How to Lower Energy Costs at Your Brewery
Dave Whitmore
Energy Trust of Oregon

What I Hope to Accomplish Today

- Have you walked away with new ideas for energy efficiency projects
- Explain how Energy Trust of Oregon can help you achieve energy savings
- Get to know you better and learn about your project ideas

Energy Consumption in Breweries

Refrigeration, packaging, and compressed air account for 70% of electrical energy use.

© E Source; data from the U.S. Environmental Protection Agency
Energy Trust of Oregon – What is it?

- Independent, nonprofit organization
- Helps utility customers save energy and generate renewable energy
- Over $1 billion saved on energy bills
- Customers of Portland General Electric, Pacific Power, NW Natural, and Cascade Natural Gas

Energy Trust – How Can it Help You?

Production Efficiency Program

**Incentives**

- Cash incentives based on annual energy savings and project cost

**Technical Assistance**

- Scoping to identify opportunities
- Technical studies
- Cost? FREE!

Typical Capital Projects - Electric

Variable speed air compressor with cycling refrigerated dryer

Incentives $0.25/kWh up to 50% of project cost

Typical payback 1-4 years

- Lighting upgrades
  - T5s or T8s
  - Motion sensors
Opportunity – Throttled Pumps

Solution? Trim impellor or install VFD. Consider this for your glycol pumps.

Typical Capital Projects – Natural Gas

Natural Gas Projects
- Stack economizer
- Blowdown heat recovery
- Efficient boiler

Incentives $2.00/therm up to 50% of project cost

Typical payback 1-5 years

Widmer Brothers Brewing
Refrigeration Project

New refrigeration system installed to handle production increase

Energy efficiency measures:
1. Compressor VFD
2. Condenser Fan VFDs
3. Refrigeration Control

Energy savings = 29,272 kWh/yr
Cost savings = $1,734
Cost = $21,183
Incentive = $8,782
Final payback = 7.1 years

Ninkasi Brewing Co.
Boiler Project

Measures being implemented:
1. High Efficiency Boilers
2. Blowdown Heat Exchanger

Projected economics:
Energy savings = 108,582 therms/yr
Cost savings = $60,806
Cost = $82,969
Incentive = $41,484
Final payback = 0.7 years
Operations and Maintenance (O&M) Projects

Typical Measures
• Compressed air leak repair
• Condenser cleaning
• Fan cycling
• Equipment shutdown
• Changes to production schedule

Incentives
$0.08/kWh or $0.40/therm, up to 90% of project cost

Payback often less than 1 year

O&M - Compressed Air Leak Repair

Leak load is often 20-40% of compressed air energy use

O&M Opportunity
“I’m not getting enough flow from my pump”
Strategic Energy Management (SEM)

• Year long support by Energy Trust
• Form energy team
• Implement low cost measures
• Cohort based approach
• Model energy intensity (BTU/BBL)
• 5-10% facility savings common

Opportunities at Widmer Brothers Brewing
• Condenser cleaning
• Compressed air leak repairs
• Reduction in air compressor discharge pressure
• Fan cycling
• Conveyor shutdown
• Refrigeration control system setpoint changes

Incentives $0.02/kWh or $0.20/therm
Payback often less than 1 year

I hope I've got you thinking about new projects at your brewery.

• Energy efficiency should be a key component of your sustainability effort.
  • Aside from being “green,” the cost savings have a direct impact on your bottom line.

• Don’t let barriers get in the way!
  • Staffing shortage?
    >>> Take advantage of technical support
  • Financial constraints?
    >>> Incentives can help justify projects
Contact Information

Dave Whitmore
503-928-3205
dave.whitmore@cascadeenergy.com

Michael Koch
503-505-6123
michael.koch@cascadeenergy.com

http://energytrust.org/