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Making Progress: Texas Industry Improves Air Emissions

Studies track impact of regulations and industry upgrades on air quality

AUSTIN (August 9, 2005) – Large investments in emission controls at coal-fired power plants have resulted in significantly lower emissions over the last ten years and dramatic improvements in air quality, according to a series of academic studies released today.

Prepared by leading academic researchers, these studies demonstrate that the implementation of emerging technologies by the Texas electric utility industry has led to dramatic reductions in nitrogen oxides (NO_x), particulate matter and sulphur dioxide (SO₂). Underwritten by the Clean Coal Technology Foundation of Texas, the studies also focused on the use of technology to continue improving air emissions such as mercury.

“Despite huge increases in our State’s population and energy consumption, emissions from Texas coal-based power plants providing our electricity have dropped significantly. Emerging technologies will allow these emissions to be further reduced,” said Donna McDonald, Administrative Director of the Clean Coal Technology Foundation. “These four studies scientifically track the progress made to date and showcase the new environmental technologies needed to meet EPA’s new, more stringent, standards. The studies also highlight further improvements that the energy industry is already working to achieve.”

The Clean Coal Technology Foundation of Texas commissioned four independent air quality studies by recognized academic researchers to quantify the progress made in reducing emissions and to showcase the emerging technologies being developed to meet stricter emission standards. The four studies demonstrate that carefully considered, attainable regulations are having a positive impact on Texas.

Dr. David Allen of the University of Texas at Austin, Matthew P. Fraser of Rice University, Peter H. Santschi of Texas A&M University at Galveston and Dr. Carl Richardson of URS Corporation in Austin, Texas prepared the four independent studies.

“Texas has significantly reduced ground-level ozone concentrations and reduced emissions that impair visibility,” said Dr. Allen. “NO_x is a precursor to ground-level ozone, and sulphur dioxide (SO₂) is one factor contributing to regional haze. The Texas electric utility industry has successfully implemented technology to reduce these emissions.”

Texas electric utilities, by installing innovative technologies to meet federal and state environmental regulations, have achieved rapid progress in emissions reductions and environmental quality improvements. Even more remarkable, Texas has accomplished this

during a time of explosive population growth, significant economic expansion and dramatically increased energy demand.

Highlights of the air quality improvements quantified by the four academic studies include:

- In 2002, the EPA reported that the nation's air quality has improved dramatically over the past several decades.
- Since 1980, emissions of sulfur dioxide (SO₂) and nitrogen oxide (NO_x) from coal-fueled power plants have been reduced by 40 percent.
- These reductions have been accomplished while electricity generated from coal has increased by approximately 70 percent.
- On average, the power plants in Texas already have low emission rates of NO_x compared to other power plants in the United States. In fact, emission rates of power plants in Texas are the 7th lowest overall and the lowest among states that use coal as a fuel.
- During the 1990s, NO_x emissions from industrial facilities in Texas decreased by 12 percent and 31 percent respectively, amounts virtually identical to the national rates despite a Texas' rate of population growth being nearly double the national average.
- The pollution control technologies used for SO₂, NO_x and Particulate Matter (PM) also produce a "co-benefit" of removing mercury from emissions.
- Since the 1980s, these pollution control technologies have already reduced mercury emissions by an estimated 40 percent.

In addition to the progress already made, further reductions are planned for Texas. Recently passed regulations, specifically the Clean Air Interstate Rule and the Clean Air Mercury Rule, set stricter emission standards and require industry to make further reductions. Electric utilities in Texas have made a significant investment in environmental controls over the past five years. Private industry will continue to lead the charge in improving environmental quality as coal-fueled power plants achieve cleaner emissions.

The State of Texas will soon initiate a comprehensive air quality assessment, the Texas Air Quality Field Study (TexAQS II). As part of the Texas Emission Reduction Program, the Texas Commission on Environmental Quality (TCEQ) will launch the TexAQS II, a comprehensive research initiative to better understand the causes of air pollution. The study will provide policy makers with technical information to help design plans that will further improve the air quality in Texas.

One challenge that the state must address is how to reduce mercury in the atmosphere even though most mercury depositions in the U.S. come from outside U.S. borders. U.S. coal-fueled power plants contribute only *one* percent to the worldwide total of airborne mercury emissions.

Because mercury can travel thousands of miles and remain airborne for up to a year, mercury emissions in any continent can contribute to mercury deposition in other continents. At least 80 percent of mercury emissions found in the western half of the U.S. comes from outside U.S. borders, according to the Electric Power Research Institute.

“Texas’ economic future depends on a reliable, affordable supply of energy,” said McDonald. “The challenge, however, is to both use coal more efficiently and in a way that reduces air emissions. That requires the development, testing and deployment of new technology.”

The Clean Coal Technology Foundation of Texas promotes the use and development of clean coal technologies that will result in reliable, low-cost and increasingly clean energy for Texas. The Foundation is a privately funded entity that also works to support the mission of the Governor’s Clean Coal Technology Council.

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For copies of “Making Progress,” an executive summary of all four reports, or copies of the individual academic reviews, please contact:

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