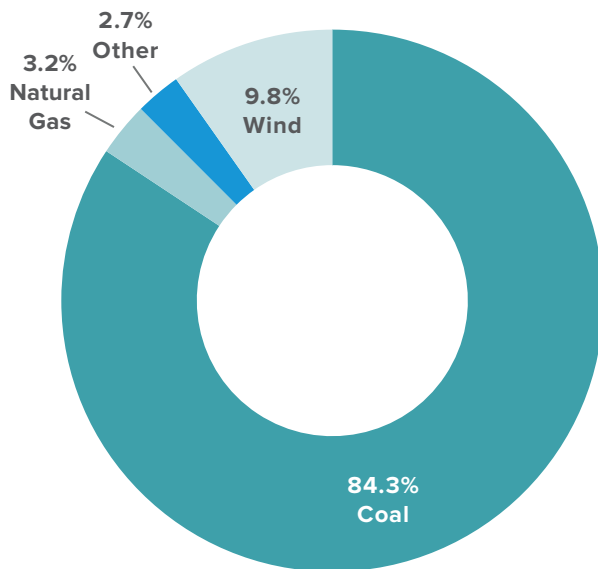


## Carbon-Free Energy

- U.S. nuclear power facilities generate nearly 55 percent of our carbon-free electricity and nearly 20 percent of total electricity, complementing wind and solar to achieve a carbon-free future.
- America's nuclear facilities employ nearly 100,000 workers at salaries well above local averages.
- U.S. nuclear plants are highly reliable, operating over 93 percent of the time in 2019, making nuclear the only carbon-free energy source that is available 24/7.
- Nuclear plants in the U.S. generate 809 million megawatt hours of electricity a year, enough to power 75 million households.
- As state governments set goals to reduce emissions from electricity production, nuclear energy can ensure a balanced mix of carbon-free technologies.



## Sources of Electricity in State



*Other includes petroleum, biomass and geothermal along with hydro, wind and solar if they account for less than 3% of electricity generated.*

*Source: ABB Velocity Suite / U.S. Energy Information Administration*

## Supporting Jobs and the Economy

- American innovators are developing new nuclear technologies that have the potential to create additional jobs and bring in export dollars.
- Nuclear energy is an American technology that employs nearly 100,000 people across the country.
- Nuclear power saves consumers an average of 6 percent on their electricity bills and contributes approximately \$60 billion to the country's GDP annually.



## The Largest Emission-Free Source

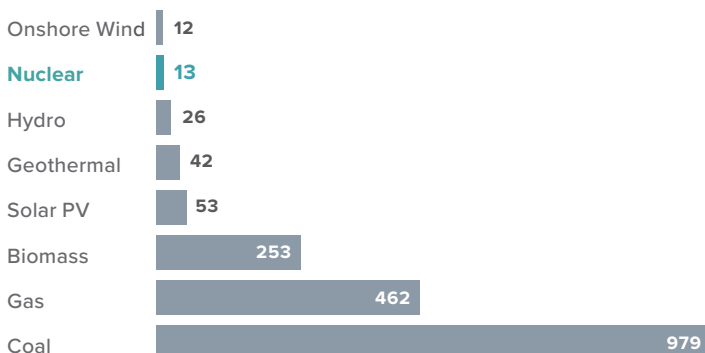
- The use of nuclear energy in 2019 prevented the emission of 476 million metric tons of carbon dioxide. This equals the amount released in a year by 102.8 million passenger cars.
- Nuclear energy is the only carbon-free electricity source that can produce large amounts of electricity around-the-clock.
- Numerous studies demonstrate that nuclear energy's life cycle greenhouse gas emissions are comparable to renewable energy, such as wind and hydropower, and far less than coal or natural gas-fueled power plants.
- The nation's nuclear energy facilities also prevented the emission of 217,357 short tons of sulfur dioxide and 244,970 short tons of nitrogen oxide in 2019.

Emissions Prevented	Quantity Prevented in 2019
Sulfur dioxide (SO <sub>2</sub> )	217,357 short tons
Nitrogen oxide (NO <sub>x</sub> )	244,970 short tons
Carbon dioxide (CO <sub>2</sub> )	476 million metric tons

Source: U.S. Environmental Protection Agency and U.S. Energy Information Administration

## Comparison of Life Cycle Emissions

Tons of Carbon Dioxide Equivalent per Gigawatt-Hour



IPCC, 2014: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

## High Industry Security Standards

- Each plant employs a highly-trained security force, strict access controls and multiple backup safety systems to ensure safety and security for plants and nearby communities.
- The independent U.S. Nuclear Regulatory Commission holds nuclear power plants to the highest security standards of any industry, and the industry exceeds these standards.

## Managing Used Nuclear Fuel

- Nuclear energy facilities store used fuel safely and securely on site. The U.S. nuclear industry is working with the federal government on a solution for permanently storing fuel rods at a consolidated location.
- All the used nuclear fuel produced by the nuclear energy industry over 60 years—if stacked end to end—would cover an area the size of a football field to a depth of less than 10 yards.
- The actual volume of nuclear fuel is small. Fuel rods that go into a nuclear reactor are made up of uranium fuel pellets. One pellet, the size of your fingertip, creates as much energy as one ton of coal, 149 gallons of oil or 17,000 cubic feet of natural gas. This means used nuclear fuel takes up little space when it is eventually stored.



After the cooling period, nuclear energy facilities store used fuel safely on-site in steel and concrete vaults.

Source: Gutherman Technical Services