



HYDROGENPRO ASA

Greenhouse Gas Inventory 2022

1. Jan 2022 - 31. Dec 2022



Introduction

This report provides a detailed inventory of the company's emission sources and associated greenhouse gas emissions for the period 1. Jan 2022 - 31. Dec 2022. The emissions are quantified according to the Greenhouse Gas (GHG) Protocol, which is the most widely used and recognized standard for corporate carbon footprint accounting. The company's activities and transactions are calculated into metric tonne, ts of CO₂-equivalents using emission factors from vetted sources.

A greenhouse gas inventory allows companies to identify emission hot-spots in their operations and in their value chain, and consequently to initiate measures to mitigate their contribution to climate change. This annual report allows the company to measure their emissions over time and thereby manage their progress.

This report comprises all company emissions. HYDROGENPRO ASA has chosen the Operational Approach when calculating their inventory.



Annual Greenhouse Gas Emissions

Emission source	Emissions (tonneCO ₂ e)	Percent of total
Mobile combustion	2,3	0,0%
Scope 1 Total	2,3	0,0%
Purchased electricity ¹	111,3	1,8%
Purchased heat	30,0	0,5%
Scope 2 Total	141,3	2,3%
Purchased good and services	5 628,6	92,8%
Fuel and energy related emissions	0,0	0,0%
Upstream transport and distribution	279,3	4,6%
Waste generated in operations	0,7	0,0%
Business travel	10,3	0,2%
Upstream leased assets	2,6	0,0%
Scope 3 Total	5 921,5	97,6%
Scope 1, 2 and 3 Total	6 065,0	100%

¹Electricity is calculated using location-based method. Read more about location-based and market-based method under Methods in this report.



Annual market-based method emissions

Emission source	Emissions (tonneCO ₂ e)	Percent of total
Electricity market-based method ¹	383,9	6,1%
Scope 2 market-based method total	388,9	6,2%
Scope 1, 2 and 3 Total market-based method	6 312,6	100%

We have purchased Guarantees of Origin for 381057.2 kWh of electricity, which is 35,2% of our total consumption

¹Electricity is calculated using . Read more about location-based and market-based method under methods in this report.



Description of Annual Inventory

Scope 1 & 2

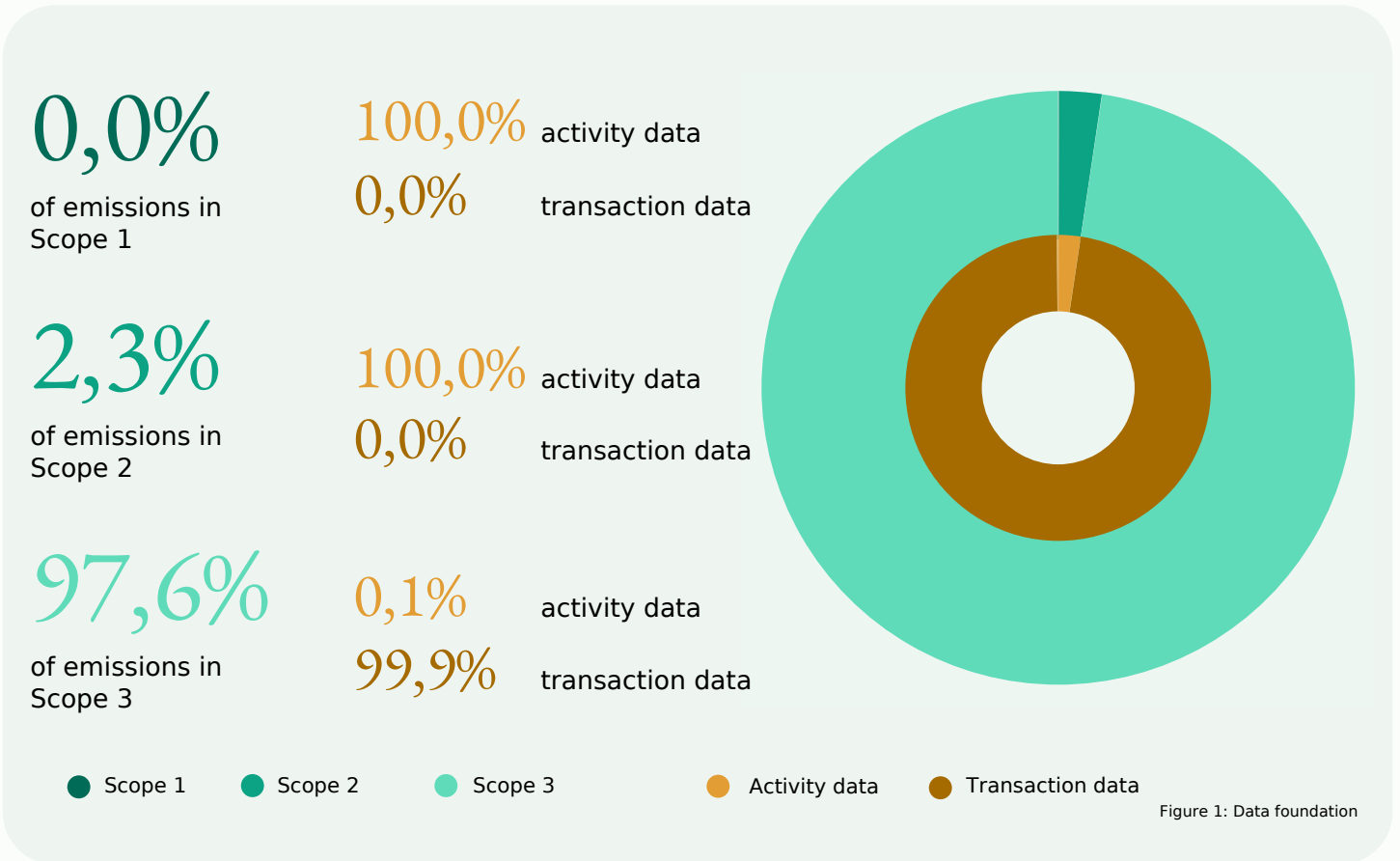
The inventory includes all material emission sources in Scope 1 & 2. 100,0% of our emissions in Scope 1 & 2 is calculated based on bottom-up activity data, while 0,0% is calculated based on top-down transaction data (read more about types of data in the Methodology chapter of this report).

We did not have any biogenic emissions during the reporting period.

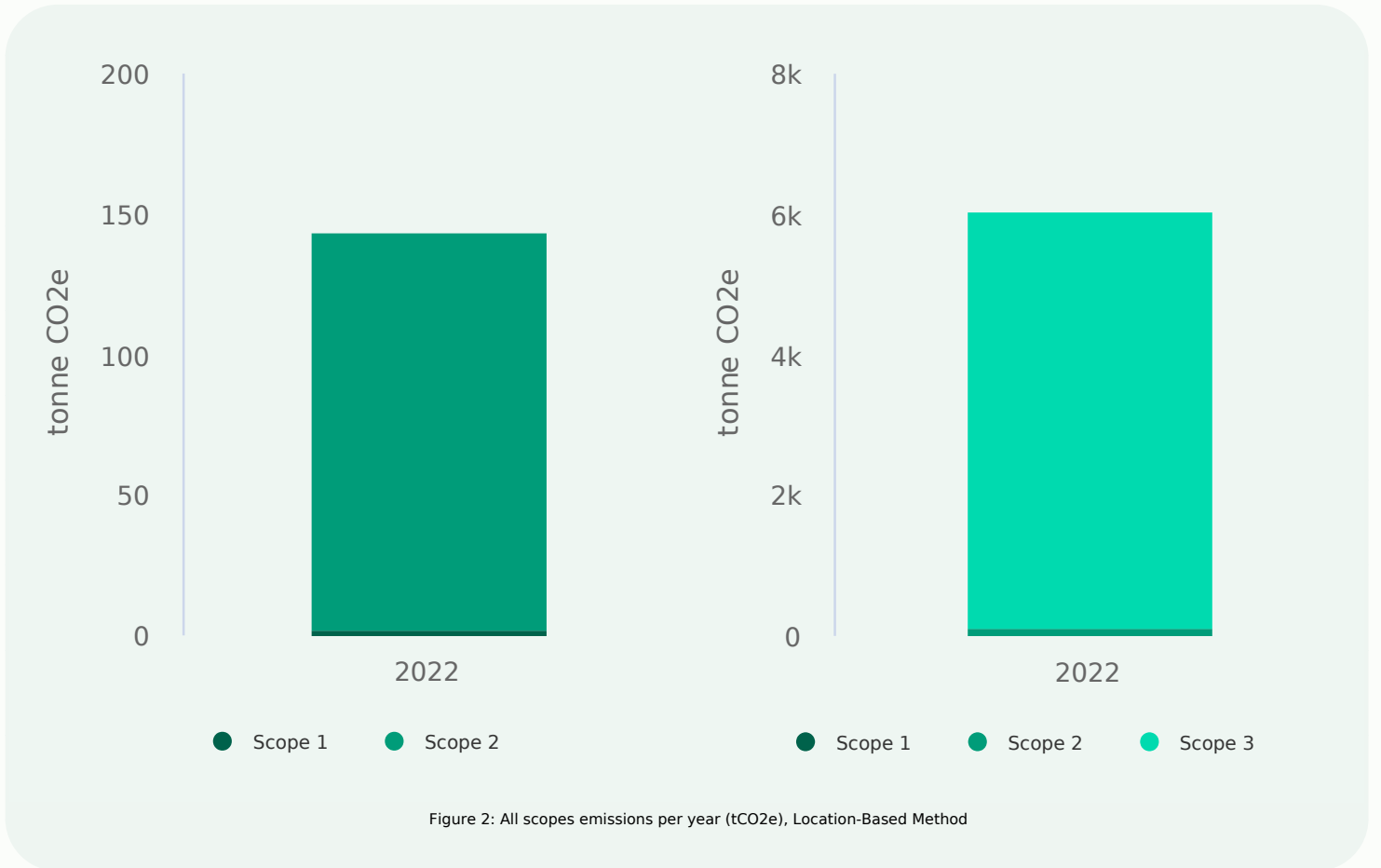
Scope 3

For the reporting period we have been able to include the following categories: Mobile combustion, Purchased electricity, Purchased heat, Purchased good and services, Fuel and energy related emissions, Upstream transport and distribution, Waste generated in operations, Business travel, Upstream leased asset. We will continue to improve and expand our Scope 3 inventory to include all material categories in the near future.

0,1% of our emissions in Scope 3 is calculated based on bottom-up activity data, while 99,9% is calculated based on top-down transaction data (read more about types of data in the Methodology chapter of this report).



Details of Inventory



Emission source	Emissions (tonneCO ₂ e) 2022
Mobile combustion	2,3
Scope 1 total	2,3
Purchased electricity	111,3
Purchased heat	30,0



Scope 2 total	141,3
Purchased good and services	5 628,6
Fuel and energy related emissions	0,0
Upstream transport and distribution	279,3
Waste generated in operations	0,7
Business travel	10,3
Upstream leased assets	2,6
Scope 3 total	5 921,5



Marked-Based Method Emissions Development

Emissions (tonneCO₂e)

Emission source	2022
Electricity market-based method	383,9
Scope 2 market-based method total	388,9
Scope 1, 2 and 3 total market-based method	6 312,6



Methodology & Sources

This Greenhouse Gas Inventory is prepared in accordance with the Greenhouse Gas Protocol (GHG Protocol) Corporate Accounting and Reporting Standard, and its related updates and guidelines. The GHG Protocol is a partnership between the World Resource Institute (WRI) and the World Business for Sustainable Development (WBCSD) that provides standards, guidance, tools and training for business and government to measure and manage climate-warming emissions.

The standard covers the accounting and reporting of the seven greenhouse gases covered by the Kyoto Protocol - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PCFs), and sulphur hexafluoride (SF₆). The emissions of each GHG (CO₂, CH₄, N₂O, etc.) are calculated separately and then converted to CO₂ equivalents on the basis of their global warming potential.

The inventory is based on the [operational control] approach. The GHG Protocol differentiates between two approaches for consolidating the inventory: the equity share approach and the control approach. The control approach can be defined as operational control or financial control.

In line with the GHG Protocol, the inventory divides greenhouse gas emissions, calculated into CO₂ equivalents, into three scopes, where Scope 1 & 2 are deemed mandatory by the Protocol, while Scope 3 is encouraged but voluntary.

Scope 1: Direct GHG emissions from sources that are owned or controlled by the company. These sources are categorized in four groups: mobile combustion (e.g. company-owned vehicles), stationary combustion (e.g. furnace heating of facilities), process emissions (e.g. emissions from chemical production), and fugitive emissions (e.g. leakage of refrigerants).

Direct CO₂ emissions from the combustion of biomass, also called biogenic emissions, shall not be included in Scope 1 but should be reported separately.

Scope 2: Indirect GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated. The Protocol mandates that Scope 2 emissions must be reported in two ways: with location-based method and market-based method.

Location-based method reflects the average emissions intensity of grids on which energy consumption occurs, which is usually a mix between renewable and non-renewable energy sources. It derives emission factors mostly from grid-averages for defined geographic locations, including local, subnational, or national boundaries.

Market-based method reflects emissions from electricity that companies have purposefully chosen (or not chosen). It derives emission factors from contractual instruments, such as Guarantees of Origin (GoOs), Renewable Energy Certificates (RECs) and Power Purchase Agreements (PPAs). If the company has



purchased such contractual instruments, the market-based emissions will reflect this, whereas if such instruments are not purchased, the market-based emissions will reflect the residual emissions of the unclaimed electricity mix (often referred to as the “residual mix”), which tends to be much higher than the location-based emission factors.

Scope 3: Other indirect GHG emissions that occur upstream and downstream of the company’s activities. These emissions occur as a consequence of the activities of the company, but stem from sources not owned or controlled by the company. Scope 3 emissions are divided into 15 categories (see diagram below).

The input data used to calculate emissions in the three scopes can either be *primary data* in the form of activity data that the company retrieves itself or supplier-specific activity data that is retrieved from suppliers, or it can be *secondary data* in the form of averages for similar activities or transaction data retrieved through accounting systems. The GHG Protocol prefers activity data to be used for calculating emissions in Scope 1 & 2, as activity data will allow for a more granular analysis that will enable decision-making. However, activity data is hard to come by for Scope 3, which leads to incomplete inventories. Thus, average and transaction-based data can be used to populate the inventory.

In addition to allowing for input of activity data, our tool enables the calculation of transaction-based emissions using an environmentally-extended multi-regional input-output model (EE-MRIO) which estimates emissions resulting from the production and upstream supply chain activities of different sectors and products based on their geographical location. EEIO models are derived by allocating direct sectoral GHG emissions and relate these to the output level in the sector (sectoral intensities or sectoral Scope 1 emissions). All sectoral intensities are further interlinked with material and service input and output relations of all sectors in the world (66 individual economies + ROW group). By combining this model with company business data, we provide estimated cradle-to-gate GHG emissions, and these are particularly useful when screening emission hot-spots in a global value-chain perspective.

This dual approach - a bottom-up activity-based approach combined with a top-down transaction-based approach - allows companies to harness the combined strength of accuracy and completeness in their GHG inventory, thereby maximizing their ability to use the inventory for strategic decision-making in planning their decarbonization. Our SaaS platform always ensures that the GHG emissions are captured either with activity data or by the transaction-based method, double counting will not occur.

