

Carlsberg Group

Value chain carbon footprinting, science-based target setting and developing an emissions reduction plan



Carlsberg Group, one of the world's largest brewery companies, worked with the Carbon Trust to measure the end-to-end carbon footprint of its full value chain, set science-based targets and develop a roadmap to meet targets.

Carlsberg Group has products available in over 150 global markets, employing more than 41,000 people. Selling billions of beers each year, the business has a significant direct and indirect environmental impact. This occurs across several areas, such as: the agricultural production of ingredients; the use of energy and water in the brewing process; and the manufacturing and recycling of bottles and cans.



Over the past decade, Carlsberg has made good progress in reducing negative impacts throughout its operations and supply chain. However, the business still did not feel that it was doing enough given the scale of the challenges the world currently faces. It recognised that increased levels of action would be necessary to deliver on the UN's globally-agreed Sustainable Development Goals and the Paris Agreement on climate change.

Carlsberg therefore decided to strengthen its sustainability ambitions with targets towards 2022 and 2030. In order to deliver these targets and make sure they would be credible, the business wanted to work with experienced, expert partners to provide technical support and practical guidance.

The Carbon Trust was selected to support Carlsberg on the issue of climate change, working closely with the group's sustainability, utility management and supply chain teams, as well as a number of key suppliers.

This involved three particular pieces of work:

Step One

Ensure the company is accurately measuring the end-to-end carbon footprint of its full value chain, incorporating both supply chain emissions and downstream customer use and disposal of products.

Step Two

Define stretching but achievable targets for emissions reduction that are in line with what climate science says will be required to limit global warming to no more than 2 degrees Celsius.

Step Three

Develop a roadmap that sets out how these targets could be achieved.



ZERO
CARBON
FOOTPRINT



ZERO
WATER
WASTE



ZERO
IRRESPONSIBLE
DRINKING



ZERO
ACCIDENTS
CULTURE

Value chain footprinting

A critical first step in developing an updated climate change ambition for Carlsberg was the measurement of the global carbon footprint of the business. This is because good quality measurement of emissions underpins the development of successful approaches to reducing them.

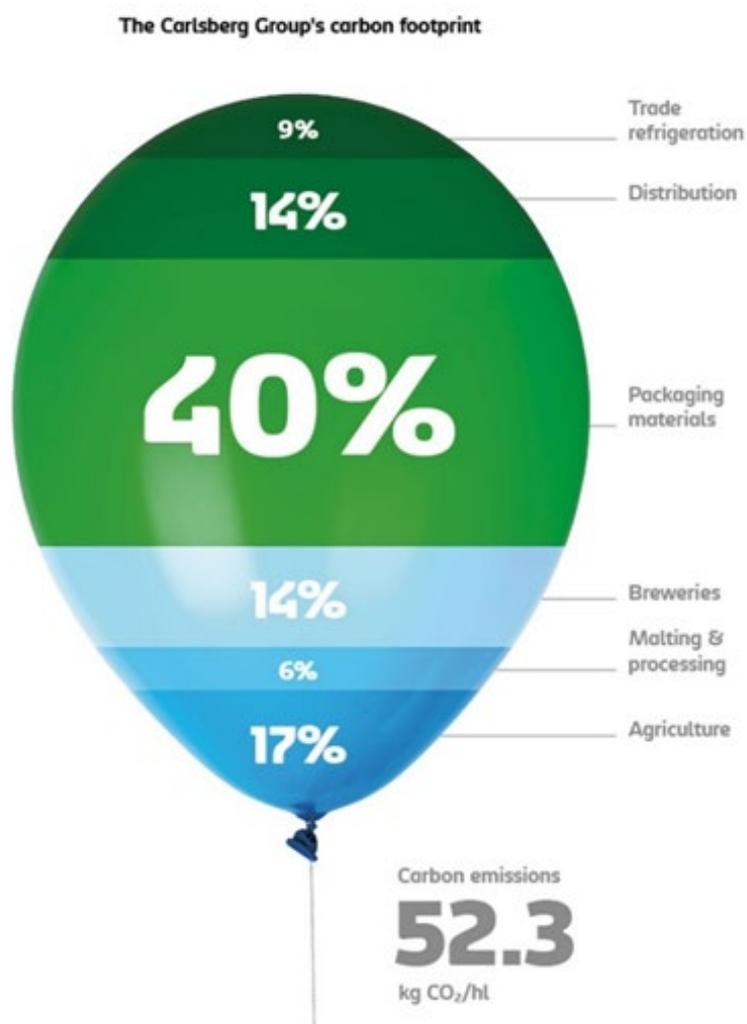
By identifying emissions hotspots it is possible to target action on areas of inefficiency, or seek out innovative product and business model solutions to reduce their impact. Accurate measurement also provides a baseline against which progress can be tracked, helping to understand which activities have been most effective.

The Carbon Trust supported Carlsberg by developing a database and emissions calculators, alongside a business intelligence dashboard that helped to highlight insights from the data. An important part of the approach was to make use of company data in its existing formats, to minimise any requirements for new data collection or input from different parts of the group.

How are greenhouse gas emissions categorised?

Following international best practice on greenhouse gas emissions measurement, a company's emissions are classified into three separate categories:

- *Scope 1* emissions are direct greenhouse gas emissions from an organisation, for example those given off by industrial processes or from the use of fuel in company vehicles;
- *Scope 2* emissions are those that are the result of purchased electricity, heat or steam; and
- *Scope 3* emissions cover all other indirect emissions that can be linked to a company's activities, including a wide range of impacts in areas such as supply chain production, third party transport and logistics, and customer use and disposal of products.



The most challenging part of the footprinting process was to quantify Scope 3 emissions. This requires a greater use of estimates and assumptions based on secondary data, which are then used to understand impacts occurring at multiple points both upstream and downstream of the business.

This is an area where the Carbon Trust was able to support Carlsberg with its world-leading expertise, thanks to years of experience in emissions measurement across multiple economic sectors and regions. In particular it was important to understand where emissions arose at different product life cycle stages across various global markets, from the production of raw materials right through to the disposal of packaging.

The tools developed by the Carbon Trust allowed Carlsberg to understand both its total group footprint and the emissions per hectolitre of beer brewed, helping the business determine the full life cycle impact of its products and work to reduce it.

Setting a science-based target

Building on a detailed understanding of Carlsberg Group's global impact, the next stage in the Carbon Trust's work was to support setting a science-based target. This involved establishing that Carlsberg's operational emissions reduction goals were fully in line with what is required to have a good chance of keeping global warming below 2 degrees Celsius above pre-industrial levels.

Carlsberg's current commitment is to achieving net zero greenhouse gas emissions at its breweries by 2030, which would reduce the company's total Scope 1 and 2 emissions by 92 percent from 2015 levels. This is supported by an interim 2022 target to cut brewery emissions in half from the same base year, which would reduce the company's total Scope 1 and 2 emissions by 46 percent.

These targets go beyond the level of emission reductions required for the 2 degrees threshold, and are at a level that would contribute to limiting global warming to 1.5°C, the higher level of ambition contained within the Paris Agreement.

The Carbon Trust sits on the Technical Advisory Group of the Science Based Targets initiative and has worked with clients across multiple sectors to set science-based targets using different methodological approaches. This experience was used to tailor the principles of the initiative to fit with Carlsberg's internal group targets and metrics, confirming that the company's goals exceeded the levels of carbon emissions reduction required.

For this target to be recognised by the Science Based Targets initiative, Carlsberg also needed to have measured and put in place goals to reduce Scope 3 emissions. To do this the company made a further commitment to reduce the beer-in-hand value chain carbon footprint associated with its products by 30 percent by 2030, again using 2015 as a base year, with an interim target of reaching 15 percent by 2022.

This target was possible thanks to the value chain footprinting work that had already been completed with the Carbon Trust. This which provided a measurement baseline and the business intelligence required to set stretching but achievable goals to have an impact with suppliers and customers.

What are science-based targets?

A target on climate change can be described as science-based if in line with the reductions required to have a good chance of limiting global warming to no more than 2 degrees Celsius above pre-Industrial levels, according to the best available climate science.

This allows a company to actively contribute towards meeting the Paris Agreement on climate change, which enshrines the ambition keeping global warming well below 2 degrees Celsius into international law. It also includes an aspirational goal to limit warming to 1.5 degrees Celsius.

To date more than 250 businesses have either set - or committed to set - their own science-based targets through the [Science Based Targets initiative](#), a partnership between the UN Global Compact, CDP, the World Resources Institute and WWF.

A small number [methodologies](#) are currently approved for use by the initiative, which allow companies to calculate their appropriate allocation of direct emissions reductions required within the wider economy. To have a target recognised the initiative also requires companies to have measured their indirect Scope 3 emissions and set a goal for reducing these.

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Technical feasibility and emissions reduction strategy

The final stage of the Carbon Trust’s work with Carlsberg was to conduct a detailed and rigorous technical and economic analysis of carbon reduction opportunities. This looked at each of the company’s breweries around the world, as well as key categories within the value chain, with a focus on packaging emissions.

The measurement tools and dashboards developed as part of the process of calculating Carlsberg’s value chain footprint provided detailed information on relative performance across individual sites and regions against a global benchmark. This allowed for ready comparison and helped identify priority areas for action.

Working closely with the group’s global utility management team, the Carbon Trust’s engineers were able to help formulate a concrete plan of action to achieve Carlsberg’s ambitious targets of cutting emissions from their breweries in half by 2022.

This was built taking a bottom-up approach, based on insights from site visits and feasibility assessments, providing a solid evidence base that will inform long term strategic investments into breweries. It includes significant investments into energy efficiency and renewable energy at breweries, as well as the purchase of zero carbon electricity and using renewable fuels for heat.

At the same time, the Carbon Trust’s experts worked with the group’s supply chain team to identify and target key suppliers, developing practical strategies to drive ongoing reductions in emissions outside of the company’s direct control.

This work builds on previously-established initiatives in areas such as sustainable packaging. Because this is the single largest area of emissions related to the business, it has been a major focus for Carlsberg. For example, the company is working closely with its suppliers through the Carlsberg Circular Community to introduce innovative new packaging options.

Find out how the Carbon Trust’s footprinting and science-based target setting services can support your organisation at: <https://www.carbontrust.com/client-services/>

More information on Carlsberg Group’s drive towards ZERO carbon footprint can be found at: <https://carlsberggroup.com/sustainability>