

# Types of Renewable Energy Sources

This document outlines the different types of renewable energy, and how they are produced. Generating clean and environmentally-efficient power is easier than you think, and there is a lot of research and development in renewable energy going on right now. The need for renewable energy standards is a hot topic, so knowing your options are will help you understand where renewable energy is headed in the near and distant future.

## **Water Power**

The power of water is abundant. Water power accounts for 73 percent of all renewable energy according to the Energy Information Administration (EIA). Water power is generated using the mechanical energy of flowing water by forcing it through pipes , which then turns a generator in order to produce electricity. Water power also consists of tidal and wave energy, both in the infant stage of research, as scientists try to discover how to harness energy produced by the ocean's movement.

## **Solar Power**

Solar cells made of silicon absorb the sun's radiation, also called photovoltaic cells. The photovoltaic process involves the movement and displacement of electrons to absorb the sun's radiation and create electricity, but there are also solar systems that use large-scale mirrors to heat water, or produce high temperatures and generate steam, which is used to turn a generator.

## **Wind Power**

Wind power is a very simple process. A wind turbine converts the movement energy of wind into mechanical energy that is used to generate electricity. The energy is fed through a generator, converted again into electrical energy, then transmitted to a power station. Wind power is abundant in some states, with the largest wind farms located in Texas. Wind is unique because it carries incentives for farmers to give parcels of land for building wind turbines, and has the most potential as far as widespread adoption due to the large areas of land with consistent wind available to harness.

## **Geothermal Power**

The process involves trapping heat underground, then building energy that rises near the surface in the form of heat. When this heat naturally creates hot water or steam, it is harnessed and then used to turn a steam turbine to generate electricity. Geothermal energy was first used for commercial purposes in the early 1900s.