Brewers Association
2014 -2018
Sustainability
Benchmarking

BREWERS ASSOCIATION®

acknowledgements

This project would not be possible without the support of the Brewer's Association Sustainability Subcommittee as well as all the individual breweries that took the time and effort to submit benchmarking data.

Particular thanks to those breweries that submitted complete sets of data from 2014 through 2018. Their contribution allows for meaningful five-year observations which benefit the entire industry.

Sustainability Subcommittee

The Sustainability Subcommittee serves the Brewers Association purpose by helping current members and future generations to brew the highest quality beers in a manner that strengthens the value of our businesses, increases the resiliency of the natural environment and agricultural systems that provide brewing ingredients, and enhances the lives of our workforce and the communities we call home.

Matt Gacioch (Ambassador)
Brewers Association
Sustainability Ambassador

John Stier (Mentor)
Brewers Association
Sustainability Mentor

Walker Modic (Chair)
Bell's Brewery, Inc.
Galesburg, Mich.

Adam Beauchamp
Creature Comforts Brewing Co.
Athens, Ga.

Carol Cochran
Horse & Dragon Brewing Company
Fort Collins, Colo.

Christian Ettinger
Hopworks Urban Brewery
Portland, Ore.

Saul Kliorys
Great Lakes Brewing Company
Cleveland, Ohio

Adam Lawrence
Left Hand Brewing Company
Longmont, Colo.

Mandi McKay
Sierra Nevada Brewing Co
Chico, Calif.

Ben Roesch
Wormtown Brewery
Worcester, Mass.

Luke Truman
Allagash Brewing Company
Portland, Maine

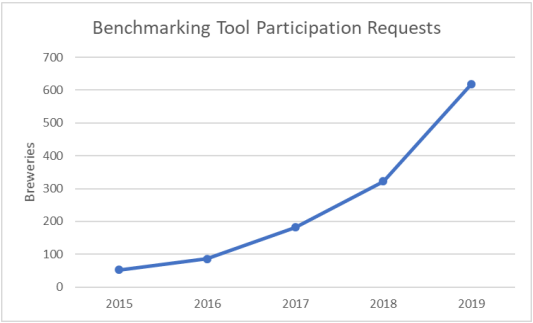
Katie Wallace
New Belgium Brewing Company
Fort Collins, Colo.

Brewers Association Staff: Paul Gatza, Chuck Skypeck, Chris Swersey

five-years of progress

The purpose of this report is to present a compilation of sustainability related benchmarking data collected from breweries of all sizes and locations from calendar years 2014 through 2018. It represents a five-year snapshot of progress towards more sustainable brewing practices.

The Brewers Association has published three annual reports (2015, 2016, 2017) summarizing the results of breweries that have participated in the sustainability benchmarking project. Participation involves entering monthly usage and cost data for sustainability key performance indicators (KPIs). The time commitment to consistently enter monthly data has been one of the biggest obstacles to increased brewery participation. However, as this report illustrates, the number of participating breweries is on the rise.



The release of a new Microsoft Excel based benchmarking tool in July 2019 seems to be one of the key enablers to increased brewery participation requests.

To be included in this report, a brewery must have submitted at least twelve months of complete data for the identified list of KPIs. We are pleased to report that 17 breweries submitted complete data sets for all five years and an additional 14 breweries submitted complete data sets for four years.

Observations:

The 31 breweries that submitted four or more years of benchmarking data significantly outperformed the group of 131 breweries that participated in the 2014 – 2018 benchmarking dataset.

The table below summarizes the average annual cost, CO2 emission, and water consumption savings for the 31 breweries with a longer-term commitment to benchmarking compared to the other 131 breweries in the dataset by size range.

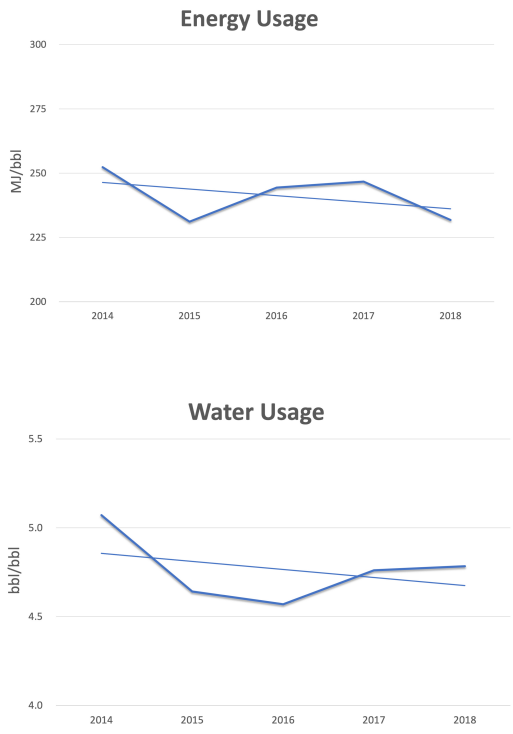
Annual Savings Reported by Breweries Benchmarking Commitment vs Noncommitment

Brewery Size (bbl/yr)	$/yr	lb CO2/yr	gal water/yr
0-1,000	$4,346	102,607	342,062
1,000 - 10,000	$21,224	261,022	294,430
10,000 - 100,000	$27,796	259,719	732,437
100,000+	$567,396	52,576	2,589,873

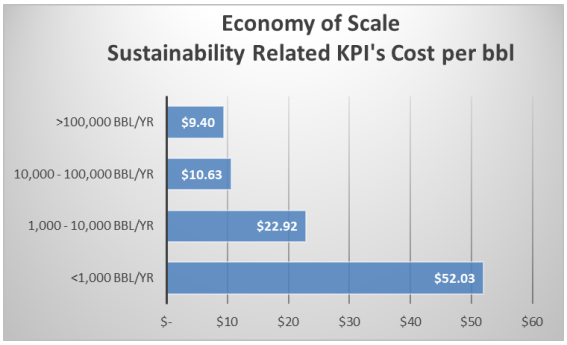
For example, a 5,000 bbl/yr brewery that showed a strong commitment to benchmarking saw an average annual cost savings of over $20,000 compared to other breweries in the database. Benchmarking participation alone is not solely responsible for these savings, however, breweries that manage to data are much more likely to have effective sustainability strategies that deliver superior returns.

five-years of progress (cont)

Breweries that submitted five years of consecutive data showed a steady natural resource efficiency improvement of 1 to 2% per year. The graphs below illustrate an example of breweries in the dataset that improved their energy and water usage profiles by taking a managed approach to sustainable brewing.



From a cost per bbl perspective, the five-year dataset of sustainability related KPIs illustrates the impact of economies of scale. Smaller breweries often invest in infrastructure that allow for future expansion. This may result in equipment not performing at peak efficiency while operating at lower demand. Brewpubs may have a significant area devoted to food service that requires comfort heating and cooling. Also, a certain percentage of utility demands are viewed as a baseload, regardless of the swings in production volume. The chart below illustrates this difference between size ranges.



benchmarking results

Efficiency charts for water, electricity, natural gas, solid waste and purchased CO_2 by production size (bbl packaged) were generated to create a five-year snapshot of participating breweries. These charts provide a quick and simple way to review the performance of participating breweries in terms of the bottom 25%, middle 50%, and top 25% for each respective environmental attribute. This review is a critical step in setting stretch, but realistic goals and targets.

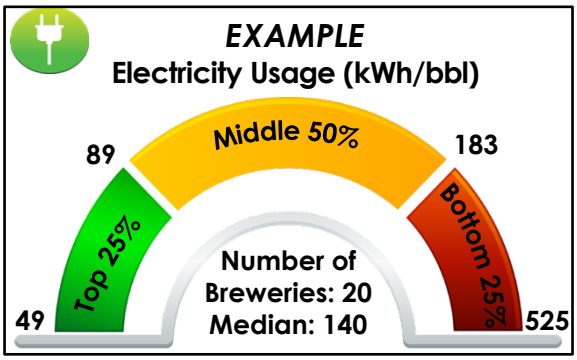
Production size categories used in the analysis are:

- Less than 1,000 bbl/yr
- 1,000-10,000 bbl/yr
- 10,000-100,000 bbl/yr
- Greater than 100,000 bbl/yr

In addition to the usage and waste efficiency charts, there are also charts outlining the average cost per barrel associated with each sustainability related KPI. These charts provide a sense of which KPIs are adding to the incremental costs per barrel of beer.

The solid waste disposed metric does not include wet spent grains, demolition debris or any other recycled waste streams.

This five-year block of data provides the basis for the goal setting function in the Brewers Association Sustainability Benchmarking tool. Each year, a new five-year rolling average will be calculated and updated into the Microsoft Excel based tool.



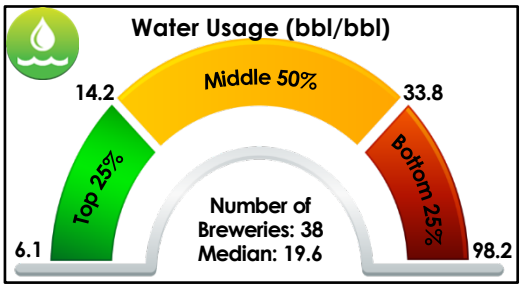
The above figure is an example of an efficiency chart used to show the top 25%, the middle 50%, and the bottom 25% of performers in production categories. A separate chart is created for each of the five attributes analyzed in this update. In this case, a brewery operating at 75 kWh/bbl would be in the top 25% of peer breweries. This graphic is meant to stimulate awareness of peer efficiency so best practices can be shared, and the overall sector can continue to improve.

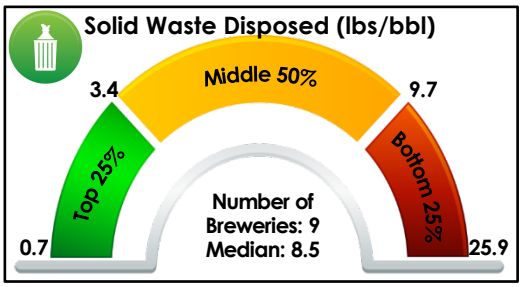
The "Number of Breweries" metric represents the number of complete sets of annual data submitted by breweries from 2014-2018.

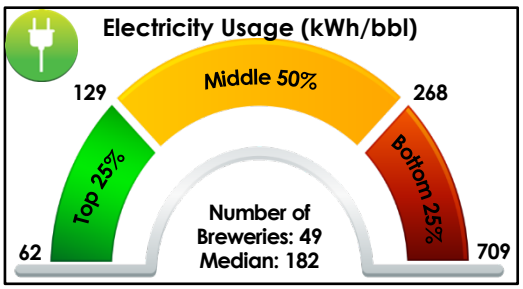
All data is self reported and submitted by participating breweries to the Brewers Association for aggregation and analysis. Although gross outliers are flagged for review, the Brewers Association does not validate, or challenge data reported by breweries.

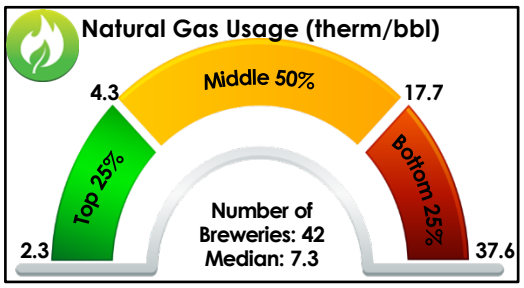
0-1,000 bbl/year

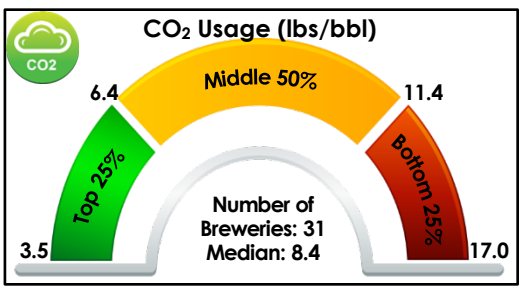
Usage Efficiency (2014-2018)



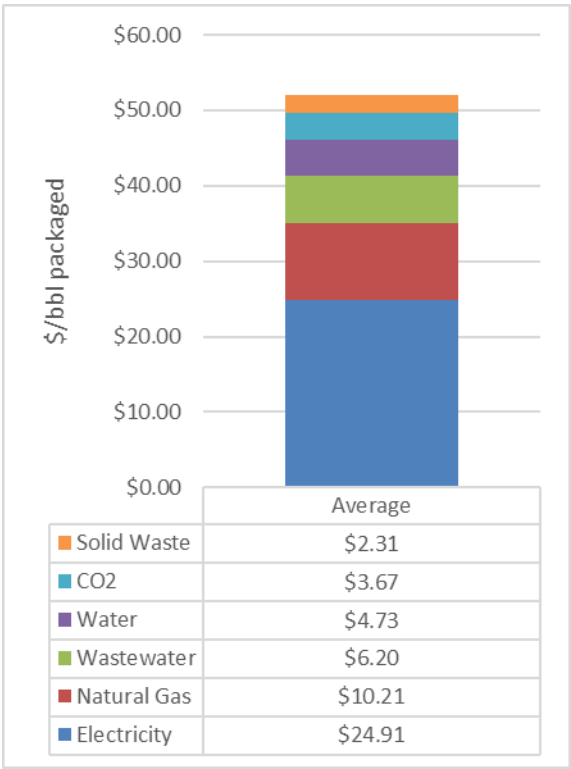






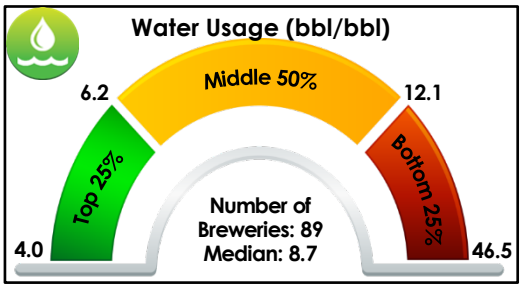


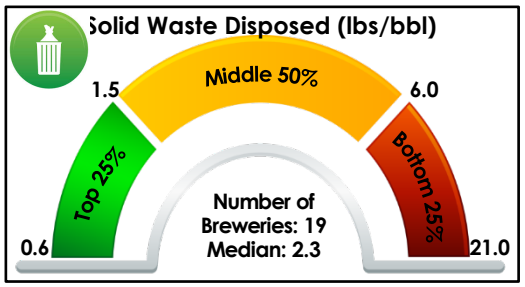
Cost Efficiency (2014-2018)

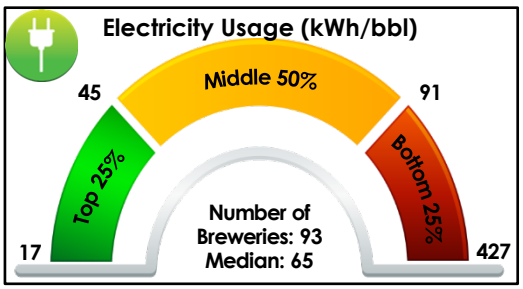


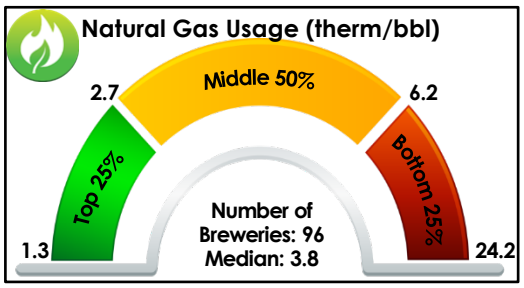
1,000-10,000 bbl/year

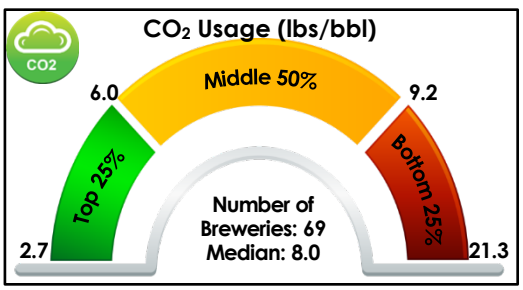
Usage Efficiency (2014-2018)











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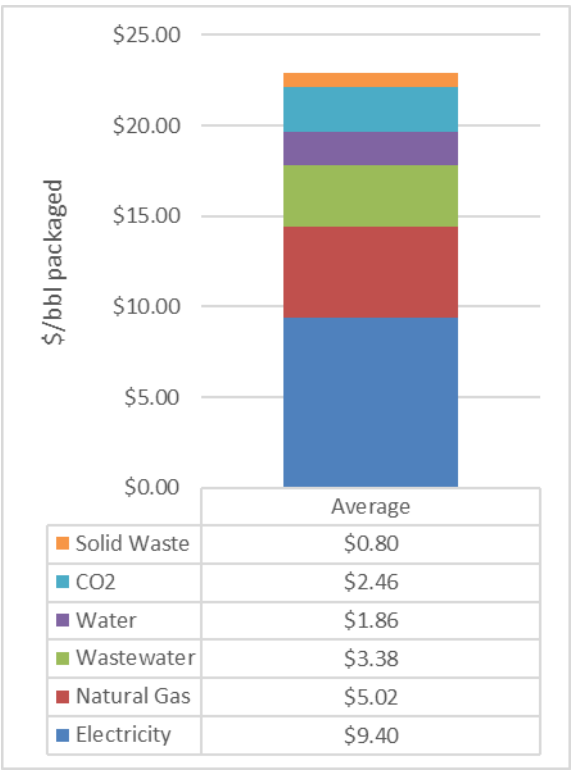
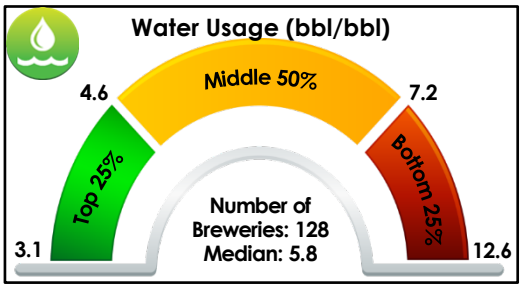
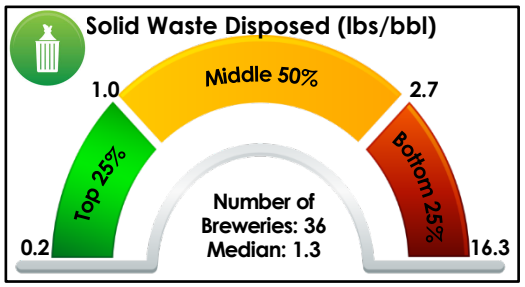


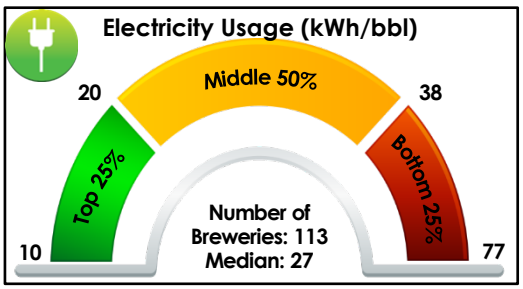
	Average
Solid Waste	$0.80
CO2	$2.46
Water	$1.86
Wastewater	$3.38
Natural Gas	$5.02
Electricity	$9.40

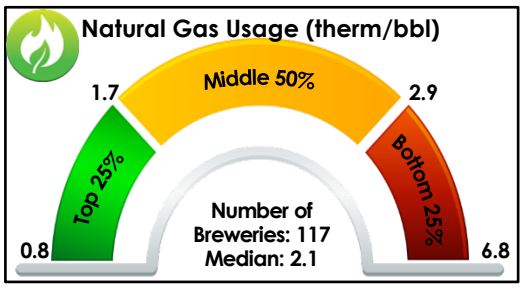
10,000-100,000 bbl/year

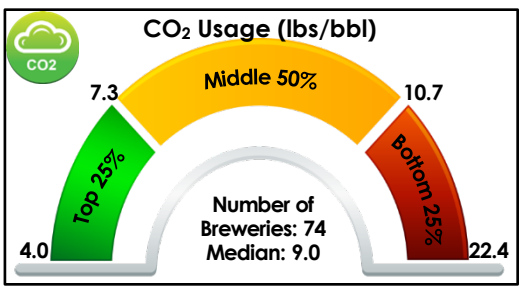
Usage Efficiency (2014-2018)











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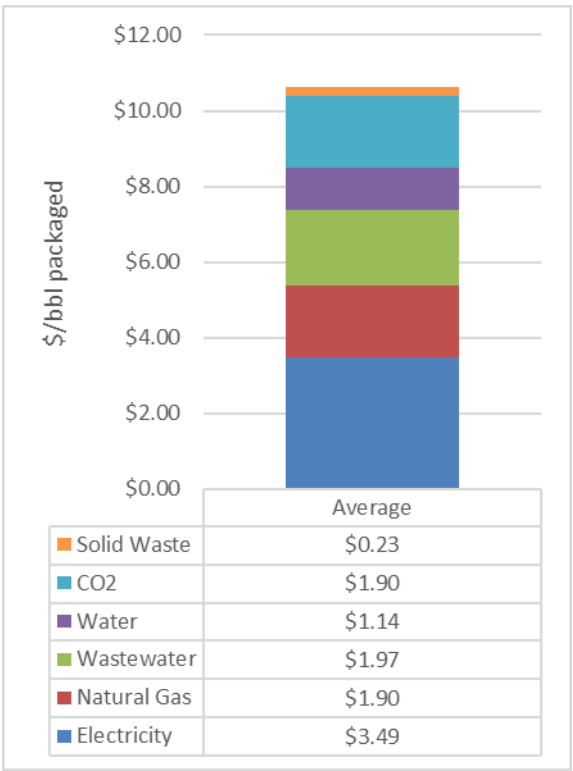
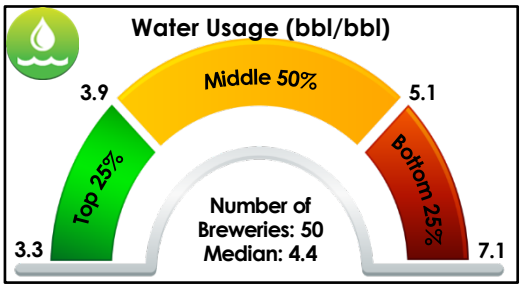
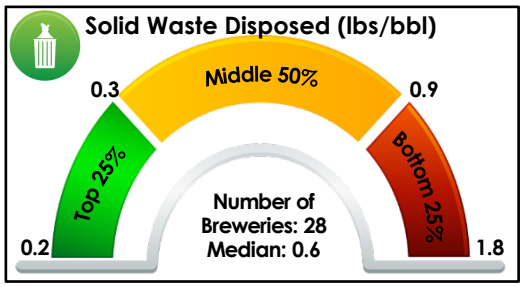


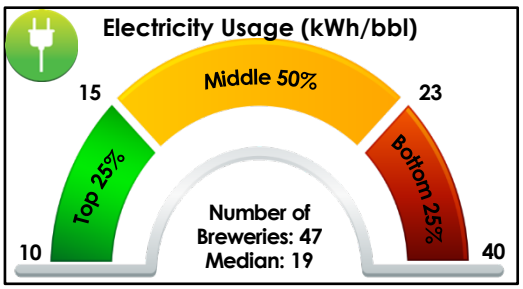
	Average
Solid Waste	$0.23
CO2	$1.90
Water	$1.14
Wastewater	$1.97
Natural Gas	$1.90
Electricity	$3.49

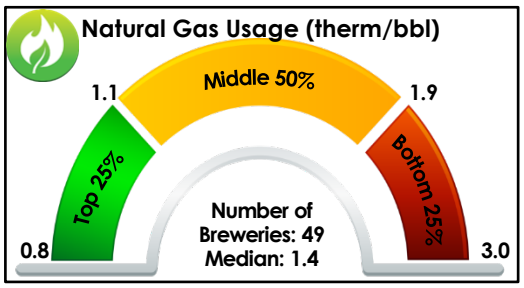
100,000+ bbl/year

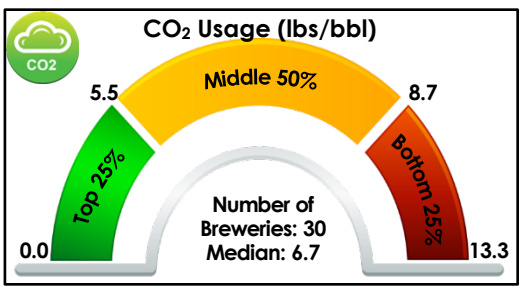
Usage Efficiency (2014-2018)











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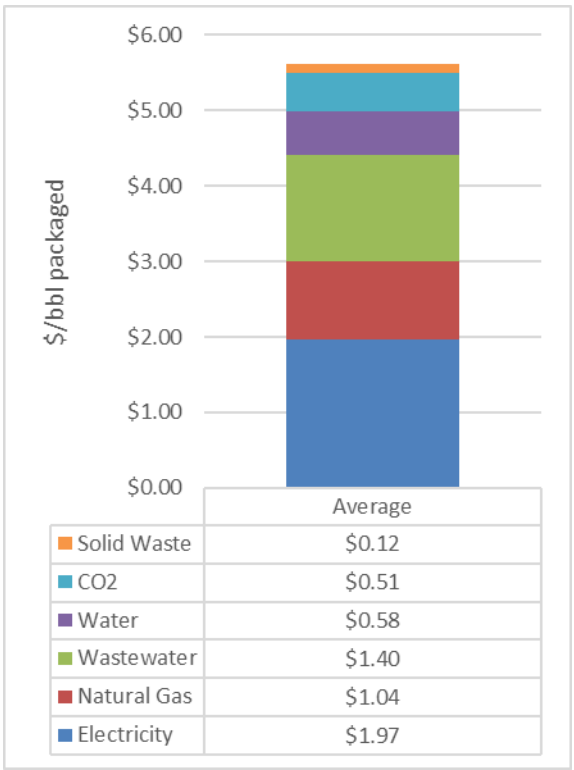

participating breweries

Five years of data

Alaskan Brewing Company

Brewery Vivant

Craft Brew Alliance

Flying Fish Brewing Company

Maine Beer Company

New Belgium Brewing Company

North Coast Brewing Company

Odell Brewing Company

Revolution Brewing

Sierra Nevada Brewing Company

Upland Brewing Company

Zipline Brewing Company

Four years of data

Bear Republic Brewing Company

Beltway Brewing Company

Birdsong Brewing Company

Dry Dock Brewing Company

Fremont Brewing Company

Great Lakes Brewing Company

Half Acre Beer Company

Horse & Dragon Brewing Company

Jackie O's Brewery

Mother's Brewing Company

Mully's Brewery

Sierra Nevada Brewing Company

SKA Brewing

Stillmank Brewing Company

Upslope Brewing Company

Worth Brewing Company

participating breweries (cont)

One to three years of data

10 Barrel Brewing Company
14th Star Brewing Company
Actual Brewing Company
Alamo Beer Company
Allagash Brewing Company
Arbor Brewing Company
Aslan Brewing Company
Atlantic Brewing Company
August Schell Brewing Company
Avery Brewing Company
Bale Breaker Brewing Company
Bell's Brewery Inc.
Bhramari Brewing Company
Black Warrior Brewing Company
Blue Point Brewing Company
Borderlands Brewing Company
Breckenridge Brewery
Brewdog Brewing Company
Broken Compass Brewing
Brooklyn Brewery
Buffalo Bayou Brewing Company
Burning Brothers Brewery
Butcherknife Brewing Company
Cahaba Brewing Company
Caldera Brewing Company
Chestnut Brew Works
Cigar City Brewing
Confluence Brewing Company
Craft Brew Alliance
Creemore Springs Brewery
Dangerous Man Brewing Company
Dark Horse Brewing Company
Denver Beer Company
Deschutes Brewery
Discretion Brewing
Dry Dock Brewing Company
EagleMonk Pub and Brewery
Elliott Bay Brewery and Pub
Elysian Brewing Company
Epic Brewing Company
Exile Brewing
Falling Sky Brewing
FiftyFifty Brewing Company
Figueroa Mountain Brewing Company
Fort George Brewery
Founders Brewing Company
Four Peaks Brewing Company
Franklin Street Brewing Company
Fremont Brewing Company
Fullsteam Brewery
Fulton Beer
Gilded Goat Brewing Company
Goose Island Beer Company
Grand Rapids Brewing Company
Great Central Brewing Company
Great Divide Brewing Company
HiHO Brewing Company
Hopworks Urban Brewery
Intersect Brewing
Iron Horse Brewery
Ironwood Brewing Company
Jack Pine Brewery
Karl Strauss Brewing Company

participating breweries (cont)

One to three years of data (cont)

Kettlehouse Brewing Company
Kinetic Brewing Company
Land-Grant Brewing Company
Lazy Beach Brewing
Lazy Magnolia Brewing Company
Left Hand Brewing Company
Little Fish Brewing Company
Lost Forty Brewing
Lucky Hare Brewing Company
MadTree Brewing
Mankato Brewery
Marble Brewery
Market Garden Brewery
Maui Brewing Company
Mike Hess Brewing
Milkhouse Brewery
Monday Night Brewing
Mount Hood Brewing Company
Mystery Brewing Company
Nebraska Brewing Company
New Belgium Brewing Company
New Holland Brewing Company
O'Fallon Brewery
One Well Brewing
Orlando Brewing Partners
Oskar Blues Brewery
Pigeon Hill Brewing Company
Pike Brewing Company
Potosi Brewing Company
Pueblo Vida Brewing Company
Raquette River Brewing
Rising Tide Brewing Company
Roadhouse Brewing Company
Rockford Brewing Company
Rockingham Brewing Company
Silver City Brewery
SingleSpeed Brewing Company
Societe Brewing Company
Standing Stone Brewing Company
Steel Toe Brewing
Stone and Wood Brewing Company
Stone Arch Brewpub
Stone Brewing
Sudwerk Brewing Company
Switchback Brewing Company
The Saint Louis Brewery
Three Taverns Craft Brewery
Town In City Brewing Company
Uinta Brewing Company
UpCountry Brewing
Upland Brewing Company
Upper Hand Brewery
Urban Chestnut Brewing Company
Walking Man Brewing Company
Warped Wing Brewing Company
Witch's Hat Brewing
Wolf's Ridge Brewing
Wooly Pig Farm Brewery
Wormtown Brewery
Worthy Brewing Company
Yards Brewing Company

resources available

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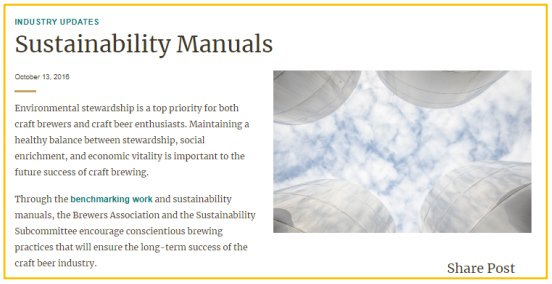

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Questions?
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benchmarking@brewersassociation.org