

# A Revealing Carbon Assessment of Brew Dr. Kombucha's Supply Chain



## THE CLIENT

TripleWin Advisory approached Brew Dr. Kombucha (BDK) about conducting a Scope 3 carbon inventory across its value chain. The company, anticipating their B Lab re-certification process in the Fall of 2020 and with a mind on fulfilling its business commitment to NetZero2030, eagerly said “Yes” to working together.

## THE CONTEXT

TripleWin's main point of contact was Danny Metcalf, Director of Sustainability and former Head of Business Operations. The company had begun calculating its Scope 1 and 2 greenhouse gas (GHG) emissions the year prior and offsetting those totals by purchasing carbon offsets and renewable energy certificates (RECs) through Bonneville Environmental Foundation. Danny recognized that a Scope 3 or full value chain analysis of BDK's GHG emissions was an opportunity to better understand the company's total environmental impact and to highlight activities and processes in the supply chain that could be optimized, changed or eliminated altogether.

**Brew Dr. Kombucha (BDK) is an 11-year old, Portland, Oregon-based consumer products goods company that serves the market through three distinct product offerings:**

- ✓ **Brew Dr. Tea Houses:** zen retail spaces where customers can select hot and cold to-order teadrinks and light snacks.
- ✓ **Brew Dr. Kombucha:** bottled fermented tea sold in glass bottles and aluminum cans throughout the U.S., Canada and parts of Mexico.
- ✓ **Townshend Distillery:** a spirits distillery.

BDK operates in a high-growth sector of the Food & Beverage industry, the Kombucha market, sized at 1.35 billion (US\$) and is expected to grow to 8.15 billion by 2026. BDK captures approximately 3.5% of the total market share.

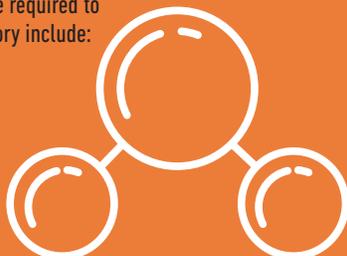


### MT CO2e = Metric Tons of Carbon Dioxide Equivalent.

Each of the seven greenhouse gases' global warming potentials (GWP) must be converted to the same metric as CO2. That metric is MT CO2e.

The seven greenhouse gases that are required to be included in a Scope 3 GHG inventory include:

- CO2: Carbon Dioxide
- CH4: Methane
- N2O: Nitrous Oxide
- HFCs: Hydrofluorocarbons
- PFCs: Perfluorocarbons
- SF6: Sulfur hexafluoride
- NF3: Nitrogen trifluoride



### What is NetZero2030?

At the UN Climate Change Conference, named COP25, this past December 2019 in Madrid Spain, more than 700 B Lab companies publicly committed themselves, individually and collectively, to meet the Paris Climate Accord greenhouse gas (GHG) emissions reductions targets necessary to keep the world below 2 degrees Celsius above pre-industrial levels, 20-years ahead of schedule. Brew Dr. Kombucha was one of those companies committed to that goal.



## THE SIZE OF IMPACT

Scope 3 GHG emissions for product manufacturers can account for between 80-90% of corporate emissions. BDK had an understanding that employee commuting and business travel were high emission “categories” for the company. TripleWin gave guidance that often these are red herrings: categories that have high awareness in the public consciousness that fossil fuel combustion by automobile, truck and plane significantly contribute to climate change, but from a total value chain perspective, are important yet small contributors to a company’s MT CO2e totals.

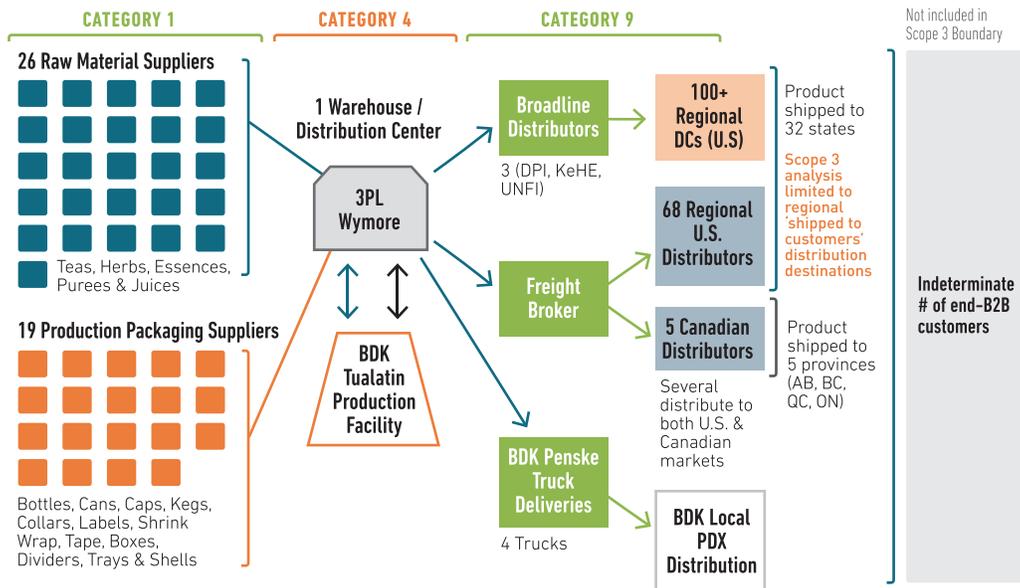
## THE EXPERTS

With its expertise in circular business models, material assessments and stakeholder engagement, TripleWin began its engagement taking a best-in-class approach to data collection, value chain mapping and industry benchmarking of competitive or like-sized beverage companies to inform what the likely Scope 3 category “hot spots” (carbon intensity activities) were likely to be for BDK.

## THE APPROACH

TripleWin’s project team led three detailed meetings at which we defined the purchasing and production facility data to be shared and assessed; walked BDK’s main facility to capture each process in the pre- and post-production phase of product-making, and detailed out specific data requests of the company’s warehousing and distribution partners that were critical to making precise GHG calculations.

## Value Chain Mapping



A Greenhouse Gas Scope 3 inventory covers an organizations complete value chain and includes both upstream and downstream activities. These activities are grouped into 15 Categories, eight that fall Upstream (Cradle-to-Gate) from raw material sourcing to warehousing finished goods, and seven that fall Downstream (Gate-to-Grave/Gate-to-Cradle). The 15 categories include:



## IDENTIFICATION OF “HOT SPOTS”

TripleWin was able to quickly identify three Scope 3 Categories that were GHG “hot spots” for BDK including: Purchased goods & services (Cat. 1), Downstream Transportation & Distribution (Cat. 9), and End-of-Life Treatment of Products (Cat. 12). We visually mapped BDK’s value chain and began calculating GHG emissions for the three hotspot categories above as well as four others. Below are the percentage totals of GHG emissions by Scope 3 category. For comparison, BDK’s Scope 1 & 2 (2018) GHG emissions include less than 6% of the company’s total emissions, in-line with industry standards.

## SCOPE 3 CATEGORY PRIORITIZATION

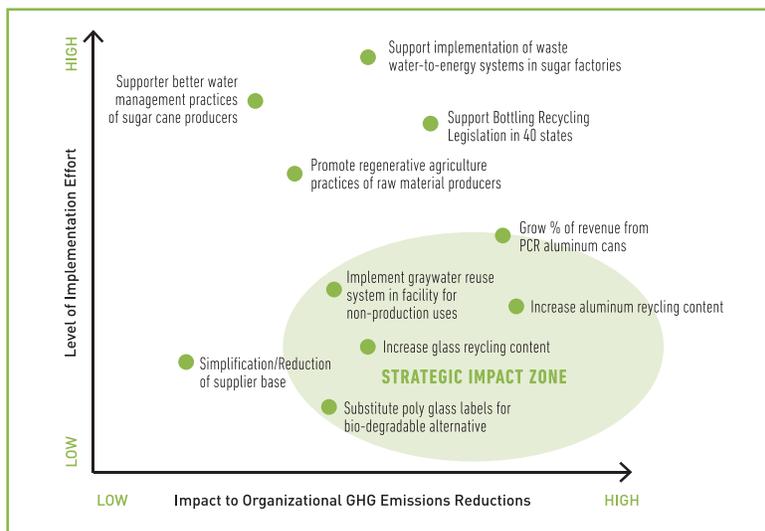
Given the company’s operations today and its growth forecast for the medium-term, TripleWin detailed out for BDK, the categories that will continue to be energy-intensive, carbon-emitting hot spots that demand attention and emissions-reduction implementation strategies. See below chart of Level of Environmental Impact by Scope 3 category:

Categories coded “High” are short-term priorities. Medium impact categories would be well-supported with process optimizations. And “Low” impact categories benefit most from internal behavioral changes, setting clear operational and codes of conduct standards.

| SCOPE 3 CATEGORY                                 | Level of Environmental Impact |
|--|-------------------------------|
| <b>1 Purchased Goods and Services</b>            | <b>High</b>                   |
| 2 Capital Goods                                  | N/A                           |
| 3 Fuel and Energy-Related Activities             | N/A                           |
| <b>4 Transportation and Distribution</b>         | <b>Medium</b>                 |
| 5 Waste Generated in Operations                  | Low, Not calculated           |
| 6 Business Travel                                | Low                           |
| 7 Employee Commuting                             | Low                           |
| 8 Leased Assets                                  | N/A                           |
| <b>9 Transportation and Distribution</b>         | <b>High</b>                   |
| 10 Processing of Sold Products                   | N/A                           |
| 11 Use of Sold Products                          | Low, Not calculated           |
| <b>12 End-of-life Treatment of Sold Products</b> | <b>High</b>                   |
| 13 Leased Assets                                 | Low                           |
| 14 Franchises                                    | N/A                           |
| 15 Investments                                   | N/A                           |

## SPHERE OF INFLUENCE

In a Scope 3 GHG analysis, the identification and prioritization of recycling, reduction and process changes as well as the pursuit of both conservation and efficiency measures are manifold. With BDK, TripleWin mapped the company’s Sphere of Influence over impactful reduction strategies. Various initiatives were plotted on an XY axis based on the level of effort to implement and the level of impact they would make on the company’s GHG reduction efforts. The circled ‘strategic impact zone’ included key initiatives TripleWin had recommended to BDK for further consideration and business case development.



## PROJECT LEARNINGS

The two-month project identified several key revelations for BDK including:

- Refrigerant leakage is a huge source of GHG emissions for the company. An emphasis will need to be placed on replacing and upgrading the refrigeration systems at its factory and working closely with its 3PL to support those upgrades and possibly, conversation to natural refrigerant systems.
- The inclusion of post-consumer recycled content (PCR) in BDK's source materials provides significantly lower emissions factors (EFs) over the product lifespan by some 2-23 times that of virgin materials.
- The transition to PCR aluminum cans from PCR glass offers a whole host of GHG emissions reducing opportunities including a lower EF to that of glass, the lighter weight supports lower transportation & distribution emissions, and aluminum cans allow the company to avoid the use of poly-based labels and acrylic adhesives.

## CLIENT OUTCOMES

Danny found the level of data detail and analysis informative and supportive of his desire to commit to a factory audit to flesh-out energy savings and system optimizations. BDK is considering conducting a product-level lifecycle assessment to determine how quickly and comprehensively it should move away from glass bottles to aluminum cans and ideally, pairing it with a strategic communications plan targeting consumers that persuades them of the need for and value of that transition. Lastly, Danny has asked to further engage with TripleWin to define a go-forward strategy for identifying, prioritizing, and facilitating data sharing with suppliers on their carbon management plans.

## Sampling of EFs of Common Recycled Content Materials

Companies Can Greatly Improve Reductions in their GHG Emissions by Focusing on Increasing the PCR of the Materials Sourced.

| MATERIAL TYPE   | SOURCE        | EMISSIONS FACTOR       | CLIMATE CHANGE IMPACT |
|-----------------|---------------|------------------------|-----------------------|
| Polyester Fiber | Virgin<br>PCR | 5.223<br><b>1.431</b>  | 3.6x                  |
| PET/PETE (#1)   | Virgin<br>PCR | 3.283<br><b>1.431</b>  | 2.3x                  |
| HPDE (#2)       | Virgin<br>PCR | 2.178<br><b>0.773</b>  | 2.8x                  |
| LDPE (#4)       | Virgin<br>PCR | 2.374<br><b>0.773</b>  | 3.1x                  |
| Container Glass | Virgin<br>PCR | 1.258<br><b>0.984</b>  | 1.3x                  |
| Aluminum        | Virgin<br>PCR | 19.262<br><b>0.815</b> | <b>23.6x</b>          |
| Steel           | Virgin<br>PCR | 1.777<br>0.735         | 2.4x                  |