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U.S. Power Plant Emissions Report Reflects Industry's Transition to Cleaner Energy

Latest data on top 100 power producers show declining SO₂, NO_x and CO₂ emissions and increasing use of energy efficiency and renewables

BOSTON – July 31, 2012 – A new report on U.S. power plant emissions from the top 100 power producers demonstrates the impact of the electric power industry's current transition to cleaner energy sources.

The 2012 [Benchmarking Air Emissions](#) report is the eighth report in a series highlighting environmental performance and progress in the nation's electric power sector. The report is based on 2010 generation and emissions data from the Energy Information Administration and the Environmental Protection Agency, and also includes analysis of preliminary 2011 emissions data. The previous edition reported on 2008 data.

Key findings of the report include:

- In 2010, sector-wide power plant **emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) were both 68 percent lower** than they were in 1990, the report's benchmark year. From 2008 to 2010, **SO₂ emissions fell by 32 percent and NO_x emissions fell by 31 percent** as the sector shifted away from coal.
- From 2008 to 2010, power plant **carbon dioxide (CO₂) emissions fell four percent**; however, emissions were still 24 percent higher than they were in 1990, the report's benchmark year. Further reductions are expected as utilities retire 12 percent of the nation's coal-fired generation fleet.
- Excluding large hydroelectric projects, **renewable energy accounted for nearly five percent of U.S. electricity generation in 2011**, and more than doubled from 2004 to 2011 to 195 million megawatt-hours.
- **Utility energy efficiency budgets increased 26 percent from 2010 to 2011**, and record levels of efficiency resources are being purchased in the nation's largest electricity markets.

Using preliminary sector-wide emissions data from 2011, the report indicates a continued downward trend in CO₂ emissions, with emissions falling an additional five percent compared to 2010. Emissions of CO₂ had increased by about five percent from 2009 to 2010 as demand for electricity increased with the recovering economy. However, CO₂ emissions declined by a similar amount from 2010 to 2011 due to a shift away from coal-fired generation. Preliminary data also indicate that in 2011, sector-wide power plant SO₂ and NO_x emissions continued to fall, dropping 40 percent and 35 percent below 2008 levels, respectively. Emissions of these pollutants are expected to decline further as power plant owners install additional pollution controls and plan to retire roughly 12 percent of the nation's coal-burning fleet.

"This is an historic transition for the electric power industry," said **Mindy Lubber, president of Ceres**, which prepared the report with M.J. Bradley & Associates, NRDC, Entergy, Exelon, Tenaska

and Bank of America. “More and more power producers are shifting away from coal-fired generation in favor of lower-emitting natural gas-fired plants, renewable power and energy efficiency. The economic case for cleaner energy is better than it’s ever been, and this report shows that the industry is adapting to stronger Clean Air Act emissions standards, state-driven efficiency and renewable energy incentives and the dynamics of the current natural gas market.”

“Business and policy decisions are only as good as the information on which they’re based. The report fills the need for impartial analysis and is instructive, highlighting the wide variety of energy emission rates due to advancement in technology over time, differing fuel types, and a shift to cleaner energy portfolios,” said **Greg Kunkel, Tenaska vice president of environmental affairs.**

The widespread transition away from coal is affecting some of the nation’s largest coal burners, the report finds. For example, [Southern Company](#), one of the nation’s most coal-intensive power producers, expects its fuel mix to include more natural gas than coal in 2012 for the first time in its 100-year history. [American Electric Power](#), the biggest producer of electricity, said in April that it used 62 percent more gas in the first three months of the year than it did in 2011.

Since January 2010, power plant owners have announced about 40 gigawatts of coal plant retirements, representing approximately 12 percent of the nation’s coal-fired capacity. Most of the plant closures are scheduled to occur between 2012 and 2020, and some already have occurred. The plants set for closure are largely older, smaller and higher polluting, the report finds. At the same time, natural gas consumption by the electric power sector has increased at an average rate of 4 percent per year over the past decade.

Changes in the generating fleets of Tennessee Valley Authority (TVA) and Xcel Energy are indicative of these broad trends in the electric power sector. From 2008 to 2010, TVA reduced its proportion of coal-generated electricity from 61 percent to 52 percent of overall generation and achieved significant reductions in SO₂, NO_x and CO₂ emissions rates across all generating sources. Similarly, changes to Xcel Energy’s generating resources resulted in significant reductions in the utility’s fleet-wide emissions rates from 2008 to 2010. Most recently, Xcel reported that more than 50 percent of its total Colorado load was served by wind at one point in early 2012, and California’s three investor-owned utilities—Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric—exceeded 20 percent renewable generation at the end of 2011.

“This report underscores the tremendous progress we are making in cleaning up our air, improving our health and moving America toward a more prosperous and more advanced energy economy. But the report also serves as a reminder that we still have a long way to go and that some companies have farther to go than others. It’s time to redouble our efforts,” said **Dan Lashof, Program Director of Climate and Clean Air at the Natural Resources Defense Council.**

Benchmarking Air Emissions also shows zero-emitting technologies gaining ground. In 2011, the U.S. wind energy industry added over 6,800 megawatts (MW) of new wind power capacity, bringing the nation’s cumulative total to over 47,000 MW. High wind capacity in Texas, Colorado, and the Upper Midwest has led to record high contributions by wind to the total energy mix.

In addition, energy efficiency is competing with generation resources in the nation’s largest electricity markets. In PJM Interconnection, the largest wholesale electricity market in the world, 900 MW of energy efficiency cleared the latest auction. Nationally, utility efficiency budgets have increased 26 percent from \$5.4 billion in 2010 to \$6.8 billion in 2011.

Benchmarking Air Emissions presents comparative analysis of emissions data for policymakers considering regulatory approaches; public interest organizations concerned about public health and consumer costs; and financial analysts and investors assessing company risk exposure as power plant emission limits in the U.S. gain more momentum. The report is available for download at ceres.org, nrdc.org, and mjbradley.com. In addition to the aggregate corporate emissions data for 2010 provided in this report, company-specific data for 2010 are now available for download at mjbradley.com.

For more information:

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About Ceres

Ceres is an advocate for sustainability leadership. Ceres mobilizes a powerful coalition of investors, companies and public interest groups to accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy. Ceres also directs the Investor Network on Climate Risk (INCR), a network of 100 institutional investors with collective assets totaling more than \$10 trillion. For more information, visit <http://www.ceres.org>

About NRDC

The Natural Resources Defense Council (NRDC) is an international nonprofit environmental organization with more than 1.3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Livingston, Montana, and Beijing. Visit us at www.nrdc.org and follow us on Twitter @NRDC.

About Entergy

Entergy Corporation is an integrated energy company engaged primarily in electric power production and retail distribution operations. Entergy owns and operates power plants with approximately 30,000 megawatts of electric generating capacity, including more than 10,000 megawatts of nuclear power, making it one of the nation's leading nuclear generators. Entergy delivers electricity to 2.8 million utility customers in Arkansas, Louisiana, Mississippi and Texas. Entergy has annual revenues of more than \$11 billion and approximately 15,000 employees. Learn more at entergy.com and follow us on Twitter @Entergy.

About Exelon

Exelon Corporation (NYSE:EXC) is the nation's leading competitive energy provider, with approximately \$33 billion in annual revenues. Headquartered in Chicago, Exelon has operations and business activities in 47 states, the District of Columbia and Canada. Exelon is the largest competitive U.S. power generator, with approximately 35,000 megawatts of owned capacity comprising one of the nation's cleanest and lowest-cost power generation fleets. The company's Constellation business unit provides energy products and services to approximately 100,000 business and public sector customers and approximately 1 million residential customers. Exelon's utilities deliver electricity and natural gas to more than 6.6 million customers in central Maryland (BGE), northern Illinois (ComEd) and southeastern Pennsylvania (PECO).

About Tenaska

Tenaska is an energy company, headquartered in Omaha, Neb., that develops, constructs, owns and operates non-utility generation and cogeneration plants. Company affiliates also market natural gas, biofuels and electric power, and provide risk management services. Tenaska is involved in

asset acquisition, fuel supply, natural gas exploration, production and transportation systems, and electric transmission development. Tenaska has developed approximately 9,000 megawatts (MW) of electric generating capacity across the United States. Tenaska's affiliates operate and manage eight power plants in six states totaling more than 6,700 MW of generating capacity owned in partnership with other companies. Tenaska Capital Management, an affiliate, manages private equity investments with approximately \$4 billion in assets, including seven power plants (with approximately 4,200 MW of capacity) and multiple natural gas midstream assets, including an operational gas gathering system and storage facilities under development. For more information about Tenaska, visit www.tenaska.com.

About Bank of America

Bank of America's commitment to corporate social responsibility (CSR) is a strategic part of doing business globally. Our CSR efforts guide how we operate in a socially, economically, financially and environmentally responsible way across more than 100 markets around the world, to deliver for shareholders, customers, clients and employees. Our goal is to help create economically vibrant regions and communities through lending, investing and giving. By partnering with our stakeholders, we create shared value that empowers individuals and communities to thrive and contributes to the long-term success of our business. We have several core areas of focus for our CSR, including responsible business practices; environmental sustainability; strengthening local communities with a focus on housing, hunger and jobs; investing in global leadership development; and engaging through arts and culture. Recently Bank of America announced a new 10-year, \$50 billion environmental business goal to address climate change, demands on natural resources and advancing lower-carbon economic solutions. The new goal will begin in 2013, and builds on the early completion of our 10-year, \$20 billion initiative announced in 2007. Learn more at www.bankofamerica.com/opportunity and follow us on Twitter at @BofA_Community.

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