

CSI-Thermal Program Contractor Resources



Solar Thermal for Breweries and Microbreweries

Market Potential

San Diego's robust beer industry, with nearly 100 beer-making facilities in the county, produces an annual economic impact nearing \$300 million. The local industry is supported by the San Diego Brewer's Guild.

A good energy strategy for brew-making facilities combines energy efficiency, a boiler and solar thermal. Solar water heating systems are ideal for the initial heating of water that can be stored and fed into boilers or other systems for final heating during brewing. Other solar thermal uses include cleaning and sterilization, space heating and dishwashing.

Example Solar Thermal Microbrewery Modeling Assumptions

Microbreweries tend to use 500 to 1500 GPD, which would justify a solar system of matching size. Below is an example of a microbrewery with an average daily hot water usage of 640 gallons.

System components (s.f./gal/day)

- Square feet of collectors 640
- Gallons of storage 900
- Temperatures varying 150-200°F

F-Chart output (MACRS depreciation not considered)

- System cost (\$100/s.f.) \$64,000
- Incentives: CSI-Thermal rebate \$33,657
- Incentives: federal ITC (30%) \$9,103
- Total project cost \$21,240
- Annual energy savings (\$1/therm) \$1,667
- **Simple payback 12.7 years**

The expected solar thermal system lifetime is 20 to 25 years.

