

# Why Natural Gas is Critical for a Clean, Reliable, Affordable Generation Mix



**Karen Moreau**  
**Executive Director**  
**150 State Street, 4<sup>th</sup> fl.**  
**Albany, NY 12207**  
**(518) 465-3563**  
**[moreauk@api.org](mailto:moreauk@api.org)**

AMERICAN PETROLEUM INSTITUTE

[https://www.bp.com/en\\_us/bp-us/who-we-are/possibilities-everywhere/wind-and-natural-gas.html](https://www.bp.com/en_us/bp-us/who-we-are/possibilities-everywhere/wind-and-natural-gas.html)

# Natural Gas Generation = Environmental Benefit

According to Energy Information Administration, between 2005 and 2015:

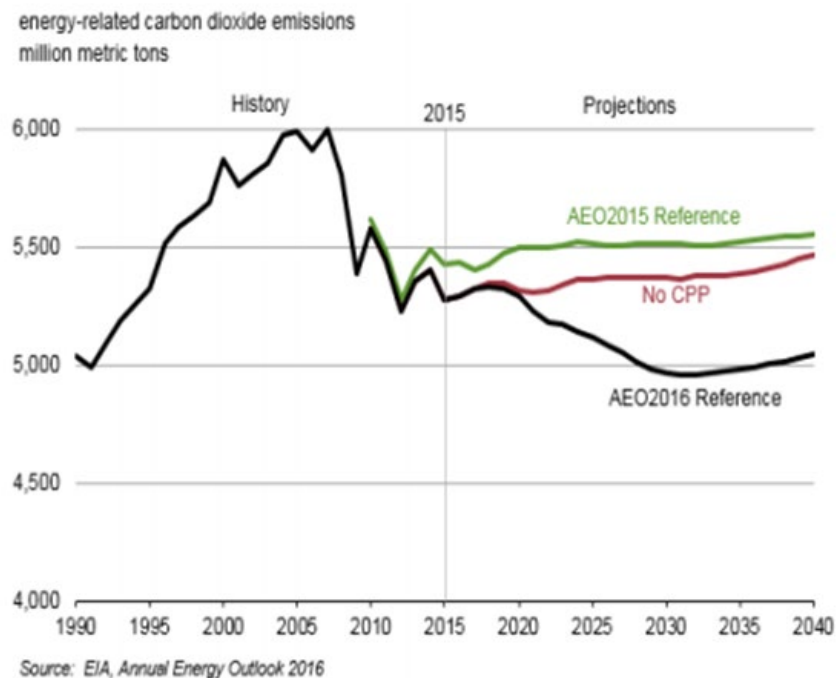
- U.S. CO<sub>2</sub> emissions fell nearly 12%;
- CO<sub>2</sub> emissions from electricity generation fell 21%; and
- more than 65% of the CO<sub>2</sub> reductions in the electric power sector were due to fuel switching to natural gas.

Source: EIA

According to the National Oceanic and Atmospheric Administration (NOAA), between 1997 and 2014, the increased use of natural gas combined cycle plants in power generation led to:

- a 40% reduction in NO<sub>x</sub> emissions, and
- a 44% reduction in SO<sub>2</sub> emissions.

Affordable natural gas prices support more electricity generation from natural gas and will reduce CO<sub>2</sub> emissions with or without the Clean Power Plan.



*In addition to providing environmental benefits in its own right, natural gas generation is needed to support intermittent renewable generation.*

# Increased Intermittent Resources Require More Fast Responding Back Up Resources

- According to a 2016 National Bureau of Economic Research study of 26 countries, ***a 1 percent increase in fast reacting fossil fuel generating capacity was associated with a .88 percent increase<sup>1</sup>***.
- The NYISO predicts that, when the CES is fully implemented in NY, the installed reserve margin (i.e. the amount of excess capacity **needed** to maintain reliability) ***will increase from the current 17.5 percent to between 40 and 45 percent<sup>2</sup>***.

Unless and until there is a major breakthrough in energy storage technology, fast ramping, dispatchable generation will be needed to support intermittent renewables and maintain reliability.

- Natural gas generation provides the most cost-effective and environmentally advantageous generation to meet these needs.
- Allowing infrastructure growth to support natural gas generation growth benefits the environment, the reliability of the electricity grid and the pocket books of NY energy consumers.

1. "Bridging the Gap: Do Fast Reacting Fossil Technologies Facilities Renewable Energy Diffusion?", NBER, August, 2016

2. NYISO Supplemental Comments on the Clean Energy Standard (Case 15-E-0302), July 8, 2016

# NYISO Reliability Needs

- The NYISO procures the following services from generation suppliers to keep the bulk power system operational within reliability parameters:
  - Energy
  - Capacity
  - Ancillary Services
    - Voltage Support
    - Regulation and Frequency Control
    - Operating Reserves
    - Black Start Service
- Intermittent Renewables (wind and solar) are not particularly suited for supplying any of these services. They produce energy sporadically at relatively low capacity factors. They can provide some ancillary services but only while operational.
- Natural Gas power generation technologies, in contrast, are generally considered good to excellent at supplying all of these needed services.