

## 4. Geothermal Energy Uses — An Overview

Geothermal energy is used in a wide variety of applications, depending on the temperature of the resource. Cooler geothermal water (and even “cold” ground water) is used in ground water “heat pumps,” which take the energy from the water to heat a secondary fluid to a vapor, which can then be compressed to give off heat.

At slightly warmer temperatures (between 70 and 100 degrees F), geothermal energy is primarily used for aquaculture and soil warming in agriculture. Between 100 and 200 degrees F the range of geothermal uses expands, including space heating, dehydration of agricultural products, and water heating. Electrical generation from geothermal power can begin at around 170 degrees F, when a binary fluid is boiled with the geothermal water to create steam to run a turbine.

The graphic below illustrates the range of geothermal uses possible at different temperatures.

