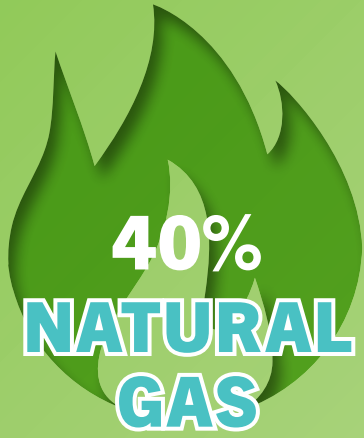




# MAIN SOURCES OF ELECTRICITY IN THE U.S.

## WHERE DOES OUR ELECTRICITY COME FROM?

Below is a comparison of the main sources of electricity used in the U.S.



Natural gas is a fossil fuel extracted by digging vertically into the earth.

- Pipelines deliver gas to power plants, where gas is used to heat water into steam, which spins a turbine to generate electricity.
- Another, more controversial collection method is fracking, which uses high pressure water, sand, and chemicals to extract gas and oil from underground. This method is often criticized due to water usage and the toxic chemicals produced.

Natural gas is a **non-renewable** resource, but (aside from renewable sources) is one of the cleanest forms of energy, releasing less CO<sub>2</sub> and pollutant emissions than coal and oil.



Coal, another **non-renewable** fossil fuel, is formed in the earth over millions of years.

- Coal is mined from the earth, transported to power plants, then cleaned and crushed into a powder. Power plants use this powder as fuel to heat water into steam, which spins a turbine to generate electricity.
- As coal burns, it releases sulfur and nitrogen into the air. Combined with water vapor, this creates “acid rain,” which strips the soil of nutrients needed by plants and trees to grow and transfers aluminum from soil into water ecosystems, increasing the water’s acidity and harming fish and wildlife. In addition, when coal burns, it also releases large amounts of carbon into the air, creating carbon dioxide and exacerbating global warming. These reasons make carbon a highly polluting source of fuel.



Nuclear power is a zero-emission, clean energy source with no impact to air quality. The United States has the largest nuclear electricity capacity globally, double the amount of the next closest, China.

- Nuclear power plants heat water to produce steam which spins large turbines to generate electricity.
- The heat used for the process comes from the nuclear fission of uranium atoms. Nuclear fission is the action of splitting atoms which releases energy. This process occurs in a highly insulated and secured reactor inside a power plant.
- However, nuclear power is not perfect. Plants are costly to build, and the radioactive waste byproduct is hazardous and needs proper storage for centuries.



Renewable energy does not deplete its source when used. The most common sources are wind, solar, and hydropower, which are also clean energy, producing minimal carbon emissions.

- Made from silicon, solar or photovoltaic cells turn sunlight into electricity. The manufacturing of PV panels creates some pollution.
- Wind energy rotates turbine blades which feed an electric generator to produce energy. Wind energy has become one of the cheapest energy sources in various parts of the country, including offshore open water locations. The main environmental impact of turbines is the disruption of local bird habitats.
- Hydropower relies on fast-moving water from a river or dam, which spins turbine blades as it passes through. The main environmental impact of hydropower comes from the water diversion that the construction of dams creates.