Sustainability in Brewing Operations

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About Craft Brew Alliance

*CB^ is a unique alliance between 5 pioneering craft beer brands. Together, CBA is able to satisfy more consumers, at more times, in more locations, through more authentic, distinct craft beers and brands.*

1981: Redhook Ale Brewery founded in Seattle,
1984: Kurt & Rob begin Widmer Brothers Brewing in Portland, OR
2008: Widmer & Redhook Brewery merge to form CBA
2010: Kona is acquired
2012: Sustainability position created

¾ million Barrels of beer produced a year in bottles, kegs & cans
Sustainability is a cornerstone of our business & we are dedicated to minimizing our environmental impact which has the dual benefit of reducing our costs. We have a responsibility to be a leader in the sustainable ways in which we make our beer.

Long term goals:
1. Identify the environmental impact of CBA activities, products & services.
2. Set sustainability targets; measure, demonstrate & certify progress towards those targets.
3. Communicate sustainability policies, plans and accomplishments internally & externally.
Efficiency in Brewing Operations

Steps into Action
1. Collect data & Measure
2. Get buy-in
3. Leverage resources
4. Prioritize no-cost & low-cost
5. Track progress, measure, integrate ongoing
6. Celebrate successes & tell the story
7. Repeat!

Electricity
Natural Gas
Water
Sewer
Waste & Recycling
Other – CO₂, chemicals
Measure – KPIs & Benchmarking
2013 Achievements

Avoided $0.52/BBL in Utilities cost

7.8% improvement on total utilities $/BBL

CBA KPIs:

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<th>2012</th>
<th>2013</th>
<th>YOY Improvement</th>
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<tbody>
<tr>
<td>Electricity (kWh/bbl)</td>
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<tr>
<td>Natural Gas (therms/bbl)</td>
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<td>Water (bbl water / bbl produced)</td>
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<tr>
<td>Sewer (bbl sewer / bbl produced)</td>
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Water Usage Ratio

- CBA
- PDX
- WDV
- PSM
Project Highlights

Woodinville, WA –
lighting upgrades
dry line lube project

Portland, OR –
Energy Trust of Oregon strategic energy management –
8.4% electricity savings
boil time reduction

Portsmouth, NH –
bottle filler water reclaim

Kona, HI –
Cooler zipdoors

Waste & Recycling
Turn waste steams into revenue streams:
spent grains, plastic, cardboard, glass
Redhook Technical Assistance


- Compressed Air audit  55 leaks, $20K in savings
- Infrared audit
  - Motors & gear boxes heat loss (21 pieces of equipment)
  - Heat loss & Refrigeration loss
- Solid Waste
  - Maximize market value
- Sewer
  - BOD source reduction
Redhook Technical Assistance

Puget Sound Energy, Industrial Systems Optimization Program (ISOP):

- Energy Model developed
- Submetering of pub usage
- Remove 30 kW electric space heaters
- Chiller controls, cooling tower setpoints, condenser cleaning, fan cycling
- Compressed Air discharge pressure lowered, shutoff valves
- Shutdown 1 of 3 chillers in winter
Redhook Technical Assistance - ISOP

Energy Consumption vs. Baseline

- Performance Period A
- Predicted kWh
- Energy Savings (negative indicates savings)
- Optimization Event
- Actual kWh

Daily Energy Use (KWh)

Cumulative Energy Savings (KWh)

Events:
- Pub closed
- Pub partially opened
- Repacking this week
- Pub fully open
- Energy use starts to increase
This year’s focus

- Compressed Air Optimization
- Lighting
- Beer Loss
- Increased waste diversion
- Live metering

5% savings target

Employee Outreach/Communication

- Annual Sustainability Report
- Points of Action – PoA’s
- Orientation, Wellness Fair, staff meetings
- GoGreen raffle, incentives
- Newsletter
City of Portland Sustainability at Work Gold

Pacific Power Blue Sky Program – 100% of the Widmer Brewery & Pub’s electricity is sourced from renewable wind power

Bonneville Environmental Foundation – CBA has been an early partner, purchasing over 9 million gallons in water offsets since 2010. 100% of the water used to brew Widmer’s Columbia Common Spring Ale was offset in 2013.

The Microbial Fuel Cell pilot underway has achieved the highest power output outside of the lab, treating wastewater and generating electricity. The pilot is a partnership with an Oregon BEST commercialization grant and Oregon State University researcher-led startup, Waste2Watergy.
**Resources**

- Brewers Association Sustainability Tools  
  [www.brewersassociation.org](http://www.brewersassociation.org)  
  - Manuals: Energy, Water & Wastewater, Solid Waste  
  - Tracking spreadsheets, Audit checklists, Cost calculators  
  - Benchmarks


- US Dept of Energy  Advanced Manufacturing Office -  
  [energy.gov/eere](http://energy.gov/eere)

- MBAA – Brewery Engineering & Utilities Course. Sept 7-19, Portland, OR  
  [mbaa.com/education/courses](http://mbaa.com/education/courses)

- Your local utility

- Best practice sharing
Questions?

Thank you!

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