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SVANEHØJ

GHG Scope 1 & 2

Baseline year Report

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tCO_{2e}

Greenhouse gas (GHG) emission results are shown in metric ton CO2-equivalents using representative Global Warming Potential (GWP) values unless other result units are stated.

1.200.000.75

This report list numbers in point decimal format.

= One million two hundred thousand point seventy-five.

%

This report list percentages rounded to the nearest whole number.

GHG Inventory

1. Introduction

Executive summary

This report presents the climate accounting baseline year result of Svanehøj's Scope 1 and Scope 2 emissions.

To assess the environmental profile of the organization, Svanehøj has conducted a full Scope 1 and 2 inventory relating their activities to greenhouse gas (GHG) emissions. This inventory shall serve as a reference for future initiatives on lowering the climate impact from business-related activities, in accordance with Svnaehøj's ambitions.

Therefore, the reason to carry out this corporate carbon footprint is to obtain a solid data foundation for decision-making on operational, tactical and strategic business management.

Scope 1 & 2 standard

Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004). This report content is presented upon requirements from chapter 9.

Figure 1.1: Absolute result Scope 1 & 2

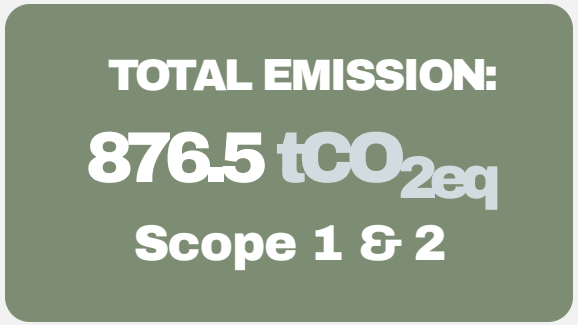


Figure 1.2: Split share of the Scope 1 & 2 inventory

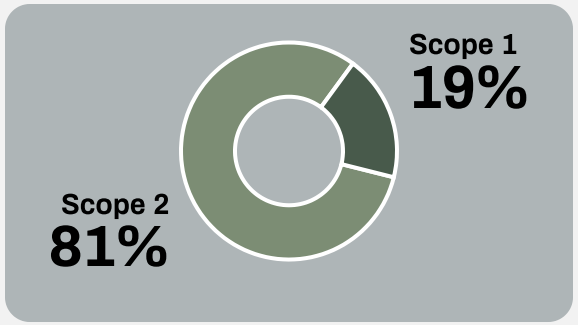
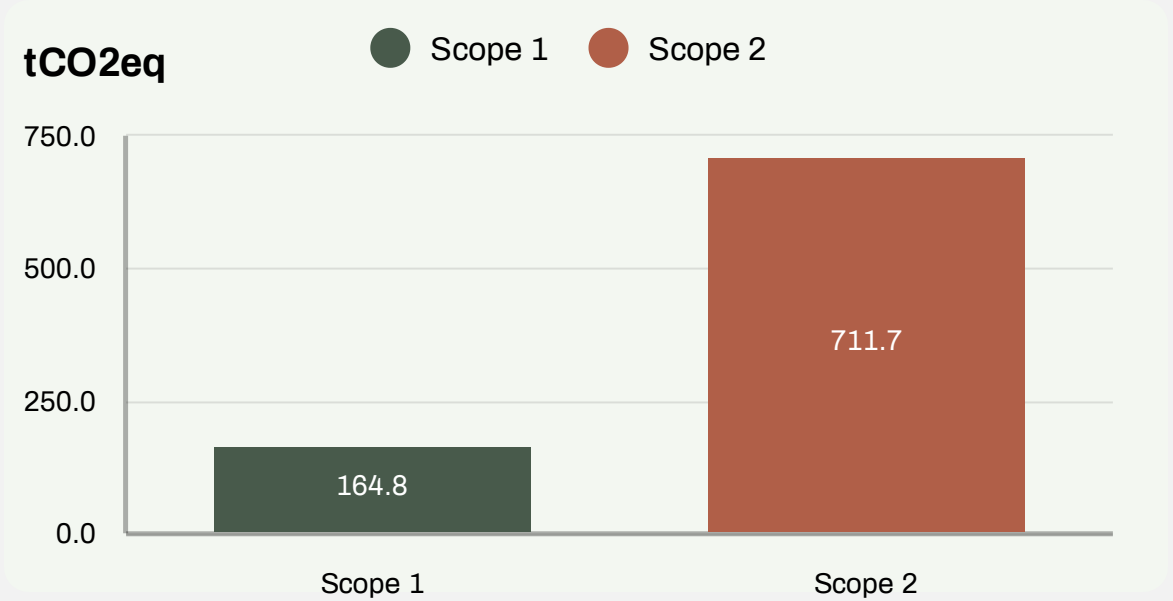


Figure 1.3: Absolute tCO_{2e} emissions of the scope 1 & 2 (market-based)



Organizational boundary: Operational Control

Baseline year: 01.01.2021 - 31.12.2021

Third-party verification: No

1. Introduction

Reporting principles

The voluntary ‘Greenhouse Gas Emissions Inventory Report’ hereinafter referred to as 'the GHG Report', describes the emissions and details of the inventory of GHGs for Svanehøj. The report is published to transparently disclose to stakeholders the environmental aspects of the company’s facilities, procedures and services. The report supports the purpose of measuring, monitoring, and managing the environmental impact and performance of Svanehøj.

This inventory is produced and provided by SustainX with the recommended principles and criteria from the GHG Protocol Corporate Standard revised edition (2004).

RELEVANCE

Company characteristics, Stakeholder needs, Organizational structures, Business context and relationships

COMPLETENESS

All emissions within their chosen inventory boundary and, If some emissions estimated insufficiently, document and justify these instances

CONSISTENCY

Consistently apply inventory boundaries and calculation methodologies, and document and justify any changes to these

TRANSPARENCY

A clear and factual manner to allow users to confidently interpret the data

ACCURACY

Credible enough to use in decision making and that uncertainties should be reduced as far as is possible

CONSERVATISM

Purpose and organisational boundaries

Purpose

It includes all required information, except those details that the standard does not consider mandatory and has not been considered relevant following the principle of relevance. This report presents the GHG inventory and calculations results, which were carried out with the input from an internal steering committee representing the company on its locations worldwide, supplying the inventory with relevant information.

The baseline calculation will serve the following purposes:

- Measuring and tracking company's GHG emissions;

- Increase the internal knowledge about the company's sustainability profile;

- Communication to a broader group of stakeholders.

Organisational boundaries

( ) Equity share

( ) Financial control

(X) Operational control

The organisational boundaries are set upon the consolidation approach of combining emissions data from separate operations in ‘Operational control’ by having the authority to introduce and implement operating policies. As Svanehøj has control over all internal operations, the company can greatly influence the reduction of emissions. The company has control over administrative costs and access to the necessary data for preparing the inventory.

Description of the reporting organization

Svanehøj is operating as an independent company, controlling its own operations and activities in all sites which is illustrated in a simplified diagram in figure 1.4 below.

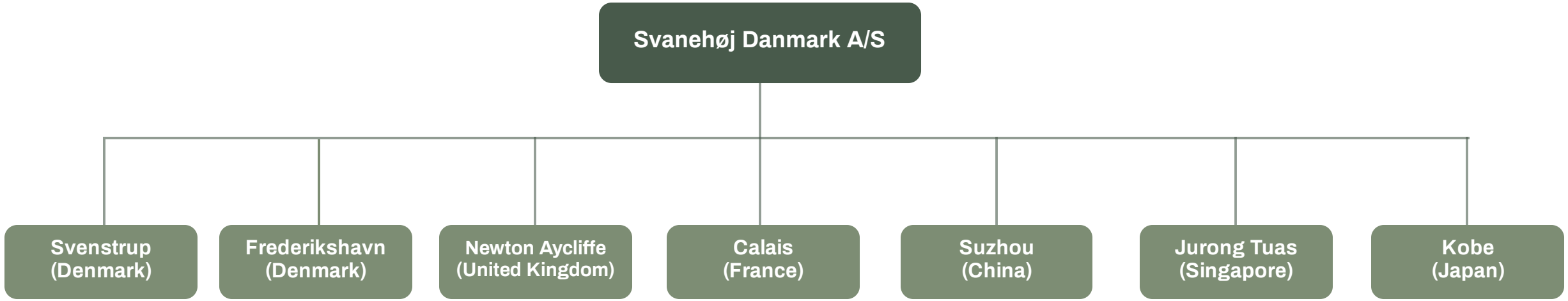


Figure 1.4: Organizational diagram

Operational boundaries

Period of coverage:
01.01.2021 to 31.12.2021.

Scope 1:
Includes all assets operated by Svanehøj and include all direct emissions resulting from activities hereof.

Scope 2:
Includes all facilities operated by Svanehøj and include all in-direct emissions resulting from activities hereof.

	Activity	Inclusion	Data completeness	Comment
Scope 1	Mobile comubstion (owned vehicles)	✔	Included 100% for all locations	
	Direct emissions from stationary combution	✔	Included 100% for all locations	
	Fugitive emissions	Not relevant	No fugitive emissions	
	Process emissions	✔	Included 100% for all locations	
Scope 2	Purchased electricity	✔	Included 100% for all locations	
	Purchased heating	✔	Included 100% for all locations	
	Purchased cooling	Not relevant	No purchased cooling	
Obligatory 'Out of scope emissions'	Biogenic emissions	✔	Included 100% for all locations	
Scope 3	Excluded as of now			We will calculate our Scope 3 emissions as the next step (to be carried out in 2023).

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Scope 1 & 2 baseline year inventory

2. Results

ABSOLUTE TOTAL EMISSION:

876.4 tCO_{2e}

(Market-based)

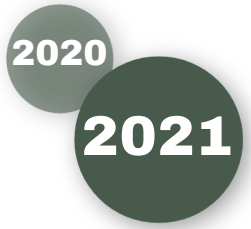
Baseline year, 2021

775.1 tCO_{2e} in 2020 (for comparison)

Inventory information

Base-year information

The baseline year, 2021, was chosen on behalf of being the most recent full calendar year with historical data.The threshold for a baseline recalculation is set to be: **5%** difference of GHG emissions in baseline inventory. For further explanation and context see section Re-calculation policy



Activity data

In the process of collecting inventory data for each included activity, a log has been made according to the data quality hierarchy, which can be seen in the methodology section. The data presented in this report are produced with with the ambition of achieving accuracy, which is credible for decision making, and uncertainties have been reduced as far as is possible. The inventory result split of data quality can be seen in the figure 2.1. See section Methodolgy & Quality for description of quality assessment.

Figure 2.1: Data quality for Scope 1-2 baseline year (market-based)

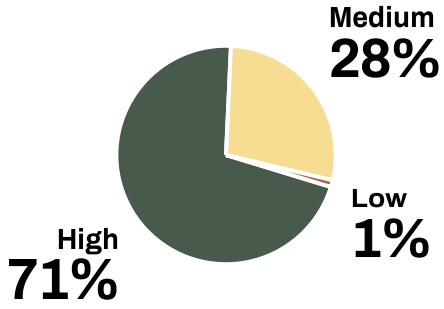


Figure 2.2: Data quality for Scope 1 categories

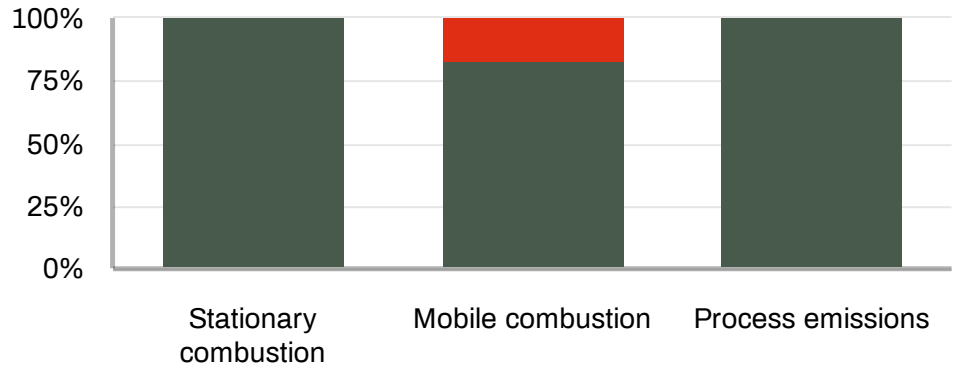
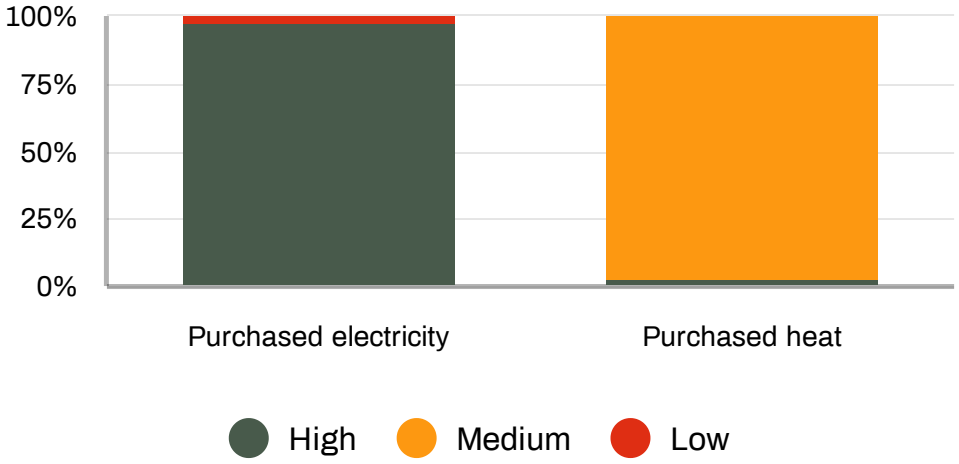


Figure 2.3: Data quality for Scope 2 (market-based) categories



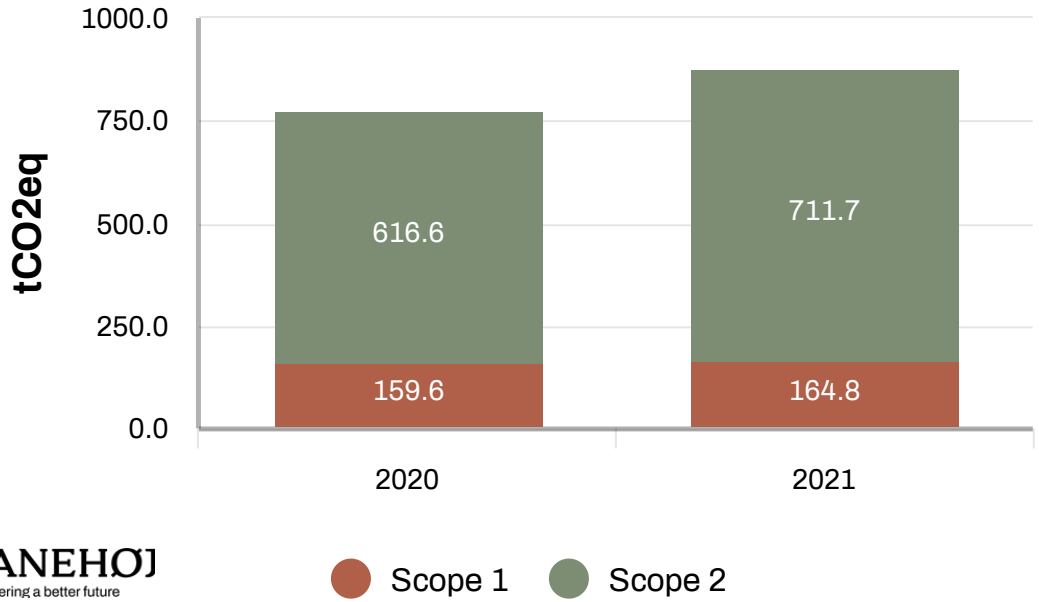
Though the category Purchased heat consists mostly of medium data quality it does not affect the total result because Purchased Electricy is the major source of emissions.

Total emissions

As a result of the full CO_{2e} inventory calculation, the absolute emissions of all activities performed by Svanehøj in Scope 1 & 2 are presented in figure 2.4 below. The absolute baseline result and future scope 1 & 2 results are reported with the use of the Market-based methodology. For further information on this, please visit the methodology section. 2020 has been used as a reference year to identify outliers. There have not been made any exclusions in the baseline year.

The small increase in emissions from 2020 to 2021 is related to increase in orders and because of covid-19 restrictions in 2020.

Figure 2.4: Total inventory emissions: Market-based results



Scope breakdown

The scope breakdown showcases the share of emissions relative to each scope (1 & 2) and according to the location- and market-based methodology.

In the baseline year 2021 Svanehøj is not using any type of guarantee of origin certificates for the purchase of electricity. As the Market-based emission factor is higher due to the residual electricity mix, a larger result in tCO_{2e} emissions is produced. It is planned to utilize Power Purchase Agreement with Addiotionality in future inventory accounting.

Figure 2.5: Scope distribution, Location-based

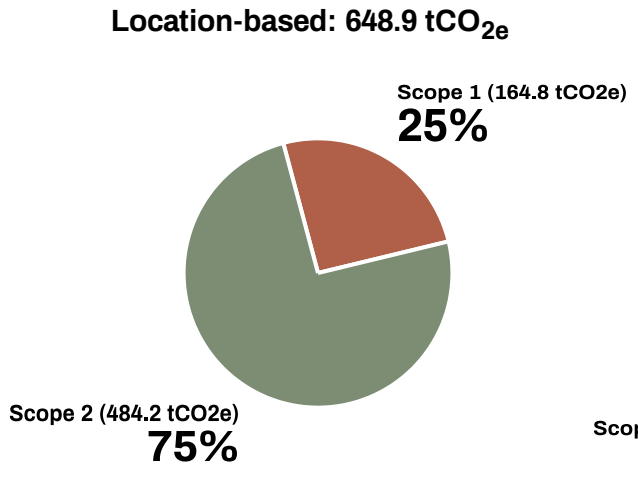
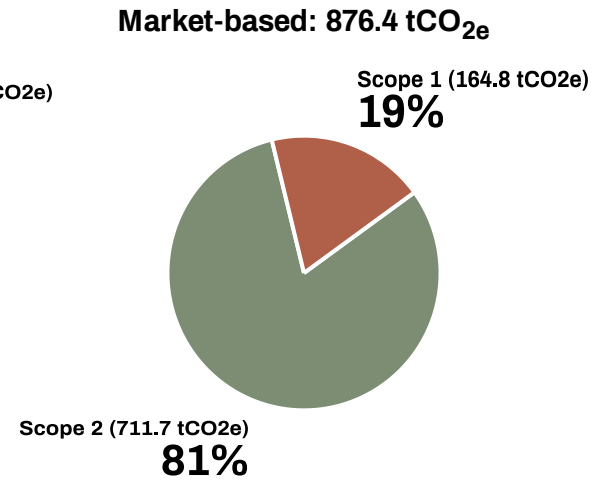


Figure 2.6: Scope distribution, Market-based



Info box:

It is suggested by the GHG Protocol to showcase results from both Location-based and Market-based methodologies, to show data transparently. Further, it showcases the relation between CO_{2e} emissions from electricity usage and grid factors, emphasizing the need for collaborations between private and public actors in the energy market.

Intensity ratios

The intensity ratios divide the absolute emissions of the location-based method into relative units of 4 selected business metrics of Svanehøj:

1) Revenue (mDKK);

2) number of employees (FTE);

Thousand production hours

The intensity ratios are useful when managing emissions according to performances or assets and can represent emissions relative to changes in company size and activities.

Info box:

Relative indicators are useful when making GHG reduction plans with intensity targets. Here, the target goal is to reduce the ratio of emissions relative to a business metric over time.

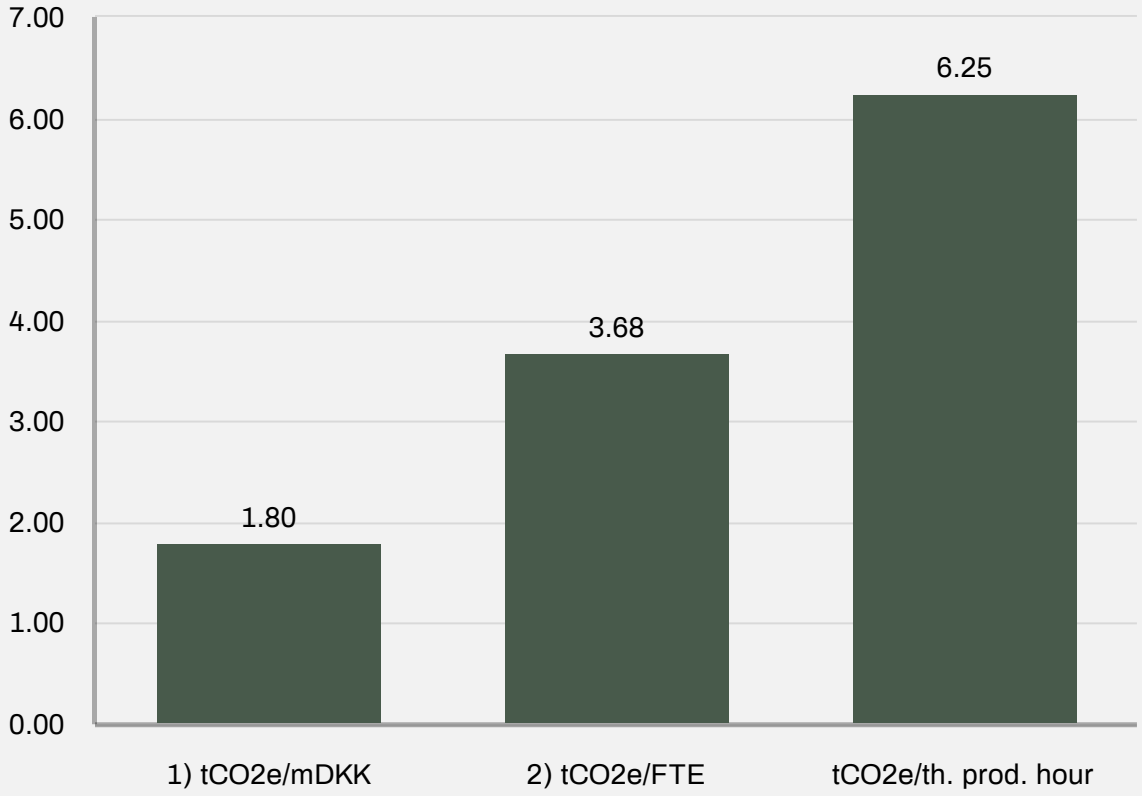


Figure 2.7: Intensity ratios on CO_{2e}-intensity on selected business metrics, Scope 1 & 2 (market-based)

Distribution of emissions

The distribution of emissions in the baseline year inventory are dominated by in-direct energy emissions from purchase of electricity by Svanehøj.

Purchased heat sees the second largest contribution also from in-direct energy emissions, stemming from the production site and office in Svenstrup.

Stationary combustion is the third largest emission source.

The distribution of emissions between categories in Scope 1 & 2 is illustrated below in figure 2.8.

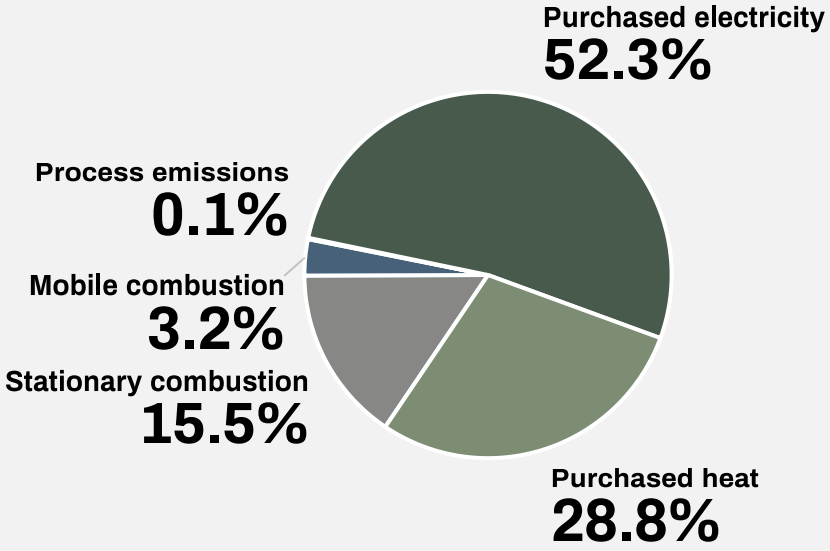


Figure 2.8: Distribution of absolute emissions in scope 1 & 2 categories (market-based)

Out of Scope emissions

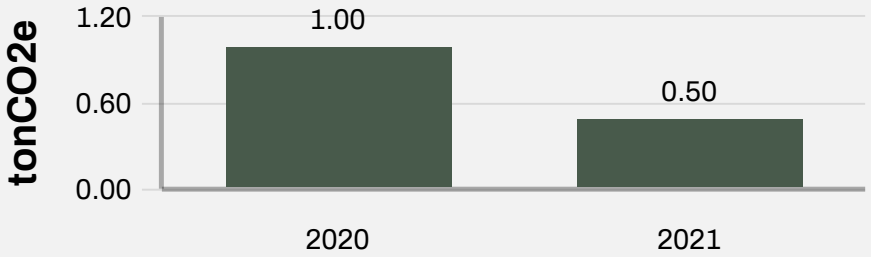


Figure 2.9: Out of Scope emissions in tonCO2e (biogenic emissions from combustion of fuels)

The biogenic emissions from combustion of fuels with a share of biofuels are illustrated in figure 2.9 above, to show data on emissions categorized as 'Out of Scope' transparently. The biognic emissions are calculated from the activity 'mobile combustion and the tCO_{2e} is derived from the share of biofuel blend in petrol and diesel. For more information on the accounting methodology, please visit the methodology section.

GHG Inventory

3. Methodology & Quality

Data inventory

To mange meta data, a data management plan has been produced in accordance with the recommendation from the GHG Protocol. Further, a controling document has been utilised to log information on data qualities relative to all emission sources owned and operated according to Scope 1 & 2.

Quality check have been ensured by utilizing the function divided principle, hence the data reporter was not responsible for data quality checks. The following factors were checked in accordance to dataproof: Unit, Collection, upload of dataproof, all 7 meta datapoints.

All activity data has been logged in accordance with the data quality hierachy shown in figure 3.2.

Controlling document content:

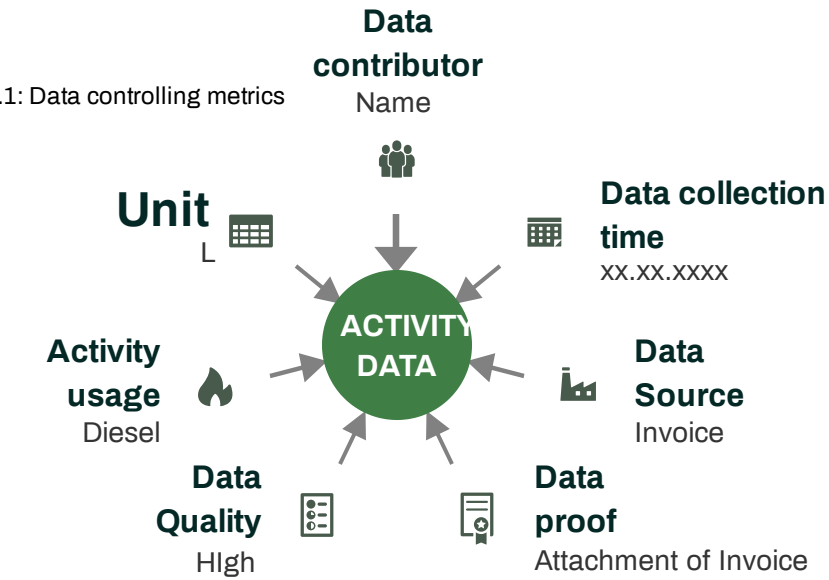
- Country (e.g. DK)
- City (e.g. Svenstrup)
- Site or Unit (Unique address of building, or registration number of vehicle or ID)
- Business unit (To more easily align/track with current internal financial reporting practices)
- Scope (Scope 1,2)
- Aspect (e.g. Scope aspect; electricity, district heating, mobile combustion etc.)
- Emitting activity (Which activity causes emissions, e.g. heating, electricity, forklifts)
- Activity usage (Consumed during activity; kWh, GJ, diesel, petrol)

  Unit (Metered or measured in; kWh, L, kg, etc)

Roles & responsibilities:

- **Reporter:** Assigned reporters are conducting the actual data reporting into the reporting software. The names of all the reporters and the specific measure-points they report on, have to be documented in the controlling document.
- **Controller:** Assigned controllers are responsible for the overall process and progress. The controllers are responsible for finding reporters, upholding reporting deadlines, and that reviewing of the activity data has been executed as part of the quality assurance
- **Reviewer**: Reviewers are responsible for acting as a second set of eyes on the reported activity data

Figure 3.1: Data controlling metrics



Primary data - inside the fence	Secondary data - outside the fence
Measured Directly measured on device or read from invoice	**Measured** Directly measured on device or read from invoice
Calculated Calculated from consumption data	**Calculated** Calculated from consumption data
Estimated Based on assumptions and calculations	**Estimated** Based on assumptions and calculations

Figure 3.2: Data quality hierachy

Greenhouse Gases

This report account for the six greenhouse gases covered by the Kyoto Protocol and the addition of a 7th GHG included in the GHG protocol Accounting and reporting standard amendment: "required greenhouse gases in inventories", which also states the use of the newest 100 year GWP value from IPCC: Fifth assessment report, 2014 (AR5)

The accounting of GHG emissions is done in accordance with the GHG Protocol and in relation to the Kyoto Protocol, which operationalises the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. Following the requirements of the GHG Protocol, the GHG emissions should be separately accounted for. However, as the inventory depends on available data from energy suppliers and agencies, this has not been possible to a full extent. It has been chosen to account for CO2 emissions in equivalents. Where emission factors in tCO2e where not obtainable, the conversion of Greenhouse Gases have been done with the use of the GWP values listed in figure 3.3.

Global warming potential (GWP) values relative to CO2 100 year time horizon						
CO_2	CO_2	CO_2	CO_2	CO_2	CO_2	CO_2
1	28	265	4 - 12400	7910 - 9540	23500	16100

Figure 3.3: GWP multiplication factor of each GHG to CO2 equivalent. HFCs and PFCs range due to variation of the gas. Source: IPCC Fifth Assessment Report, 2014 (AR5)

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Use of relevant emission factors

The emission factors for the calculation of the baseline inventory are selected upon best suitability and availabilty. Every emission factor have been assessed according to producing accurate results.

Selection criteria:

- The newest schemes are preferred, with actual rather than projected emission factors.

- A preferred use of reliable, internationally and nationally accepted databases for emission factors and conversion coefficients.

- A preferred use of the newest databases with updated emission factors.

- Preferred consistency in the use of the same database and not combined databases. However, the use of combined databases was pursued whenever data was not available in the primary database.

- A preferred use of the GWP rates from the newest IPCC assessment reports based on a 100-year timeframe.

Scope 1 Direct emissions		
Stationary combustion	CO2, CH4, N20	DEFRA, 2021 UK Government
Mobile combustion	CO2, CH4, N20	DEFRA, 2021 UK Government
Process emissions	CO2, CH4, N20	DEFRA, 2021 UK Government

Scope 2 In-direct emissions		
Purchased electricity	CO2, CH4, N20	Energinet, eloverlik.dk
Purchased heat	CO2, CH4, N20	Energistyrelsen, data om fjernvarmenettet

Figure 3.3: Used emission factors and respective sources

GHG Inventory

4. Policies

4. Policies

Re-calculation policy

If significant changes affecting emissions are identified during the preparation of future GHG Inventories the baseline year must be recalculated. Significant changes can be 1) company structural changes, 2) out- or in-sourcing of emitting activities, 3) access to better activity data or emission factors, or 4) discovering significant errors.

Thresholds for recalculation:

>5% of deviation from baseline year due to company changes that affects the comparability between the years.

Errors in data that are greater than 5% or affect the result by more than 5% in total or 10% in each category.

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