



Craft Brewery Benchmarking

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UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

Groups Involved

Antea Group

- On the Brewers Associations Sustainability Subcommittee
- Created the Sustainability Manuals
- Currently running the Sustainability Benchmarking Study



Groups Involved



Brewers Association

- Provides technical information and tools to new and established brewers
- Networking for brewers
- Marketing channels to brewers
- Promotes changes to laws that help small brewers

Craft Brewing in Minnesota

- All breweries in Minnesota are considered craft breweries
- Currently 19 breweries in planning in Minnesota
- Over 80 currently open in 2015
- 500,000 bbl packaged just in 2014



Reasons for MnTAP Assistance

- Small local breweries with taprooms are a booming industry for Minnesota thanks to the Surly Bill
- Concerns about water use and other utilities
- Get our name into a local industry that is growing
- First time benchmarking has happened for small breweries



Benchmarking Project

- **Brewers Association Project to go with the Sustainability Manuals**
- **Goal 250 breweries of all sizes, types, and locations**
- **Performance Indicators being studied**

Electric	60 to 285	kWh/bbl
Water	8.7 to 14.1	Bbl water/bbl
Natural Gas	2.4 to 10	Therms/bbl
CO2 usage	5.8 to 20.3	Lb CO2/ bbl



Reason for the Study

- Shows where time would best be spent
- Can identify positive or negative changes in the process
- Less resources are used
- Saves money
- Better image for the industry



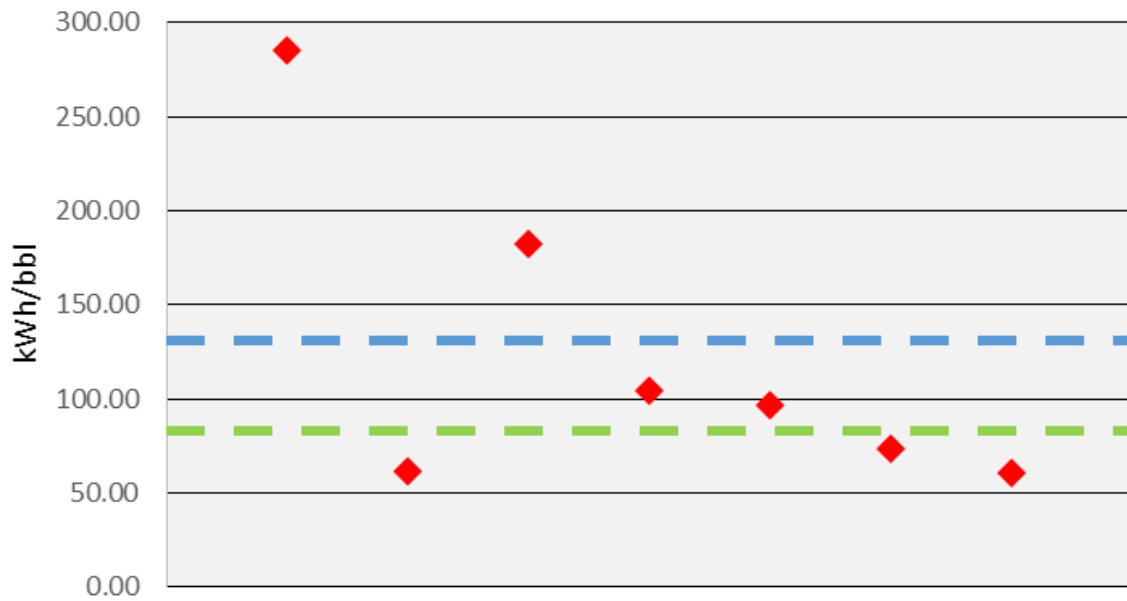
Data from Minnesota Breweries

- **Contacted 75 brewers of all sizes**
- **Over 60% produce less than 1,000 bbl/year**
- **7 Completed data sets**
- **10 in-progress**

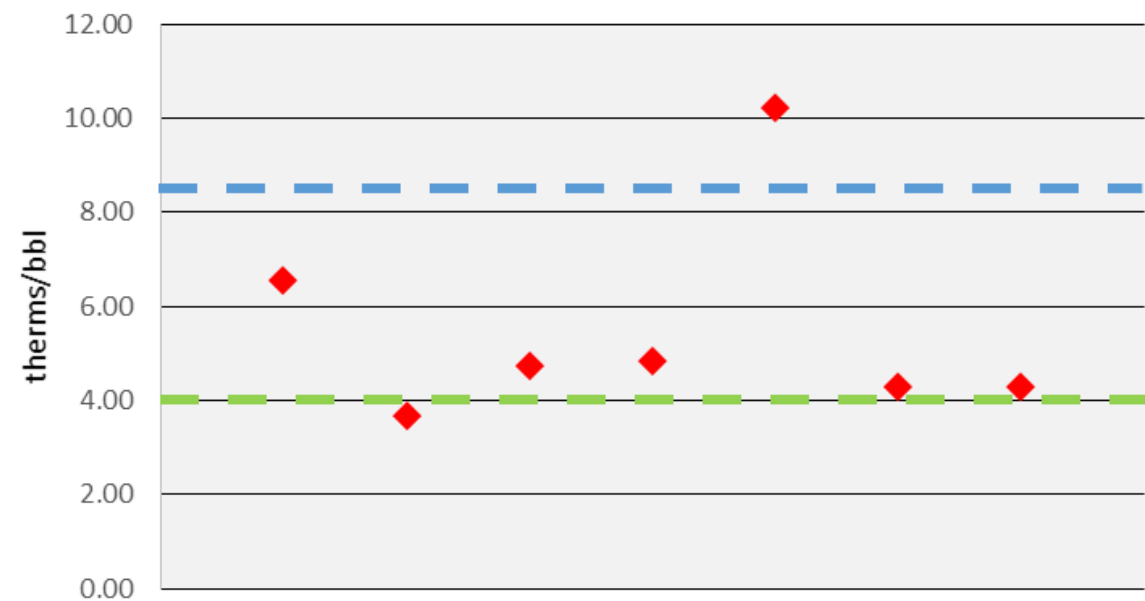


How is Minnesota Doing?

Electrical Usage



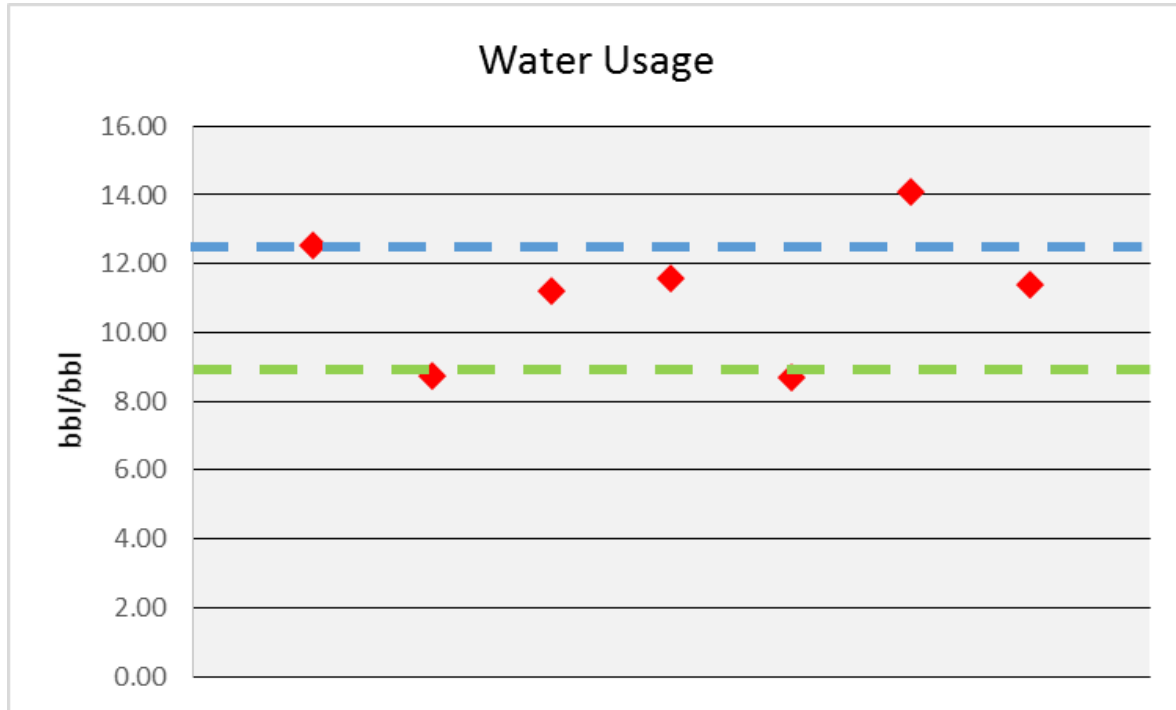
Natural Gas Usage



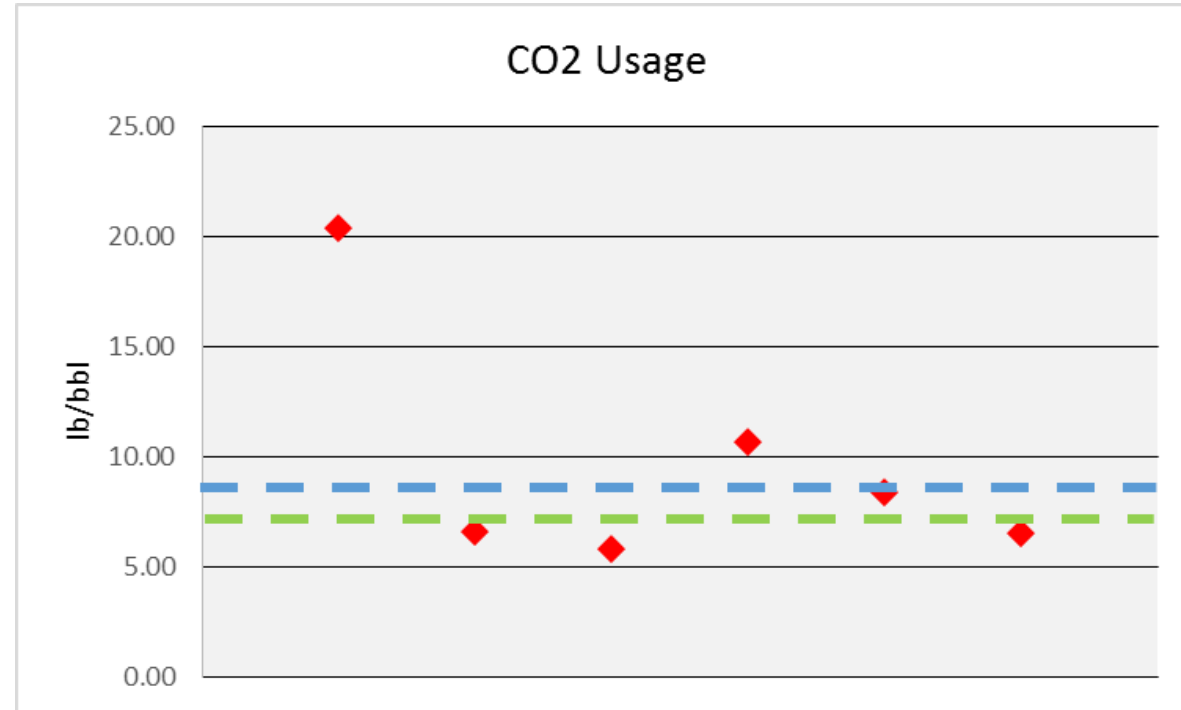
— Median
— Top 25%

How is Minnesota Doing?

Water Usage

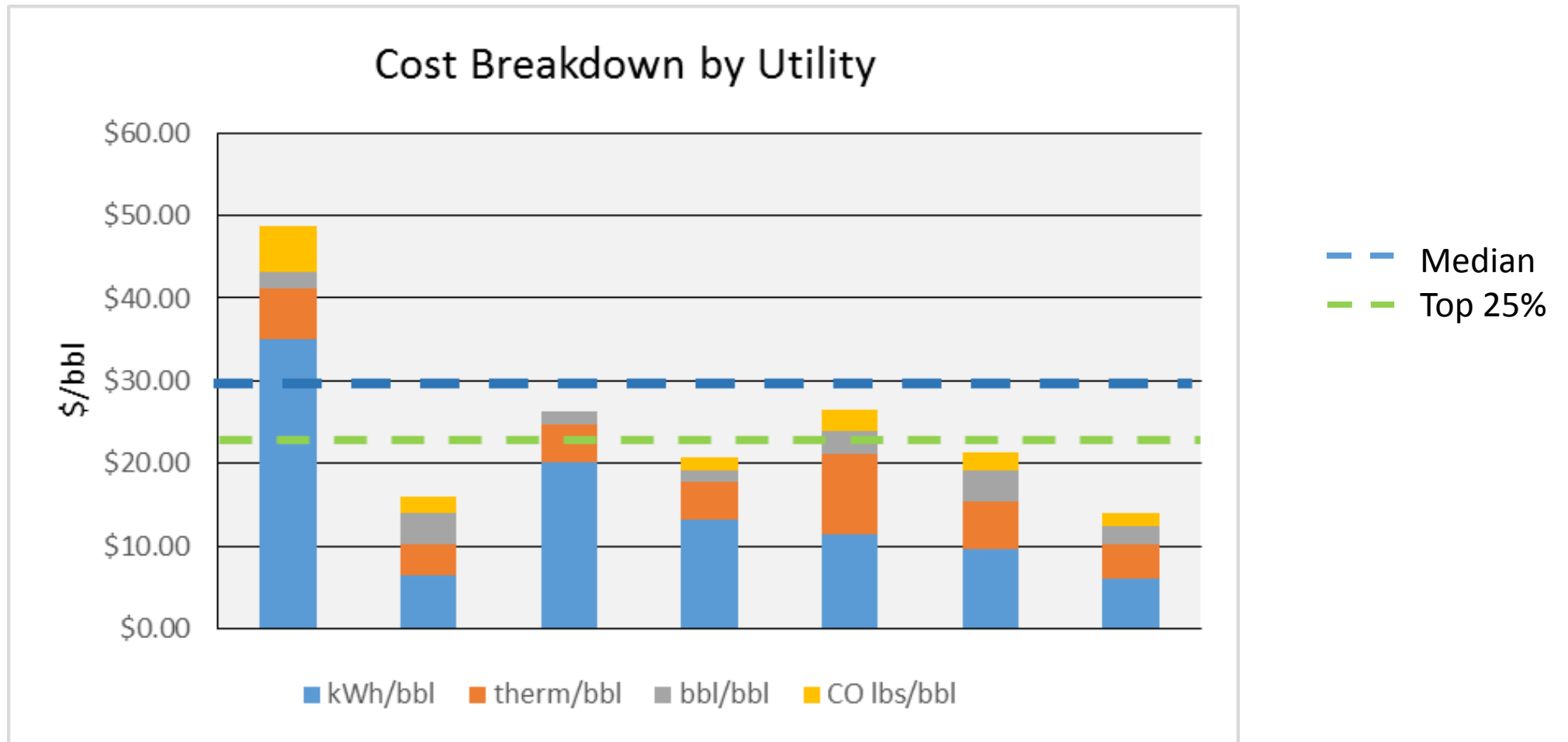


CO2 Usage



— Median
— Top 25%

How is Minnesota Doing?



Where is this Data Going?

- Brewers Association Report
- Brewers Association Benchmarking Program
 - Real-time tracking
 - Goals
 - Resources to improve with
 - Case studies



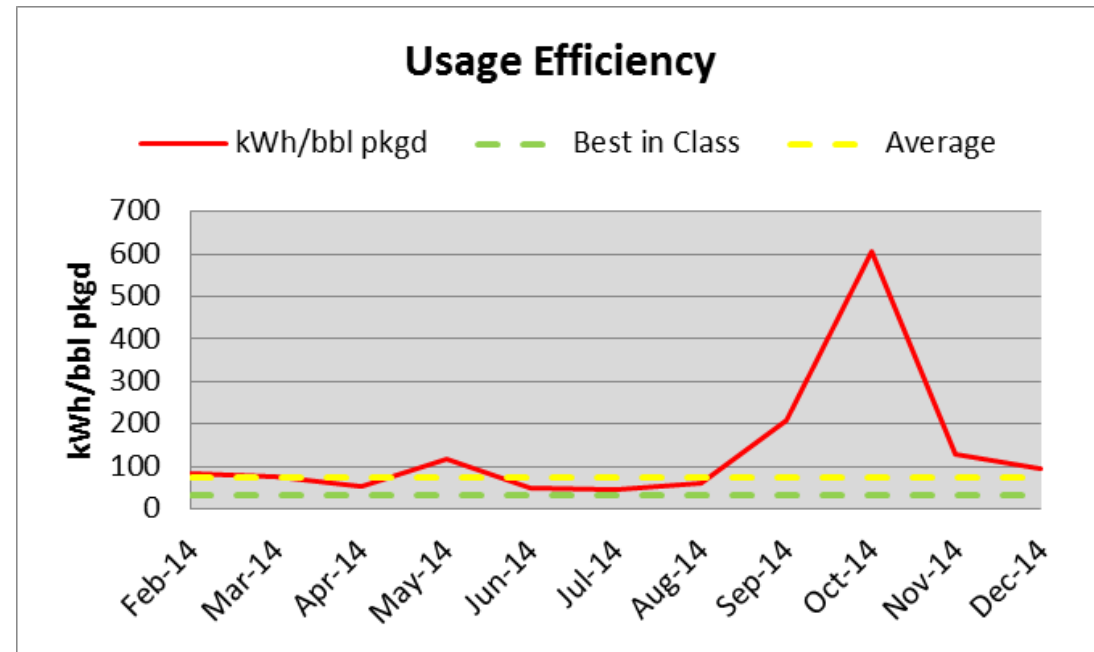
Sustainability Assessments

- Four breweries from 200 to 2,000 bbl/year
- Overview of their efficiency
- Looked for low hanging fruit
- Talked about their future plans



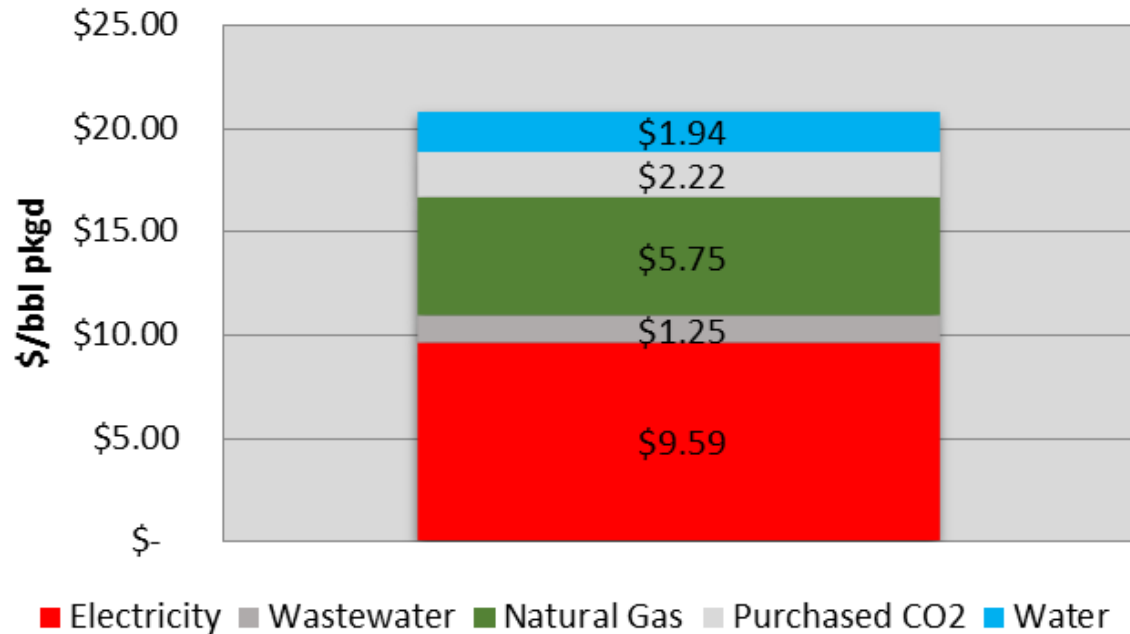
The Power of Tracking This Data

- Quick and easy
- Gets everyone on the correct mindset
- Corrections can be made with no or little capital cost
- Identifies areas of improvement

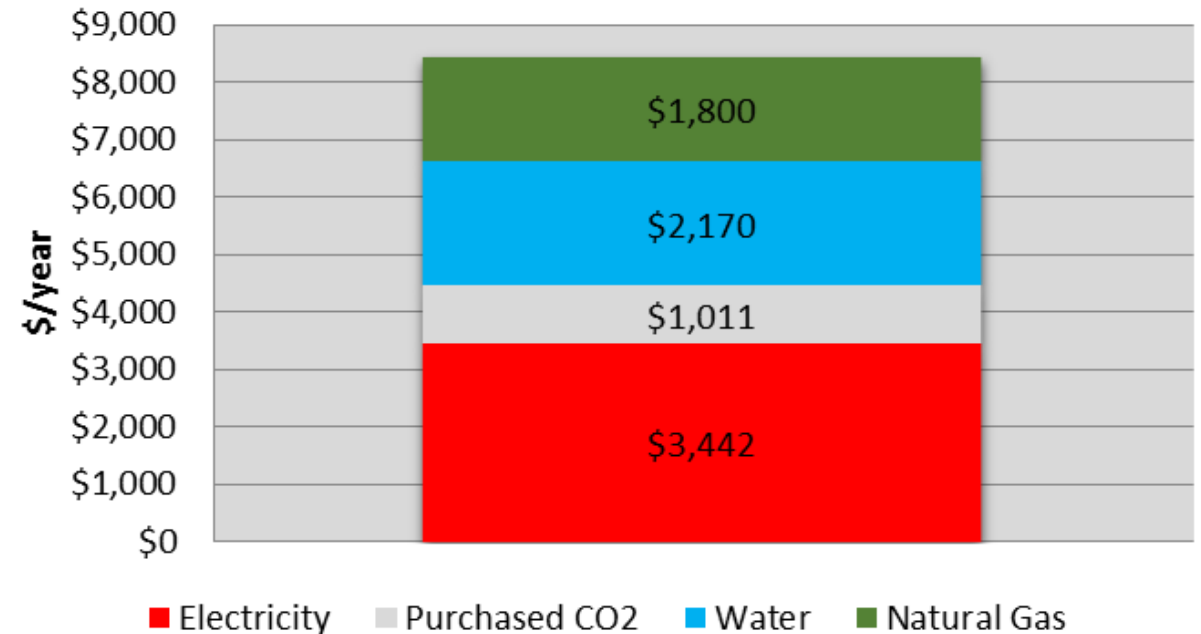


Cost Avoidance

Cost Contribution For 2014

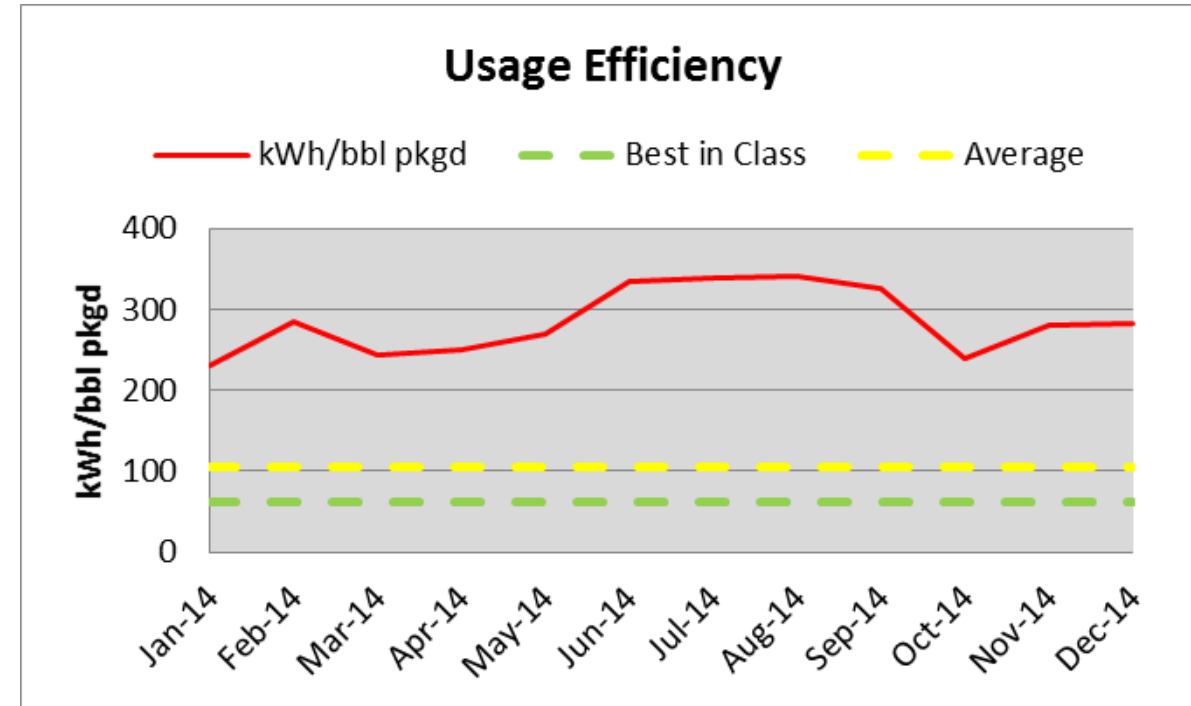


Potential Cost Avoidance at Goal Efficiencies



Power Study

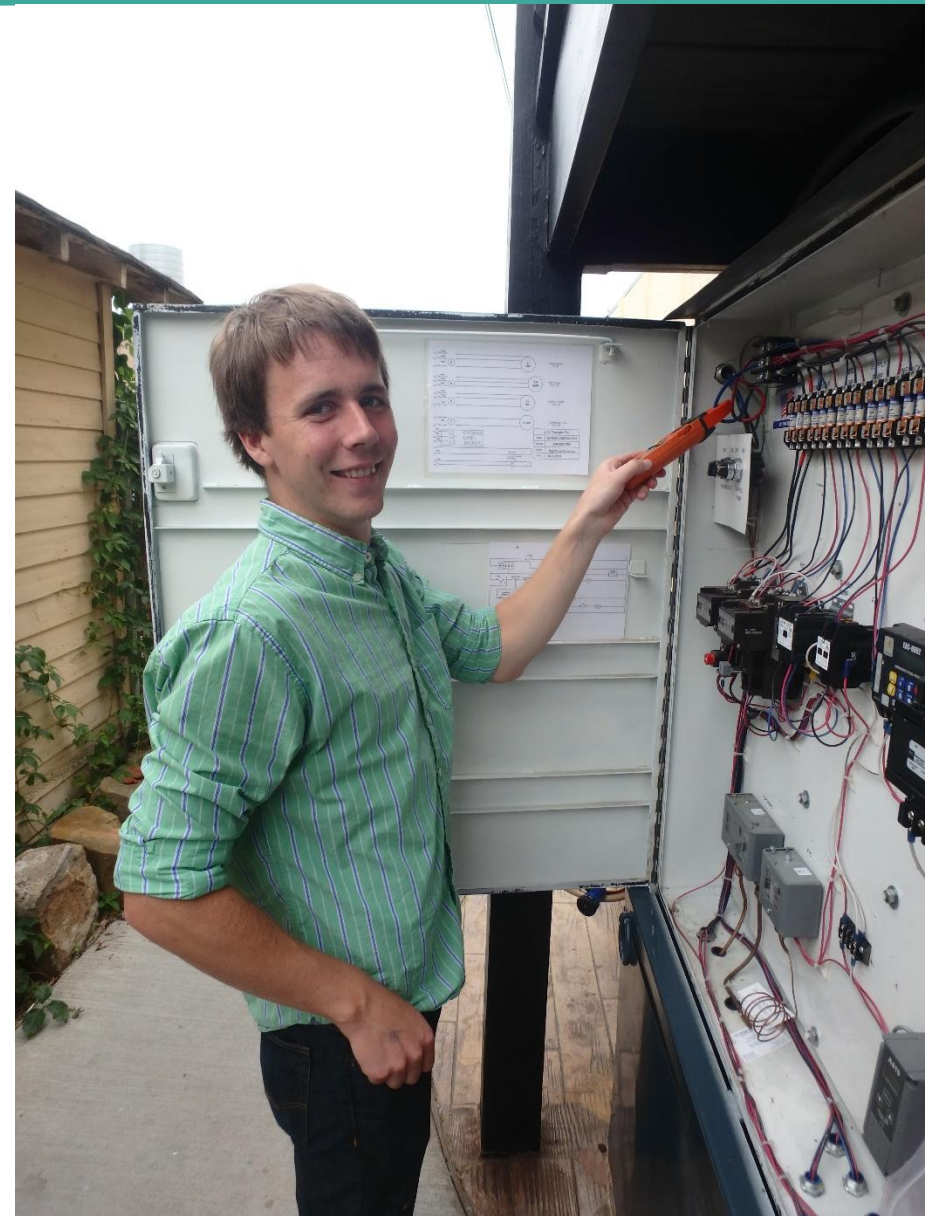
- Electric use was about 3 times the average for a brewery of similar size
- Biggest energy hogs
 - Evaporator fans were running 24/7
 - Fan in the brewery
 - 6.5% energy reduction possible



Recommendation	Power Reduction	Capital Cost	New Saving	Payback
Fan controller	3000 kWh/year	\$600	\$245	1.9 Years
Use comfort fan only when needed	1550kWh/year	\$0	\$140	Immediate

Personal Benefit

- Real world experience
- Communication skills
- Organizational skills
- Management skills
- Learned the value of time and money for a small business



Thank You

- Questions?