Northeast Supply Enhancement

NATURAL GAS FUELING A RENEWABLE FUTURE

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Thanks to an increase in the popularity of natural gas, the United States has reduced its carbon emissions more than virtually any other nation in the world.

Domestic natural gas production has ramped up 40 percent in the past decade, resulting in a 70 percent drop in prices and catapulting natural gas past coal as the country's leading fuel for electric power generation.

During the past five years, electric generation from coal has fallen one-third and U.S. CO2 emissions have plummeted to 20-year lows. That's because natural gas emits half the carbon dioxide of coal to generate the same amount of electricity. What isn't as well known is that natural gas complements low-carbon energy solutions by providing the flexibility and affordability needed to support a growing renewables component in power generation.

Because natural gas a reliable, inexpensive fuel source, it allows utilities to blend renewables into their portfolios without raising costs for the consumer.

Renewable energy industry leaders, such as Solar Energy Industries Association, have pointed to natural gas's flexibility as key to helping make the use of renewables a reality.

"Natural gas and renewables complement each other very nicely," said Rhone Resch, CEO of the Solar Energy Industries Association. "I think it's important to recognize that these industries, although we do compete, are working together to address some of the most pressing energy needs in the country."

The ability for a utility company to incorporate more wind and solar energy into their power mix is dependent on natural gas combined cycle turbines that will quickly and cost-effectively pick up the slack when the sun doesn't shine or the wind doesn't blow.

Natural gas complements low-carbon energy solutions, supporting a growing renewables component in power generation.

Cal-Berkley Professor Richard Muller points out that renewable energy sources like solar and wind require back-up energy supplies that are flexible and cost effective.

"Cheap natural gas can also make it easier for solar and wind energy to further penetrate electricity markets by providing the rapid back-up that those intermittent sources require," he says. The Business Council for Sustainable Energy echoed this point in 2013.

"Gas generators, which are inherently flexible technologies that can be easily ramped up and down to meet demand, are natural counterparts for variable resources such as wind and solar."

President Obama's proposed Clean Power Plan recognizes the important role natural gas is going to play in our country's energy portfolio. Under the Plan, natural gas will continue to provide the largest share of power generation by 2020 (32%), 2030 (31%) and 2040 (29%).

The environmental benefits of natural gas are well documented.

Data from the EPA and the U.S. Energy Information Administration (EIA) show a 60 percent decrease in Fine Particulate Matter (PM 2.5) from 2005 to 2013. Over that same period, U.S. natural gas production increased by 35 percent, and natural gas-fired electricity generation increased by 50 percent.

U.S. total electricity generation, 1990-2040

Trillion kilowatt-hours