



Corporate Carbon Footprint

Financial Year 2020/2021

Financial Year 2021/2022

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HORNBACH Holding AG & Co. KGaA - Corporate Carbon Footprint

Executive Summary

In this project, Planetly carried out a corporate carbon footprint analysis of HORNBACH Holding AG & Co. KGaA (in the following referred to as “Hornbach”), which includes HORNBACH Baumarkt AG, HORNBACH Immobilien AG and HORNBACH Baustoff Union GmbH, for the reporting period equivalent to their financial year March 2020 - February 2021 (in the following referred to as ‘financial year 2020/21’) and March 2021 - February 2022 (in the following referred to as ‘financial year 2021/22’). According to the GHG Protocol Corporate Standard, the footprint analysis covers all of Hornbach's internal activities for scope 1 and 2. For scope 3, category 3, ‘fuel- & energy related activities’ is considered.

All locations in Germany, the Netherlands, Switzerland, Austria, Romania, the Czech Republic, France, Luxembourg, Romania, Sweden and Slovakia have been considered for scope 1 and 2. Additionally there are some locations where Hornbach commissioned a third party to provide a service (e.g. warehousing) or consumption is charged based on a flat fee to Hornbach. These locations and the associated emissions fall under scope 3 and were therefore not in scope of this analysis.

For the financial year 2020/21 **Hornbach’s gross carbon footprint amounts to 98,159.12 tonnes of carbon dioxide equivalent (tCO₂e)** (location-based approach). Due to the use of renewable electricity and electricity with a lower emission factor than the national average, 15,378.25 tCO₂e can be deducted (market-based approach). **In conclusion, Hornbach’s net emissions amount to 82,780.86 tCO₂e** in the financial year 2020/21.

For the financial year 2021/22 **Hornbach’s gross footprint amounts to 104,624.99 tonnes of carbon dioxide equivalent (tCO₂e)** (location-based approach). Due to the use of renewable electricity and electricity with a lower emission factor than the national average, 16,511.33 tCO₂e can be deducted (market-based approach) **In conclusion, Hornbach’s net emissions amount to 88,113.66 tCO₂e** in the financial year 2021.

The results of this analysis will be used to provide Hornbach with transparency on its emissions, enable the setup and implementation of specific carbon reduction measures, and the foundation to track its progress in reducing carbon emissions. It is planned to start periodic reporting, to expand the scope of the analysis to include scope 3 emissions, and implement a reduction strategy roadmap.

The overall data quality is considered good and comprehensive, with common and statistically insignificant data quality issues. Appropriate and current emission factors are used in the calculation of the footprint. All relevant activity data was collected by Hornbach’s team, whose responsibility was to ensure data completeness. Planetly is not in the position to anticipate missing processes in the defined scope. Overall data quality is considered sufficient to calculate meaningful results.

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About Hornbach

HORNBACH Holding AG & Co. KGaA is the parent company of the HORNBACH Group. It does not have any operations itself, but has a number of major subsidiaries. In addition to HORNBACH Baumarkt AG, the largest operating subgroup at which the do-it-yourself (DIY) retail activities across Europe are pooled, the HORNBACH Group also comprises the HORNBACH Baustoff Union GmbH subgroup (regional builders' merchants) and the HORNBACH Immobilien AG subgroup (real estate and location development). The HORNBACH Group was founded in 1877 and is family managed, now in the fifth generation. It has the legal form of a partnership limited by shares (KGaA) and is publicly listed. At the balance sheet date on February 28th 2022, the Group had a total of 24,268 employees. In the financial year 2021/22 (March 1st 2021 to February 28th 2022), the HORNBACH Group generated net sales of € 5.9 billion.

Their business activities focus on do-it-yourself (DIY) retail with DIY stores and garden centres, as well as an online DIY retail store in Germany and eight other European countries. These retail activities, which mainly focus on the needs of private end customers (business-to-consumer: B2C), are managed at HORNBACH Baumarkt AG, which is by far the largest operating subgroup. With its "ProfiService" and product range, Hornbach also targets tradespeople and other commercial customers. The DIY product range, which comprises around 50,000 articles stocked at the stationary stores and up to around 250,000 articles available online, is structured in five product divisions: hardware / electrical, paint / wallpaper / flooring, construction materials / timber / prefabricated components, sanitary / tiles, and garden. In addition, Hornbach is also active in the regional stationary builders' merchant business via its HORNBACH Baustoff Union GmbH subsidiary (HBU), which chiefly focuses on specialist retail with commercial customers in the main and secondary construction trades (business-to-business: B2B). The range of products and services in HBU's B2B segment comprises around 180,000 articles in ten product divisions: civil engineering, building construction, roof / façade, fittings, garden, construction elements, sanitary and tiles, specialist products, fuels, and transport/other.

The principal task performed by the HORNBACH Immobilien AG subgroup is to support the DIY retail business by developing stationary retail properties for group-internal use.

For more information, please visit the company's website at <https://www.hornbach-holding.de/>.

Results Overview

Overall result

	FY 2020/21 (tCO₂e)	FY 2021/22 (tCO₂e)
Scope 1	32,395.17	40,518.52
Scope 2	39,782.70	35,144.10
Scope 3 Category 3	10,602.99	12,451.04
Total	82,780.86	88,113.66

What does the result mean?

The FY 2021/22 annual corporate carbon footprint is equivalent to...



... the annual carbon footprint of 17,946 people (world average).
[MUNTEAN2018]



... travelling 526,051,701 km with a plane in economy class.
[DEFRA2020]



... producing 239,289,737 kWh in the coal power plant.
[DEFRA2020]



... drinking 1,748,286,905 cups of coffee.
[REINHARD2020]

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Boundaries and scope

This report contains all information and results for Hornbach's corporate carbon footprint analysis from March 2020 to February 2021 and March 2021 to February 2022, including scope 1 and 2 and scope 3 category 3 emissions, using all available data from that year. Extrapolation and forecasting will be described more specifically in the relating scope methodologies.

Note should be taken that consumption of sublet facilities within Hornbach locations (e.g. bakeries and bistros) have been considered within scope 1 and 2 of this analysis, while consumption is invoiced based on actual consumption to the renting party (and hence should be accounted for in scope 3 category 13 Downstream Leased Assets). The cut-off was not conducted in this analysis due to immateriality but will be adapted in the next analysis cycle.

The locations in Germany, the Netherlands, Switzerland, Austria, Romania, the Czech Republic, France, Luxembourg, Sweden and Slovakia were in the scope of this analysis. All relevant scope 1 & 2 activities have been considered. For scope 3, only category 3, 'Fuel- & Energy related Activities' is in the scope of the analysis. The operational boundaries were set to include building related activities such as heating, electricity and air conditioning. Furthermore, fleet emissions have been considered. Scope 3.3 has been included in this analysis, as the emissions from this category are in direct relation to scope 1 and 2 emissions and highly relevant to the carbon footprint of Hornbach.

Biological CO₂ sequestration is not relevant for Hornbach's operation. Biological emissions have been included in a few categories (e.g. 7% share of biogenic diesel in vehicle fuel consumption), but a differentiation is not useful in this report, as these factors are not influenced by Hornbach, but are a legislative standard.

Base year and recalculation policy

The financial year 2020/21 was selected as the base year. A recalculation may be considered if there is significant methodological progress or an improved availability of emission factors.

Quality of Activity Data

Overall data quality was considered sufficient to calculate meaningful results. It is within Hornbach's responsibility to ensure data completeness. Planetly is not in the position to anticipate missing processes in the defined scope. The majority of data was sourced from systemic data or manually read from energy meters. However, there were some data gaps that required extrapolation or the use of fallback options. An appropriate approach was determined on an activity level and will be described in the sections below.

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Scope 1 & 2 Footprint

Financial Year 2020/21

		tCO ₂ e	tCO ₂ *	tCH ₄ *	tN ₂ O*
Scope 1	Fleet	7,986.75	8.09	0.01	0.00
	Cooling	210.53	Not available		
	Gas Heating	21,735.56	21,674.36	37.75	23.45
	Oil Heating	2,462.33	2,457.35	0.09	4.90
Scope 2	District Heating	4,132.56	4,087.91	23.59	21.06
	Electric Fleet (market-based)	15.97	Not available		
	Electric Fleet (location-based)	15.97	Not available		
Scope 2 (Location Based)	Electricity	51,012.42	50,763.83	41.94	206.65
Scope 2 (Market Based)	Electricity	35,634.17	853.15	0.72	3.74
Scope 1 + 2 (Location Based)	Total	87,556.13	78,991.55	103.37	256.06
Scope 1 + 2 (Market Based)	Total	72,177.87	29,080.87	62.16	53.15

*GHGs are expressed in tonnes of CO₂-equivalent

**GHGs that were not reported separately (HFCs, PFCs, SF₆) are included in the inventory but due to missing information cannot be disclosed.

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Financial Year 2021/22

		tCO ₂ e	tCO ₂ *	tCH ₄ *	tN ₂ O*
Scope 1	Fleet	11,792.09	1,342.89	1.82	0.71
	Cooling	210.72	Not available		
	Gas Heating	25,790.79	25,718.15	44.64	27.99
	Oil Heating	2,724.92	2,719.47	0.04	5.41
Scope 2	District Heating	5,067.38	5,012.64	28.92	25.82
	Electric Fleet (market-based)	30.81	Not available		
	Electric Fleet (location-based)	30.81	Not available		
Scope 2 (Location Based)	Electricity	46,557.25	46,331.49	37.86	187.90
Scope 2 (Market Based)	Electricity	30,045.91	1,391.49	1.27	5.73
Scope 1 + 2 (Location Based)	Total	92,173.95	81,124.63	113.28	247.85
Scope 1 + 2 (Market Based)	Total	75,662.62	36,184.63	76.69	65.68

*GHGs are expressed in tonnes of CO₂-equivalent

**GHGs that were not reported separately (HFCs, PFCs, SF₆) are included in the inventory but due to missing information cannot be disclosed.

Scope 1 Emissions

Fleet

Hornbach's fleet is powered by diesel, petrol, electricity, Liquefied Petroleum Gas (LPG), and Compressed Natural Gas (CNG). Consumption was available either in litres, kilograms (CNG), or spend-based. Spend-based consumption was converted to consumption in litres/kg using [PLANETLY2020-12]. Emission factors were used from [GLEC2019] for consumption in litres for diesel, LPG, and petrol, and from [DEFRA2021] for consumption in kg for CNG. Consumption data for the fleet was unavailable for January and February 2022 and was therefore extrapolated based on average consumption between March and December 2021.

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Air-Conditioning

Fugitive emissions from air-conditioning are relevant in the scope of this analysis. Hornbach does not centrally record or document the amount of refilled coolants. Therefore, consumption data was collected for the period January 2021 - December 2021 taking appropriate approaches considering different countries and location types:

Hornbach's buildings were categorised into a number of building types. For office locations, consumption was modelled using [PLANETLY-2020-8]. Further, Baustoff Union GmbH's stores also did not have any consumption data available. However, information was available about the square metres of air-conditioned area. Consumption was estimated using [PLANETLY-2020-8]. This model, however, is generally set-up to estimate consumption for office buildings and hence, note should be taken to a potential inaccuracy of the overall coolant consumption for Baustoff Union GmbH's stores. Due to the insignificant impact of these stores and locations, this inaccuracy was considered acceptable. For data centres and the Baumarkt AG stores in Romania, consumption data was available. To account for consumption of Baumarkt AG stores in countries other than Romania, a sample of stores was drawn and consumption of refilled cooling liquid collected. The average consumption per store was extrapolated to the remaining Baumarkt AG stores, based on the premise that the air-conditioned area (social and server rooms) are the same size for all stores. Consumption was linearly extrapolated to cover the full financial year 2020/21 and 2021/22, based on sample data collected for January to December 2021, assuming that consumption would be equal. However, there were a few locations that were exempt from extrapolation. CSRID 212 (HORNBACH Immobilien AG in Germersheim, Germany) was not calculated via fallback as it was assumed that there was no consumption due to vacancy of the location. Furthermore, as CSRID 800 (HORNBACH Baumarkt AG in Nitra, Slovakia) was opened only in March 2022, it was assumed that no cooling liquid consumption took place in the weeks before the opening. To assess the impact of the refilled cooling liquids, emission factors from [DEFRA2021] have been used.

However, shortly before this report was finalised it came to light that some Baumarkt AG stores have air conditioning units cooling the full store and not only server and social rooms. This was unknown when calculations were conducted, but will be taken into account in the next analysis cycle. This holds true for 7 stores:

CSRID 660 (HORNBACH Baumarkt AG in Praha - Cerný Most, Czech Republic)

CSRID 661 (HORNBACH Baumarkt AG in Brno, Czech Republic)

CSRID 663 (HORNBACH Baumarkt AG in Rapy, Czech Republic)

CSRID 668 (HORNBACH Baumarkt AG in Cestlice / Praha, Czech Republic)

CSRID 669 (HORNBACH Baumarkt AG in Praha Velká Chuchle, Czech Republic)

CSRID 746 (HORNBACH Baumarkt AG in Kosice, Slovakia)

CSRID 748 (HORNBACH Baumarkt AG in Presov, Slovakia)

Heating

Consumption for heating was provided from Hornbach's energy management system or manually collected from heating metres. For locations with partial data gaps in 2021, the

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consumption of the same month from the previous year and location was applied, assuming similar weather conditions and similar heating activity year-on-year. If data gaps were found in 2020, consumption data from the same month of 2021 was adduced, applying the same assumption. If no consumption data was available, the average heating consumption per year, heating type and building type provided by Hornbach was used to calculate missing data. If the heating type was unavailable, gas heating was assumed as it is the most commonly used heating by Hornbach. Missing heating consumption for offices was calculated using Planetly's Activity Consumption Benchmarks. Emission factors for gas and oil were used from [IPCC2006] and [UBA2019].

Scope 2 Emissions

District Heating

Similar to the gas and oil heating, consumption for heating was provided from Hornbach's energy management system or manually collected from heating metres. For locations with partial data gaps in 2021, the consumption of the same month from the previous year and location was applied, assuming similar weather conditions and similar heating activity year-on-year. If data gaps were found in 2020, consumption data from the same month of 2021 was adduced, applying the same assumption. If no consumption data was available, the average heating consumption per year, heating type and building type provided by Hornbach was used to calculate missing data. Missing heating consumption for offices was calculated using Planetly's Activity Consumption Benchmarks. Emission factors for district heating were used from [UBA2019].

E-Fleet

For electric vehicles emissions are disclosed in scope 2. Vehicles are mostly charged in-house, and hence emissions are already covered in the building electricity consumption. No consumption data was available for electric and hybrid vehicles for vehicles charged externally. The holders of these vehicles were approached to retrieve information that helped to calculate the amount of externally charged electricity. Consumption of fully electric vehicles could then be estimated using emission factors from [HBEFA2018]. The electric share of plug-in hybrid vehicles has been excluded from the analysis due to low data quality, difficulties in calculation and the comparably low significance of total emissions. Improvements in data quality can lead to their inclusion in future reports.

Electricity

Consumption for electricity was provided from Hornbach's energy management system or manually collected from metres. In case of data gaps, i.e. a few months, the average consumption for the respective location and year was calculated and applied where data was missing. To extrapolate for January and February 2022 the average consumption per location starting from January 2021 was calculated and applied to the missing months. For office buildings with no electricity consumption data available at all, Planetly fallbacks have been

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utilised [PLANETLY2020-4]. For other building types, the average consumption for the respective year, building type and country have been calculated and applied accordingly. There are a few deviations to this process: For Baustoff Union GmbH in France, no data was available for that country. Instead, data from Germany was used since consumption was assumed to be similar and it was the largest data set available. For CSRID 212 (HORNBACH Immobilien AG in Gernersheim, Germany) no area in square meters was available, instead extrapolations were made based on full-time employee (FTE) figures using the average of all building material markets with 20-30 FTEs.

Emission factors from [IEA2021] have been used.

Scope 3 Footprint

Category	Activity	FY 2020/21	FY 2021/22
03 Fuel- & Energy related activities	Fuel Production	1,844.69	2,761.46
03 Fuel- & Energy related activities	Heating Gas Production	5,050.12	5,963.71
03 Fuel- & Energy related activities	Electricity Transmission & Distribution Losses	2,440.07	2,253.82
03 Fuel- & Energy related activities	Heating Oil Production	522.30	557.53
03 Fuel- & Energy related activities	District Heating Distribution	745.81	914.51
03 Fuel- & Energy related activities	Total tCO2e	10,602.99	12,451.04

Category 3 - Fuel & Energy related Activities

Upstream emissions for transmission & distribution losses of electricity have been calculated based on the most up-to-date emission factors from the International Energy Agency [IEA 2021]. The emission factors from [IEA2021] do not account for upstream emissions resulting from the resources used for the generation of electricity. These emissions will be added in an updated model that can be used in following reports.

Fuel production has been calculated with [GLEC2019], for heating gas production [UBA2019] has been used. The production of heating oil has been calculated with [BEIS2021] and [UBA2019], while district heating distribution losses were calculated with [UBA2019].

Conclusion & Next Steps

With this first Corporate Carbon Footprint Report Hornbach gains transparency on its emissions. In the financial year 2020/21 scope 1 accounts for 32,395.17 tCO₂e (39.13%), while scope 2 emissions account for 39,782.70 tCO₂e (48.06%) and the scope 3.3 emissions have an impact of 10,602.99 tCO₂e (12.81%). In the financial year 2021/22 scope 1 accounts for 40,518.52 tCO₂e (45.98%), while scope 2 emissions account for 35,144.10 tCO₂e (39.88%), the scope 3.3 emissions have an impact of 12,451.04 tCO₂e (14.13%).

This first annual report provides Hornbach with an overview of their relevant CO₂e emissions. It is planned to start periodic reporting, to expand the scope of the analysis to include scope 3 emissions, and implement a reduction strategy roadmap.

References

Reference	Author	Year	Title
BEIS2021	BEIS	2021	Greenhouse gas reporting: conversion factors 2021
CASCINI2013	Cascini et al.	2013	Life Cycle Assessment of a commercial refrigeration system under different use configurations
DEFRA2020	DEFRA	2020	Conversion Factors 2020: Full Set, Version 1.0
DEFRA2021	DEFRA	2021	Conversion Factors 2021: Full Set, Version 2.0
GLEC2019	Global Logistics Emissions Council	2019	Framework for Logistics Emissions Accounting and Reporting, version 2.
HBEFA2018	HBEFA	2018	The Handbook Emission Factors for Road Transport, Version 4.0
IEA2021	International Energy Agency	2021	Emission Factors
MUNTEAN2018	Muntean et. al.	2018	Fossil CO2 emissions of all world countries - 2018 Report, EUR 29433 EN, Publications Office of the European Union
PLANETLY2020-4	PLANETLY	2020	Average consumption of electricity, water and heating, based on previous calculations
PLANETLY-2020-8	PLANETLY	2020	Modelled airconditiong liquid consumption and estimated production emissions
PLANETLY2020-12	PLANETLY	2020	Modelled spent-based Fleet Consumption Factors
REINHARD2020	Reinhardt et al.	2020	Ökologische Fußabdrücke von Lebensmitteln und Gerichten in Deutschland
UBA 2019	Umweltbundesamt	2019	Emissionsbilanz erneuerbarer Energieträger

About Planetly

Planetly is a technology start-up on a mission to help build a carbon neutral economy. Our Software helps you to introduce and automate carbon management, from data collection to reduction strategies and offsetting measures.

Publisher

HORNBACH Holding AG & Co. KGaA

Hornbachstraße 11
76879 Bornheim

info@hornbach.com
www.hornbach-holding.de

Contractor

Planetly GmbH

Gormannstraße 14
10119 Berlin

hello@planetly.com
www.planetly.com

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