



New Glarus Brewing Company

Green Tier Breweries

Annual Report 2014

An Efficient Brewing Process — The New Glarus Brewing Company is located in New Glarus, WI. It was established in 1993 by Deb and Dan Carey. Approximately 90 people are currently employed. The brewery's mission is to produce world-class, handcrafted beer. In 2014 the brewery sold 162,000 barrels of beer. New Glarus applied for the Green Tier program in 2012 and was accepted in August of 2013.

"To truly become number one, you must constantly strive to surpass yourself... not the competition." -Deb Carey

Sustainability affects every process and person in a brewery and community. Our brewery has embarked on a quest to reduce consumption through process improvements and system upgrades. The individuals involved are what make this standard equipment unique: Brewers challenge the process to utilize resources more effectively, Team Leaders dream up ways to reduce our use of resources, Programmers modify systems, Welders modify pipes and fittings, Lab Technicians evaluate cleaning programs, Gift Shop Staff communicate our story to visitors and Maintenance Technicians install equipment and support operations. Improving sustainability is a team effort.

Energy Consumption

Gas (Next target is 1.37 Therms/BBL & 121.2 MJ/HL)

2012– 1.46 Therms/BBL 131.2 MJ/HL

2013 – 1.41 Therms/BBL 126.7 MJ/HL

2014 -- 1.39 Therms/BBL 124.9 MJ/HL

Electric (Next target is 17.00 Kwh/BBL & 14.49 Kwh/HL)

2012– 19.48 Kwh/BBL 16.34 Kwh/HL

2013 – 18.49 Kwh/BBL 15.51 Kwh/HL

2014—17.19 Kwh/BBL 14.65 Kwh/HL

Note: Consumption numbers include: Riverside and Hilltop locations and associated visitor areas, Gift Shop and Beer Depot.



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An Efficient Brewing Process – continued

2014 Items in Review

- Heat Recovery Systems
 - We installed three process wastewater heat recovery systems. The boiler blow down and skim water heat will be heat exchanged into the makeup water for the boiler. The other two systems will collect hot water from process points and cleaning systems in the Brewhall. This heat will be transferred into makeup water for the warm water system in the Brewhall.
- Upgrade to Refrigeration Plant
 - We installed a closed loop & VFD compressor pump system. The total energy consumption decreased due to compressor VFD's coupled directly to the system demand, switching to a "Closed Loop" system and integrating programming that allows multiple operating parameters based on ambient conditions, trend tracking and system warnings. We insulated all hot and cold lines affected by change on system.
- Conversion of a compressed air bottle blow off system to a centrifugal blower.
 - The wiping and drying of rinse water off filled bottles is important to the labeling process. This inefficient use of compressed air is expensive.
 - 20HP was replaced with 5HP, that's a 75% reduction.
- Continue use of smart LED high bay lighting in the warehouse expansion.

2015 Goals

- Pre-Run Vessel & Heat Recovery
 - We plan to collect more vapor during the boil process and use this heat to pre-heat wort prior to the kettle stage. The energy storage tank, at 95°C, will increase the useful energy level of heat reclaimed from the vapor condenser. The additional volume will also give us the needed capacity to utilize all vapor energy from boiling. We can reduce kettle fouling, which reduce CIP's, decreasing water use and brewing time. All these items will increase efficiency in the Brewhall.
- Warehouse-air movement & infiltration around docks and levelers. These areas can let in cold outside air which increases heating costs unnecessarily. The goal is to reduce cold air infiltration with minimal impact to fork truck operation.
- CIP 1 & 2
 - CIP system 1 & 2 will each get water/chemical recovery tanks. This will reduce water/chemical use. These tanks will hold solutions so the system does not have to reheat water as often or as much. The solution can be up-concentrated to utilize chemical more than once, there by reducing chemical usage.
- A continued use of LED lighting in new construction.



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Sustainable Brewing Process – These are the actions you have or will take in your processes that drive you as close to truly sustainable as possible.

Water Target; Reduce water ratio to 3.5:1, ultimate goal is 2.5:1

What is your past, current and future BBL beer to BBL water?

- 3.66 in 2012
- 3.83 in 2013
- 3.88 in 2014

What actions have you taken to get you to this point?

- Identifying water/chemical operations & keying in volumes used.

What actions will you take to achieve your goals? (To reduce water use)

- CIP system 1 & 2 system upgrades, chemical & water tanks.
 - Improvements start with the addition of recovery tanks on CIP system 1 and 2. This means that there is no need to empty the entire system between chemical washes; saving a great deal of chemical and water waste. The caustic recovery tanks recover caustic to be reused in a required pre-flush rinse on the next equipment CIP. The only time there is a need to completely empty the system is when the CIP system itself needs to be cleaned.
 - Work on CIP 1 & 2 to bring on-line.
- Brewhall Heat Recovery will reduce CIP's for a fouled kettle, decreasing water and chemical use.

Reduce-Reuse-Recycle

Divert waste from landfill

- Less than 9 yards per week to landfill, which includes Gift Shop and visitor garbage.
- Less than 9 yards per week of commingled recyclables.
- 2013—22.8 tons of paid for recyclables. NGB segregated cardboard and stretch film and sold them instead of paying to haul it away.
- 2014—45.25 tons of paid for recyclables. NGB started segregating some high use plastics and paper.
- Pallet recycle reuse and repair program is ongoing.
- 2015—Extend commingled recycling containers to the visitor areas.



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Reduce-Reuse-Recycle-continued

What have you been doing to drive down the amount of waste from your processes?

- 2013 – 1st completed year of baling & selling corrugated cardboard and stretch film. E-waste recycling program started.
- 2014 Review– Segregate #4 plastics from commingled recyclables, separate mixed paper and bale poly and paper bags.
- 2015 Goals– More plastics/paper. Extend commingled recycling to visitors.
- Scrap pallet re-use and recycle plan.

Sustaining Community

What have you done and are you planning to do to increase your interaction with the community and employees?

- Events sponsored in part by New Glarus Brewing. (See next page)

New Glarus Brewing Company has been a proud supporter of events in our village. The brewery is a major sponsor for Oktoberfest, the Beer, Bacon & Cheese/Polkafest event, and the annual Bike Rodeo for Kids. We are grateful to the village that we've called home for over 20 years and we donate money, beer and merchandise, as well as our time, to help support the village's many events and organizations.

- 90+ employees and growing.
- Use of local skilled labor in construction/maintenance of the brewery.
- Gift Shop staff advocates "Local" businesses & information.

People Planet Profit

- We use local suppliers for raw materials.
- We currently have 320 suppliers in WI.
- We use Green Tier Company Suppliers; currently 6.
- Our suppliers use recycled contents; collect glass 30-35%, paper related 34 %.



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Thanks for the Support!

At the close of another year...we gratefully pause to wish all of our friends a warm and blessed New Year!

Ace/Shannon Memorial	Eagle Pass for Parkinson Disease	Monroe Fire Department	Polkafest
Agricultural Research Foundation	EMMA STRONG benefit for Emma Hicks	Monroe Jaycees	Project Home
Albany FFA	Epilepsy Foundation	Monroe Justice For A Cure	Ronald McDonald House
Albany PTO	Federal Industries	Monroe Shriners	Ride 4 A Cure
Alphorn Triathlon	Feed America	Monroe Youth Hockey	Rainbow Benefit
American Cancer Society	Greyhound Fundraiser	Monticello Bucky/Ron Scramble	REAP Food Group
American Family Children's Hospital	Green County 4-H	Monticello FFA	St. Jude's
American Heart Association	Green County EMS	Monticello Fire Department TJ Disch	Sangerfest
American Legion	Green County United Way	Scholarship Fundraiser	Second Harvest Food Drive
American Red Cross	Green County Ag Chest	Monticello Foundation golf outing	State FFA Banquet
Angels Among Us	Green County Alliance on Mental Illness	Monticello Homecoming	Sugar River Rapids
Argyle Booster Club	Green County Cheese Day	Monticello Lions Club	State Teachers Conference
Argyle Post Prom	Green County Child Advocacy Center	Monticello Post Prom	Sexual Assault Recovery Program
Belleville Fire Department	Green County Fairest of the Fair	Monticello Public Library	Teacher Ag Association
Belleville High School Post Prom	Green County Fair	Mount Vernon Breast Cancer Fundraiser	Tyler Pierce Memorial
Belleville Police Bike Rodeo	Green County Fall Nationals	New Glarus Area EMS	Toys for Tots
Benefit for Angie Johnson	Green County Family Promise	New Glarus PTO	Thunder Run-Juvenile Diabetes
Benefit for Bonnie Wilde Sigman	Green County Farm Bureau	New Glarus Schools	UW Food and Science
Benefit for Sabrina Foley and Family	Green County Food Pantry	New Glarus Car Show	Volksfest
Benefit for Ava and Audrey's Angels	Green County Foster Care	New Glarus Chamber of Commerce	Veteran's Benefit Ride
Benefit for Ava Biel	Green County Habitat for Humanity	New Glarus Co-Ed Kickball Team	Walk to Cure Diabetes
Benefit for Braxton Maddi	Green County Humane Society	New Glarus Community Foundation	Whitetail Deer Unlimited
Benefit for Brenda Schad	Green County Sexual Assault Response Program	New Glarus Depot Dash	WI Agribusiness Council
Benefit for Gary Armitage	Green County Tourism	New Glarus FFA Alumni	WI FFA Convention
Benefit for Sabrina	Green County YMCA	New Glarus Fire Department	WI National Guard
Benefit for Shawn Smith family	Green Haven Family Advocates Monroe	New Glarus Gift of Community	WI Army Chapter
Benefit for Talon Zuelsdorf	Harvest Fest	New Glarus Kinder Choir	WI Deer & Elk Farmers Association
Big Brothers/Big Sisters Club	Heidi Festival	New Glarus Lions Club	WI Department Of Tourism
Blackhawk FFA	Helping Hands Medical	New Glarus MusicFest	WI Disabled American Veterans
Blackhawk Post Prom	Hollandale Fire Department	New Glarus Oktoberfest	WI DNR
Boys and Girls Club Dane County	Hollandale Sportsman Club	New Glarus Post Prom	WI Fairest of the Fair
Breast Cancer for Women Golf outing	Juda Post Prom	New Glarus Public Library	WI Farm Bureau
Brodhead FFA	Little Tumor Foundation	New Glarus School Knight Pride	WI Teacher's Association
Bundled Blessings	Logan's Heart and Smiles	New Glarus School Wyalusing Park	WI Veterans Museum
Camp Gray	Lupus Foundation	New Glarus Shop with a Cop	WI Vietnam Veterans Chapter III
Carbon Cancer Center Alzheimer Walk	March of Dimes	New Glarus Small World Childcare	WI Wetlands Association
Carbon Cancer Center	Matt Grossen Memorial Fund	New Glarus Special Olympics	WI Women's Health Gala
Chicago Fire Department	MBAA Conference	New Glarus Sports Boosters	WI Public Television
Crohn's and Colitis Foundation	MDA Tub Run	New Glarus Teachers Golf Outing	Wilhelm Tell Festival
Cystic Fibrosis Foundation	Milwaukee Children's Hospital	New Glarus Village	Women for Women Cancer for a Cure
Dane County Domestic Abuse Intervention Services	Monroe Alpine Curling Club	New Glarus Winterfest	Worm Ride-Hope Transplant House
Disabled Veterans	Monroe Arts Center	New Glarus Yodel Club	Wounded Warriors In Action
Dodge County Safe Ride	Monroe Clinic Hospital	NWTF Sugar River	Yellowstone Lake Fundraiser
Ducks Unlimited	Monroe Clinic Hospice	Old World Wisconsin	
Dying to Golf-Swiss Church	Monroe Clinic Hospital	Pink Ribbon Riders/Breast Cancer	
		Parkinson Ride	

New Glarus Brewing Co.

301 Cow Path Lane, New Glarus

608-527-5850 • Hours 10-4

www.newglarusbrewing.com

We're looking forward to a great 2015!

