



Central Waters Brewing Company

351 Allen Street
Amherst, WI 54406
715.824.2739
715.824.6789 fax
<http://www.centralwaters.com/>

Photovoltaic Systems, LLC

7910 Hwy. 54
Amherst, WI 54406
715.824.2069
<http://www.pv-systems.org/>

Bob's Plumbing & Heating

8105 Stoney Rd.
Amherst, WI 54406
715.345.9990
<http://bobsplumbingandheating.biz/>

Overview

- Location: Amherst, Wisconsin
- Type: Brewery
- Established: 1998 Junction City, WI
- Relocated to current location: 2007
- Owned & Operated by:
Paul Graham & Anello Mollica
- Service: 200 retail locations
in Central Wisconsin

Prepared by:

RENEW Wisconsin



222 South Hamilton Street
Madison, WI 53703
<http://www.renewwisconsin.org/>

Central Waters Brewing Company: "Truly making the world a better place, one beer at a time."

Brewing beer is a resource-intensive process. Copious amounts of water and energy are required to produce those refreshing pints we Wisconsinites are so fond of. Central Waters Brewing Company is well aware of this fact and has chosen to make "sustainable beer production" a leading goal of the brewery. From its humble beginnings in 1998, Central Waters has grown into a leader of the Wisconsin sustainability movement. In 2009, owners Paul Graham & Anello Mollica invested in a solar thermal array to become the first Wisconsin brewery to heat domestic water using energy from the sun.

With the assistance of Bob's Plumbing & Heating of Central Wisconsin and a \$25,000 incentive from Focus on Energy, Central Waters installed 24 solar thermal panels—totaling 960 square feet of collection space—and a 2,500-gallon hot water storage tank on-site at its facility in Amherst. The collectors, manufactured by Menomonee-based Bubbling Springs Solar, capture sunlight that heats water for the brewery's domestic and process needs. Each day, Central Waters' brewing process uses about 1,500 gallons of water heated to 165°F. Before the solar hot water system, this water was heated entirely using natural gas. Now, the water is pre-heated by the sun to a temperature of 130-140°F, and a natural gas boiler heats the water the rest of the way. Central Waters also uses the preheated water to clean tanks and kegs—an energy-intensive task that requires a water temperature of 180°F. With energy production estimated to reach 2,500 therms/year, the system is expected to meet more than 18% of the brewery's annual hot water needs. The payback period for the system is estimated to be about seven years, with a projected energy savings of \$1.4 million over the life of the system.



Solar Electric Specifications

- 108 Kyocera KD 185 W modules
- Capacity: 20 kW
- Average output: 21,292 kWh/yr
- Distribution utility: Alliant Energy
- Year of installation: 2011
- Installer: Photovoltaic Systems, LLC
- State incentives: \$25,000 cash-back reward from Focus on Energy

Solar Thermal Specifications

- 24 Mainstream 4 x10 panels
- 6 Laing DC pumps
- 1 DC controller
- 2,500 gallon storage tank
- Collector space: 960 square feet
- Average output: 2,500 therms/yr
- Bubbling Springs Solar, Menomonie
- Year of installation: 2009
- Installer: Bob's Heating & Plumbing of Central Wisconsin
- State incentives: \$25,000 cash-back reward from Focus on Energy

Further Information:

Central Waters Brewing Company

Becoming Wisconsin's First Green Powered Brewery

<http://www.centralwaters.com/>

Focus on Energy

Central Waters Case Study

http://www.focusonenergy.com/Renewable/centralwatersbrewery_casestudy.aspx

Wisconsin DNR

Central Waters Becomes First Green Tier Brewery

http://dnr.wi.gov/news/BreakingNews_Lookup.asp?id=2104

Central Waters took another step down the path of sustainability in 2011, when it invested in a photovoltaic array that was installed by yet another local renewable energy contractor, Photovoltaic Systems, Inc. of Amherst. The PV system of just over 100 solar panels—with a combined capacity of 20 kW—helps reduce Central Waters' consumption of fossil fuels that were once used to power the brewery.

In 2011, Central Waters also became the first brewery to become part of the Wisconsin Department of Natural Resources' Green Tier program. A number of sustainability initiatives, in addition to the solar arrays, have helped the brewery achieve this status. In terms of equipment, Central Waters has installed a radiant floor heating system, more energy-efficient lights, a remodeled taproom using recycled materials, and a new grain silo that helps reduce the amount of packaging needed. Central Waters is also dedicated to following more sustainable business practices. Some of these include, supporting local farmers and reducing transportation costs by using barley grown only five miles away, as well as donating spent grain to local community-supported agriculture programs. While implementing environmentally beneficial practices, Central Waters continues to grow. With the 2010 expansion of the building and current efforts to expand process lines, Central Waters is poised to nearly double its production capacity. Reducing utility bills through the use of solar energy was an obvious economic choice, but, as Paul Graham states, "we didn't do this [install renewable energy systems] just for financial or marketing benefits, we did this because we believe it's the right thing to do." Outfitted with two solar arrays, the resources of the Green Tier program, and a tenacious attitude towards sustainability, Central Waters will continue to build on its green initiatives ... one beer at a time.

