



Energy Insights -- January 2013 Monthly Briefing on Energy Issues and Trends

Short-Term Projections of U.S. Fuel Supplies and Prices

The Energy Information Administration's (EIA) *Short-Term Energy Outlook* contains the following forecasts for 2013 and 2014:

Oil -- U.S. crude oil production averaged 6.4 million barrels per day (bb/d) in 2012 and is projected to increase to 7.3 million in 2013 and 7.9 million bb/d in 2014 -- the highest annual average level of production since 1988. Crude oil spot prices, which averaged \$112 per barrel in 2012, are expected to fall to \$99 per barrel by 2014 -- which will reduce gasoline prices from an average of \$3.63 per gallon in 2012 to \$3.34 in 2014.

Natural Gas -- In November 2012, natural gas inventories reached a record high level of 3.5 trillion cubic feet (Tcf). Continued growth in natural gas production is expected to be driven largely by production in the Marcellus Shale areas of Pennsylvania and West Virginia. EIA expects the Henry Hub natural gas spot price, which averaged \$2.75 MMBtu in 2012 to increase to \$3.9 MMBtu in 2014.

Coal -- In 2012, coal used to generate electricity totaled 829 million short tons -- the lowest since 1992. Higher natural gas prices are expected to slightly increase coal's share of total electricity generation from 37.6% in 2012, to 39.6% in 2014 -- although lower than projected natural gas prices along with future environmental regulations could cause coal use to fall below this forecast.

Electricity -- Total electricity generation is expected to remain largely unchanged in 2013 and is projected to increase slightly by 0.8% in 2014. Retail electricity prices are forecasted to increase by 1.9% in 2013, and an additional 2.6% in 2014, due to the rising cost of infrastructure upgrades.

Renewables -- Electricity generated by renewable resources decreased by 2.5% in 2012, due to a decline in hydropower which more than offset growth in other renewable resources. Wind-powered generation grew by 17% in 2012, and is expected to increase by an additional 13% in 2013, followed by a year of no growth in 2014. Electricity generated from solar energy is projected to grow 31% in 2013 and 28% in 2014. However, wind and solar will still generate a small percentage of the nation's total electricity.

In This Issue:

Short-Term Projections of U.S. Fuel Supplies and Prices

ISO New England Projects Adequate Resources to Maintain Reliability

Natural Gas is Increasingly the Dominant Fuel for U.S. Electricity Generation

New England to Invest an Additional \$5.7 Billion in Energy Efficiency

2012 Clean Energy Progress

CT Regulator Named President of NECPUC

For more information: U.S. Energy Information Administration: *Short-Term Energy Outlook*, January 8, 2013 (www.eia.gov)

ISO New England Projects Adequate Resources to Maintain Reliability

ISO New England's 2012 Regional System Plan projects adequate resources to meet the region's forecasted electricity annual growth rate of 0.9% over the next decade, as well as the summer peak demand growth of 1.5% per year.

Adequate Generation and Demand Resources The current development of generation, demand and import capacity resources in the region is expected to provide the electricity supplies needed to meet the requirements for resource adequacy through the current resource commitment period which runs through May 2016. More than 14,430 megawatts (MW) of new generation has been constructed in New England since 1997 -- an increase of over 50%.

Robust Transmission Development From 2002 through June 2012, 400 transmission projects representing \$4.8 billion in infrastructure upgrades have been put into service to enhance reliability. Several additional transmission upgrades are under construction, have been approved, or are being prepared for state siting proceedings.

Increased Reliance on Natural Gas for Electricity Generation New England is increasingly dependent on natural gas as the primary fuel for electricity generation, while the use of oil and coal is declining. Between 2000 and 2011, electricity generated by natural gas-fired power plants grew from 15% to more than 50%. During this same time period, electricity generated by oil units declined from 22% in 2000, to less than 1%, and coal from 18% to 6%.

For more information: *2012 Regional System Plan (RSP12)*, ISO New England, Inc., November 2012 (www.iso-ne.com)

Natural Gas is Increasingly the Dominant Fuel for Electricity Generation

While natural gas is the dominant fuel used for electricity generation in New England, coal has traditionally held that position for electricity generation nationally.

But for the first time, during 2012, natural gas matched coal in the generation of electricity -- largely resulting from abundant natural gas supplies from advanced drilling techniques such as horizontal drilling and hydrofracking.

According to a recent article in the *MIT Technology Review*, these methods make it practical to extract large amounts of natural gas that have long been known to exist in shale deposits around the country, most notably in the Marcellus shale that spreads for tens of millions of acres underneath much of Pennsylvania and parts of New York, Ohio, West Virginia, Maryland and Kentucky. While there is disagreement on how much recoverable gas these deposits

hold, it is estimated to be more than enough to supply the U.S. for many decades

The article states that due to lower prices from abundant supplies, natural gas-fired generating plants can now produce electricity at around four cents per kWh -- cheaper than electricity from coal plants and far less than the price of electricity from wind or solar power.

The article reports that for the first half of 2012, the price of natural gas was around \$2 to \$2.50 per million BTUs -- over five times cheaper than what it was in 2008. At \$2.5 per million BTUs, the price of natural gas is the equivalent of around \$15 per barrel for oil.

Also noted is that natural gas-fired power plants emit only two-fifths as much carbon as new coal plants. Thus, the U.S. is saving about 400 million metric tons of carbon emissions annually in the recent switch to natural gas from coal -- which the article mentions is twice as much progress as the European Union has made in complying with the Kyoto Protocol through policy efforts.

Looking forward, a forecasted increase in the price of natural gas due to increased demand could reverse this trend nationally in 2013, maintaining coal as the dominant fuel for electricity generation.

Sources: "King Natural Gas" David Rotman, *MIT Technology Review*, Sept/Oct 2012; U.S. Energy Information Administration

New England to Invest an Additional \$5.7 Billion in Energy Efficiency

According to a recently released Energy Efficiency Forecast by ISO New England, \$1.2 billion was spent on energy efficiency programs in the region over the past several years that cumulatively reduced electricity consumption by about 3,500 gigawatt-hours (GWh) and peak demand by 514 MWs (the amount of electricity required to power about half a million homes). These programs have also deferred about \$260 million in transmission upgrades and made the New England states national leaders in energy efficiency.

ISO's forecast -- the first multi-state long-term forecast of energy efficiency reductions in the nation -- predicts New England will spend an additional \$5.7 billion on energy efficiency measures from 2015 to 2021 to further reduce electricity consumption and peak demand.

Energy efficiency programs are funded by the "systems benefits charge" on rate-payers bills, revenues from the region's Forward Capacity Market, and amounts included in state budgets for policy directives. State public utility commissions generally oversee the programs, while electric and gas utilities serve as program administrators (although ME and VT have created separate entities to provide efficiency services).

For more information, ISO New England Media Briefing: Energy Efficiency Forecast, December 12, 2012 (www.iso-ne.com)

2012 Clean Energy Progress

In 2012, the U.S. installed a record 3,200 MW of solar power -- the size of a few large power plants -- bringing the nation's solar capacity to 7,600 MW's. This growth was partly due to a record drop in solar panel costs which have decreased 80% in five years.

The U.S. wind sector also had its strongest year as companies rushed to get wind farms built before expiration of the Wind Production Tax Credit. In total 50,000 MW of wind power -- with the potential to power up to 13 million homes -- was installed. Together, however, wind and solar still make up only 5% of the nation's electricity supply.

The Wind Production Tax Credit was scheduled to expire at the end of 2012 but was renewed during the Fiscal Cliff negotiations. It provides a credit of 2.2 cents per kWh generated from wind power. The tax credit -- which totals about \$1 billion annually -- has been available since 1992.

Source: "2012 Was a Big Year for America's Clean Energy Economy." *McClatchy Tribune*, January 1, 2013.

CT Regulator Named President of NECPUC

Connecticut Public Utilities Regulatory Authority (PURA) Vice Chairman John Betkoski was named President of the New England Conference of Public Utilities Commissioners (NECPUC).

NECPUC, established in 1947, provides regional regulatory assistance on matters of common concern to the six New England States. It addresses issues regarding electric, gas, telecommunications and public drinking water companies.

Betkoski has served on Connecticut's utility regulatory authority since 1997 when he was named a Commissioner of the Department of Public Utility Control. He was elected Vice Chairman in 2007. When PURA was established on July 1, 2011 as the state's new regulatory authority, Betkoski was appointed a Director by Governor Malloy and elected as Vice Chairman of the new authority.

About the New England Energy Alliance, Inc.

The New England Energy Alliance is a coalition of energy companies 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.