

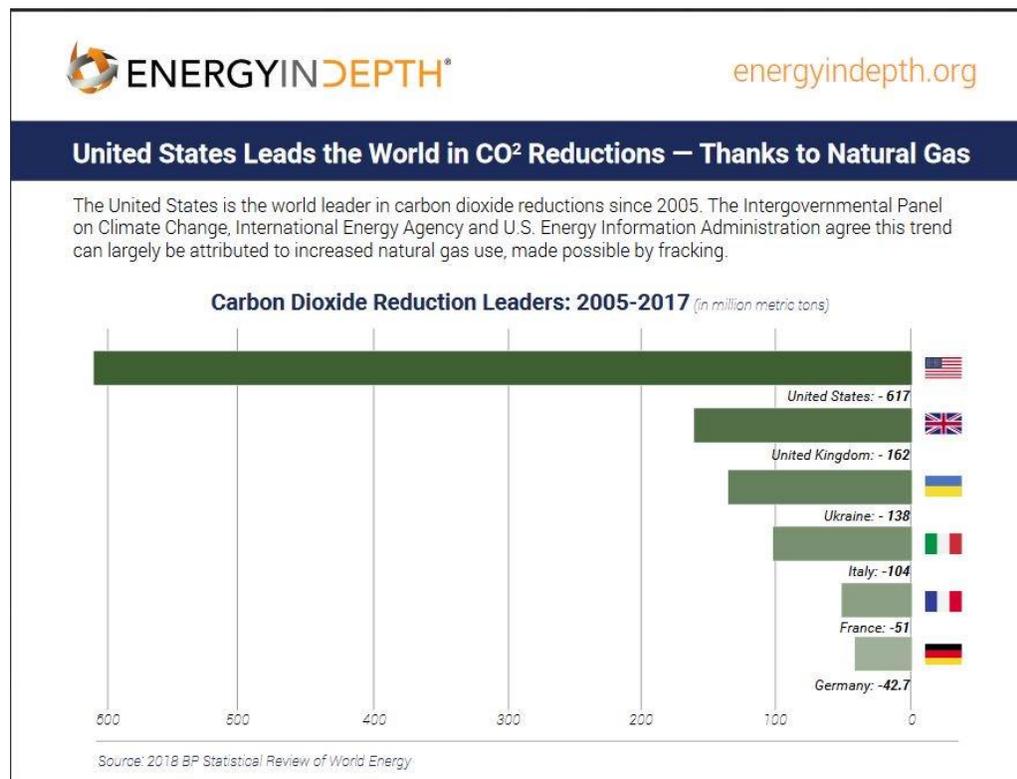
Natural Gas Climate Change Benefits



Position Paper - March 2019

The United States leads the world in greenhouse gas (GHG) emission reductions, and the primary reason has been natural gas. The incredible progress has been made without the use of heavy-handed government policies like a carbon tax, cap-and-trade or international treaties. Rather, we've enabled the United States to reduce greenhouse gas emissions 14% below 2005 levels through a market-driven increase in natural gas electricity generation.¹

Natural gas, as acknowledged by the U.S. Energy Information Administration (EIA) and the International Energy Agency, is the number one reason the United States has reduced more greenhouse gas emissions than any other country over more than a decade.



Source: [Energy in Depth from the 2018 BP Statistical Review of World Energy data](#)

Because natural gas has 55% lower carbon dioxide emissions than coal,² it delivers huge GHG reductions in the electricity sector, where emissions are nearly ten times higher.³ Natural gas has delivered 61% of

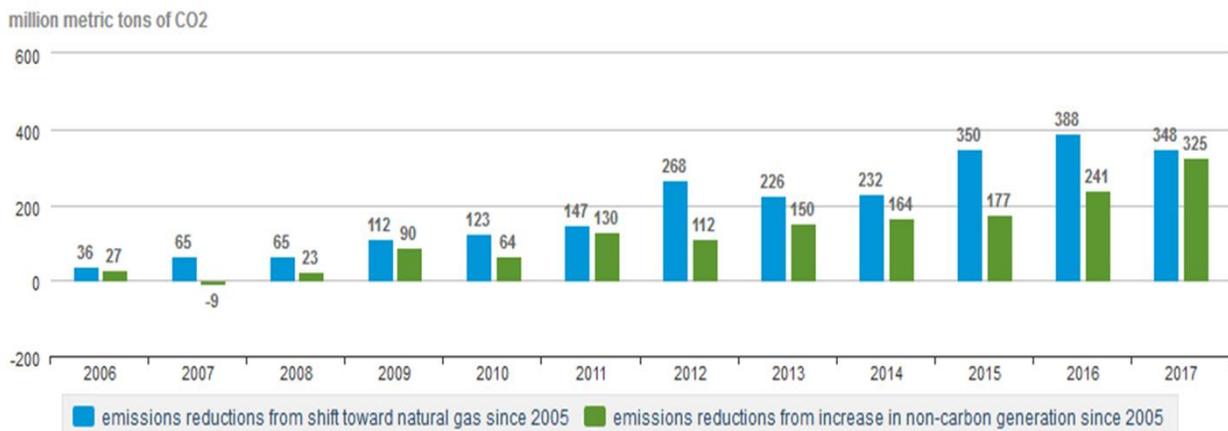
¹ [U.S. Energy-Related Carbon Dioxide Emissions, 2017](#), EIA, September 2018

² [Cost and Performance Baseline for Fossil Energy Plants](#), U.S. Department of Energy, July 2015

³ [Sources of Greenhouse Gas Emissions](#), EPA, 2016

the reduction in greenhouse gases resulting from fuel switching in the electricity sector, removing 2,360 million metric tons of carbon dioxide equivalents since 2005.⁴ In contrast, wind and solar have only reduced GHG emissions by 1,494 million metric tons, or 39% of the total reduction.⁵

Figure 9. Electric generation CO2 savings from changes in the fuel mix since 2005



Sources: U.S. Energy Information Administration, August 2018 *Monthly Energy Review*.

Reducing Methane Emissions

When looking at the full balance of emissions from development and production, EPA finds the oil and natural gas industry accounts for 3.4% of total U.S. GHG emissions. The electricity sector is the largest contributor at 28.4%.

But we're not satisfied even with that low relative contribution. The oil and natural gas industry continues to develop new technologies such as remote sensing and airborne platforms, and to implement best practices to more quickly detect and fix methane leaks. Continual innovation is the reason that the American oil and natural gas industry has decreased methane emissions by 19%⁶ over the last four decades while at the same time increasing natural gas production over 50%.⁷

Small methane leaks at the well head are more than offset by the huge GHG reductions from power plants that natural gas makes possible. Furthermore, many studies show leaks are in the range of 1.5% of production, well below the 3.2% that the Environmental Defense Fund (EDF) estimates will cause natural gas to lose its climate change benefit.⁸

⁴ EIA, September 2018

⁵ Note that EIA and EPA use carbon dioxide equivalents in their inventories and analyses of GHGs. By doing so, the higher potency of methane is taken into account, which enables the relative contributions to be clearly shown. Methane accounts for [10.2%](#) of total U.S. GHG emissions.

⁶ EIA, September 2018.

⁷ [Petroleum and Natural Gas Production](#), EIA, 2018.

⁸ [The Climate Impacts of Methane Emissions](#), EDF, April 2012