



MARBLE DISTILLING CO.

COMBATting CLIMATE CRISIS

Sustainability Report
April 20, 2022

Marble's WHY

A message from Co-founder, CEO & Head Distiller, Connie Baker

It has been nearly seven years since we started to collect sustainability data and more than ten years since we began the journey to build the World's Most Sustainable Distillery.

In the ten years since the Marble Distilling Company was founded, we have made it our mission to be the *leader* in sustainability within the distilling industry and good corporate citizens in the world. We hold ourselves accountable to our mission and constantly strive to improve our first-in-kind systems, processes, and ways of working.

The intent of this data-driven report is two-fold. First, to assist and inspire other distilleries in adopting sustainable practices, and second, to build awareness with consumers who vote with their purchases and demand products that reflect their sustainability values.

From the beginning, we have believed in the idea of building with a Net Zero foundation rather than working backwards towards net zero impact which is the norm in our industry. We looked at waste streams as a valuable resource, rather than something to discard. We planned and built each area of our business - Distillery Operations, The Inn, The Tasting Rooms, The Private Barrel Club with sustainable practices in mind. Similar planning went into assembling our supply chain, process areas and retail/hospitality offerings.

We are committed to continuing this journey in sustainability and are eager to present an evaluation of our journey to date. We welcome questions, comments, and feedback from our fellow distillers with the aspiration that we can all work together to . . .

"Save the Planet, One Bottle at a Time"



Link to Sustainability Photos:

<https://www.dropbox.com/sh/xkxgnbfvoljjq14/AAA5wzMToh8IDPoz6aYoDnJsa?dl=0>



Introduction

Marble Distillery was founded in 2015 based on two core sustainability values: Environmental Stewardship and Community Support.

Environmental Stewardship

Marble Distilling Co. puts sustainability at the forefront of every decision. From local sourcing to reuse of process water and energy, we constantly look for ways to minimize our environmental/carbon footprint. As mentioned before, we built our company from a Net Zero foundation rather than work backwards towards Net Zero.

Community Support

As good corporate citizens, we believe that community support represents a living cycle. In our case, this living cycle starts with our local ranchers and farmers, moves through our distilling community, and goes back to local suppliers, ranchers and farmers.

Our success as a distillery relies on the success of our community and vice versa. This mindset was a factor in selecting Carbondale, CO as a home base - a community and economy that shares our values.

We partner with local farmers and ranchers in our supply chain. We created The Distillery Inn - the first hotel in the world to be housed in a working distillery, bringing much needed tourist accommodation in our town.

Between our tasting room, Inn and distillery, we have created many meaningful employment opportunities in our community.

We welcome community events in our tasting room and event space. Works from local artists adorn the walls of our distillery. We support the hundreds of non-profits in the Roaring Fork Valley, especially those focused on environmental issues

The application of these twin principles of Environmental Stewardship and Community Support ultimately move us towards our goal of NET ZERO with these key factors:

ZERO CARBON

ZERO WASTE

ZERO WASTE-WATER



A Note on Transparency:

Transparency is a keystone of sustainability. The misrepresentation of environmental responsibility, also known as Greenwashing, is disingenuous and potentially harmful to consumers and the environment.

In the first section of this report, we have created a scorecard to hold ourselves accountable to our mission and highlight areas that we are working to improve.

Our scale of 1-5 represents our progress towards our ideal. 1 = *Full Achievement of Goals* to 5 = *Significant Improvement Needed*. For each element, Ratings are in the green boxes and Fixes are outlined where improvement is possible, listed are fixes that we plan to implement in 2022/23.

In the second section of this report, we highlight our community involvement and progress in creating and supporting a sustainable local economy as well as a diverse and equitable distillery.

Section 1: SUSTAINABILITY SCORECARD

SOURCING

GOAL: Source 100% of ingredients from US sources, where possible, and within Colorado as a top priority, regardless of cost. Quality First.

GRAIN:

1

100% of our grain used in for distilling is sourced from local Colorado farms with malted grains coming from Southern Colorado.

COFFEE:

2

While we cannot source our coffee beans directly from the US, we use a local roaster who purchases Guatemalan coffee and roasts the beans a few blocks down the street.



FIX: Our roaster has committed to purchasing ONLY fair-trade coffee beans and works directly with the family who owns and work on the farm ensuring the best working conditions and no middle-men. We will continue to audit this situation to ensure practices do not change.

GINGER:

2

Marble recipes require fresh, not frozen, ginger which is sourced from Hawaii up to 4 months of the year (the length of the growing season). The remainder of the year, ginger is sourced from Brazil.

FIX: We were in connected through the New Mexico Department of Agriculture to NM growers of ginger. Currently, their entire crops are reserved, but Marble remains in touch with these growers to purchase when available.

PEACHES:

1

100% of the peaches used for our Peach Brandy are sourced from orchards within 60 miles of our distillery from a family run orchard in Paonia, CO.

GLASS:

2

In 2021 we began sourcing our glass exclusively from O-I, the United States' first Cradle to Cradle glass manufacturer. O-I is an industry leader in sustainability, working towards higher percentages of recycled glass in its products and with a goal to reduce its environmental footprint. Nevertheless, glass and its distribution inherently has a large environmental impact.

FIX: Continue exploring other sustainable options for bottling our products and seek opportunities to reduce consumption.



LABELS:

3

Blue Label Packaging from Lancaster, OH produces all our labels. We purchase in bulk or combine orders to minimize shipping.

FIX: Continue searching for sustainable solutions related to label backing materials.

BARRELS:

1

We source our Missouri oak barrels from Independent Stave Company, a family owned company. They are committed to sustainably harvesting white oak, the second fastest growing hardwood. We consolidate our loads with other distilleries to reduce carbon footprint related to shipping.

RESOURCE CONSUMPTION & EMISSIONS

GOAL: Achieve Carbon Neutral Electricity by 2022

WATER:

1

Our WETS system drastically reduces water usage from our distilling process, allowing us to operate a Five-Bedroom Inn, a Tasting Room, and a distillery, with significantly less water than a larger distilling operation – See WETS Water section.

NATURAL GAS:

2

Natural Gas usage represents the largest source of emissions. Distillation requires steam and high heat to extract alcohol from water & grains. We utilize a high-efficiency steam boiler, fitted with a controls modulator to minimize the number of times the boiler must fire to create the optimal pressure. We harvest waste heat to reuse in the distillery processes, production and tasting room facilities and inn rooms.



In Q1 2022 we are adding a vodka column to our current finish still to reduce the number of distillations required to reach 190 proof to significantly reduce time for distillation. We also replaced a 300-gallon condenser with an efficient column condenser to reduce cooling requirement. **FIX:** We continue to study additional means to reduce our reliance on natural gas. In the past two years we have been analyzing the use of energy per proof gallon. With the addition of new equipment in 2022, we will compare industry benchmarks and calculate our energy per proof gallon and determine how to further improve our energy efficiencies.

ELECTRICITY:

2

We have a goal to be carbon neutral for our electric usage by end of 2022. We currently operate on a grid that is 35% renewable and have recently installed a total of 35kW of solar panels on our building, which provides 65% of our electrical power needs.

A commissioning study by an outside engineering firm estimates our 7000 square foot facility utilizes less energy than a 2000 square foot home.

FIX: To reach the remaining amount of renewable electricity to be carbon neutral for our electric usage, we plan to purchase Renewable Energy Credits from our local utility to reach 100% carbon neutral electricity.

DISTILLERY TRANSPORTATION:

2

Our "Marble Mobile" is a hybrid Prius that is used for sales trips/local deliveries and general errands by our team. Our gas-powered flatbed makes up most of our direct vehicle emissions and is only used to cover short trips such as stillage deliveries and movement of supplies. We also have two Tesla chargers for our customers.

FIX: In Q4 2021 we relocated supplies from a warehouse 3.5 miles away to our current location to eliminate trips. We are in the zoning process of building a barrel barn .5 miles from the distillery rather than one located farther away.



DISTRIBUTION CHANNELS:

3

There are very few, if any, spirit distributors in the US that prioritize sustainability and carbon footprint reduction. We have negotiated an arrangement with our distributor to have all shipments to Denver (180 miles) are loaded onto a "Deadhead" truck that has previously made local deliveries and would otherwise return to Denver empty.

FIX: Continue conversations with our distributor about more efficient local distribution and sustainable practices.

CARBON FOOTPRINT

2

An organization's carbon footprint consists of 3 different sources of emissions, or "Scopes."

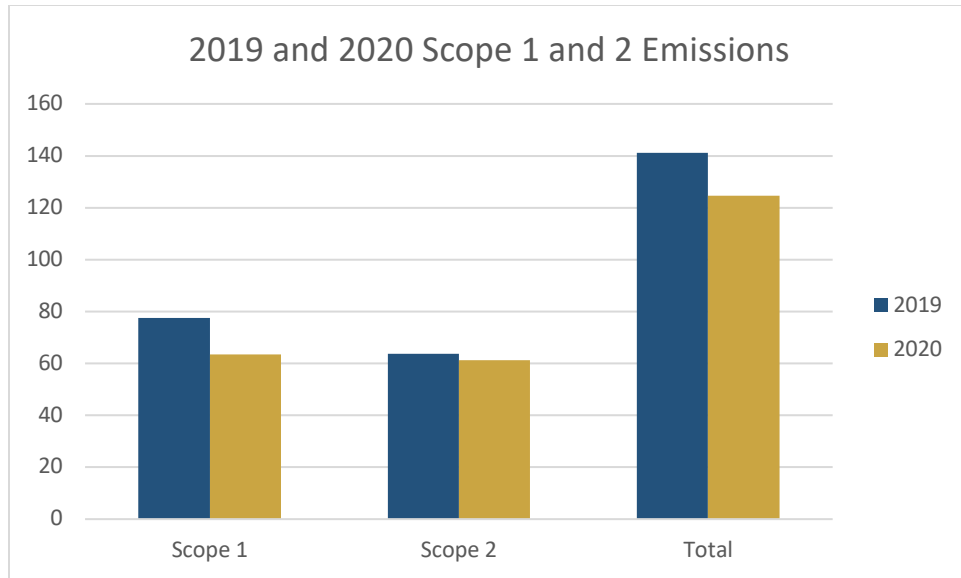
Scope 1: The direct emissions from a company's operations. In our case, these represent vehicles and natural gas used in our processes.

Scope 2: The emissions derived from the electricity consumed by a company.

Scope 3: The emissions from a company's supply chain due to business operations. We have not yet calculated our Scope 3 emissions due to the complexities of isolating these emission figures.

Our carbon footprint reduced from 2019 to 2020 while distillery production, and occupancy at the Distillery Inn increased markedly in 2020. We anticipate further reduction in 2021 carbon emissions with our new 35kW solar panel array offsetting scope 2 emissions.





FIX: Report electric emissions reductions in 2021 due to solar install. Finalize Net Zero Carbon for electricity in 2022. Work towards a partial Scope 3 assessment for the 2021 report and a full estimation for 2022.

WASTE & BYPRODUCTS

GOAL: Reuse or Recycling of all Waste

DISTILLING WASTE:

1

All of our stillage (spent grain from the distillation process) is donated to local farmers and ranchers who use it as livestock feed.

COMPOST:

1

We use compostable straws and send all our food waste to a local composting facility.



RECYCLING:

2

Marble's recycling bins include 1) Glass, Plastic, Aluminum 2) Cardboard 3) Compost. Some recycling escapes to the trash through our production facility and our Inn.

FIX: Place a recycling container and signage next to every trash can for our guests to decrease missed recyclables especially in the Inn where guests may not be aware of recycling options

TRASH:

2

Common trash is relatively minimal. Backing substrate from our labels, which is unrecyclable goes straight to landfill.

FIX: Research and select a label manufacturer that can achieve high end printing with recyclable or compostable backing.

HEAT:

1

Marble's Water & Energy Thermal System (WETS) recaptures energy from the distillation process and reuses it to heat our facility, pre-heat processes and pre-heat domestic hot water. This closed loop WETS system captures more than 1.8 Billion BTUs annually - enough to power 20 homes. Our 7000 square foot distillery utilizes the same amount of energy as a 2000 square foot home.

WATER:

1

We do not put any water down the drain, nor use tap water for any processing. Our WETS system operates with two super insulated tanks, one hot and one cold.



All condensing water is pulled from our cold tank and pumped to heating condensers where it is then returned to our hot tank. Multiple heat exchanges extract the thermal energy, leaving cold water to return to the cold tank to be used again, and again.

Our WETS system saves over 4 Million gallons of water annually and eliminates the need to use tap water or send hot, clean water down the drain to the local water treatment facilities

CHEMICAL

FERMENTING & DISTILLING:

1

We do not use chemicals in our production facility. Equipment is cleaned by steam, Hydrogen Peroxide and distillation by products (heads cuts) only.

CLEANING:

1

Our Inn and tasting room require daily cleaning. Only green products are utilized (floor cleaner, etc.) and vinegar (mirrors, surfaces, etc.).

LUBRICATION:

1

Our distilling equipment motors are "greased" (where necessary) with food-based oil.

HAND SANITIZER:

1

During Covid-19 in early 2020, we realized that as a distillery, we could play a special role in helping our community. As businesses shut down, we started to manufacture and bottle alcohol-based hand sanitizer.



Each day, socially distanced lines formed around our facility for hand sanitizer, which was distributed free of charge for two months. Additionally, we would fill people's own containers with our hand sanitizer. When we received containers and dispensers to package our own hand sanitizer, we were able to sell to the public.

WETS

WATER

ENERGY

THERMAL

SYSTEM

As part of a high mountain ecosystem, water in the Roaring Fork Valley is a critical, limited natural resource. A typical distillery requires millions of gallons of water to cool processes and convert hot vapor off the still into liquid (spirits). Most of this hot water is ultimately discharged into the local sewer system. As we developed our distillery, we also developed the Water and Energy Thermal System (WETS) to find a better way to handle this valuable resource.

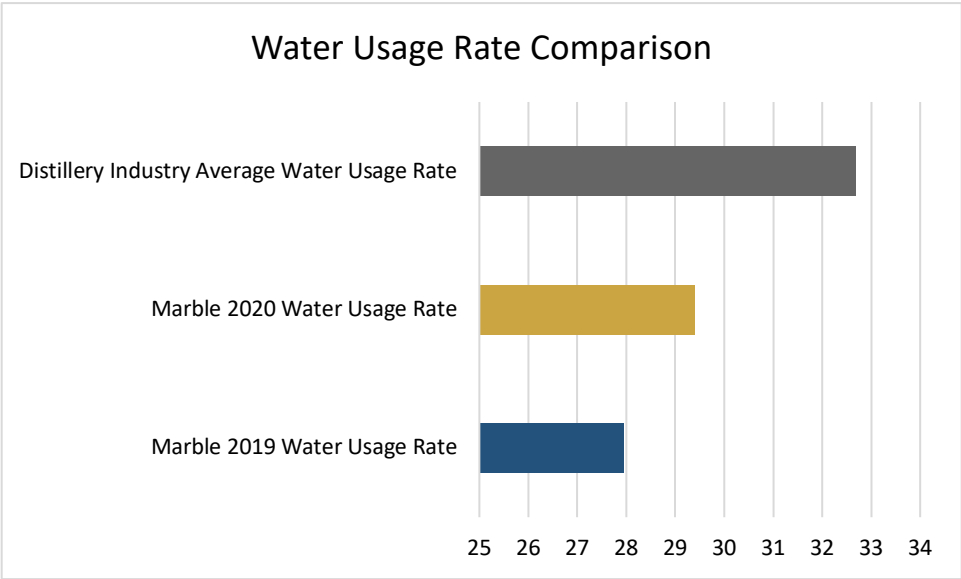
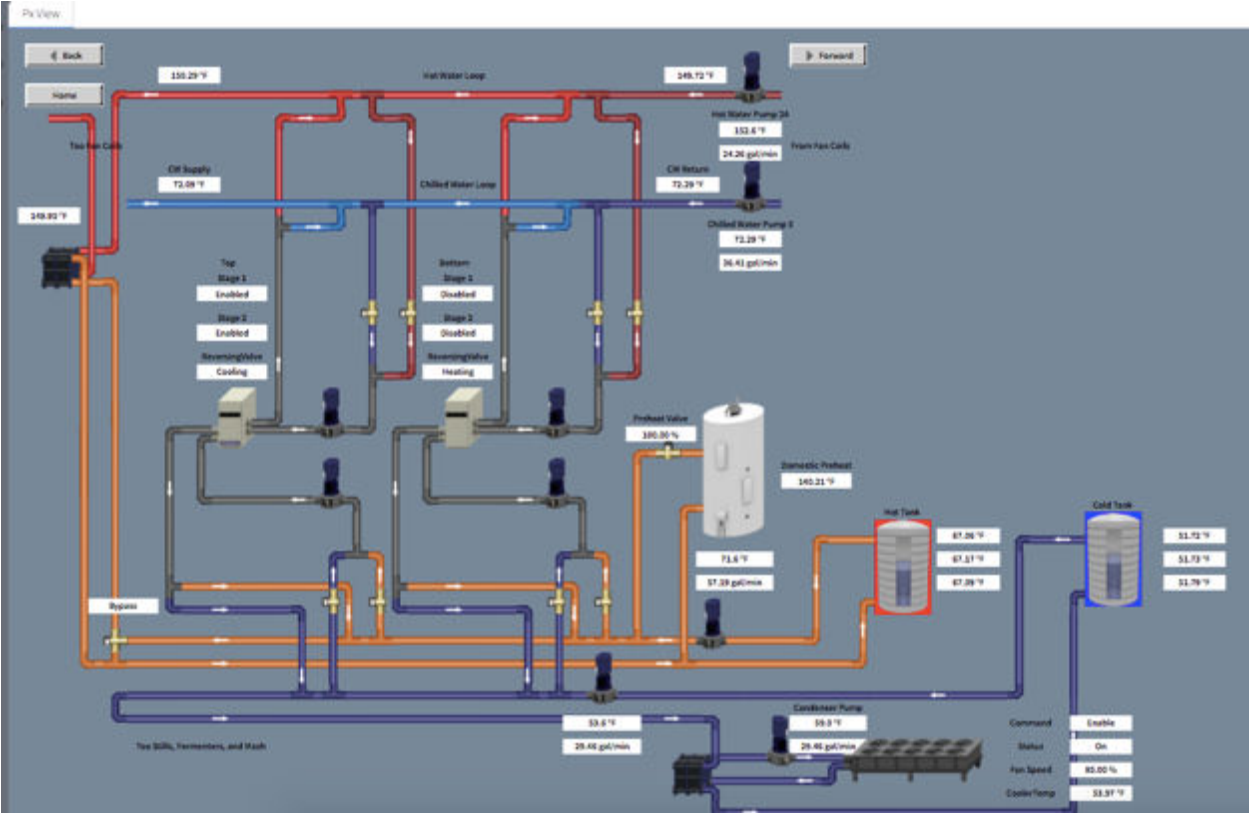
The WETS System uses two super insulated 5,000 Gallon water tanks and a series of pumps to cool the distilling processes. Rather than using water to cool the stills and then dumping it to the sewer, these water tanks and pumps serve to capture the heat used in the distilling process. This heat is used to heat the Tasting Room and Inn, pre-heat domestic and production water and mash, and melt snow on our sidewalks in the winter.

Overall, the WETS system saves over 4 million gallons of water each year, the equivalent of six Olympic sized swimming pools. We have been able to eliminate the need for a chiller in 2021 and replace it with heat pumps to reclaim additional BTUs and for more efficient heating and cooling. The system is controlled by state of the art SIEMENS building technology.

<https://new.siemens.com/us/en/products/buildingtechnologies/energy/energy-efficiency/marble-distillery.html>



WETS Diagram



SOLAR ARRAY

In May of 2021 we installed a 30kW solar photovoltaic system on the roof of our facility to add on to our already existing 5kW system. This system takes advantage of the over 240 days of sunshine annually in Carbondale and supplies the facility with over 65% of our energy needs.

Energy Compliance Calculations and Savings

Electric	kWh	CO ₂ Equivalent in Metric Tons	Annual Greenhouse Gas Emissions Equivalent to Passenger Car	CO ₂ Emissions Equivalent to Homes Energy Use for 1 Yr.
Proposed	17,246	11.9	2.5	1.1
Proposed w/o Tanks	54,357	37.5	7.9	3.4
ASHRAE Baseline	60,169	41.5	8.7	3.8
Estimated Savings to Building w/o Tanks	37,111	25.6	5.4	2.3
Estimated Annual Dollar Savings (\$0.10 per kWh)		\$3,711		
Estimated Savings to ASHRE	42,923	29.6	6.2	2.7
Estimated Annual Dollar Savings (\$0.10 per kWh)		\$4,292		

Gas	therms	CO ₂ Equivalent in Metric Tons	Annual Greenhouse Gas Emissions Equivalent to Passenger Car	CO ₂ Emissions Equivalent to Homes Energy Use for 1 Yr
Proposed	1,283	6.5	1.4	0.59
Proposed w/o Tanks	10,412	55.2	11.6	5
ASHRAE Baseline	19,201	102	21.4	9.3
Estimated Savings to Building w/o Tanks	9,129	48.7	10.2	4.41
Estimated Annual Dollar Savings (\$0.76 per therm)		\$6,938		
Estimated Savings to ASHRE	17,918	95.5	20	8.71
Estimated Annual Dollar Savings (\$0.76 per therm)		\$13,618		

Total	CO ₂ Equivalent in Metric Tons	Annual Greenhouse Gas Emissions Equivalent to Passenger Car	CO ₂ Emissions Equivalent to Homes Energy Use for 1 Yr
Proposed	18.4	3.9	1.69
Proposed w/o Tanks	92.7	19.5	8.4
ASHRAE Baseline	143.5	30.1	13.1

Estimated Carbon Reduction (Metric Tons) compared to w/o Tanks	74.3
Estimated Annual Dollar Savings compared to w/o Tanks	\$10,649
Estimated Carbon Reduction (Metric Tons) compared to ASHRE	125.1
Estimated Annual Dollar Savings compared to ASHRE	\$17,910



Section 2: COMMUNITY DEVELOPMENT

ECONOMY

Local Supply Partners

Nieslanik Ranch, Carbondale, CO

Our current barrel house is located on leased ranch property on this working ranch 1 mile from the distillery, and we will be breaking ground on a new barrel house/storage facility in early 2022. We provide our stillage to feed their cattle.

Bonfire Coffee, Carbondale, CO

Local coffee roaster who roasts all the coffee for our Moonlight Espresso.

Paul Young Farms, Palisade, CO

Provides corn for our Back Country Bourbon whiskey.

Proximity Malt, Monte Vista, CO

Provides grain for our whiskies and vodka.

Colorado Malting Co, Alamosa, CO

Provides grain for our whiskies.

Riverside Orchards, Paonia, CO

Provides peaches for our Paonia Peach Brandy.

Gran Farnum Printing, Glenwood Springs, CO

Prints all of our business cards and flyers.

Sunshine & Moons, Glenwood Springs, CO

Uses the "tails" from our Moonlight EXpresso to make toffees.

Pollinator, Carbondale, CO

Uses the "tails" from our Moonlight EXpresso to craft specialty chocolates.

Il Porcellino Salumi, Basalt, CO

Provides us with meats for our food service in the tasting room



JOB CREATION

Employment

Between our distillery, two tasting rooms, and Distillery Inn we are adding employees at an increasing rate.

Local Contractors

We only hire local contractors for any work on any of our buildings or equipment.

Distillery Inn

Our one-of-a-kind Distillery Inn provides much needed lodging in our town which in turn benefits the local tourism industry. We often host media for our local and state chamber associations.

EQUITY Non-Profit Partners

Carbondale Arts, Carbondale, CO

Carbondale Arts builds an inclusive and vibrant community through the arts, supporting Carbondale's identity as a place that fosters creativity, collaboration, innovation, and artistic exploration.

Anderson Ranch Art Center, Snowmass, CO

Snowmass' artistic and cultural hub, Anderson Ranch Arts Center is a year-round visual arts community, bringing together aspiring and internationally renowned artists to discuss and further their work in a stimulating environment.

Carbondale Clay Center, Carbondale, CO

Carbondale Clay Center is a non-profit community arts center that offers clay classes for adults, kids and families, outreach programs with local organizations, ceramic studio space rentals, long term artist residency program, as well as ceramic gallery & retail spaces.



Aspen Strong, Aspen, CO

A mental health advocacy non-profit 501(c)(3) that is breaking stigmas through prevention resources, education, policy change, and community connection.

Aspen Buddy Program, Aspen, CO

For 46 years, the Buddy Program has been empowering the youth of the Roaring Fork Valley through mentoring experiences to achieve their full potential.

Jazz Aspen, Aspen, CO

Founded in 1999, Jazz Aspen Snowmass (JAS) is a not-for-profit 501 (c)(3) organization, whose mission is to present and preserve jazz and related forms of music through world-class events, performances and education programs.

Colorado Animal Rescue C.A.R.E, Glenwood Springs, CO

C.A.R.E. serves as an animal resource center in our community and greater Western Colorado. In addition to the role as a pet intake and adoption facility, they offer feral cat TNR, spay/neuter assistance, low-cost vaccine clinics, free pet identification, and a year-round pet food bank.

Rifle Animal Shelter, Rifle, CO

The Rifle Animal Shelter provides temporary shelter and care for homeless animals, while encouraging responsible pet ownership and being a community resource for animal welfare.

Donations

Through sponsorships and donations, we donate over \$50,000 annually.



DISTILLERY & DISTILLERY INN BUILDING

Building Process

Planning & Design

USDA Efficiency Grant for Rural Development
LEED Certified Architect
Highest and Best Use of Land

Building Supplies & Systems

Green Building Materials
Recycled concrete and paper
MEP including Water & Energy Thermal Systems (WETS)
Solar Paneling
Integrated Controls Systems (SIEMENS)
Tesla Chargers

Tasting Room & Distillery Inn

High Efficiency Appliances & Fixtures
Limited Water Use
Green Cleaning Materials
Locally Sourced Meats for Charcuterie Boards
All re-usable or compostable drinkware and flatware
Optional turndown service on extended stays

SUSTAINABILITY PARTNERS

Aspen Center for Environmental Studies (ACES), Aspen, CO

ACES is a nonprofit environmental science education organization. They focus on ecological literacy, regenerative agriculture, forest and ecosystem health, land restoration, and environmental leadership.



Aspen Valley Land Trust, Carbondale, CO

They work with local families and communities throughout the Roaring Fork and Colorado River valleys to protect the land, water, and wildlife.

Business for Water Stewardship, Portland, OR

Helps businesses work collaboratively with community and policy stakeholders to advance solutions that ensure people, economies, and ecosystems have enough clean water to flourish.

Clean Energy Economy for the Region (CLEER), Carbondale, CO

CLEER works to accelerate the transition to a clean energy economy, increase energy independence and reduce our contribution to climate change. Worked together to receive state grants.

Colorado Department of Public Health & Environment, Denver, CO

Pollution Prevention Advisory Board

Develops pollution prevention goals and objectives; reviews environmental regulatory programs, laws and policies to identify opportunities and incentives; provides direction for pollution prevention outreach, education, training and technical assistance programs; and supports non-regulatory public and private efforts that promote pollution prevention.

Provided data for different distillery related initiatives.

Colorado Green Business Network (CGBN)

CGBN is a voluntary program that encourages, supports, and rewards superior environmental performers that go beyond the requirements of environmental regulations and move toward the goal of true, operational sustainability.

Silver Level Partner

Active participating member of the Western Slope chapter.

Colorado Parks & Wildlife (CPW), Denver, CO

CPW's mission is to perpetuate the wildlife resources of the state, to provide a quality state parks system, and to provide enjoyable and sustainable outdoor recreation opportunities that educate and inspire current and future generations to serve as active stewards of Colorado's natural resources.

Creating a private label for their 125th anniversary.



Colorado State University: College of Business Fort Collins, CO

Impact MBA Corporate Sustainability Fellowship

Summer internship program where Impact MBA corporate sustainability fellowship students work across Colorado to identify, analyze, and address sustainability issues within the public and private sectors.

In 2021, we hosted a sustainability fellowship intern who helped us develop this sustainability report. In 2022 we plan to host an intern to work on a Craft Distillery Sustainability Scorecard.

Colorado Water Conservation Board, Denver, CO

Wild & Scenic Rivers Fund

The Colorado Water Conservation Board mission is to conserve, develop, protect and manage Colorado's water for present and future generations.

Community Office of Resource Efficiency (CORE), Aspen, CO

CORE is dedicated to helping people save energy; advancing clean air, sustainable economy and stable climate.

Worked together to receive grants to enhance our energy efficiencies.

Distilled Spirits Council of the United States (DISCUS), Washington, DC

The Distilled Spirits Council is the leading voice and advocate for distilled spirits in the United States.

Only craft member on the Sustainability Committee

Co-Chair Craft Sustainability Committee

Energy Star

ENERGY STAR® is the government-backed symbol for energy efficiency, providing simple, credible, and unbiased information that consumers and businesses rely on to make well-informed decisions.

Provided information for the efficiency guide for distilleries. 1 of 25 case studies.

Protect Our Winters (POW), Boulder, CO

POW is a community of athletes, scientists, creatives, and business leaders advancing non-partisan policies that protect our world today and for future generations.

Trout Unlimited, Carbondale, CO

Ferdinand Hayden Chapter

Trout Unlimited mission is to restore and preserve rivers and streams so that future generations may enjoy the wild and native trout and salmon.



Wilderness Workshop, Carbondale, CO

Wilderness Workshop is a non-profit organization whose mission is to protect and conserve the wilderness and natural landscapes of the Roaring Fork Watershed, the White River National Forest, and adjacent public lands.

2021 Siemens White Paper on Sustainable Distilling Marble Distilling Co. Save the Planet - One bottle of Vodka at a Time.

Marble Distilling company and The Distillery Inn is located in Carbondale, Colorado. Founders are Connie Baker and Carey Shanks. "We're dedicated to making the best vodka. But we want to do so without so much waste, wasted water, wasted energy," says Carey Shanks. Marble Distilling Co. is on a mission to become the most sustainable, zero waste distillery on the planet. They're getting there ... with help from Siemens and Solutions Partner, Holbrook Service.

