

# OHIO

## EMISSIONS ANALYSIS



### OHIO 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 Ohio 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 Ohio increases its energy production and remains one of the nation's largest energy consumers, emissions of key air pollutants and greenhouse gases have declined significantly across the state.

**Declining Ohio Emissions 1990-2017**

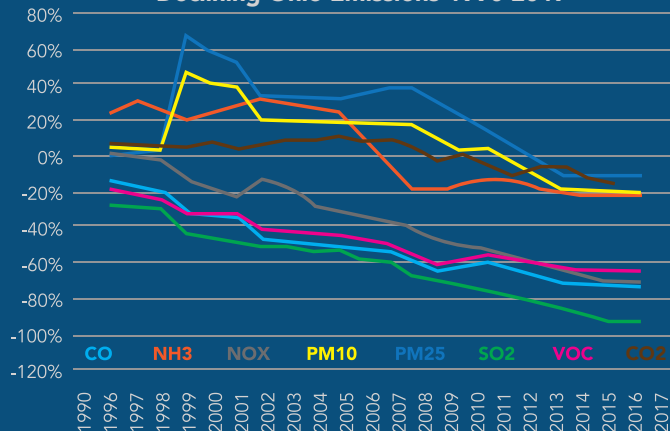


Figure 1: Declining Ohio Emissions 1990-2017 (Source: U.S. Environmental Protection Agency and Energy Information Administration.)  
NOTE - EIA data only available through 2016

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

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

Additionally, from 1990 to 2016, Ohio's carbon dioxide (CO2) emissions declined by 16 percent.

These emissions reductions are remarkable in light of Ohio's growth, including:

- 118.9 percent increase in the state's gross domestic product from 1990 to 2017
- 6.5 percent increase in vehicle miles traveled from 2001 to 2017
- 7.5 percent increase in population from 1990 to 2017

Ohio's cleaner air means that the state's wildlife and natural assets will be protected. This ensures that Ohio's tourism industry, which brought in 222 million visitors and \$46 billion in 2018, will continue to thrive. Not only that, Ohio's families and children can enjoy all their state has to offer in a healthier way, from riding the Steel Vengeance roller coaster at Cedar Point traveling to Columbus for college football, or riding bikes through Cleveland's Emerald Necklace.

Additionally, cleaner air means that Ohio's farms - providing one in eight jobs and more than \$124 billion in annual investment - will be able to provide products found at dinner tables across the country.

### OHIO ECONOMIC GROWTH

Strategically located at the heart of our nation's interstate highway and inland waterways systems, Ohio is a known industrial leader. However, the state is also a hub for academic and private research with over \$12 billion in research and development contracts ranging from biosciences to power and propulsion. With over 11.6 million residents based in 14 metropolitan areas, Ohio's total employment is poised to grow by more than 253,000 from 2016-2026.

With such a vital economy, it is of little surprise that Ohio is also a top consumer of energy. Additionally, Ohio's prolific natural gas production contributes to the supply of cheap, reliable energy that powers our everyday lives.

### OHIO ENERGY CONSUMPTION

Ohio is ranked as the eighth-highest energy consuming state in the nation. The leading energy sources in 2018 for Ohioans were coal and natural gas. In fact, Ohio is the third-largest coal consumer and the among the top ten natural gas consuming states in the U.S.

Nearly 90 percent of coal and 30 percent of natural gas is consumed by the state's electric power sector. Natural gas use at Ohio's power plants increased 13-fold from 2008 to 2018.

Ohio is also one of the nation's leading petroleum-consuming states - ranked in the top ten. The transportation and industrial sectors account for the majority of the state's demand. Almost one in thirteen Ohio homes use petroleum products - such as kerosene, heating oil or propane - for heating.

## OHIO ENERGY PRODUCTION

Ohio has seen a giant leap in energy production over the last two decades, particularly natural gas production. Across the state, production has increased nearly 28 times since 2012, thanks to resources produced in Ohio's own Utica Shale. In 2008, only 2 percent of the country's natural gas production was from the Marcellus and Utica shales in Ohio, Pennsylvania and West Virginia. Today, 28 percent of the nation's natural gas is supplied by this region.

Ohio's natural gas production has outpaced demand, allowing the state to become a supplier to states without the same resources. These shipments can move as far south as the Gulf Coast, north to Canada, and eastward to the Atlantic coast, making affordable natural gas energy much more accessible for the entire country.

### 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 Ohio and the rest of the country.

With the emission reductions that have occurred recently, Ohio'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.

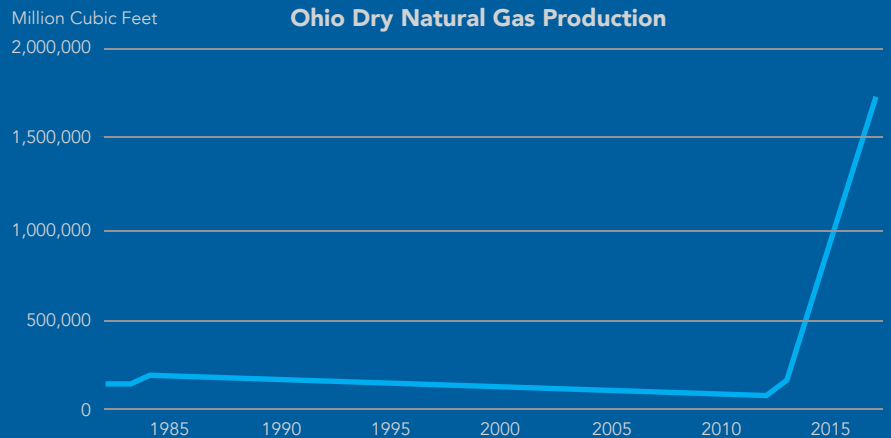


Figure 2: Ohio Dry Natural Gas Production (Source: Energy Information Administration) Source: U.S. Energy Information Administration

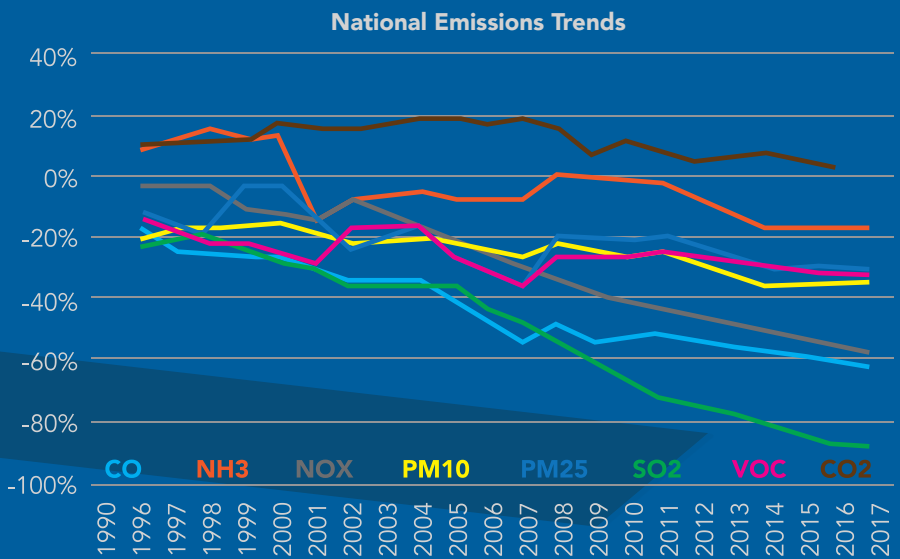


Figure 3: Declining Ohio Emissions 1990-2017 (Source: U.S. Environmental Protection Agency and Energy Information Administration.) NOTE – EIA data only available through 2016; 2014 emissions data omitted due to EPA reporting errors.

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