The Ins and Outs of Making Electricity

Electricity is made from many different resources, including non-renewable and renewable sources.

Non-renewable sources include uranium and fossil fuels, like coal and natural gas. When they’re used to generate power, these sources produce waste, and will eventually run out.

On the other hand, renewable sources can be used over and over again to produce energy without creating waste. That makes these resources environmentally friendly. Some examples of renewable sources include solar and wind power. Remember, they only work when the wind blows or when the sun shines.

Non-Renewable Sources

Let’s begin with non-renewable sources. These resources are used to produce heat in order to convert water into steam. The steam turns an engine called a turbine. And as the turbine spins, electricity is generated.

Nuclear Power  Some power plants have machines called nuclear reactors where the heat is produced. Within these reactors are atoms of a radioactive metal called uranium. Heat is created when these atoms are split apart. This heat boils water, creating steam that turns turbines to generate electricity.

Coal  This fossil fuel is burned in large boilers that are found in power plants. The burning coal heats water and this produces steam which spins a turbine engine.

Natural Gas  There are generally two ways natural gas is used to create electricity. One way involves burning it to heat water, which produces steam that turns a turbine. It may also be burned directly in a turbine as a way of creating gases that will spin turbine blades.
Renewable Sources

Now let’s look at the ways that renewable power resources are used to create electricity. Remember, these resources are considered clean because they can be used over and over again without any negative effects on the environment.

Solar Power  Solar power is energy that is created directly from the light or heat of the sun. One method uses special solar panels to capture the sun’s light and convert it directly into electricity. The other uses the sun’s heat to produce the steam that will spin turbines and generate electricity.

Wind Power  Wind is used to spin turbines, modern windmills, which generate the power. There’s one drawback with using wind. Since it comes and goes, we can’t always rely on it to produce electricity when we want it.

Water Power (Hydro Power)  To generate electricity with this renewable source, water from a river or dam is sent through a turbine. This moving water causes the turbine’s blades to spin, which generates power.

Geothermal Power  It sounds complicated but geothermal power basically means using the heat from below the Earth’s surface. To use this renewable source, underground water is converted into steam that will spin turbines and generate power.

Biomass  Biomass is a renewable source of energy that uses organic materials to produce heat. To do this, wood by-products, plants, crops and animal waste are used instead of fossil fuels like coal and natural gas. Burning this organic waste creates the heat and steam that spins electricity-making turbines. For example cow manure is a source of biomass energy because animal waste gives off methane gas.