The criticality of natural gas

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Key points

- Natural gas has keyed the United States’ and Maryland’s ability to satisfy energy demand while reducing energy-related emissions
  - U.S. CO$_2$ emissions are at a 25-year low
  - The U.S. natural gas and oil industry leads in spending to reduce greenhouse emissions
  - Maryland’s energy-related emissions fell by 28.9% between 2005 and 2015
  - Natural gas enables intermittent renewables in power and is a feedstock in manufacturing

- Maryland’s increased utilization of abundant and low-cost natural gas has lowered consumer electricity prices

- While Maryland has missed out on many of the demonstrable benefits to upstream energy development, it is poised to grow as a LNG exporter
Increased natural gas use and energy efficiencies have reduced U.S. CO₂ emissions as energy demand grows

Since 2005, total energy-related CO₂ emissions declined faster than total energy consumption, due largely to natural gas substitution for coal in power.

As energy consumption grows in the future, energy efficiency improvements and increased renewables and natural gas use should restrain CO₂ emissions.

Source: EIA AEO (2018)
Between 2000 and 2016, natural gas and oil industry spending on carbon mitigating technologies was more than double that of every other individual industry.
The keys to the outlook are increased use of natural gas and renewables in electric power and improved energy efficiency.
EIA expects the East to dominate U.S. natural gas production

Continued development of the Marcellus and Utica plays in the East is the main driver of growth in total U.S. shale gas production across most cases.

Source: U.S. EIA AEO (2018)
Since 2005, Maryland’s energy demand and energy-related CO₂ emissions have fallen. The largest shift was gas substitution for coal and oil in power.
Increased utilization of abundant and low-cost natural gas lowered Maryland’s electricity prices

Maryland electricity net generation

- Natural gas
- All other fuels

In MD’s generation mix, natural gas grew to nearly 20% in 2017 from 6% in 2010, which enhances grid resiliency and reliability.

Maryland electricity prices declined with those of natural gas.

Lower natural gas prices decreased Maryland residential electricity prices

maryland residential electricity prices

- 2018$/MMBtu
- 2018 cents per kWh

source: EIA

Natural gas price at Henry Hub
Maryland has lagged the nation and its energy-producing neighbors in economic and income growth.

Energy has propelled the economies of Ohio and Pennsylvania, while Maryland’s growth has lagged.

In Q1 2010, Maryland’s real per capita personal income was $10,800 above the national average. As of Q4 2017, that premium fell by $1,500 per capita.
Maryland is poised to benefit from LNG production and exports

Global natural gas landed prices ($/MMBtu) – March 2018

- Mexico: $7.52
- Lake Charles: $2.56
- Cove Point: $2.80
- Argentina: $7.60
- Spain: $7.13
- Belgium: $7.67
- UK: $6.86
- Korea: $7.75
- Japan: $8.80
- China: $7.66
- India: $7.73

At the beginning of 2018, U.S. natural gas prices were less than half of international levels, which motivated U.S. production and exports.

sources: U.S. FERC, METI