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Sustainability Report 2012

Green Commerce

Calculating our carbon footprint

HEINEKEN has developed an extensive and comprehensive carbon footprint model that calculates the greenhouse gas emissions of beverage production, in order to better understand the hotspots in our value chain and identify areas for improvement. This is the third year that HEINEKEN has calculated its carbon footprint, and the first year it is published based on data from 2011. We expanded the model to include Africa and the Middle East and the Americas. With 24 Operating Companies in scope, it covers more than 90 per cent of HEINEKEN Group volume. This model has allowed us to map the carbon footprints of the beverages we produce.

How we calculate our Carbon Footprint

HEINEKEN developed calculation principles specifically for the life cycle of beverages. These are based on the calculation methodology described in WBCSD/WRI's **Product Life Cycle Accounting and Reporting Standard**¹ (<http://www.ghgprotocol.org/files/ghgp/Product%20Life%20Cycle%20Accounting%20and%20Reporting%20Standard.pdf>). The calculation principles have been customised to better fit our reporting needs.

The model covers the six beverage production life cycle stages from barley to bar:



Agriculture

Malting & processing

Beverage Production

Packaging

Distribution

Cooling

Agriculture

The agricultural stage includes cultivation of barley and other raw materials for beer, cider and soft drinks.

Malting & Processing

The processing stage includes the malting of barley and similar processes such as fruit concentration and syrup production.

Beverage Production

The beverage production stage covers emissions from brewing beer and cider, and producing soft drinks. The emissions are divided into on-site, upstream and downstream emissions. On-site emissions refer to emissions from combustion of fossil fuels at the breweries. Upstream emissions are related to the emissions associated with purchased electricity and heat as well as auxiliary materials. Downstream emissions include emissions related to waste management.

Packaging material production

The packaging material production stage includes the production of the materials such as aluminium or glass, the manufacturing of the cans, bottles or kegs and the end of life as recycled materials, landfill or incineration.

Distribution

The distribution stage includes both the inbound distribution (raw and packaging materials distributed to the breweries) and the outbound distribution (finished products distributed to warehouses and outlets).

Cooling

The cooling stage covers cooling in fridges (for bottled and canned products) at home, retailer or in bars and restaurants and through draught beer installations.

Our carbon hotspots and how they are addressed

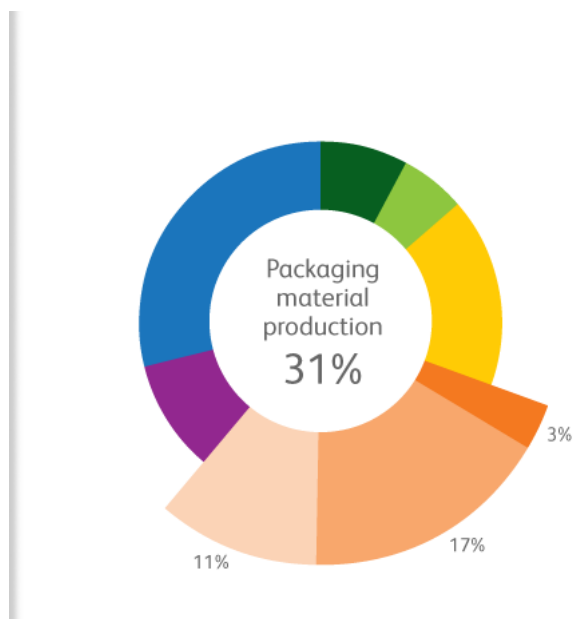
The calculation principles lead to a carbon footprint for each beverage (group) at a specific Operating Company. Operating Companies receive a feedback report stating the carbon footprint of the different beverages they produce and the weighted carbon footprint of the total hl produced. The HEINEKEN Group carbon footprint is about 68 kg CO₂eq/hl. This figure is based on best available data, but also includes assumptions and estimates, specifically for processes further away from our core activities. In the coming years we will make an effort to include more precise data with focus on the hotspots. The graph shows the breakdown of HEINEKEN's carbon footprint over the main processes from barley to bar.

Carbon Footprint breakdown of HEINEKEN

Barley to bar based on 90 per cent of produced volume

Agriculture	8%
Malting and adjuncts	6%
Beverage production	17%
Packaging material production	31%
Returnable packaging	3%
OW packaging (supplier efficiency)	17%
OW packaging (waste system efficiency)	11%
Distribution	10%
Cooling	28%

For more information click on the list above.



Remark: Total percentage may not add up to 100% due to rounding.
Green distribution = HEINEKEN controlled outbound distribution.

For each of the processes we have identified ways to reduce the emissions:

Agriculture

For agriculture the main emissions result from the use of fertilizer. We address this through our work with SAI on standards in [sustainable agriculture \(http://www.annualreport.heineken.com/empower/heineken-cares/sustainable-agriculture.html\)](http://www.annualreport.heineken.com/empower/heineken-cares/sustainable-agriculture.html).

Malting & processing

Although malting & processing is the smallest of the emission drivers, we have programmes in place to reduce the emissions in our own malteries.

Beverage production²

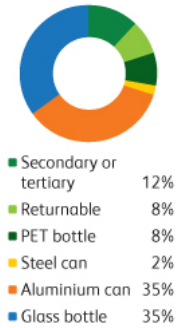
Beverage production is one of the hotspots for HEINEKEN. Most of these emissions are generated upstream by the combustion of fossil fuels to generate electricity, the production of filter material for the brewing process and generation of steam. On-site emissions mainly originate from the use of natural gas. More efficient use of energy will reduce emissions from [beverage production \(http://www.annualreport.heineken.com/improve/green-brewer/energy.html\)](http://www.annualreport.heineken.com/improve/green-brewer/energy.html).

Packaging material production

[Packaging material \(http://www.annualreport.heineken.com/improve/green-commerce/packaging.html\)](http://www.annualreport.heineken.com/improve/green-commerce/packaging.html) production including the end-of-life are the largest sources of emissions for HEINEKEN's carbon footprint. One way glass accounts for about 35 per cent of the emissions from packaging. Another 35 per cent are generated by the production of aluminium cans. Returnable packagings account for about eight per cent of the carbon footprint. PET bottles production generates about eight per cent of the total packaging emissions and steel cans about two per cent. An estimated 12 per cent of the emissions are generated by the use of secondary and tertiary packagings.

Nearly half (45 per cent) of the beverages produced by HEINEKEN are packed in returnable packaging. The multi-use of returnable bottles results in lower emissions. We focus on reducing the carbon footprint by reducing the weight, increasing the amount of recycled content in the packaging, efficiency improvements at suppliers and increased collection and recycling after use.

Percentage contribution of the different packagings to the total packaging emissions



Distribution

Our Green Distribution programme aims to reduce our CO₂ emissions from transport. During 2012, we launched a number of initiatives to support CO₂ reduction in [distribution \(http://www.annualreport.heineken.com/improve/green-commerce/distribution.html\)](http://www.annualreport.heineken.com/improve/green-commerce/distribution.html).

Cooling

Cooling is another hotspot for HEINEKEN. Depending on the country and the beer culture, a large proportion of the beverages are sold from fridges in bars, restaurants or corner shops. We will continue to improve our carbon footprint by significantly increasing the efficiency of HEINEKEN [fridges and draught beer installations. \(http://www.annualreport.heineken.com/improve/green-commerce/cooling.html\)](http://www.annualreport.heineken.com/improve/green-commerce/cooling.html)

Our focus for the coming years will go to those areas where we can make the biggest impact: brewing, packaging, cooling and distribution.

¹ Published in October 2011

² This also includes production of other beverages

Case Studies



[Poland](#)
A very water-efficient operation
[\(/improve/case-studies/poland-a-very-water-efficient-operation.html\)](http://www.annualreport.heineken.com/improve/case-studies/poland-a-very-water-efficient-operation.html)



[USA](#)
Headquarters rewarded with LEED Gold Certification
[\(/improve/case-studies/usa-headquarters-rewarded-with-leed-gold-certification.html\)](http://www.annualreport.heineken.com/improve/case-studies/usa-headquarters-rewarded-with-leed-gold-certification.html)



[Austria](#)
Harnessing the power of nature
[\(/improve/case-studies/austria-harnessing-the-power-of-nature.html\)](http://www.annualreport.heineken.com/improve/case-studies/austria-harnessing-the-power-of-nature.html)



[The Netherlands](#)
Unlocking the benefits of brewery waste water
[\(/improve/case-studies/the-netherlands-unlocking-the-benefits-of-brewery-waste-water.html\)](http://www.annualreport.heineken.com/improve/case-studies/the-netherlands-unlocking-the-benefits-of-brewery-waste-water.html)



[Italy](#)
A bright future for CO₂ emissions reduction
[\(/improve/case-studies/italy-a-bright-future-for-co2-emissions-reduction.html\)](http://www.annualreport.heineken.com/improve/case-studies/italy-a-bright-future-for-co2-emissions-reduction.html)



[Nigeria](#)
A second life for spent grains
[\(/improve/case-studies/nigeria-a-second-life-for-spent-grains.html\)](http://www.annualreport.heineken.com/improve/case-studies/nigeria-a-second-life-for-spent-grains.html)



[Global](#)
Holland | the 'green in'
[\(/improve/case-studies/global-green-in.html\)](http://www.annualreport.heineken.com/improve/case-studies/global-green-in.html)