

NORTH CAROLINA

EMISSIONS ANALYSIS



NORTH CAROLINA 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 in North Carolina and across the nation. Even as North Carolina remains one of the nation's largest energy consumers, emissions have declined significantly across the state.

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.

North Carolina Emissions 1990 - 2017

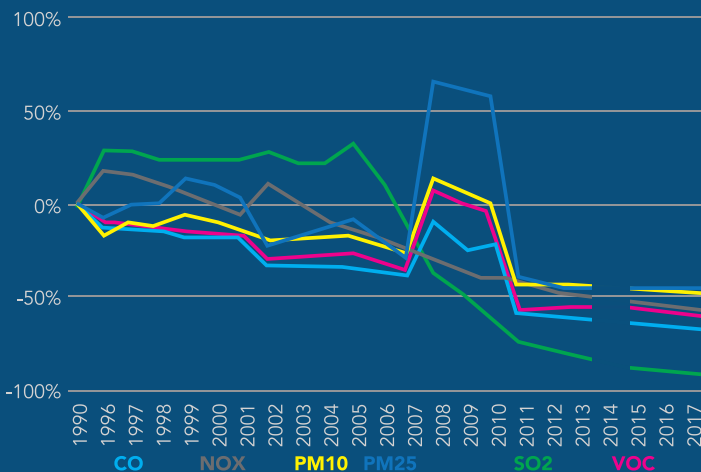


Figure 1. North Carolina Emissions 1990-2017 (Source - U.S. Environmental Protection Agency and U.S. Energy Information Administration) NOTE - 2014 emissions data omitted due to reporting errors; EIA data only available through 2016.

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

- 69 percent reduction in nitrogen oxides (NOx)
- 92 percent reduction in sulfur dioxide (SO2)
- 68 percent reduction in carbon monoxide (CO)
- 58 percent reduction in volatile organic compounds (VOCs)
- 46 percent reduction in fine particulate matter (PM2.5)
- 46 percent reduction in coarse particulate matter (PM10)

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

- 305 percent increase in the state's gross domestic product from 1990 to 2017
- 88.1 percent increase in vehicle miles traveled from 1990 to 2017
- 55.8 percent increase in population from 1990 to 2017

North Carolina's cleaner air means that the state's wildlife and natural assets will be protected. This ensures that North Carolina's tourism industry, which brought in \$23.9 billion in 2017 will continue to thrive. Not only that, North Carolina's families and children can enjoy all their state has to offer in a healthier way, from hiking the 469-mile Blue Ridge Parkway kayaking along the Outer Banks.

NORTH CAROLINA ECONOMIC GROWTH

WalletHub recently published a study ranking North Carolina as the 10th best state economy in the U.S. based on metrics such as gross domestic product, startup activity, and number of jobs in high-tech sectors. There is little doubt North Carolina is growing by leaps and bounds. North Carolina is also home to the largest manufacturing workforce in the southeast, and the 8th largest in the United States – employing more than 460,000 workers.

NORTH CAROLINA ENERGY CONSUMPTION

North Carolina is ranked as one of the highest energy consuming states in the country. Natural gas is largely responsible powering the state - 30 percent of electricity generation statewide relies on natural gas. One in four North Carolina homes relies on natural gas for home heating.

U.S. ENERGY PRODUCTION

New and efficient technologies have enabled the United States to increase its oil and gas production over the last two decades. The U.S. Energy Information Administration reported that the United States was the largest global crude oil producer – surpassing Russia and Saudi Arabia - in late 2018.

U.S. EMISSIONS ARE DECLINING TOO

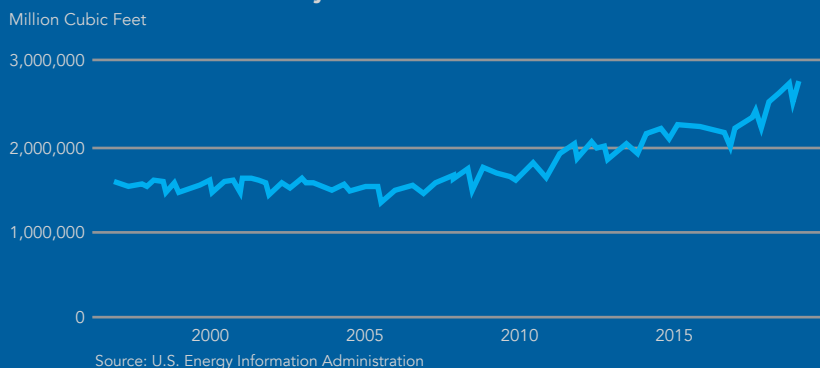
Rigorous environmental standards and energy production can and do coexist. U.S. oil and gas companies banded together to form The Environmental Partnership to improve environmental performance and further reduce emissions of methane and volatile organic compounds. These improvements are occurring at 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.

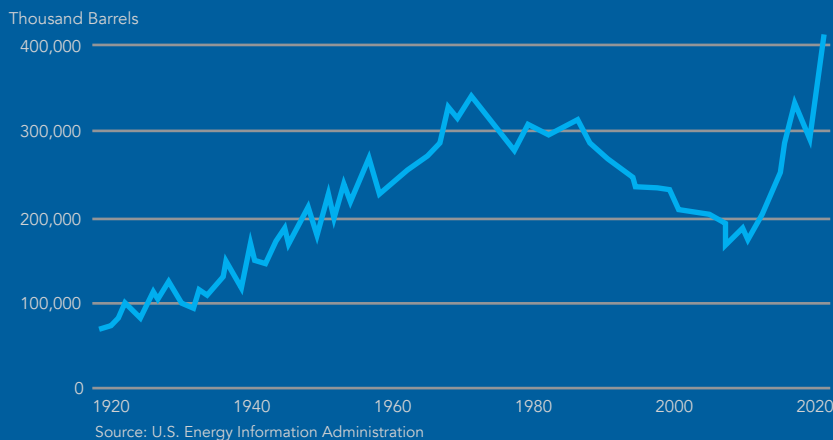
Consumer Energy Alliance (CEA) works to support and advocate for the continued development of a balanced energy portfolio including oil and natural gas as well as other traditional and renewable energy sources. CEA also recognizes the vital role that transportation infrastructure like pipelines and transmission 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.

U.S. Dry Natural Gas Production



U.S. Field Production of Crude Oil



National Emissions Trends

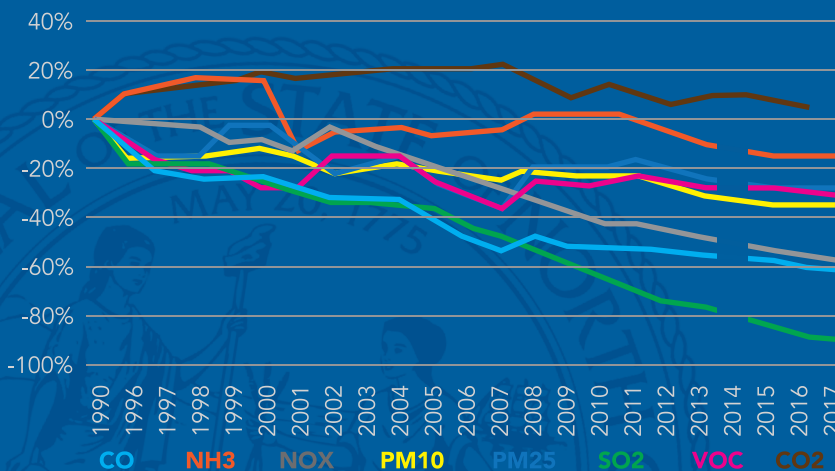


Figure 4. National Emission Trends 1990-2017. (Sources: U.S. Environmental Protection Agency and Energy Information Administration) NOTE - 2014 EPA emissions data omitted due to reporting error; EIA CO2 data only available through 2016.

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