



Energy Insights -- March 2012

Monthly Briefing on Energy Issues and Trends

Energy Wholesale Prices Heading in Different Directions for Different Reasons

According to the U.S. Energy Information Administration, 2011 energy commodity price trends varied widely — with increased petroleum and coal prices, but lower natural gas and electricity prices:

Petroleum: The national average pump price for gasoline and diesel during 2011 never fell below \$3 a gallon, marking the first time the national pump price for both transportation fuels topped this level throughout a calendar year. Higher gasoline and diesel prices reflected higher crude oil prices which rose in response to the disruption in Libya's oil production and expected stronger oil demand as the global economy improved.

Coal: Through November 2011 (latest data available), average delivered coal prices to electric utilities in the U.S. were up about 6% compared to the same period for 2010. Record coal exports contributed to higher wholesale prices even though U.S. total coal production rose slightly (0.4%) in 2011.

Natural Gas: 2011 prices at the Henry Hub, a key pricing point at a pipeline hub on the Louisiana Gulf Coast -- fell 9% from 2010 to the lowest annual average price for natural gas in almost a decade (\$4.37 MMBtu). Abundant reserves and production drove down the price. The Northeast had the highest natural gas prices in the country -- about 15% above the national average -- due to pipeline constraints, especially during extreme weather. Nevertheless, prices in the Northeast followed the national decline of up to 7% in 2011.

Electricity: Average on-peak, day-ahead electricity prices were lower across most of the U.S. in 2011, with many markets mirroring the decline in natural gas prices. In the Northeast, wholesale electricity prices declined approximately 6%. Conversely, Texas electricity prices increased -- at least temporarily -- by a whopping 51% because sustained, widespread, extreme heat resulted in record-breaking load levels and unprecedented prices.

Additional information on energy price trends can be found at www.eia.doe.gov

Electric Utilities Investing in Efficiency & Infrastructure

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A 2012 Wall Street briefing by the Edison Electric Institute highlights industry performance in several areas:

Generation Technologies: To ensure a reliable, affordable electricity supply, the industry is relying on a diverse mix of fuels -- including coal, nuclear, natural gas, hydro, solar, wind and other renewables. Electric utilities are also investing in unique ways to store electricity, including battery, fly-wheel, and compressed air storage technologies to improve the feasibility and cost-effectiveness of renewable energy sources.

Energy Efficiency: A report by the Institute for Electric Efficiency found that utility energy efficiency and demand response programs saved enough electricity to power almost 10 million homes in 2010, representing approximately 112 million megawatt-hours (MWh) of electricity. These savings signify an increase of 21 percent over 2009 levels.

Smart Grid: To date, about 27 million smart meters have been installed, representing about 23 percent of U.S. households. In three years, the industry expects to more than double digital meter installation. For many electric companies, smart meters will be system-wide by mid-decade.

Infrastructure Investment: The electric utility industry is one of the most capital intensive in the country. Today, these investments total approximately \$80 billion per year -- about double what was spent in 2004. Transmission investment accounts for a growing percentage of capital expenditures -- over \$10 billion in 2011. Looking ahead, the industry expects the annual level of transmission investment to increase to more than 30% by 2014.

The 2012 Wall Street Briefing: *Electricity: The Future Starts Here* can be found on the Edison Electric Institute website (www.eei.org).

Study Shows Economic Benefits of the Regional Greenhouse Gas Initiative

Ten states in the Northeast and Mid-Atlantic regions initiated the Regional Greenhouse Gas Initiative (known as RGGI) to reduce carbon dioxide emissions from electricity generation. This initiative created the country's first mandatory cap-and-trade program, requiring fossil-fueled power plants over 25 megawatts to buy "allowances" for each ton of carbon dioxide emitted. These allowances are auctioned off four times a year.

A study by the Boston consulting firm Analysis Group, found that since the first auction in 2008 through June 2011, electricity generating plant owners have spent roughly \$912 million to buy carbon dioxide allowances -- costs which are borne by consumers. The proceeds are disbursed to participating states, where most of the funds are invested in energy efficiency programs.

Since 2009, these investments were found to have added \$1.6 billion in net benefits to the economy of the participating states, including customer energy savings over the next decade of \$1.3 billion from energy efficiency programs.

The report also found that RGGI created over 16,000 "Job Years" by employing people to conduct energy efficiency audits and install

efficiency measures or to maintain workers in state-funded programs that might have been cut had a state not used RGGI funds to close budget gaps. When spread across the region's population, these economic impacts amount to nearly \$33 per person

The study also found that RGGI increased consumers' bills by an average of 0.7% over the last three years. The study predicts that over time, RGGI will lower consumer bills because of investment in energy efficiency measures that will ultimately reduce consumer electricity use

In terms of emissions reduction, factors unrelated to the RGGI program have resulted in a 35% reduction in carbon dioxide emissions from electricity generation in the RGGI region since 2005. The most significant cause is the proportion of electricity generated by coal and oil in the RGGI region has declined by nearly 50% since 2005. Other lesser contributors include the economic slowdown (less electricity being generated) and impacts of energy efficiency programs.

The Economic Impacts of the Regional Greenhouse Gas Initiative on Ten Northeast and Mid-Atlantic States is available on the Analysis Group's website at www.analysisgroup.com

Massachusetts Study Finds No Link Between Wind Turbines and Public Health

The Massachusetts Department of Environmental Protection (MassDEP) in collaboration with the Massachusetts Department of Public Health (MDPH) convened a panel of independent experts to identify any documented or potential health impacts associated with wind turbines.

Research on existing scientific literature was reviewed by the panel which included mechanical engineers, physicians and experts on acoustics, public health, sleep disturbances and other scientific fields

They study found:

- No evidence of health effects from exposure to wind turbines that could be characterized as a "Wind Turbine Syndrome"
- No scientific demonstration that infrasound from wind turbines directly impacts the vestibular systems
- No association between noise from wind turbines and measures of psychological distress or mental health problems
- No evidence suggesting association between noise from wind turbines and pain and stiffness, diabetes, high blood pressure, tinnitus, hearing impairment, cardiovascular disease, and headache/migraine
- Limited epidemiological evidence suggesting an association between exposure to wind turbines and annoyance
- Limited evidence suggesting an association between noise from wind turbines and sleep disruption
- Evidence that shadow flicker does not pose a risk for eliciting seizures. There is limited scientific evidence, however, of an association between annoyance from prolonged shadow

flicker and potential transitory cognitive and physical health effects.

Due to the complex nature of the research, a public comment period was held through mid-March with several public hearings. Additional information on the study can be found at www.mass.gov/dep/energy/wind/panel.htm

Construction of First New Nuclear Power Units in 30 Years

The U.S. Nuclear Regulatory Commission announced approval of Southern Nuclear's combined construction and operating license for the two-reactor Plant Vogtle expansion in Georgia. Southern Nuclear -- a subsidiary of Southern Company -- will build two Westinghouse Electric Co. AP1000 reactors at the site -- the nation's first two new nuclear units in 30 years.

The Combined Construction and Operation License (COL) is the first such license ever approved for a U.S. nuclear plant (historically they have been granted separately). Receipt of the COL enables construction to begin.

The project is estimated to create up to 5,000 construction jobs and over 25,000 direct and indirect jobs. Plant operation is expected to begin in 2016 and 2017.

Exelon Corporation and Constellation Energy Merger Complete

On March 12th, Exelon Corporation and Constellation Energy announced the completion of their merger, creating the largest competitive energy provider in the U.S. The new company retains the Exelon name and will have operations and business activities in 47 states including the six New England states

The company has one of the nation's largest power generation fleets, with approximately 35,000 megawatts of power generation, including more than 19,000 megawatts of nuclear power. It will also be one of the largest residential electricity and natural gas distribution companies, serving 6.6 million gas and electric customers (in Maryland, Pennsylvania and Illinois).

Report Weighs Economic Impacts of Vermont Yankee Closure

Last year, the U.S. Nuclear Regulatory Commission extended Vermont Yankee's 40-year operating license for another 20 years until 2032. The extension was granted despite state legislation that would have put the plant on track for closure. In January 2012, a federal judge ruled that the state's efforts to close the plant fringed upon federal jurisdiction. Vermont has appealed the decision in its entirety and the plant's owner has appealed a section that requires state approval for on-site spent fuel storage past March 31st. The plant will continue to operate until resolution of the appeals.

A recent report has found that potential closure of Vermont Yankee would have a devastating effect on the local economy. According to the report by the Southeast Vermont Economics Development Strategy Planning Group, plant closure would result in: the loss of

more than 1,000 jobs; a decrease in the state education fund of almost \$5 million; a loss of \$6 million in municipal and state property tax revenue; and a decrease in property values of between 5 to 15 percent. The report was commissioned by a task force established to assess the economic impact of Vermont Yankee's closure on Windham County.

Do You Know?

According to ISO New England, approximately \$4.6 billion in transmission investment has been made across the six New England states from 2002 through 2011, and another \$5-plus billion is planned over the next decade.

This investment will enable electricity to flow more efficiently within and between regions, provides greater access to low-cost electricity supplies, improves market competition, reduces transmission congestion costs and line losses, and reduces the need for costly reliability provisions with specific power plants.

About the New England Energy Alliance, Inc.

The New England Energy Alliance is a coalition of energy companies and trade associations advocating to ensure the availability, reliability and affordability of future energy supplies which are vital to the region's economic growth and prosperity. Formed in 2005, the Alliance works to balance public debate about solutions to New England's energy infrastructure by providing information on the region's energy needs and the resources, technologies and policies needed to meet those needs.

Please visit www.newenglandenergyalliance.org for more information on the Alliance.



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