WEST VIRGINIA
EMISSIONS ANALYSIS

CONSUMER ENERGY ALLIANCE
THE VOICE OF THE ENERGY CONSUMER

WEST VIRGINIA EMISSIONS ARE DECLINING

While the nation's increased energy production has received a great deal of media focus in recent years, little has been written about the significant emission reductions and overall environmental improvement, both in West Virginia and across the nation.

The World Health Organization identifies outdoor air emissions as "a major cause of death and disease globally" and attributes emissions such as particulate matter (PM), ozone (formed by volatile organic compounds (VOCs), nitrogen oxides (NOx) and sulfur dioxide (SO2) to lung cancer, respiratory infection, heart disease and stroke. The economic impacts of these air emissions include increased health care costs, decreased labor productivity and declining agricultural crop yields. Even as West Virginia increases its energy production, emissions of key air emissions have declined significantly across the state.

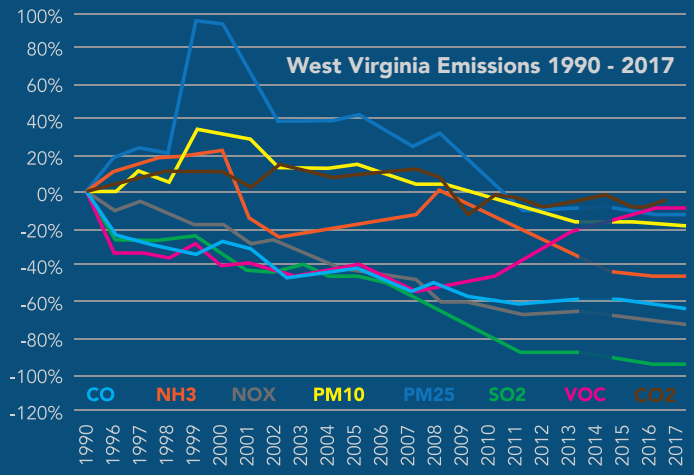


Figure 1: West Virginia Emission Trends 1990-2017 (Source: U.S. Environmental Protection Agency and Energy Information Administration) NOTE - 2014 EPA emissions data omitted due to reporting error; EIA C02 data only available through 2016.

From 1990 to 2017, West Virginia's emissions of key pollutants have decreased across the board:

- 74 percent reduction in nitrogen oxides (NOx)
- 94 percent reduction in sulfur dioxide (SO2)
- 64 percent reduction in carbon monoxide (CO)
- 13 percent reduction in volatile organic compounds (VOCs)
- 11 percent reduction in fine particulate matter (PM2.5)
- 19 percent reduction in coarse particulate matter (PM10)
- 47 percent reduction in ammonia (NH3)

Additionally, from 1990 to 2016, West Virginia's carbon dioxide (CO2) emissions declined by 9 percent even while experiencing surges in oil and natural gas production.

These emissions reductions are remarkable in light of West Virginia's growth from 1990 to 2017, including:

- 163 percent increase in the state's gross domestic product
- 1.3 percent increase in population
- 22 percent increase in vehicle miles traveled per capita

West Virginia's cleaner air means that the state's wildlife and natural assets will be protected. This ensures that West Virginia's tourism industry, which brought in 15.9 million visitors and $4.1 billion in 2017, will continue to thrive. Not only that, West Virginia's families and children can enjoy all their state has to offer in a healthier way, from visiting the historic Greenbrier Hotel to traveling to Morgantown for Mountaineer football games, or riding bikes through Harper's Ferry National Park.

Additionally, cleaner air means that West Virginia's farms - providing almost $690 million in statewide annual income - will be able to provide products found at dinner tables across the country.

WEST VIRGINIA ECONOMIC GROWTH

The U.S. Department of Commerce recently announced that West Virginia had the highest rate of economic growth in the nation during the first quarter of 2019. This is little surprise as the West Virginia ranked as the 6th best state nationwide for the cost of doing business in 2019, according to CNBC. This ranking includes factors such as West Virginia's affordable energy rates.

West Virginia's affordable energy and economic growth is linked to the state's production of energy resources. The state produces almost six times as much energy as it consumes. More specifically, West Virginia's prolific natural gas production contributes to the supply of affordable, reliable energy that powers our everyday lives.

WEST VIRGINIA ENERGY CONSUMPTION

West Virginia is ranked 6th nationwide for total energy consumption per capita. More than 70 percent of the state's energy needs are fueled by oil and natural gas. West Virginia's industrial sector, including chemical production and biotechnology research, is the largest natural gas consumer in the state. Forty percent of West Virginia homes rely on natural gas for heat during the winter. The transportation sector accounts for almost 75 percent of the state's petroleum consumption.

WEST VIRGINIA ENERGY PRODUCTION

West Virginia is the nation's seventh-largest producer of marketed natural gas in the country and has enjoyed remarkable growth with 10 consecutive years of production increases. Year over year production of natural gas in the state rose by almost 20 percent in 2018. According to recent state production figures, one day's worth of natural gas production in West Virginia is enough to satisfy the demands of every household. Since 2008, natural gas production has increased 700 percent and oil production in the state increased 60 percent from 2017 to 2018. West Virginia's natural gas production has outpaced demand, allowing the state to become a supplier to other regions. New pipeline projects are planned to provide much-needed energy supplies to the eastern U.S. and Canada.

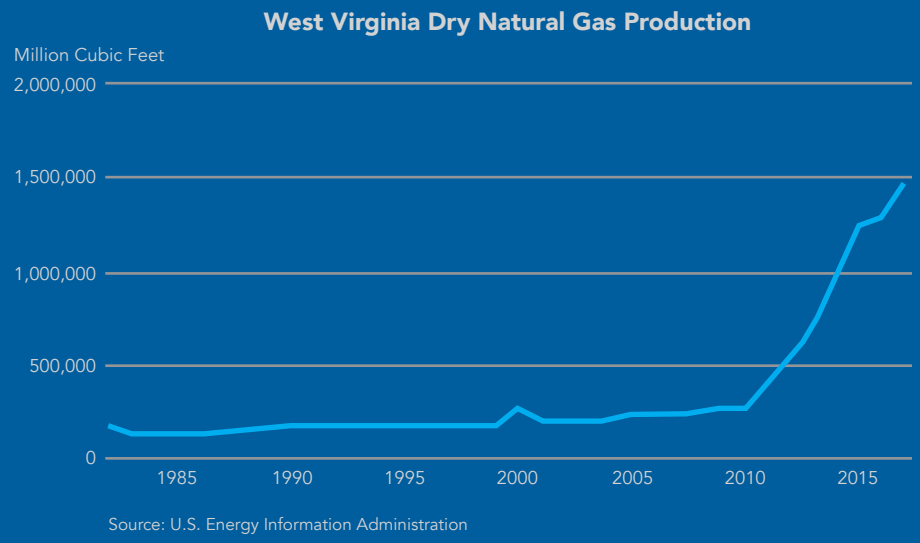
U.S. EMISSIONS ARE DECLINING TOO

Rigorous environmental standards and energy production can and do coexist. U.S. oil and gas companies banded together to form The Environmental Partnership to improve environmental performance and further reduce emissions of methane and volatile organic compounds. These improvements are occurring at a time when our country has catapulted forward to become the world's leading producer of oil and natural gas.

Worldwide CO2 emissions increased 1.7 percent in 2018. The U.S. stands in stark contrast to global trends, leading the world in reductions by lowering carbon emissions with an anticipated decline of 2.2 percent in 2019 and an additional 0.7 percent decline in 2020. These reductions are forecast in large part due to U.S. usage to natural gas.

Consumer Energy Alliance (CEA) works to support and advocate for the continued development of a balanced energy portfolio including oil and natural gas as well as other traditional and renewable energy sources. CEA also recognizes the vital role that transportation infrastructure like pipelines and transmission lines serve, as they are critical for moving energy throughout North Carolina and the rest of the country.

With the emission reductions that have occurred recently, North Carolina's policymakers, regulators and leaders must come together in support of access to reliable energy resources and infrastructure development that will help the state continue to thrive, and ensure that hard-working families, seniors, households and small businesses can continue to enjoy the benefits of American energy.



Source: U.S. Energy Information Administration

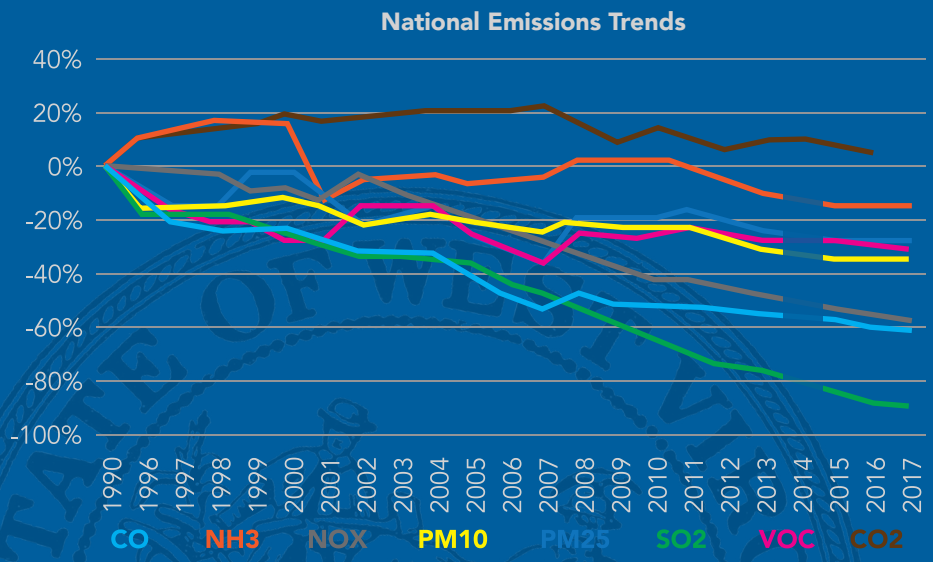


Figure 3.National Emission Trends 1990-2017. (Sources: U.S. Environmental Protection Agency and Energy Information Administration) NOTE - 2014 EPA emissions data omitted due to reporting error; EIA C02 data only available through 2016.

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