



Water for Energy Each energy source has its own “water footprint” (the total amount of water required to produce energy from a given resource). For example, coal-fired power has a very high water footprint because of the amount of water required for the mining, transporting, heating and cooling processes involved with this type of energy production. In fact, 48% of water use in the US is connected to thermoelectric power production (burning fossil fuels to drive steam turbines). On the other hand, many renewable energy resources have much lower water footprints.

Water Intensity - Gallons Consumed per Megawatt Hour (mWh)

Coal-Fired Energy: 692 gallons per mWh

Natural Gas Energy: 172 gallons per mWh

Solar: 2 gallons per mWh

Wind: 0 gallons per mWh

Energy for Water The energy needed to provide municipal water depends on factors such as the quality of the water source and its proximity to treatment facilities and end-users. Because Aspen’s water source is very high quality (Castle and Maroon Creeks), and the treatment/delivery systems are mostly gravity fed, the amount of energy required to treat and deliver the “better than bottled” water that you enjoy is much less than the national average. Additionally, since most of Aspen’s electricity is renewable energy (which has a low water footprint), the energy required to collect, treat, and deliver your water also requires less water!

Aspen = 997 kilowatt hours (kWh) per million gallons

National Average = 1,746 kWh per million gallons



Water & Energy Facts

- Aspen’s water utility treated and delivered just over 1 billion gallons of water in 2013.
- About 70% of the electricity used by Aspen’s water utility involves pumping water up to special service zones above 8,040 feet elevation (like Red Mountain, Mountain Valley, Highlands etc.).
- 13% of the nation’s electricity consumption is related to collecting, treating, and delivering water.
- The carbon footprint currently associated with moving, treating and heating water in the U.S. represents 5% of all U.S. carbon emissions (equivalent to the annual emissions of over 62 coal fired power plants).
- For many communities, supplying and treating water and wastewater makes up the largest municipal energy cost.
- If every household in the United States installed low-flow shower heads, sink aerators and efficient dishwashers and washing machines, residential hot water use could be reduced by approximately 4.4 billion gallons per year, (that would reduce CO2 emissions about 38.3 million metric tons which is like cutting the emissions from about 8 million passenger cars each year).

Learn More

<http://www.unwater.org/worldwaterday/home/en/>

http://www.ucsusa.org/clean_energy/our-energy-choices/energy-and-water-use/energy-and-water.html

<http://www.rivernetwork.org/water-energy-nexus>

<http://aceee.org/white-paper/addressing-the-energy-water-nexus>