

Micro-hydro Capabilities

Gardner Energy has been designing and installing micro-hydro systems for the past 18 years and has installed 20 micro hydro systems in the intermountain west. Micro hydro power, just like solar power, can be designed for grid-tie with net metering, off-grid and grid-tie with battery backup. Micro hydro systems are typically designed to meet the customer's needs even though at times the potential exists to generate far more power than is needed. Because hydropower operates 24 hours a day a small system can provide enough energy for residential or small commercial customers.

Case Study:

Pioneer Valley Hydro system, near Cimarron, Colorado

- 2 - 4 kW Pelton wheels producing approximately 6 kW, grid-tie hydroelectric system
- 110 feet of head
- 1.4 cfs flow

The hydroelectric turbines and controls were installed in the basement of a new concrete garage. The system provides power and energy for the owner's resort property through net metering. Pressure sensing switches were installed to sense water line pressure. A fluctuation in flow will automatically open or close valves to maintain maximum water pressure at variable flow. The water source is from a mountain spring diverted through a Conanda screen and an 8" pipeline. During the winter months produced energy is used to heat a home rather than using excessive amount of propane.

