

## Carbon Dioxide And Methane Emissions Decline Again

Energy-related carbon dioxide (CO<sub>2</sub>) and methane emissions have declined again, according to two new reports from the Environmental Protection Agency (EPA) and the Energy Information Administration (EIA) at the Department of Energy (DOE).

The EPA report issued on Oct. 7 stated that methane released from the nation's petroleum and natural gas sector declined 3.8 percent in 2015, marking the fourth consecutive year methane emissions have dropped.

The EIA released its "Short-Term Energy Outlook" on Oct. 13, noting that the energy industry had the lowest CO<sub>2</sub> emissions during the first six months of 2016 since 1991.

Ironically, even though declines in emissions have been recorded without federal regulations, the EPA has issued massive, new air-emissions regulations on the oil and gas industry, which have prompted many states and industry groups to file a lawsuit against EPA.

Texas, the largest producer of energy (oil, natural gas, and wind), recorded a reduction in methane emissions to a combined 3.58 million metric tons of CO<sub>2</sub> equivalent between 2011 and 2015, according to EPA's report.

The newest report from EIA said the industry totaled 2,530 million metric tons in the first six months of 2016, the lowest level in 25 years. EIA projects that energy-associated CO<sub>2</sub> emissions will fall to 5,179 million metric tons in 2016, the lowest annual level since 1992.

EIA attributed the decrease to a change in electric generating fuels and the weather.

EIA noted that natural gas consumption has increased, as has renewable consumption, but coal consumption has declined.

In the first six months of 2016, the United States had the fewest [heating degree days](#) (an indicator of heating demand) since at least 1949, the earliest year for which EIA has monthly data for all 50 states. Warmer weather during winter months reduces demand for heating fuels such as natural gas, distillate heating oil, and electricity.

Renewable energy consumption increased 9 percent during the first six months of 2016 compared to the same period in 2015. Coal consumption fell 18%.

Overall, total primary energy consumption was 2% lower compared with the first six months of 2015. The decrease was most notable in the residential and electric power sectors, where primary energy consumption decreased 9% and 3%, respectively.

EIA expects the share of U.S. total utility-scale electricity generation from natural gas will average 35 percent this year, and the share from coal will average 30 percent. Last year, both fuels supplied about 33% of total U.S. electricity generation. In 2017, natural gas and coal are forecast to generate about 34 percent and 31 percent of electricity, respectively, as natural gas prices are forecast to increase. Non-hydropower renewables (wind and solar) are forecast to generate 8 percent of electricity generation in 2016 and 9 percent in 2017. Generation shares of nuclear and hydropower are forecast to be relatively unchanged from 2016 to 2017.

Natural gas marketed production fell from 79.7 billion cubic feet per day (Bcf/d) in September 2015 to 76.5 Bcf/d in July 2016. EIA expects marketed natural gas production to average 77.5 Bcf/d in 2016, a decrease of 1.6% from the 2015 level, which would be the first annual decline since 2005. Forecast production increases by 3.7 Bcf/d in 2017.

Henry Hub spot prices are forecast to average \$3.04/million British thermal units (MMBtu) in the fourth quarter of 2016 and \$3.07/MMBtu in 2017. Natural gas futures contracts for January 2017 delivery traded during the five-day period ending October 6 averaged \$3.34/MMBtu. NYMEX contract values for January 2017 delivery traded during the five-day period ending October 6 suggest a price range from \$2.28/MMBtu to \$4.88/MMBtu encompasses the market expectation of Henry Hub natural gas prices in January 2017.

The legal action against EPA was originally filed by the state of North Dakota and quickly joined by Texas and other states. A group of some 18 oil and gas associations also filed suit in the U.S. Court of Appeals for the District of Columbia Circuit.

EPA adopted the methane emissions regulations on June 3.



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