by Tampa Electric are currently in attainment with all of these standards.

### **Ozone NAAQS**

Recently, EPA lowered the national ozone standard and while Tampa Electric's emission reductions, as well as reductions in automobile emissions, are expected to help, it will be challenging for the areas served by Tampa Electric to meet the new standard.

### **Clean Air Mercury Rule**

The Clean Air Mercury Rule (CAMR) was struck down in February 2008 by a judicial panel of the United States Court of Appeals for the Washington, D.C. circuit. In March 2008, EPA filed a petition asking the judges to rehear the decision. Although there is uncertainty regarding the outcome and the form of the final mercury regulations, the decisions Tampa Electric made in 1999 have led to a significant reduction in mercury emissions. The company expected to meet the 20 percent reduction requirement of the original first phase of CAMR, which would have been in place by 2010.

A co-benefit of mercury reduction results from installation of the SCR units in combination with the scrubbers. A significant reduction in mercury emissions is realized because the SCR oxidizes mercury to a compound more readily removed in emissions control processes.

At Polk, the IGCC process has a distinct advantage over traditional coal-fired plants because the gasification process provides unique opportunities for mercury removal. The repowering of Bayside to natural gas eliminated its mercury emissions.

### **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.



*Downtown Tampa, headquarters to TECO Energy, Inc.*

In addition to industrial facilities and power plants, other significant contributors to haze 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 risks for people with chronic respiratory diseases. These pollutants include fine particle pollution and compounds – such as oxides of nitrogen and sulfur, and certain volatile organic compounds – which contribute to the formation of haze.

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. States are currently in the process of evaluating which Best Available Retrofit Technology (BART) controls need to be installed on facilities having a significant impact on visibility.

Big Bend has been identified as one of the facilities subject to this rule; however, analyses conducted by Tampa Electric indicate that Big Bend emissions do not have a significant impact on visibility on any national wildlife refuge. The combination of currently installed pollution control technology, including state-of-the-art PM control equipment and the selective catalytic reduction systems being installed, are currently deemed by the regulatory agencies to be better than the requirements of BART for controlling NO<sub>x</sub> and SO<sub>2</sub>.

# The Council for Responsible Energy

Peoples Gas is one of five founders of the Council for Responsible Energy (CRE), a unified voice for the natural gas industry to communicate a consistent message about the environmental benefits of using natural gas.

As the public began to think more about the economic and environmental issues affecting the U.S., the American Gas Foundation commissioned a study completed in 2008 that found increased use of natural gas improves the productivity of available energy supplies. It also concluded that natural gas reduces overall energy costs and related carbon dioxide emissions.

With the support of the American Gas Association, the American Public Gas Association, the Southern Gas Association and the Energy Solutions Center, the CRE is making strides. By the end of 2008, more than 185 companies representing more than 6.5 million households across North America joined the Council. And membership continues to grow.

In November 2008, the CRE was launched to the public and Carter Oosterhouse was introduced as the celebrity spokesperson for the natural gas industry. Oosterhouse is former star of TLC's *Trading Spaces* and today hosts *Red, Hot and Green* on HGTV and *Carter Can* on HGTV and DIY networks.

The campaign includes the industry-branding logo, consumer Web site, standardized residential carbon calculator and multi-media advertising introduced in late 2008. In 2009, the campaign will also involve social marketing and national media outreach.

As a founding member, Peoples Gas has a permanent position on the Board of Directors of the Council for Responsible Energy.



## PEOPLES GAS

In 1997, TECO Energy acquired Florida's largest natural gas distribution utility, Peoples Gas. This gave the company an immediate presence in most of the state's major metropolitan areas, but today it offers an additional advantage.

Tampa Electric and Peoples Gas together are uniquely positioned to combine the benefits of both energy sources when natural gas is used as a premium fuel for customers. Natural gas has a very positive environmental profile, even more so when used directly, compared to being combusted for the production of electricity.

By adding a natural gas range, tankless water heater, furnace and clothes dryer in place of lower-efficiency electric appliances, a typical home's carbon footprint can be reduced by as much as 4,000 pounds per year.

Natural gas is also a cost-efficient and safe alternative for transportation. Natural gas vehicles are dramatically better for the environment than gasoline-powered vehicles and the use of NGVs helps to reduce America's dependence on foreign oil. Peoples Gas purchased three Honda Civic GX vehicles in 2008 and plans to transition up to 10 percent of its fleet to natural gas each year.

Peoples Gas is working with green-minded municipalities across the state on ways to increase the retail use of natural gas as a way to reduce carbon emissions.

Peoples Gas, along with its sister company, Tampa Electric, can bring the benefits of both natural gas and electricity to bear to help customers optimize their home's environmental performance. The companies have formed a partnership with a local business organization, Westshore Alliance, to bring energy efficiency and other green aspects, including solar water heating, to Westshore Landings, a new affordable housing development in Tampa scheduled for completion in 2009.

Homeowners will benefit from energy efficiency rebates that reduce the cost of their home, but the most significant savings will be experienced over time, through the cost savings resulting from lower energy consumption. This project is the first alliance of its kind in the State of Florida, and through Peoples Gas' statewide geographic reach, likely to be the first of many such projects.



**Carbon Reduction.** Peoples Gas is working with green-minded municipalities statewide to expand the use of natural gas as a premium fuel. By replacing four less-efficient electric appliances with highly-efficient natural gas counterparts - range, clothes dryer, furnace and tankless water heater - an average home can reduce its carbon footprint by as much as 4,000 pounds per year.



### TECO COAL

TECO Coal monitors methane emissions from its underground operations. TECO Coal averaged 196,450 cubic feet of methane every 24 hours from each of its 21 underground mines. NO<sub>x</sub> and SO<sub>2</sub> are measured regularly on all diesel equipment used underground. These amounts are recognized by regulators as insignificant.

TECO Coal is a partner in an experimental carbon sequestration program for the southeastern United States. This initiative looks at ways of sequestering CO<sub>2</sub> by injecting it into mine voids and by establishing carbon sinks in trees. This program is designed to reduce global greenhouse gases as a voluntary effort to reduce global warming without the debilitating effects of the Kyoto Protocol.

This effort also includes the Department of Energy and oil/gas companies, railroads, several electric utilities, other major coal producers, land-holding companies, and the University of West Virginia.



Left: **Coal Operations.** Shown here through its Bear Branch and Premier Elkhorn facilities, TECO Coal works to provide high-quality coal to its customers while minimizing its impact on the environment. .

## TECO GUATEMALA

TECO Guatemala operates its facilities under an approved environmental management plan that provides for efficient facility operation while ensuring worker health and safety and reducing environmental impacts. This plan is incorporated into the plant's standard operating procedures without sacrificing the quality of the operation.

TECO Guatemala has an environmental emissions control plan, including monitoring programs, and maintains overall compliance with the World Bank Guidelines of 1996, as well as all Guatemalan guidelines.

**San José Power Station.** Like its sister station, Alborada, the San José facility has a strong operating profile while complying with World Bank Guidelines.



“ Research and development efforts should be aimed at technologies that are able to eliminate, reduce or control greenhouse gas emissions, including related generation technologies and concepts, such as carbon capture and sequestration for advanced clean coal projects. ”

- *TECO Energy Environmental Policy*