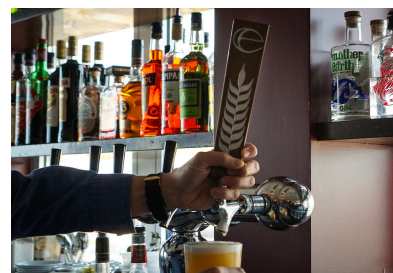




Epiphany Craft Malt: Three-Year Climate Resilience Plan



About Epiphany Craft Malt

In a very simple way, malt is the soul of beer. Epiphany Craft Malt transforms raw barley into quality malt, the primary ingredient in beer, foremost to supply North Carolina craft brewers and distillers. At present, local breweries purchase malt from large, often globally operating malting companies, as virtually no locally-made malt is available east of the Mississippi. Epiphany partners with farmers, researchers, seed growers, distillers and breweries to collaborate on producing base and specialty malts. In doing so, Epiphany fills the brewer's need for transparent local production by enabling the connection between farmer, maltster and brewer. In the process, we support local agriculture, lower the impact on the planet, and keep jobs and money in the region. We are committed to establishing a resilient, sustainable and quality supply of domestically grown malt that is farmed, malted and brewed for exceptional flavor and character.

Key statistics about Epiphany

- Keeps approx. \$1.1 million in the regional economy
- Utilizes 800 acres of farmland for malting-quality grain
- Annually supports \$210,000 of added revenue to local farmers and the community
- We are collaborative-small-savvy with a scientific-approach to malting as trained agronomists and maltster-brewers

Our Story

Epiphany Craft Malt was established in 2015 as one of four craft malthouses in the Southeast. Our founders, Sebastian and Leila Wolfrum, had the “epiphany” of opening a malthouse after attending a meeting in 2012 on how local farmers could get involved with the region’s craft brewing industry. Barley had potential in the region, but there was one problem — nobody in North Carolina could take the farmers’ crops and make it into a functional product for the 300-plus breweries in the state. Capitalizing off of Sebastian’s expertise in brewing and malting with Natty Greene’s Brewing Company and Ayinger Brewing near his home in Munich, Germany, they decided to open Epiphany. Now, the malthouse serves breweries and farmers across North Carolina and beyond.

Our Position on Resilience

As a malting operation and small business, we at Epiphany have a growing concern for the brewing industry's impact on the climate. But at the same time, we feel very limited in our ability to lower our carbon footprint and make swift change. While large-scale operations like Sierra Nevada and Rahr Malting have the time, resources and opportunity to move their businesses towards a zero-impact operation, that same level of commitment is not achievable through technological solutions, hence, investing into our process. This is the same challenge for most of our customers and piers. As a small business with only three full-time employees, we have neither the time nor resources to dedicate to sustainability at the level we would like.

However, we are implementing goals for reductions in waste and carbon emissions, and are assessing ways that we can further reduce water and electricity use, which are already below industry averages. These will be realistic expectations for a business of our size, and we are seeking advice from others who may be able to help us meet our goals.

Because we need to balance business operations with a commitment to sustainability, we are turning towards climate advocacy efforts as a way forward. However, this means that Epiphany is getting wrapped up in a very personal and political conversation. This may well turn uncomfortable at times as it is not always about a tangible solution like solar panels but one of collective action. Part of our mission is to get breweries on board and join us in advocating for climate neutrality. By opening up the conversation for our own business, we hope that we can help others do the same.

As people who love beer and are involved in its creation, we need to think about our behavior on a global perspective. As people who have the money and resources to enjoy craft beer, we are benefiting from our shared global ecological destruction and economic exploitation of many members of our society. This inherently means that our actions come at the expense of future generations. It's time that we change that.



Epiphany's Quantitative Effect on the Climate — 2019

Carbon Dioxide (CO₂)

Generally, there are two types of greenhouse gas emissions: direct and indirect.

Direct emissions are the result of our immediate malting process, such as the energy that it takes to heat water or keep the lights on. Indirect emissions are exactly that — they take into account emissions such as the CO₂ produced in growing the grain and transporting it to Durham, as well as the travel of people who come to visit us.

- CO₂ emissions for 2019:
 - Direct = 113.5 metric tons CO₂
 - Indirect = 360 metric tons CO₂
- Total = 475 metric tons CO₂
 - (taking into account an estimated 0.75 lbs CO₂/ lb of finished malt)
- Rate = 0.86 lb CO₂/ lb finished malt

By comparison, a gallon of gasoline for a car emits roughly 20 lbs of CO₂. For a better comparison, a gallon of gas weighs roughly 6 pounds — so that's roughly 3.3 lbs CO₂/ lb gasoline.

Where does most of our carbon footprint come from?

The process of growing the barley accounts for more than 60% of the carbon footprint for finished malt. Electricity and fuel consumed during malting account for another 35%. Since the malting process has become more efficient over the last few decades with better



technology, any further advances we make will be piecemeal.

Epiphany's Concrete Goals

Attaching quantitative values to our goals is an essential part of making sure we meet them. Here are our overarching goals, as well as ways that we plan to reach them:

Carbon Dioxide

We will play our part in reducing carbon dioxide in the atmosphere by purchasing carbon offsets. Our overall plan is to get 105% of the way to carbon neutrality in the next three years. Assuming that we produce roughly the same amount of CO2 as we did in 2019 (475 metric tons), here is the breakdown:

Year	Percent offset	Amount of CO2 offset	Cost*
2021	50%	237.5 MT	\$3,562.50
2022	75%	356.25 MT	\$5,343.75
2023	105%	498.75 MT	\$7,481.25

*According to the \$15/MT CO2 from [Cool Effect](#)

We have also signed the Business Climate Leaders' [Brewers' Climate & Carbon Pricing Declaration](#). The declaration, which endorses a Congressional act that supports carbon pricing policies in the brewing industry, was presented to U.S. legislators on June 13.

ELECTRICITY:

Epiphany is meeting industry standards for electricity. Unfortunately, there isn't much room to cut electricity use in our malting process. We also don't own the building that we are based out of, so our ability to generate our own renewable energy is limited.

Over the next three years, we plan to:

- Look into taking part in [Duke Energy's Shared Solar program](#), an initiative in which a group of individuals and businesses financially support a solar farm and receive the credits from the energy it generates
- Maintain our current electricity use, while taking a closer look at potential inefficiencies and areas for improvement with the help of community partners

WATER USE:

As with electricity, Epiphany is comfortably meeting industry standards on water use. Over the next three years, we plan to maintain our current levels and look for water-based inefficiencies in our malting process. We also plan to seek advice from our partners from the Brewers Association and Craft Maltsters Guild on ways that we can further streamline our water use.

WASTE:

This year we are revamping our malt bags, which includes moving towards a recyclable, single-material design. Our current bags are created with a multi-material blend that cannot be recycled, so this move will cut down on our waste with the help of breweries.

Since the decision on whether these bags end up in the recycle or in the trash falls to our brewing partners, we will produce information on how to dispose of these bags. Aside from this initiative, we will stay honest with ourselves and look to areas where we may reduce plastic or grain waste.



ADVOCACY:

The mission behind our advocacy efforts is to get the public and breweries to join the fight towards climate resilience. Epiphany is all about collaboration, and we want to expand that mentality to the way that we address climate action. We can't do this alone. If you have any interest in setting up an event or working

with us on a climate-associated project, please reach out. We would love to work together!

Over the next three years, we plan to:

- Host events with our brewing partners to promote environmental stewardship
- Become active in state and/or federal political lobbying efforts
- Collaborate with our customers on establishing strategies from grass to glass, and encourage others to become more active in advocating for climate resilience
- Connect with state universities and work with their experts to find local solutions



How can the brewing industry be a catalyst for change?

Can you imagine a world without beer? We could not. Check out this infosheet [for a snapshot look at how climate affects the beer industry and vice versa](#).

- Beer makes up nearly 1.9% of US GDP, and over 6,000 small breweries across the nation play a large part in supporting their communities.
- We have a voice in Congress. The House Small Brewers Caucus was formed in 2007 to provide a forum for brewing issues — there are 225 elected officials who are part of the caucus. Breweries can be an effective special interest group.
- Beer is one of the most popular beverages in the world. In America particularly, it could be used as a way to unite people of all ideologies and backgrounds to take on climate change through a common interest.

What can people in the industry do?

- Work with farmers and maltsters who are invested in sustainable practices.

- Move to clean energy, whether in-house or through utility purchases.
- Endorse a federal climate solution, such as signing the [Brewers' Climate & Carbon Pricing Declaration](#) and talking about the benefits to other brewers.
 - Use this [carbon calculator](#) to determine how much carbon pricing will cost a business and its customers (in short: not much.)
 - Meet with your legislators. As community-oriented business owners in a growing industry, we have more power than we might think.
- Raise awareness about climate to your suppliers, customers and the public. This can be done through special releases and events.

We can make a difference together.

Other Resources

Carbon Pricing Calculator for Breweries:

<https://www.cutmycarbon.org/carbon-calculator-for-breweries/>

Malting and Farming / Carbon Footprint:

<https://sciencebasedtargets.org/>

<https://www.fwi.co.uk/know-how>

<http://www.ukmalt.com/carbon-footprint>

<https://saipatform.org>

Have questions? Feel free to reach out!

