

CARBON NEUTRAL TOOLKIT

FOR CRAFT BREWERS

FAT TIRE
Carbon ALE Neutral



CLIMATE CHANGE IS A THREAT TO THE BEER BUSINESS — WE ALL NEED TO ACT NOW

Climate change is a clear & catastrophic threat to the economy, the planet, our health, and our businesses. Its impacts are already widely experienced across society and are advancing [much faster than anyone expected](#). A recent report demonstrates the danger zone we are quickly approaching, and the science is clear that these impacts will worsen in the coming decades. It can feel hard to wrap our heads around scientists' well-documented apocalyptic predictions – things like mass migrations, mass extinctions, crop shortages, water shortages & more frequent pandemics can cause our brains to shut right down. But the way climate change is already [costing society billions of dollars](#) helps put it right into perspective and gets us thinking about what to do about it.

Beer is especially at odds with a brave new apocalyptic world.

Price, quality and availability of our crops, our water and even our packaging materials are already being impacted. Heightening risk is detrimental to farmers' livelihood and the ingredients essential to making beer, and with these impacts to our supply chains, smaller businesses will feel the biggest pinch as larger competitors leverage their purchasing power to grab up supplies.

[And those impacts are already here.](#) Here are a few things New Belgium has seen in recent years:

- **[Barley](#)** – In recent years, droughts have decimated barley fields or driven up protein content which reduces ease of brewing. Meanwhile, warm temperatures and late season rains have caused pre-harvest sprouting across barley growing regions, rendering barley useless for malt. These impacts can make the crop unusable for malt forcing growers to sell at a reduced price for livestock feed impacting their livelihoods and the price and availability of malt for craft brewers.
- **[Hops](#)** - drought affected PNW hops in 2017 followed by increased pests in 2018. Severe wildfires in the region in 2020 resulted in smoke taint affecting hops in some areas.
- **[Water supplies](#)** – erratic weather patterns affect snowpack, rate of snow melt and stream flows and therefore water availability. Wildfires in the West leave charred slopes vulnerable to soil erosion which affects water quality, availability, and price. Water supplies in Colorado have been affected by these issues in 2012, 2013, and 2020.
- **[Specialty ingredients](#)** - hurricanes in the southeastern U.S. decimated the 2017 citrus crop in Florida wiping out a key ingredient for one of our beers.
- **[CO2](#)** – [extreme cold temperatures](#) in early 2021 affected CO2 compressors and the natural gas supply to CO2 vendors limiting their capacity to fulfill their contracts to brewers and others.

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If you don't have a climate plan, you don't have a business plan.

The Intergovernmental Panel on Climate Change reported that the world needs to reduce emissions drastically by 2030 in order to avoid a reality much worse than impacts we're already experiencing, and an updated report in 2020 showed that the world is way off course – with global plans achieving only 1% of the 45% reduction necessary. Studies also clearly show that failure to act and invest today will cost significantly much more later on. We need all hands on deck and we need to move fast.

Progress over perfection. Start somewhere and start now.

We get it. This is overwhelming in its scale and complexity, and it's hard to know where to start. But the thing is, we've all gotta start somewhere. Consider this guide as a library of options to pick off the shelf. Pick at least one action to do TODAY, roll up your sleeves and get to work. We're all in this together.

Cost: The long-term costs of inaction on climate are exponentially higher than the price of investments we make today.

Time: Less than 7 years to avoid the onset of mass-scale catastrophe, and the UN says everyone needs a plan in place by end of 2021!



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01

MEASURE YOUR CARBON FOOTPRINT



1. MEASURE YOUR CARBON FOOTPRINT

Overview: Measuring your GHG emissions from all categories and sources is essential to understanding opportunities for reducing carbon emissions as a company and for individual brands. To meet national standards, breweries must measure emissions across all “Scopes” as described below. These start with the most controllable (Scope 1 for beer production) then from electricity used by the brewery (Scope 2) and finally from activity in your value chain (Scope 3 – suppliers and customers). Understanding the sources for emissions in each Scope area helps to prioritize actions based on potential solutions, benefits, and costs. Here is a more technical definition and diagram of the three Scopes:

- **Scope 1 GHG emissions** are direct emissions from sources that are owned or controlled by the company and includes on-site gas usage for heating and brewery operations, purchased CO₂, and fleet fuel consumption (including owned or leased vehicles).
- **Scope 2 GHG emissions** are indirect emissions from the generation of electricity that is used by the company at all facilities (ex: main brewery, warehouse, and taproom).
- **Scope 3 GHG emissions** are from sources not owned or directly controlled by the brewery but are linked to all activities across the value chain including the manufacturing of cans and bottles, growing barley, retail refrigeration, contract brewing (if applicable), and more.
- **Product Lifecycle Accounting** GHG emissions are all of scopes 1-3 for a particular beer.

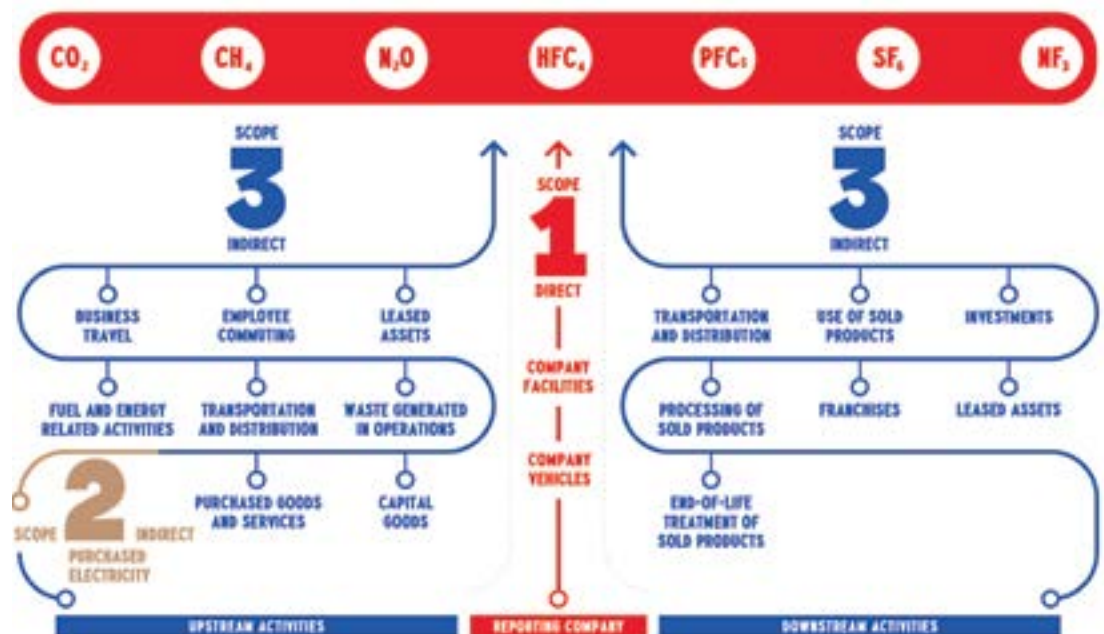
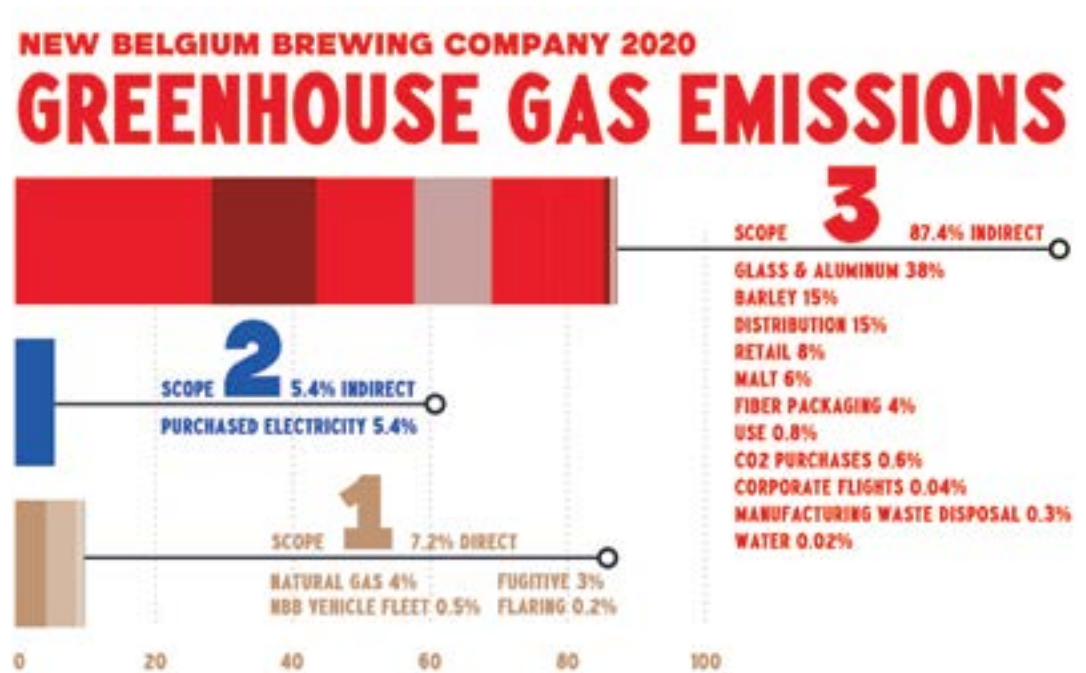


Diagram of GHG Emissions by Scope. Source: [GHG Protocol](#)

Our advice: Start with comprehensive Scopes 1-3 accounting for your overall company, including all brewing operations and product lines. Then, if pursuing a brand-specific approach, build your product life cycle accounting (LCA) for the first beer you'll certify carbon neutral. Note that product LCAs start by using your overall GHG accounting data but have some specific methods that use a more granular approach to manufacturing activity, inputs, and outputs.

Here is an example of the major GHG emissions categories for Fat Tire – the first carbon neutral certified craft brew:



Study performed following WRI/WBCSD GHG Protocol and BIER Beverage Sector GHG Accounting Guidelines

A Must: Follow international GHG accounting protocols to make this a meaningful effort and build confidence as you begin finding ways to reduce your emissions. While international protocols can seem complex, they provide common language and standards for all companies so our collective actions will have a bigger impact. Trusted sources for these standards are:

- [World Resource Institute's GHG Protocol](#)
- [Beverage Industry Environmental Roundtable \(BIER\) Beverage Sector Guidance](#)

Other resources:

- [Carbon Disclosure Project \(CDP\)](#)
- [Science Based Targets Initiative \(SBTi\)](#)

Tool: Start with a template to capture and measure your usage of energy, water, waste, and CO2 with this [Brewers Association template](#). Gathering this data is key for establishing performance indicators and measuring your footprint.

Tool: [Use New Belgium's Drink Sustainably GHG Accounting Tool!](#) We have adapted our internal New Belgium GHG accounting template (Excel-based) that other brewers can use to jump-start their own process.

Pro tip: Hire an intern to build out your annual GHG reporting process and populate it with data. We recommend reaching out to Universities with strong environmental and GHG accounting programs that are likely to have interns available. Here are six great programs from across the country to get started in your search:

- [Colorado State University](#)
- [University of Colorado, Denver](#)
- [George Washington University](#)
- [Duke University](#)
- [University of California, Santa Barbara](#)
- [Arizona State University](#)



Also, hiring a specialized consulting firm will help speed up the process and provide guidance on methods (ex: SCS Global Services / Fosterra).

Cost: No direct costs aside from time spent by coworkers, interns, and/or consultants to gather information.

Time: Budget about 300 hours in total over six months for the initial documentation and build of your GHG inventory (this is why having an intern work on this project is a good idea!). Then about 30 hours annually in the future for updates.

02

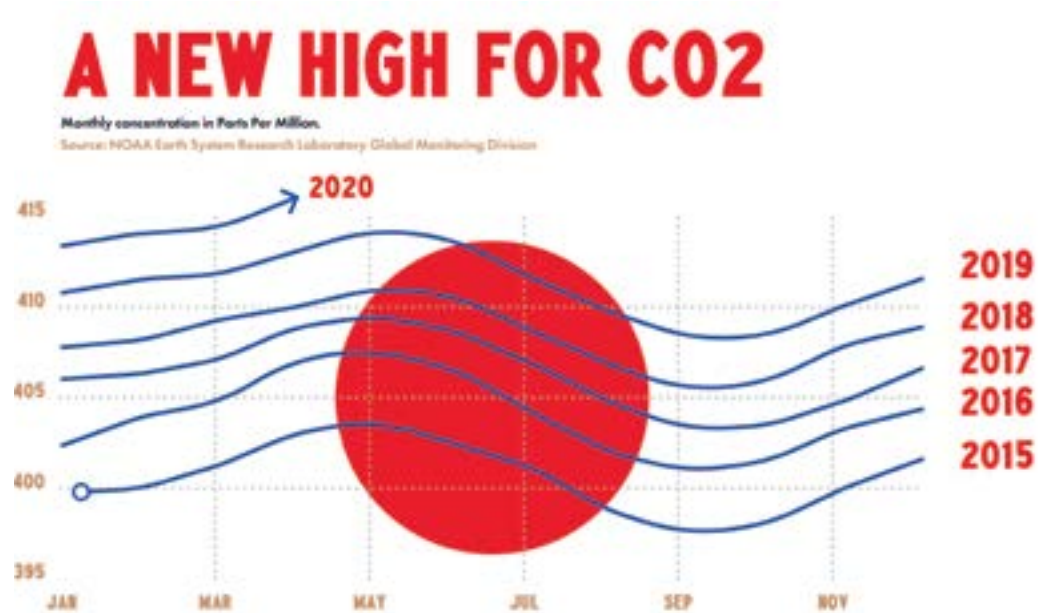
SET YOUR CARBON NEUTRAL GOAL



2. SET YOUR CARBON NEUTRAL GOAL

Overview: Setting goals for GHG emission reductions is the foundation for making progress and communicating your commitment to team members, customers, and suppliers. It illuminates the opportunities and challenges ahead as you join other leaders in the industry. We think of goal setting in two broad categories that address all of your carbon footprint: (1) reduce the sources of emissions (AKA: “emit less”) and (2) find ways to offset the remaining emissions (AKA: “capture and store” carbon). Targets should be set for both areas to, keeping in mind that Science Based Targets recognize only the “emit less” actions while carbon neutral certification also recognizes the “capture and store” projects. As technology advances and industry pioneers lead the way, early action toward your goals is possible and there are many resources available to support your efforts.

Bear in mind that we are on a path is not sustainable and we must move quickly to avert severe, irreversible climate impacts in our lifetimes. Recent reports and statistics highlight the need for setting meaningful targets including the Intergovernmental Panel on Climate Change ([IPCC 1.5oC Special Report](#)) and [Climate Central](#) (see chart below) shows that “[The last time CO2 levels were this high](#), trees grew near the South Pole and sea levels were [50 to 80 feet higher](#) than today.



A Must: Set reduction targets in line with scientists’ advising for your entire footprint, including a Scope 1+2 target and a Scope 3 target. A meaningful target for Scope 1+2 is necessary since that’s the portion of our footprint which we have the most direct control over. A meaningful target for Scope 3 is necessary, since such a large percentage of our footprint as brewers comes from our supply chain and distribution. We’re big fans of the [Science Based Targets Initiative](#) (SBTi), as it’s based on climate science. Following

their methodology, we've broken down the basics of what a short-term science-based goal (think an actionable plan for the next 5 to 15 years) should look like for brewers:

A true science-based target – a goal that keeps global warming “within 1.5oC”:

- Reduce your Scopes 1-2 emissions (energy, CO2 purchases, refrigerants) 55% by 2030, from a 2019 baseline. This is regardless of growth.
- Switch half of your company vehicles to EVs by 2030.
- Start a Sustainable Supplier Program and get your top 5 suppliers enrolled by 2025. Ensure all packaging has at least 50% recycled content and is 100% recyclable by consumers. See Section 3: “Reduce” of the Blueprint to learn more.

Pro tip: Engage a GHG Accounting intern or technical expert to help evaluate and set your targets.

Cost: No direct immediate costs for setting targets aside from time spent by coworkers and/or intern time, unless formally submitting targets to SBTi for review (\$5,000 for target validation or \$1,000 for smaller companies).

Time: Budget about 30 hours to learn about SBTi, discuss internally, and seek organizational buy-in.



03

REDUCE YOUR GHG EMISSIONS



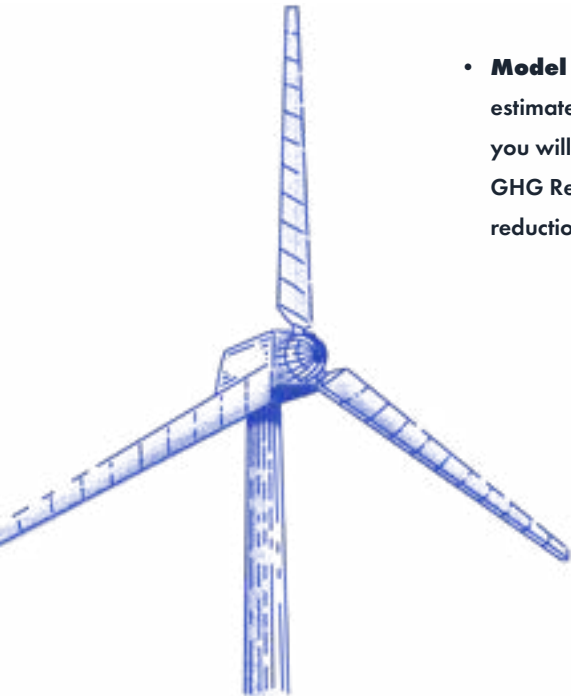
3. REDUCE YOUR GHG EMISSIONS

In addition to measuring what we want to manage thru tools like the [BA Benchmarking spreadsheet](#) and the [Drink Sustainably GHG Accounting Tool](#), we need plans in place to manage – or reduce – our footprint. Just get started! Plenty of low-hanging fruit for reducing your carbon footprint also save money on energy bills --- money which can be invested in future emission reduction projects with a longer ROI. There's no time like the present to dive in, and you've gotta start somewhere.

SCOPE 1 + 2 EMISSIONS // ENERGY, FLEET + FUGITIVE EMISSIONS

If you are brewing your own beer, a great place to start is right at home with the things you can most directly control: energy, fugitive emissions, and your own vehicles. In addition to measuring your footprint using the [Drink Sustainably GHG Accounting Tool](#) you can begin by mapping out what projects will help you achieve your goal.

- **Start a Carbon Neutral Task Force** – Whether your brewery's a team of one or 1000, get the right minds in the same room and bought in – even if it means inviting your engineer neighbor over for a beer. Meet on a regular basis to keep the momentum going strong.
- **Identify Projects and Get to Work!** Identify the best money-saving opportunities to improve energy efficiency, cut back on CO2 purchases and repair refrigerant leaks, and maybe even invest in renewables. [The Brewers Association](#) has an encyclopedic energy manual as well as some great recordings and presentations available to members on their site. Get with your local utility to understand what rebates and efficiency programs they offer that can improve the ROI.
- **Model out your Reductions.** To see where you're going and how much farther you've got to go, estimate future growth of your brewery along with potential emission reductions of future projects you will undertake to move toward your carbon reduction goals. Stay tuned for the Drink Sustainably GHG Reduction Tool which we will be releasing soon to help you model your path to your carbon reduction goal!

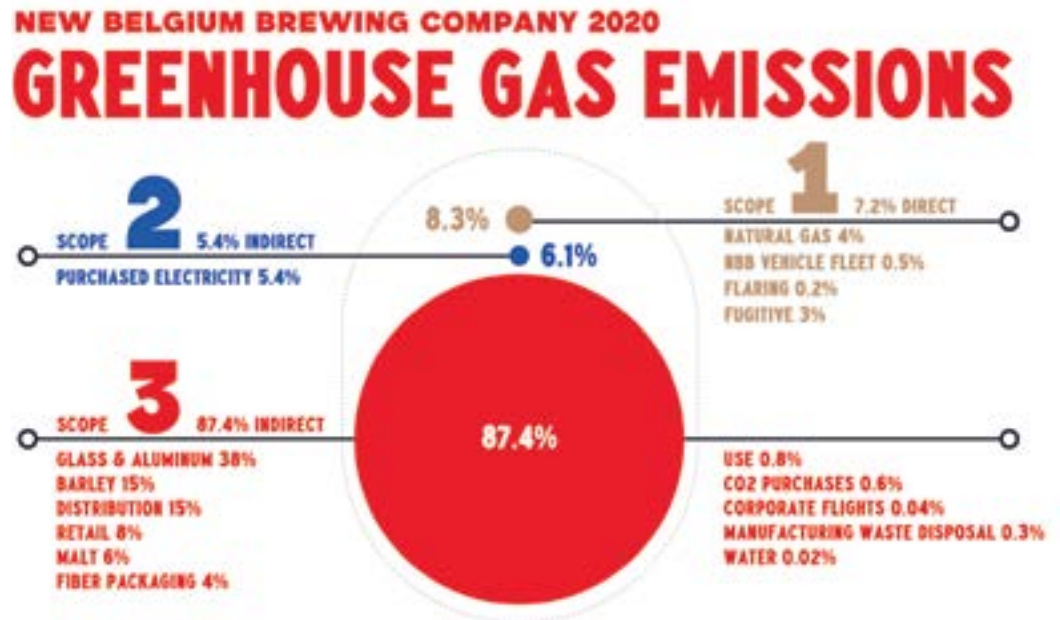


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SCOPE 3 EMISSIONS // SUPPLIER & CUSTOMER EMISSIONS

For most companies, craft brewers included, the most significant portion of our carbon footprint is in our value chain (our suppliers up stream of our business and our customers downstream). Below is a snapshot of New Belgium's GHG emissions:

Of course, it's harder to control emissions outside the walls of our own breweries and can be difficult



Study performed following WRI/WBCSD GHG Protocol and BIER Beverage Sector GHG Accounting Guidelines

to exert leverage when we're small customers of companies with national or international reach. But the more of us that speak up and ask for accountability on GHG emissions, the more we'll be able to collectively move the needle, save money, and protect the beer business.

Start a Sustainable Supplier Program that requires the following of your suppliers:

- Ask (or better yet, contractually require if you can) suppliers to commit to eliminating carbon emissions related to your brand volume. This can include buying renewable energy and converting their vehicles to electric or hybrid, while they evaluate energy efficiency options.
- Ask for greater recycled content from your packaging suppliers. Increasing recycled content reduces the energy intensity of manufacturing facilities.
- Ensure your packaging is 100% recyclable by consumers. Shrink wrap and sticker labels confuse optical sorting at the recycling facility causing aluminum cans to be mistakenly sorted as plastic which reduces the recycled material available for suppliers to utilize. If you must go this route, choose shrink wrap with a perforated strip and directions to use it on the label.

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- Reduce unnecessary packaging and implement lightweight packaging where possible.
- Regenerative agriculture practices sequester carbon while also improving soil health. Consider asking malt and hop suppliers to work with their growers to enroll in regenerative agriculture programs such as [Indigo Ag](#) or [Locus Agricultural Solutions](#) that pay farmers for verified increases in soil carbon.

RESOURCES:

- [Fosterra Consulting](#) for Renewable Energy & supply chain Renewable Energy.
- [Brewers Association sustainability manuals](#) for energy efficiency and green building.

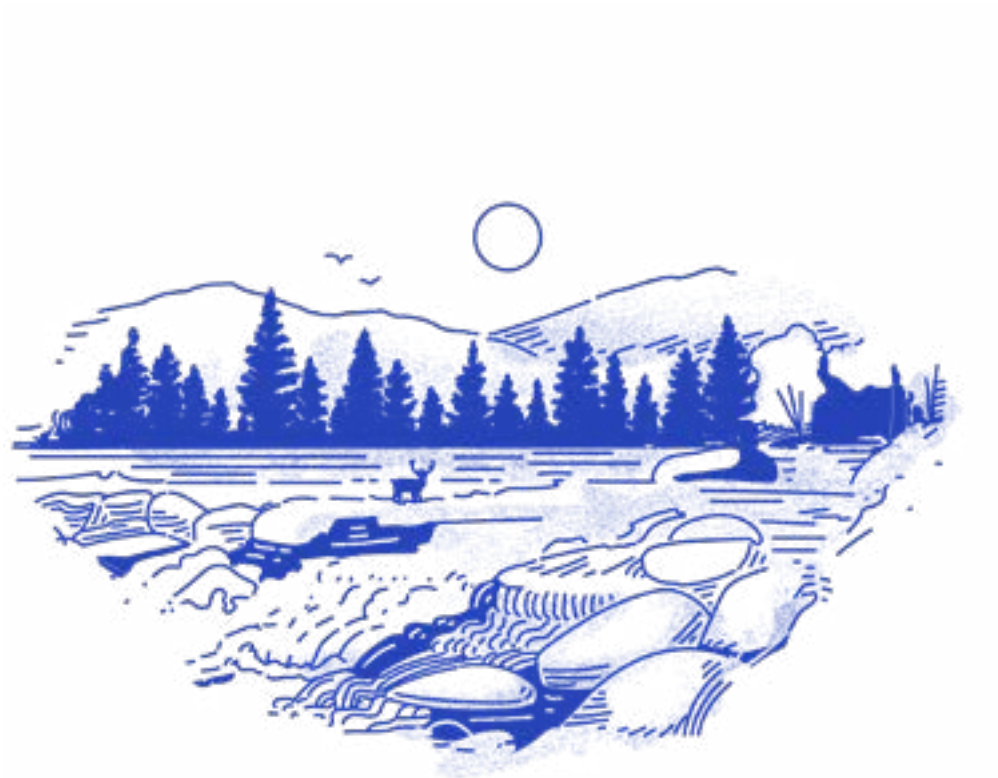
Cost: Varies widely, contact [Fosterra Consulting](#) for \$4,000 quick overview for Renewable Energy financing + Scope 3 Supplier Programs. Contact the [Brewers Association sustainability ambassadors](#) for guidance on cost-effective brewing efficiency.

Time: Varies widely, best to integrate into workers' existing jobs.



04

BUY CARBON OFFSETS



4. BUY CARBON OFFSETS (GOOD ONES!)

Chances are you've heard of carbon offsets. They've become a popular way for everyone from global corporations to individual travelers to mitigate their environmental impact. The idea behind carbon offsets is relatively simple: by purchasing a carbon offset you're paying to compensate for the carbon dioxide you emit. Your payment goes towards projects and programs that remove CO₂ from the atmosphere. These projects can include renewable energy projects to replace fossil fuels, methane capture systems for landfills or livestock operations, or protecting native forests or grasslands that serve as carbon sinks.

Unfortunately, a lack of rules and guidelines in the carbon offset market has resulted in many projects with poor track records that lack meaningful reductions in emissions. We can't afford to waste money or time on worthless investments so it's crucial that we ensure the carbon offsets we purchase are high quality.

Criteria for selecting offsets that actually make a difference for climate:

- Offsets should create genuine, additional reductions in GHG emissions – meaning the project would not have happened without the money provided by the sale of the offsets.
- Free of double-counting – only one buyer can claim the reduction of emissions.
- Ensure a high level of permanence - ensuring that the carbon isn't going to be released back into the air (e.g., a newly protected forest wiped out by logging).
- Avoid and fully account for leakage - not forcing environmental or social problems elsewhere.
- Meet nationally recognized standards established by credible organizations such as American Carbon Registry, Climate Action Reserve, Verra, or Gold Standard and stored within their registries with publicly available documentation. [Here's an example.](#)
- Verified by an independent, certified third party - their role is to make sure the offset project meets the requirements of the standard and that future GHG reductions have been correctly calculated and monitored.
- Issued after the emission reduction has taken place and within the last 2-3 years. It's best to select an offset from a similar "vintage" year from which the emissions happened.

We can't "offset" our way out of a climate catastrophe however, we can potentially leverage carbon offsets to drive systemic decarbonization in our value chain. It's also worth noting that carbon offsets will help you achieve carbon neutral certification, but do not count toward your Science-Based Target goal. Here are offset categories relevant to the source of emissions in the beer value chain:

- **Renewable energy** – Investing in renewable energy offsets helps mitigate fossil fuel energy

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consumed in the beer value chain including barley malting, manufacturing of packaging and electricity used in brewing operations.

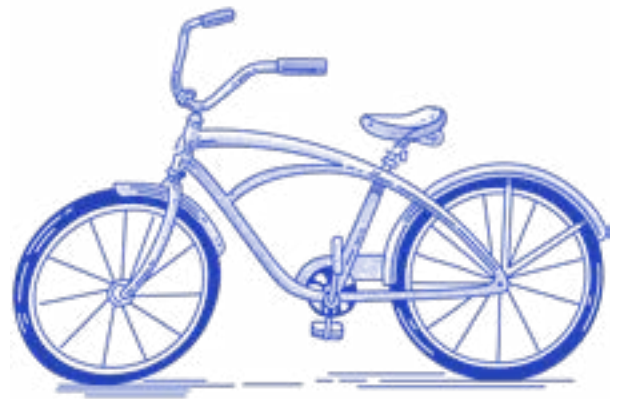
- **Land preservation and improved forest management** – preserving the natural functioning of ecosystems that draw carbon dioxide out of the atmosphere. These projects offset the emissions released by our vehicle fleet, distribution transportation, and fugitive emissions.
- **Regenerative agriculture** – regenerative agricultural practices improve soil health while sequestering carbon. Investing in these projects offsets the emissions from cultivation and harvesting of barley and hops. We hope these projects can also help growers transition to more climate-friendly farming practices eventually driving direct reductions in our Scope 3 emissions.
- **HFC reduction** - the refrigerant compounds that keep beer cold are significant drivers of global warming. Recycling these compounds displaces the need for new ones to be manufactured.
- **Methane capture** - methane captured from landfills can replace fossil fuels and mitigate the emissions related to packaging that ends up in landfills.

Resources

- Blue Source, Pachama, Indigo Ag and other developers and retailers offer quality carbon offsets. Be sure to check that individual projects meet the criteria listed above.
- Hire Fosterra Consulting for support with sourcing carbon offsets if needed.

Cost: Carbon offsets are sold by the metric ton. You'll find that international offsets are often much cheaper than U.S. or North American based projects. Unfortunately, international projects often fail to deliver real emissions reductions or have quality baseline measurements established. For this reason, (and because we sell our beer in the U.S.), New Belgium has chosen to focus on North American based projects. Prices for domestic offsets vary widely. New Belgium budgets about \$1.50/BBL per year for offsets to reach carbon neutrality.

Time: Budget 20 hours to source quality offsets.



05

ADVOCATE FOR STRONG CLIMATE POLICY



5. ADVOCATE FOR STRONG CLIMATE POLICY

Overview: Why climate policy is an urgent need

Our individual commitments to reduce our impact are critical, but they're not enough to solve the climate crisis. We need all hands on deck – especially bold leadership from our elected officials.

State and federal leaders have the power to move big levers that we cannot move on our own as individual businesses – paving the way for things like renewable energy adoption at the grid, more electric vehicles in the marketplace, and programs that incentivize sustainable agriculture practices for farmers.

There's a long history of leveraging the power of federal leadership to meet economic crises and enable collective prosperity, such as oil & gas subsidies that have been in place for over a century and the agricultural subsidies that helped America get back on her feet following the Great Depression. The climate crisis is an economic crisis at its heart, and the investments that businesses and federal leaders make today avoid significantly greater costs in the future. And, by working together we ensure that our individual resources & investments are most efficient.

As business leaders, job creators, and the heart of our communities, our voices matter to our representatives, and we must feel empowered to pick up the phone, write a letter and visit with our leaders to make it clear that climate change is threatening our businesses – and that we demand action.



Key climate policy priorities brewers advocate for:

Here's examples of key issues to consider advocating for, why they're relevant to beer, and the sort of asks you can make of your lawmakers.

YOUR ISSUE

YOUR TALKING POINTS (example)

YOUR ASKS

Energy Efficiency & Renewables

As manufacturers, we're inherently energy-intensive. We prioritize efficiency investments and purchase renewable energy in our operations, and we need leadership from legislators to help propel our efforts even further and to keep our operating costs manageable.

- A state or federal (depending on your audience) clean energy standard to help ensure utility providers are mitigating your electricity's carbon footprint.
- More funding for local & state energy efficiency programs.
- More and better incentives for renewable energy.

Transportation

Our businesses depend on vehicles & infrastructure to get our product in our customers' hands – across town or across the country.

- Local & state low-emission and electric vehicle incentive programs.
- Clean transportation standards at the state & federal level that help accelerate getting more low-emission and electric vehicles and OTR trucks in the marketplace.
- Expanded EV charging infrastructure.

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YOUR ISSUE	YOUR TALKING POINTS (example)	YOUR ASKS
Sustainable Agriculture	The farmers we rely upon are on the front lines of climate change, with record-breaking droughts decimating barley crops and wildfire smoke threatening hops. Farmers are the backbone of this country and need programs which help them thrive into the future while ensuring barley and hops remain lucrative and reliable crops to grow.	<ul style="list-style-type: none"> • USDA expand technical assistance to support farmers with adaptation planning and implementation of climate-friendly growing practices. Ensure assistance is offered to a broader array of growers including socially disadvantaged and underserved communities of farmers.
Packaging Sustainability	As craft brewers, we have limited capacity to influence our packaging supply chains and yet our packaging is a leading source of our emissions. We need programs in place that ensure sustainable choices for our suppliers are economically viable.	<ul style="list-style-type: none"> • State and federal programs which incentivize circular packaging and increased recycled content. • Local and state zero waste commitments and expanded recycling infrastructure.

How to take action

Depending on your size and scale, perhaps it makes sense for you to get involved in local, state or federal climate policy opportunities. Here's the basics for engagement at all levels.

Get Engaged: If you're focused on the local level, learn whether your city or local utility has a 100% renewable energy or carbon neutral goal of their own. At the state level, join your regional climate advocacy organization focused on the business voice to get educated about climate policy in your state, and to find opportunities to lend your voice to creating change. At the federal level, join [Business for Innovative Climate and Energy Policy](#).

Use Your Voice: Ask your local leaders to commit to 100% renewable energy if they haven't already. Participate in your climate network's lobby days, sign onto letters and lend your voice to requests for action that are materially relevant to beer.

Pro-tip: When meeting with lawmakers, be prepared to "share your why" with them in ~60-seconds. This should consist of WHO you are (Make yourself relevant to the lawmaker – share your company name, # employees, and key economic stats about craft beer's impact in their region in \$\$ and total jobs), and WHY you are there (Make your issue relevant - explain how climate change impacts the craft beer economy. Personal anecdotes go a long way, and the general impacts that we've shared are a great starting point).

Success Story: New Belgium's had great success in advocating for climate action at the local, state & federal level. At the local level, we successfully helped encourage our City to commit to 100% renewable energy by 2030 by engaging with City staff and building rapport & a strong relationship between our company's leadership and City leadership.

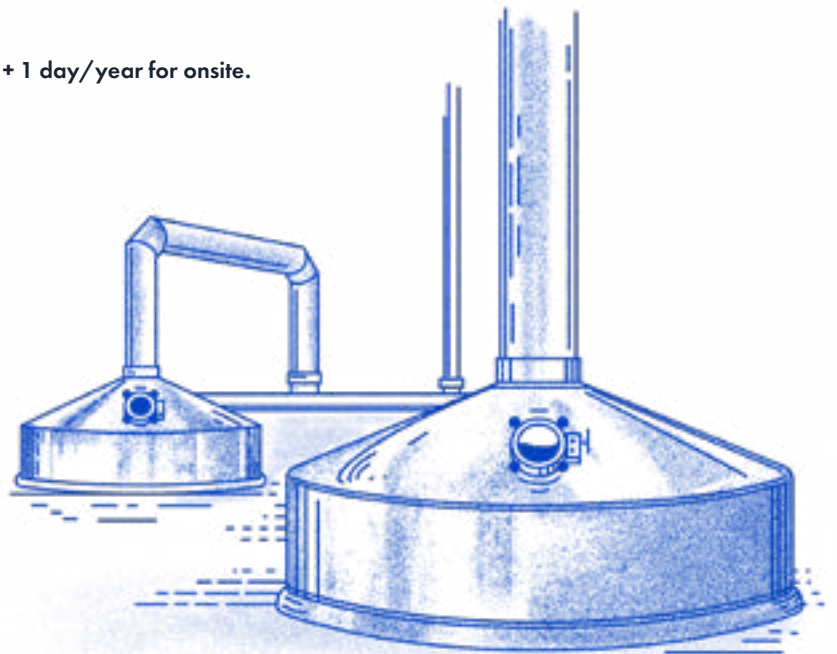
Invite your employees & customers to the party: As you understand your voice and your appetite for speaking up, consider offering up opportunities for your coworkers and your customers to take action.

Cost:

CEO/brewers' time plus travel to state capitol.

Time:

Budget 2 hours/month + 1 day/year for onsite.



06

ACHIEVE CARBON NEUTRAL CERTIFICATION



6. ACHIEVE CARBON NEUTRAL CERTIFICATION

Overview of Certification: We have no time to waste to avert catastrophic climate disaster across the planet. The most important thing is that we each take action in an impactful way. Carbon Neutral certification isn't a requirement for meaningful impact but can demonstrate rigor to your commitment to decarbonization. You can pursue carbon neutral certification for your company or for an individual brand.

Steps:

- Work with a certifier to establish your carbon footprint. This GHG accounting should include Scopes 1, 2 and Scope 3 emissions that contribute more than 1% to the total footprint. To ensure this work is meaningful in fighting climate change, select a certifier that requires 3rd party verification of the carbon footprint and follows an accepted protocol such as the GHG Protocol or PAS Standards. Certification must be completed annually.
- We recommend SCS Global.
- Purchase the prescribed number of carbon offsets. One offset removes or avoids one metric ton of carbon emissions. See our tips for quality carbon offsets in Section 04: Buy Carbon Offsets.
- Develop and implement a carbon footprint reduction plan describing a strategy to make true reductions in your emissions and decrease your reliance on offsets over time. This is critically important for the sake of making real progress on climate change. You'll need to show true reductions in carbon emissions each year to maintain certification.

Pro Tip:

- Hire Fosterra and/or a GHG intern to support the process.

Time commitment:

- If you already quantify your GHGs, budget 50 hours over 3 months to get the certification process completed.

Cost:

- Plan for \$9K-12k per brand annually for certification plus approximately \$1.50/BBL per year for carbon offsets.

FAT TIRE
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**THE FUTURE
IS IN OUR
HANDS**

[DRINKSUSTAINABLY.COM](https://drinksustainably.com)