



A Golden Opportunity.

“Avista helped our brewery save 30% on production water-heating costs.”

Jim Mills (front), Owner
Caldera Brewing Company

Kerry Shroy (back), Manager
Oregon Demand Side Management
Avista Utilities



Much of what Jim Mills touches turns to liquid gold. Jim owns and operates Caldera Brewing Company, a 28,000 square foot brewery and restaurant, along with the Caldera Taphouse in Ashland, Oregon. He became a brewer at age 19, and today, 25 years later, his hand-crafted beers are distributed to a dozen U.S. states and as far away as Puerto Rico, England and Japan.

Dedicated to uncompromising quality, Jim imports premium malted barleys from England and Germany. And he uses only fresh whole-flower hops which give a cleaner taste than pelletized hops. Naturally carbonated, many Caldera beers are also plate and frame filtered for a bright, clear product unmatched by other Northwest breweries. Caldera beers have won numerous national and international awards,

including gold and platinum, because Jim insists on doing things right.

It's why Jim worked closely with Avista 11 years ago to save money on energy efficient equipment upgrades at his original brewery, and why he was eager to speak with Avista again upon moving and expanding his brewery earlier this year.

Incorporated in 1996, Caldera Brewing Company got its start just down the street from the new location. The original brewery produced its first batch of premium beer on Independence Day in 1997 and sold its first keg a little over a month later.

“Basically I self-distributed for the first five years starting out in the back of my Subaru hauling kegs around town,” said Jim.

A Golden Opportunity. continued

For eight years, Caldera was draught only. But looking to improve his product, Jim decided in 2005 to make Caldera the first microbrewery on the west coast to can premium craft beers. Cans help a beer's taste by eliminating light and oxidation. Plus, they are accepted where glass bottles have long been banned, such as golf courses and beaches. Currently, Caldera cans its Pale Ale, IPA and Ashland Amber, and now a lager is in the works.

According to Jim, "People thought we were crazy and now you see a lot of breweries—I think there are over 100 breweries in the nation—that are canning their beer."

Cans are also 100% recyclable—something important to Jim. In fact, he reuses and recycles everything from cardboard boxes to waste malt grains (sold for stock feed). He also donates unused baked breads from his new brew house restaurant to the local food bank.

Brewing beer requires a lot of hot water. And Jim's newly expanded facility requires a whole lot more, which is why he decided to collaborate with Avista on energy solutions.

"At the old location, we were basically doing 5,000 barrels a year and completely maxed out," Jim recounted. "This building will do 60,000 barrels a year and we're on pace to do about 11,000 this year."

Avista helped Jim's growing business with \$21,000 in incentives on energy-saving equipment. The monies let Jim purchase what's loosely called a "hot liquor tank," a 1250-gallon storage tank that uses efficient natural gas to heat water for brewing, and a new heat exchanger, which works hand-in-hand with the hot liquor tank by recapturing heat from processing to make more hot water.



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The heat exchanger gives a master brewer more precise control when cooling down "wort," a liquid extracted in the mashing process wherein grain starches are broken down into sugars.

"When we transfer from our boiling kettle to our fermenters, we have to 'force cool' the wort or it will kill the yeast," explained Jim.

This heated wort and cool water are pumped through the heat exchanger in side-by-side channels so that heat from the wort is transferred to the water. This hot water can then be stored in the hot liquor tank and be heated further to begin another batch of beer. As the water is already partially heated, it doesn't take as long as before to cook more wort.

The new brewing equipment helped Jim save 30% on heating water for production—one of his biggest costs. Because he now pours much less water down the drain, he also plans to renegotiate lower sewer costs with the city. Avista's incentives saved Jim enough money to purchase an additional fermentation tank to further increase production capacity—something he sees as a plus for his 61 employees.



New 98% efficient natural gas water heater.

A Golden Opportunity. continued

"The more tanks, the more business, the more jobs, the more hours for my guys," he said.

Brewing beer involves live yeasts. And so to keep batches pure, the tanks and other equipment must be continually and thoroughly cleaned (including constant acid washes). It's why Avista also offered Jim a rebate on a new 98% efficient natural gas water heater.

Avista supplied a rebate on a new high-efficiency natural gas convection fan oven for Jim's restaurant, too.

With décor featuring one of southern Oregon's largest beer bottle collections, Jim's brewery restaurant offers 27 different Caldera beers on tap with names like Old Growth Imperial Stout, Hoppportunity Knocks IPA and Mogli (a platinum award-winning brew named after a beloved dog that died years back.)

Most of the menu items include locally-sourced organic ingredients and are all made from scratch, including entrées, artisan pizzas, breads, desserts, and more. The new convection oven not only uses less energy, it bakes 10 racks of bread and other foods all at once, which speeds up service to customers. It also greatly increases kitchen labor efficiency compared to using the standard two-rack oven at Jim's downtown pub.

"(Toasting coconut chips) took 19 minutes per batch, and here it was 11 minutes with five times the racks. So what took me a weekend down there took me three-and-a-half hours here," said Jim.

Jim's new restaurant has already become as huge of a success as his brewery. Because like his award-winning beers, Jim has a good head on him.



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