

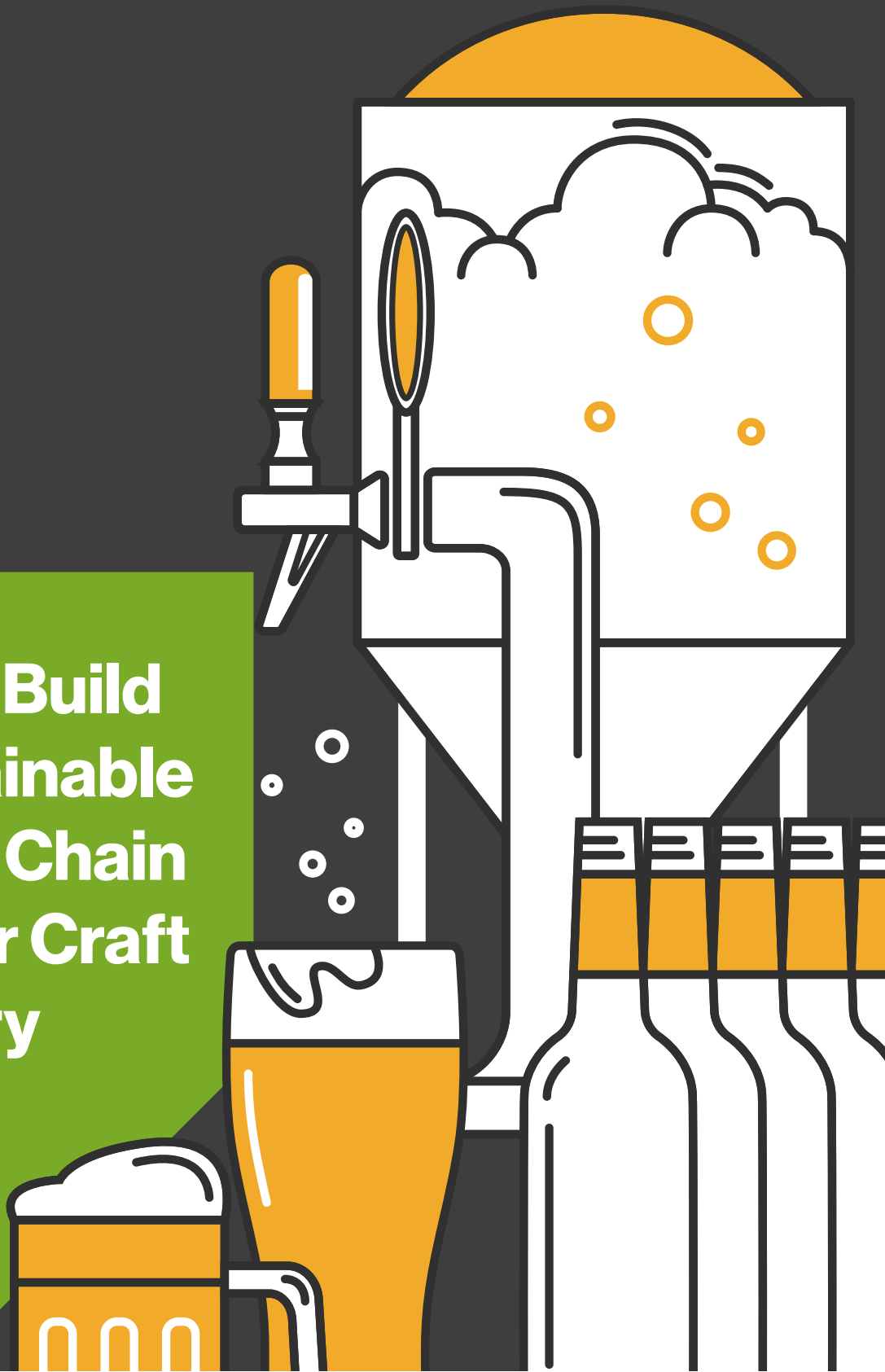


New York State
Pollution Prevention Institute

CAREY INSTITUTE
FOR GLOBAL GOOD



How to Build a Sustainable Supply Chain for Your Craft Brewery



ABOUT THIS RESOURCE

People across New York State want to make the places where they live and work more sustainable—but they don't always know where to start. New York State Pollution Prevention Institute (NYSP2I) gives Empire State businesses, communities, and nonprofits the practical tools and solutions they need to realize the benefits of sustainability for our economy, environment, and our society as a whole.

We created this guide as an easy-to-use resource with answers to the most common questions we have been asked in our work with breweries across New York State. We intend this to be a great starting point for anyone looking to foster a more sustainable craft-brewing industry.

ABOUT THE CAREY INSTITUTE FOR GLOBAL GOOD

The Carey Institute for Global Good is a not-for-profit organization dedicated to building a strong, educated, and just society. Our Sustainable Communities Program seeks to advance the role of rural communities in sustainable and equitable development. We have worked to support the craft-brewing sector in rural New York State since 2012.

Learn more about the Carey Institute: <https://careyinstitute.org>

ABOUT NYSP2I

The NYSP2I partners with businesses, municipalities, and communities in New York State to identify practical, cost-effective solutions for building sustainable supply chains. Our work is funded by New York State's Environmental Protection Fund as administered by the New York State Department of Environmental Conservation (NYS DEC).

Learn more about NYSP2I: <https://www.rit.edu/affiliate/nysp2i/about/overview>

NYSP2I Funding Statement

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Sustainable beer tastes better.

Craft-beer drinkers the world over are falling in love with New York State breweries.

And they love them even more when they brew sustainably. But brewing and sustainability is about more than what happens inside your brewery—it's the entire supply chain you depend on. That means all the ingredients you source, your packaging, and how you store and ship your beer.

Use this guide to learn how you can build a sustainable supply chain for your brewery so you can better reflect your customers and their values.



More than just the taste.

In 2018, an international survey of beer consumers found that taste and sustainability play a key role in consumer preference for craft beer. Fifty percent of respondents claimed that they believed craft beer is more sustainable than regular beer and this makes the product more attractive to consumers.



Think about your supply chain.

Only 20% of the craft-brewing industry's impact on the environment is actually caused by what happens within the walls of your brewery. The rest comes from the businesses that supply ingredients to you (your **upstream supply chain**) and how your beer is packaged and distributed (your **downstream supply chain**).

To make craft brewing in New York State more sustainable, we need to look beyond the brewing process and consider the whole brewing supply chain. It helps to think of a supply chain as a river: What happens upstream affects what happens downstream.



What's upstream?

All the consumable and non-consumable materials that enter your brewery's doors to make beer.

Who's upstream?

- farms
- processors
- manufacturers
- shipping and logistics firms



What goes downstream?

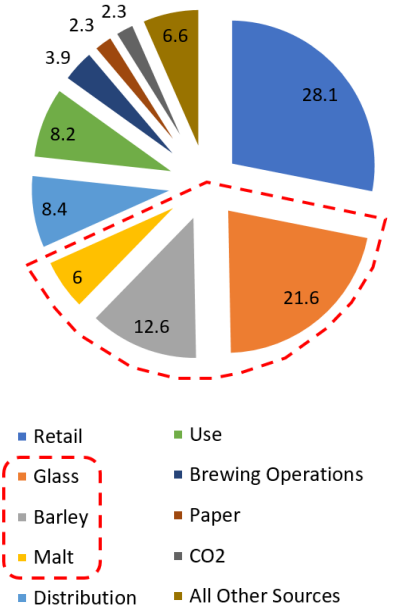
Everything that your brewery produces, such as beer, wastewater, brewing byproducts, and reusable materials.

Who's downstream?

- warehouses
- distributors
- retailers
- consumers

Did you know?

New Belgium Brewing Company set the standard for brewery sustainability in 2008. They were one of the first craft breweries to perform a life-cycle assessment (LCA) of its process, including its entire supply chain. The results of the study were astounding: About 40% of the greenhouse-gas emissions associated with brewing beer were generated "upstream" in their supply chain.



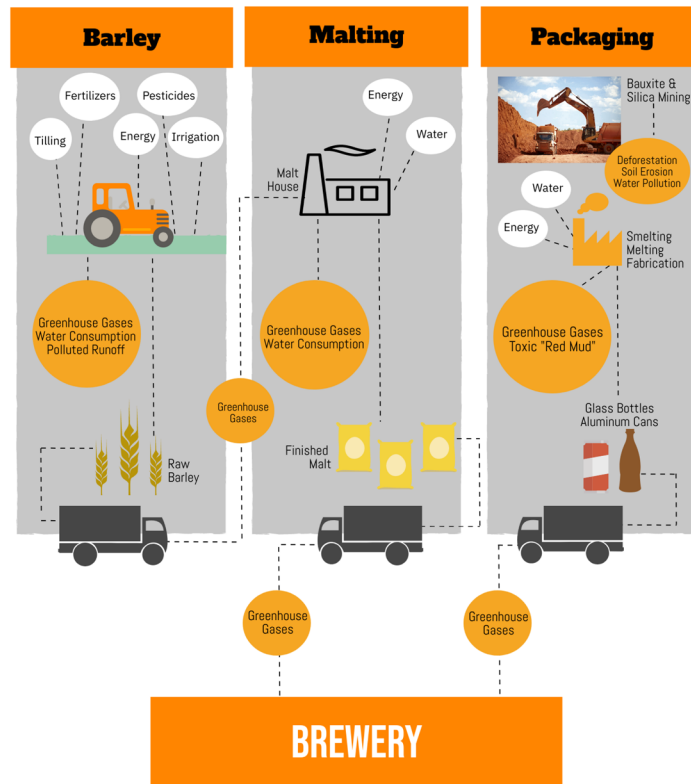
Where to begin?

You don't need to conduct an LCA to integrate sustainability into your upstream supply chain. It can start with something as simple as conversations with your suppliers and staff.

Brewing's biggest impacts

The processes within the craft-brewing supply chain that are most responsible for the industry's impact on the environment are **barley agriculture, malting, packaging and distribution**. These steps are where raw materials and energy enter into the brewing process. It's also how most of its waste is created.

Altogether, packaging (glass and can manufacturing), barley production, and malting make up more than 75% of the upstream environmental impact of brewing beer.



Signs of sustainable barley and malt:

Barley growers are usually contracted directly by malt houses. Talk to your malt supplier to learn about the barley it sources. Here are some questions you can ask:

- Does it have a sustainability program, or has it published a sustainability report?
- Does the malt house carry a certified organic option? Is it USDA-Certified Organic or another organic certification?
- Does it offer winter barley malt varieties? These tend to require less fertilizer and pesticides.
- What are its barley growers' tilling, rotation, and irrigation practices?

Working with local malt houses in New York State can make answering these questions easier because you are able to have closer, more direct relationships with them.

Get to know the sources:

Barley Agriculture

The bulk of barley in the U.S. is grown in North Dakota, Idaho, Montana, Washington, and Minnesota.

Malting

Malting requires electricity and natural gas to warm steep water and control air temperature for germination, drying, curing, and roasting.

One metric ton of malt produces the same amount of greenhouse-gas emissions as a gas-engine passenger car driven 690 miles. What's more, malting uses significant amounts of water. A study commissioned in 2006 estimated that 1,320 gallons of water were used to produce 1.1 tons of finished malt.

Aluminum

Aluminum is made from bauxite. It is mined in Australia, China, Brazil, Jamaica, Guinea, and India. Mining requires clear-cutting land and causes soil erosion and degradation.

Glass

The production of glass uses a lot of energy to melt down silica and other materials, emitting greenhouse gases.

Glass bottles made with recycled content use less energy than manufacturing aluminum cans. However, glass bottles are much heavier and require more energy to transport, making the overall impact of glass comparable to that of aluminum.



The sustainable craft-beer supply chain

Building a sustainable supply chain for your brewery means rethinking your process from the ground up. A good place to start is to talk to the companies you work with up- and downstream in your supply chain to share your goals and learn about their practices. You might learn that your suppliers already use sustainable practices. Or it might mean discovering new suppliers or considering new ingredients.

Building sustainability upstream

Barley

Barley grown using sustainable practices includes organic production, no-till or low-till practices, dryland production, and crop rotation. Local sourcing may also help reduce the impact of transportation and provide more supply-chain transparency between the barley grower and malt house.

Malting

There is no apparent industry standard or certification for a sustainable malt house. However, many malt houses demonstrate an awareness of their role in supporting sustainability and reducing environmental impacts in the beer supply chain. Getting to know your maltster is a first step.

Add local color with New York State grain varieties:

Learn what grain varieties grow best in New York State and find the suppliers who carry them using these free resources:

- [Cornell University Small Grain Research and Variety Trials](#)
- [NY Grown & Certified](#)
- [Cornell Cooperative Extension](#)
- [NOFA-NY Grower Directory](#)
- [Source NY Directory](#)

A benefit of sourcing your ingredients locally is that suppliers are more likely to have information about growers.



Packaging

Reuse is the name of the game when it comes to offsetting the impact of packaging. The most sustainable packaging option is to sell beer in a reusable glass pint from reusable steel kegs. The next best option is the reusable/refillable glass container.

If you are debating between cans or bottles, consider the amount of recycled content in a can or bottle and the distance they would travel to you from the manufacturer. Ultimately, cans are considered the more sustainable option because they typically contain more recycled material than glass and they are lighter to transport—a bottle puts 20% more greenhouse gases into the air than a can does during transportation.

Transportation

Consider ordering and shipping with other brewers in your area to maximize logistics and cut down redundant truck journeys. Transportation can make a key difference in a material's net impact (e.g., glass bottles are less polluting than aluminum cans up until the point of transportation).

Ask your suppliers if they work with a logistics company to help optimize shipments (e.g., "Less Than Truckload" shipping).

Five things to remember

1. Sustainability is a market-growth opportunity—craft-beer drinkers want to support sustainable breweries.
2. If your brewing process is already sustainable, consider pushing sustainability upstream in your supply chain.
3. Familiarize yourself with sustainable (and unsustainable) practices, then talk to your suppliers and partners to learn about their priorities.
4. Set in-house purchasing policies that help you advance your own environmental goals. And don't be afraid to start small. Pick one supplier or beer line to test the waters.
5. Don't go it alone—collaborate with other breweries, suppliers, and other industry stakeholders.

A checklist for more sustainable packaging:

- ☐ Contains recycled content.
- ☐ Uses non-toxic dyes.
- ☐ Refillable glassware is used, like pints and growlers.
- ☐ The glass or can manufacturer is local or regional to the brewery.
- ☐ The manufacturer has a certification, such as the [Global Recycled Standard](#) or [Recycled Content Certification](#).
- ☐ The manufacturer has a published sustainability program, like [Ball](#) or [Crown Cork and Seal](#).

Building buy-in on sustainability:

We designed a tool that you can use to put sustainable supply-chain practices into motion with your suppliers. It can help you to do the following:

- Set a purchasing policy for your company.
- Create a supplier code of conduct that suppliers can sign.
- Assess whether your environmental goals align with those of your suppliers.

Download the tool [here](#).