Climate Account for Dansk Træemballage A/S 2023

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Dansk Træemballage A/S

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Content

1 Background

Over the years, Dansk Træemballage A/S (DTE) has maintained a strong focus on sustainability and aspires to take a leading role in the industry within the framework of people, the environment, and economics. DTE adopts a systematic approach to environmental practices and has recently developed Environmental Product Declarations (EPDs) for a portion of the product portfolio.

Aligned with this commitment, DTE has decided to compile a climate account to support their systematic approach to climate action and investigate which activities contribute the most to carbon impact.

This approach will provide an understanding of the specific activities within DTE that drive climate effects. Subsequently, this knowledge can serve as a basis for identifying the most advantageous initiatives to achieve the greatest possible climate impact.

The climate account is thus an integral part of the company's commitment to demonstrate responsibility, transparency, and compliance with increasing expectations for documenting the company's impact on the environment.

In this Climate Account 2023, the entire DTE concern is represented with companies in Norway and Sweden.

2 Introduction

The climate account has been carried out for the entire concern of DTE, including the departments in Denmark and the companies in Norway and Sweden. The climate account covers total greenhouse gas emissions from the calendar year 2023.

The climate account has been prepared in accordance with the requirements of the GHG protocol[1], which is an internationally recognized standard for the preparation of climate accounts. The climate account have been prepared based on the GHG Protocol's *A Corporate Accounting and Reporting Standard*[2]*, Scope 2 Guidance*[3]*,* and the *Corporate Value Chain (Scope 3) Standard*[4]*.*

The GHG protocol prescribes that greenhouse gas emissions are assessed in the defined scopes (Scope 1, 2 and 3). These are briefly described below and illustrated in Figure 1.

- **Scope 1**: Direct emissions originating from DTE's activities and processes, such as fuel consumption in the company's vehicles and fuel for heating and processes.
- **Scope 2**: Indirect emissions from the production of the energy consumed by DTE from the collective utility grid, including electricity and district heating.

[1] https://ghgprotocol.org/
[2] https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf
[3] https://ghgprotocol.org/sites/default/files/standards/Scope%202%20Guidance_Final_Sept26.pdf
[4] https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf

- **Scope 3**: Indirect emissions from the supply chain, stemming from the extraction of raw materials, transportation, and the production of the materials, products, and services consumed by DTE.

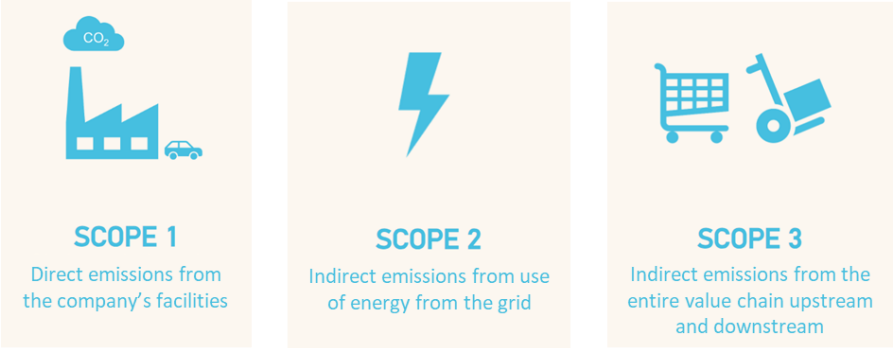


Figure 1 Visualization of scope 1, scope 2 and scope 3 emissions, in accordance with the GHG Protocol.

The results are calculated in CO_2 equivalents (CO_2e). Read more about "scopes" and "CO_2 equivalents" in the methodology section in Chapter 5, and more about the data basis in Chapter 5.4.

2.1 Reporting Period

The climate account is based on emissions from the calendar year 2023 (January to December 2023). The first climate account for DTE Denmark was prepared in 2022 for scope 1, 2 and 3. The climate account 2023 is the first year in which the entire organization, including the locations of DTE in Denmark, Norway, Sweden and Germany, is represented. Therefore, it will be used as the baseline year for future climate accounts and targets for DTE at concern level.

2.2 Operational and Organizational Scope

The climate account covers all Danish locations in DTE that have relevant consumption and activities that give rise to emissions, listed in Table 1.

Table 1 Companies and locations included in DTE's climate account 2023.

Country	Name of location	Facility	Location
Denmark	Ribe Savværk	Sawmill, pellet factory and component factory	6760 Ribe
	Ribe Pallefabrik	Production of wooden packaging	6760 Ribe
	Brande		7330 Brande
	Haastrup		5600 Faaborg
	Stampen		9330 Dronninglund
	Ulsa		5540 Ullerslev
	Hvidovre		2650 Hvidovre
Sweden	Aven Rabbalshede		45756 Rabbalshede
Norway	Aven Holmestrand		3083 Holmestrand
	Røyrås Treindustri		4646 Finsland
	Industripaller AS		2435 Braskereidfoss

The climate account is consolidated based on an operational control approach according to the GHG protocol. This means that emissions are placed in scope 1 and 2 if they are within the

operational control of DTE. Emissions from consumption in rented/leased assets (vehicles, premises, equipment, etc.) are thus reported in Scope 1 and 2.

2.3 Inclusions of Scope 1, 2 and 3

The following categories within scope 1 and scope 2 are relevant and therefore included in the climate accounts, listed in Table 2 below.

Table 2: Scope 1 and Scope 2 Consumption Included in the Climate Account for DTE.

Categories Included in the Climate Account	
Scope 1	• Diesel – and gasoline consumption in the company's own and leased vehicles. • Diesel consumption for machinery etc. for production. • Diesel and gas consumption for building heating.
Scope 2	• Electricity consumption. • District heating consumption.

The GHG Protocol prescribes that Scope 3 emissions are reported in 15 different categories. The detailed descriptions of these categories and their content according to the GHG Protocol can be found in Appendix 1. Of these 15 categories, six categories are included in the climate account, as described in Table 3.

Table 3: Scope 3 Categories Included in the Climate Account for DTE 2023.

Scope 3 Categories - Included	Description of Contents
Category 1: Purchased goods and services	Purchased products and services, including wood and other materials for production, as well as operational purchases, administration, etc.
Category 2: Capital Goods	Major purchases that are subsequently financially depreciated, such as machinery, etc.
Category 3: Fuel- and Energy-Related Activities	Emissions from electricity, district heating, and fuels not covered in emissions from Scope 1 and 2, including upstream emissions, distribution losses, etc.
Category 4: Upstream Transportation and Distribution	Transportation services by external transport suppliers for DTE, including the freight of purchased goods, internal transportation, and transportation of sold products to customers.
Category 5: Waste Generated in Operations	Emissions from the collection and treatment of waste generated by DTE, including general waste for incineration and metal for recycling, etc.
Category 6: Business Travel	Employee transport in employees' own cars for work-related purposes and business travel.

The GHG Protocol also prescribes that the climate account must include a justification for the *exclusion* of categories. These exclusions are presented in

Table 4, along with a rationale for why they are not relevant to the current climate account.

Table 4: Scope 3 Categories Excluded from the Climate Account for DTE 2023.

Excluded Scope 3 Categories	Justification for Exclusion in this Climate Account
7. Employee Commuting	Primary data for DTE's employee commuting is currently unavailable. Additionally, employee commuting is expected to constitute a small portion of DTE's total greenhouse gas emissions.
8. Upstream Leased Assets	Due to the operational consolidation approach, DTE's consumption in leased vehicles is included in Scope 1 and 2.
9. Downstream Transportation and Distribution	The majority of goods transportation to customers is included in Category 4: Upstream Transportation and Distribution. It is estimated that less than 5% of transportation to customers is carried out by the customers themselves, hence this category is not included.
10. Processing of Sold Products	DTE's products do not require additional processing and are not incorporated into other products before use. Therefore, this category is deemed irrelevant for DTE.
11. Use of Sold Products	Deemed irrelevant for DTE, as there is no direct or indirect energy consumption associated with the use of DTE's products, and there are no direct greenhouse gas emissions associated with product use.
12. End-of-Life Treatment of Sold Products	Deemed irrelevant for DTE, as emissions associated with the disposal of DTE's products are expected to constitute an insignificant portion of the total Scope 3 emissions. Moreover, the majority of the effects of recycling materials in DTE's products fall outside the scope of DTE's climate account.
13. Downstream Leased Assets	DTE has no downstream leased activities, and the category is therefore not relevant for the preparation of this climate account.
14. Franchises	DTE does not have franchises, and the category is therefore not relevant for the preparation of this climate account.
15. Investments	The category is not relevant for the preparation of this climate account.

2.4 Recalculation Practice

This climate report is the first climate report for the concern of DTE. The financial year 2023 will thus be used as the baseline year for future climate accounts and the year on which the emission profile will be based on.

In the event that, when preparing future climate accounts, major changes are made, errors are found or other factors are identified that would make it inaccurate to compare with this climate account, the emissions will have to be recalculated. Errors or factors that can significantly affect emissions may be, for example, structural changes in the organization, better data or significant data errors. Recalculation must be done if these factors affect comparability between years.

3 Results of the DTE concern 2023

The carbon footprint for DTE is presented below, calculated for Scope 1, 2, and 3 (According to the GHG Protocol) and their respective *subcategories* in 3.1

Section 3.2 presents the climate footprint categorized by *consumption areas.* The emissions are divided into the four consumption areas:

- Energy
- Transportation
- Operational procurement
- Production procurement

The four consumption areas are then broken down into a number of more detailed *consumption subcategories*.

Results from the location-based method are briefly presented in Section 3.3 where DTE's purchase of green certificates for electricity is not credited, and the emissions from electricity are calculated based on the average emissions per kWh in Denmark. The method for this is described in Section 5.2.

Section 4 presents the climate footprint divided into the individual DTE companies. Here the results are presented separately for:

- Dansk Træemballage A/S, Parent company (DTE Denmark)
- Aven Rabbalshede AB (Sweden)
- Aven Holmestrand AS(Norway)
- Industripaller AS (Norway)
- Røyrås Treindustri AS (Norway)

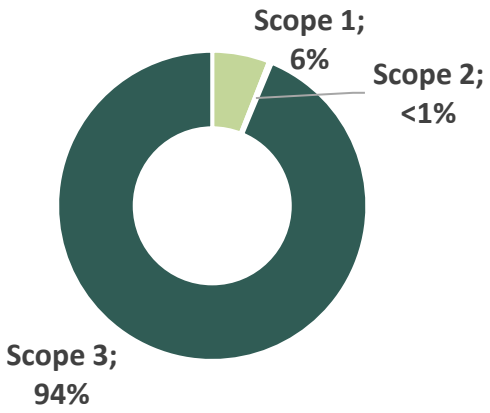
Section 4.1 presents the results for DTE Denmark, and the development of the climate footprint from 2022-2023.

In the methodology section (section 5), the data sources used for the consumption data from which the results are calculated are reviewed. Appendix 2 lists the sources of emission factors used to calculate the emissions.

3.1 Scope 1, 2 and 3

The total emissions from the concern of DTE in 2023 were 50.723 tons CO_2e, calculated using the market-based method. This accounts for the reduction in emissions from electricity due to DTE's purchase of green certificates, which is why emissions in Scope 2 are close to zero CO_2e. The method for this is described in Section 5.2.

The emissions are distributed across Scope 1, 2 and 3 as shown in Figur 2 and listed along with their respective subcategories in Table 5 below.



Figur 2 Greenhouse Gas Emisisons from DTE, distributed by Scope 1, 2 and 3

Table 5: Total greenhouse gas emissions from DTE in 2032 by Scope 1, 2 and 3 and subcategories. Calculated by the market-based method.

Emissions sources		Ton CO_2e	Share of emission
Scope 1		**3.025**	**6%**
Own and leased vehicles	Diesel and gasoline	3.024	100%
Gas consumption	Heating of buildings	1	<1%
Scope 2		**164**	**<1%**
Electricity	Electricity consumption from the grid (market-based method)	148	91%
District heating	District heating consumption from the grid	15	9%
Scope 3		**47.534**	**94%**
Category 1: Purchased goods and services	Purchased products and services, including wood and other materials for production, and purchases for operations, administration, etc.	35.471	75%
Category 2: Capital Goods	Major purchases that are subsequently depreciated, such as machinery	3.938	8%
Category 3: Fuel- and Energy-Related Activities	Emissions from electricity, district heating, and fuels not included in emissions from scope 1 and 2, including upstream emissions, distribution losses, etc.	1.239	3%
Category 4: Upstream Transportation and Distribution	Transport services by external transport providers for DTE, including freight of purchased goods, internal transport, and transport of sold goods to customers	6.819	14%
Category 5: Waste Generated in Operations	Emissions from the collection and treatment of waste generated in DTE, including household waste for incineration and metal for recycling, etc.	9	<1%
Category 6: Business Travel	Employee transport in employees' own cars for work purposes and business trips	58	<1%
Total		**50.723**	**100%**

3.2 Consumption areas

This section presents the results of the DTE concerns Climate Account for 2023 divided into *consumption areas* (according to the market-based method):

- Energy
- Transportation
- Operational procurement
- Production procurement

Each consumption area is further divided into several *consumption categories*, which detailed in the results presented in this section. Emissions for consumption areas span across Scope 1, 2 and 3, contributing to the same total emissions as presented in section 3. Table 6 and Figure 3 present the total emissions distributed across the four consumption areas.

Table 6: DTE concern's total emissions by consumption areas.

Areas of consumption	Ton CO2e	Share of emission
Production procurement	31.566	62%
Transportation	10.613	21%
Operational procurement	7.875	16%
Energy	669	1%
Total	**50.723**	**100%**

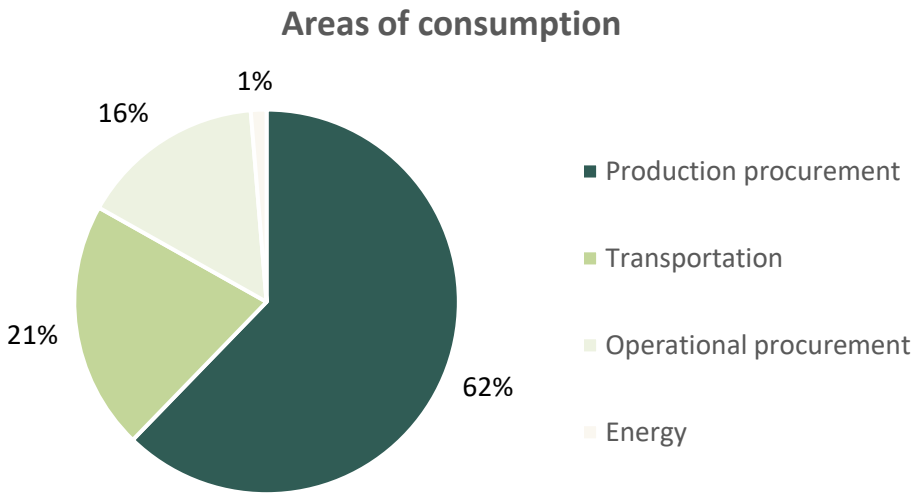


Figure 3 Total emissions from DTE concern in 2023 distributed by consumption areas.

In the following, the four consumption areas (energy, transport, operational purchases and production purchases) are broken down into more detailed consumption categories.

3.2.1 Production procurement

Table 7: DTE concern's total emissions from production procurement distributed by detailed consumption categories.

Production procurement	Ton CO_2e	Share of emissions
Wood chip blocks	12.373	39%
Nails and fittings	7.533	24%
Packaging wood	3.264	10%
Raw timber	2.976	9%
Pallets and pallet frames	2.583	8%
Wood boards	1.759	6%
Secondary raw materials and auxiliary materials	733	2%
Packaging	336	1%
Waste	9	<1%
Total	**31.566**	**100%**

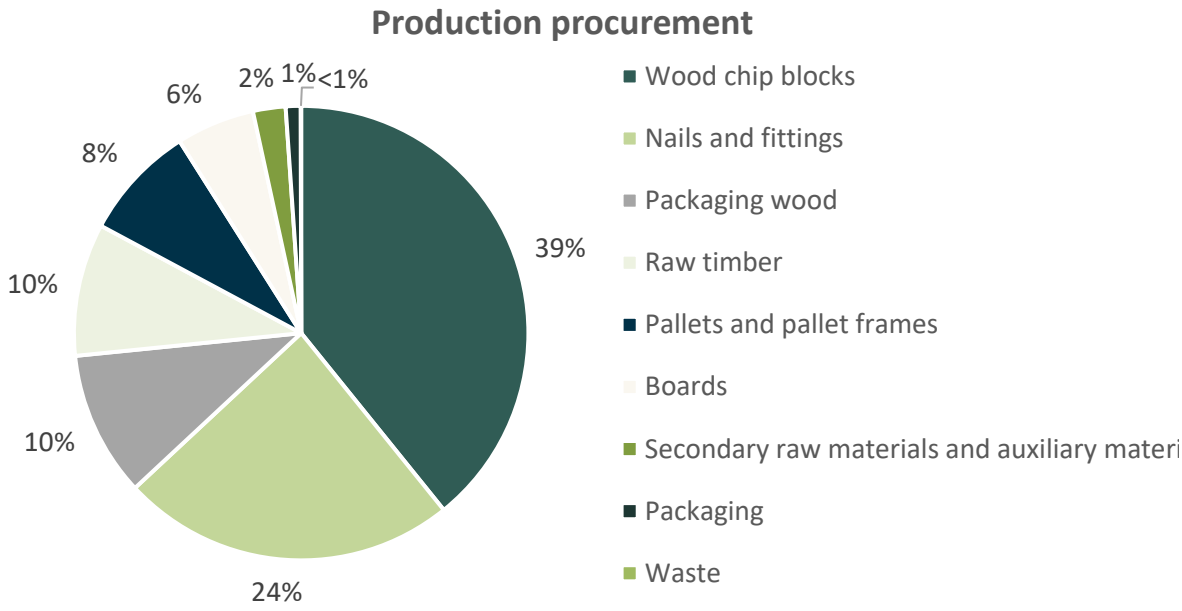


Figure 4 Greenhouse gas emissions from DTE concern's production procurement, distributed by consumption categories.

3.2.2 Transportation

Table 8: DTE concern's total emissions from transportation distributed by detailed consumption categories.

Transportation	Ton CO_2e	Share of emissions
Freight of purchased goods	4.604	43%
Company vehicles and machinery	3.764	35%
Freight of sold goods to customers	2.169	20%
Internal transportation	46	<1%
Employee transportation	29	<1%
Total	**10.613**	**100%**

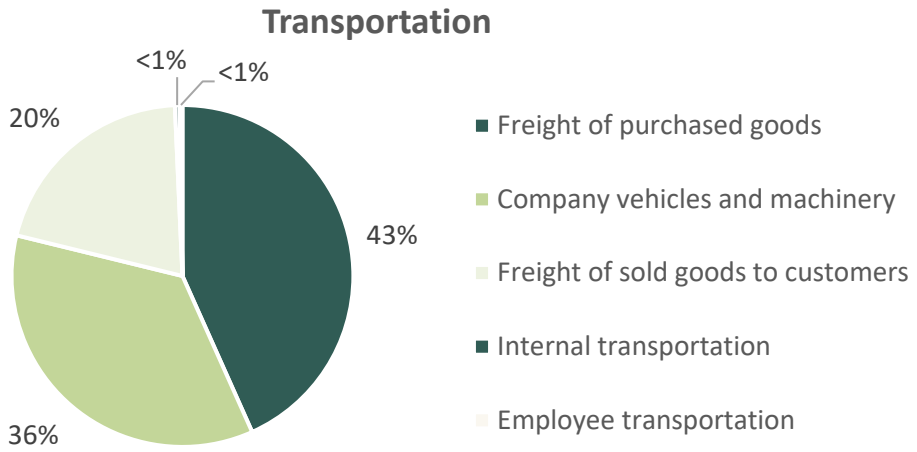


Figure 5 Emissions from DTE concern's transportation, distributed by consumption categories

3.2.3 Operational procurement

Table 9: DTE concern's total emissions from operational procurement distributed by detailed consumption categories.

Operational procurement	Ton CO_2e	Share of emissions
Operations and maintenance	4.750	60%
Vehicles, machinery, leasing, and maintenance	1.657	21%
Miscellaneous goods	456	6%
Miscellaneous services	310	4%
Administration	232	3%
Personnel-related purchases	176	2%
Information Technology	158	2%
Courses, travels, meetings, and catering	91	1%
Marketing and communication	45	1%
Total	**7.875**	**100%**

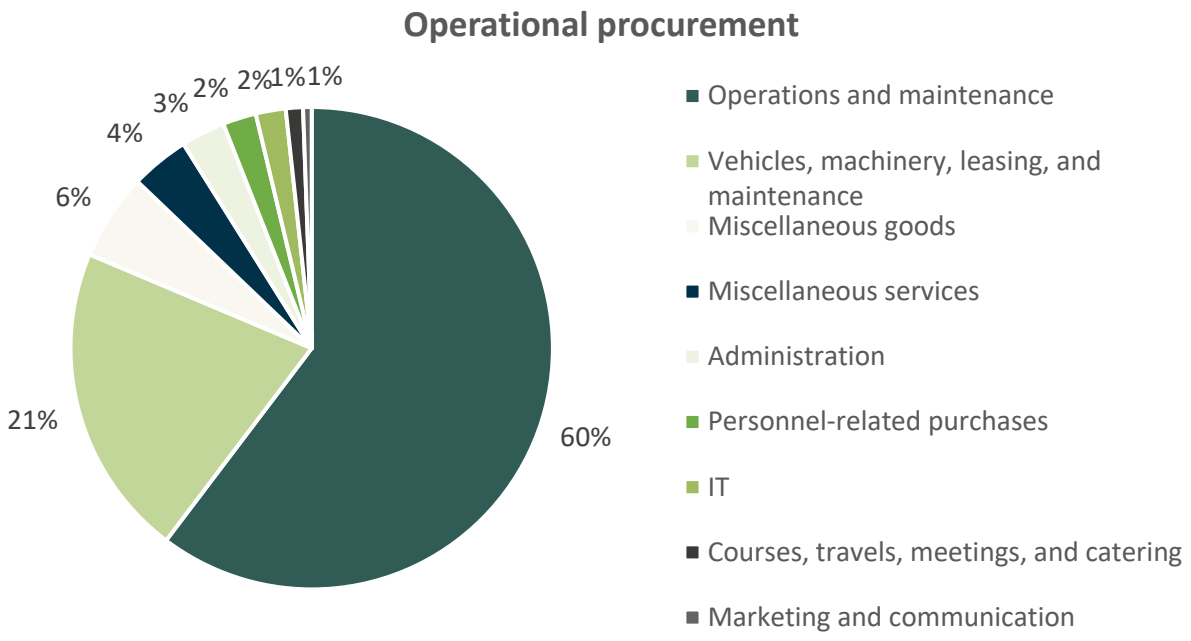


Figure 6 Greenhouse gas emissions from DTE concern's operational procurement, distributed by consumption categories.

3.2.4 Energy

Table 10: DTE concern's total emissions from energy consumption distributed by detailed consumption categories.

Energy consumption	Ton CO_2-e	Share of emissions
Electricity	643	96%
District heating	19	3%
Water	5	1%
Gas for heating	1	<1%
Total	**669**	**100%**

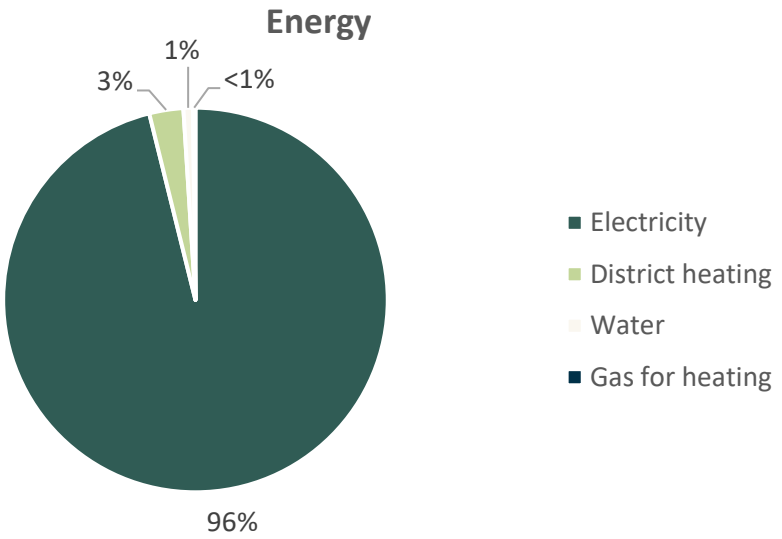


Figure 7 Greenhouse gas emissions from DTE concern's energy consumption, distributed by consumption categories.

The emissions from electricity consumption in scope 3 are primarily upstream emissions from the renewable energy for which DTE purchases certificates. This includes the construction and operation of wind farms and transmission losses from the grid. Additionally, there is a minor scope 2 emission from electricity for which no green certificates have been purchased.

3.3 Results using the location-based method

Table 11 shows the emissions from DTE divided into scope 1, 2 and 3 calculated according to the location-based method, cf. the GHG protocol. In this calculation, DTE's purchase of green certificates for electricity is not reimbursed, and the emissions from electricity are calculated based on the average emissions per kWh in Denmark. The GHG Protocol prescribes that results for both methods are presented for transparency. The methodology for this is described further in section 5.2.

Table 11 The total emissions from DTE concern in 2022 by Scope 1, 2 and 3, calculated using the location-based method.

Scope	Ton CO2e	Share of emissions
Scope 1	3.025	5%
Scope 2	3.815	7%
Scope 3	49.036	88%
Total	**55.876**	**100%**

4 Results by company

In 2023, DTE's climate account is expanded to include DTE's the Norwegian and Swedish companies.

Table 12 presents an overview of the total emissions from each of the Norwegian, Swedish and Danish departments.

Table 12: Ton CO_2e emissions for the entire DTE concern distributed across all locations in 2023.

Country	Company	Ton CO_2-e	Share of emissions
Sweden	Aven Rabbalshede AB	4.858	10%
Norway	Aven Holmestrand AS	5.242	10%
	Industripaller AS	1.534	3%
	Røyrås Treindustri AS	2.231	4%
Denmark, departments	Brande	4.028	8%
	Haastrup	5.374	11%
	Hvidovre	272	1%
	Ribe Pallefabrik	9.148	18%
	Ribe Savværk	9.919	20%
	Stampen	4.677	9%
	Ulsa	3.062	6%
	Without location*	375	1%
Total		**50.723**	**100%**

* A number of sources for emissions in Denmark could not be attributed to a specific location and are indicated as *without location*. The emissions of DTE's German office are also placed in this category.

In the following section, the results of the development from 2022-2023 of the Danish DTE departments' emissions are divided into scopes and consumption areas.

This is followed by a more detailed breakdown of emissions in 2023 from the individual Norwegian and Swedish DTE companies, divided into scopes and consumption areas.

Key Performance Indicators

The companies' emission profile varies from one another due to different sizes, production methods and product types. Therefore, a Key Performance Indicator (KPI) has been calculated for each company. The KPI is calculated as the company's total emission in tonnes of CO_2e in relation to the company's purchase of wood in the form of chipboards, packaging wood and boards in the current year. This has been evaluated as relevant as the purchase of wood is directly related to the companies' activity. For the Danish company, the amount of self-produced packaging wood (cut from raw timber at its own sawmill in Ribe) is also included.

The KPI helps to put the results in context and is particularly relevant when reporting over a number of years.

4.1 Results of DTE Denmark 2022-2023

In this section, the results are presented for the Danish DTE departments from 2022-2023. Only the development of the Danish operations of the DTE concern are presented, since the climate account was only expanded to include the Norwegian and Swedish companies of DTE in 2023.

4.1.1 Consumption areas

Table 13: Ton CO_2e emissions from the DTE Denmark divided by consumption areas 2022-2023

Areas of consumption	Ton CO_2e 2022	Ton CO_2e 2023	Development 2022-2023	Share of emissions (2023)
Production procurement	27.439	22.579	-18%	61%
Transportation	8.782	7.928	-10%	22%
Operational procurement	5.944	5.942	0%	16%
Energy	400	408	3%	1%
Total	**42.552**	**36.858**	**-13%**	**100%**
Ton CO_2e /1.000 m^3 wood products*	167	162	-3%	

*Only for the Danish company is self-produced packaging wood, processed from raw wood at their own sawmill, included.

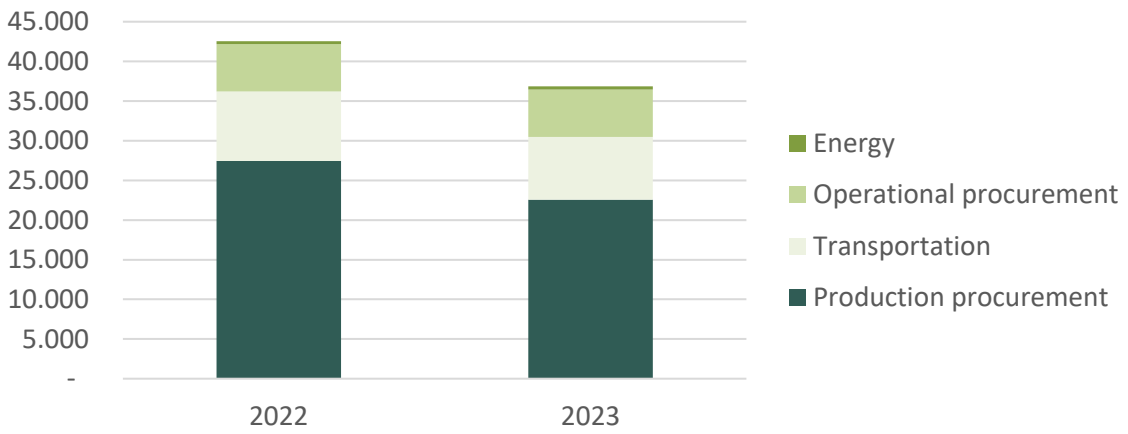


Figure 8 Development from 2022-2023 of DTE Denmark across the four consumption categories.

The lower emissions in 2023 are mainly due to lower sales activity and thus reduced purchasing due to the increased prices of goods in 2023.

4.1.2 Scopes

Table 14: Ton CO_2e emissions from the Danish departments divided by scopes in 2022-2023

Scopes	Ton CO_2e 2022	Ton CO_2e 2023	Development 2022-2023	Share of emissions (2023)
Scope 1	2.329	2.197	-6%	6%
Scope 2	2	15	>100%	<1%
Scope 3	40.221	34.646	-14%	94%
Total	**42.552**	**36.858**	**-13%**	**100%**

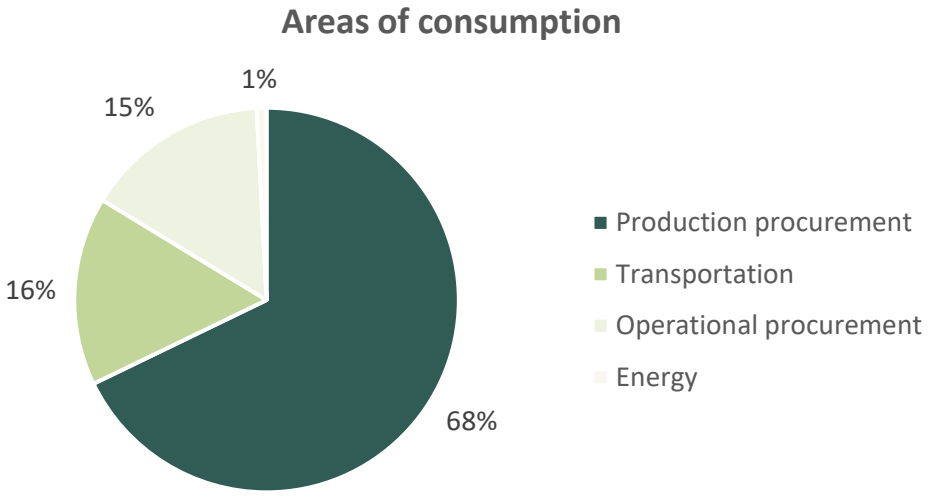
4.2 Aven Rabbalshede

The total emissions from Aven Rabbalshede are presented below, first divided into consumption areas (as described in section 3.2) and then divided into scopes (as described in section 3.1).

4.2.1 Consumption areas

Table 15: Ton CO_2e emissions from Aven Rabbalshede divided by consumption areas in 2023.

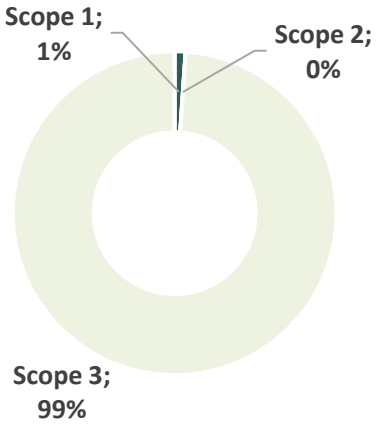
Areas of consumption	Ton CO_2e	Share of emissions
Production procurement	3.295	68%
Transportation	772	16%
Operational procurement	751	15%
Energy	40	1%
Total	**4.858**	**100%**
Ton CO_2e / 1.000 m^3 wood products	143	



4.2.2 Scopes

Table 16: Ton CO_2e emissions from Aven Rabbalshede divided by scopes in 2023.

Scope	Ton CO2e	Share of emissions
Scope 1	53	1%
Scope 2	0	0%
Scope 3	4.806	99%
Total	**4.858**	**100%**



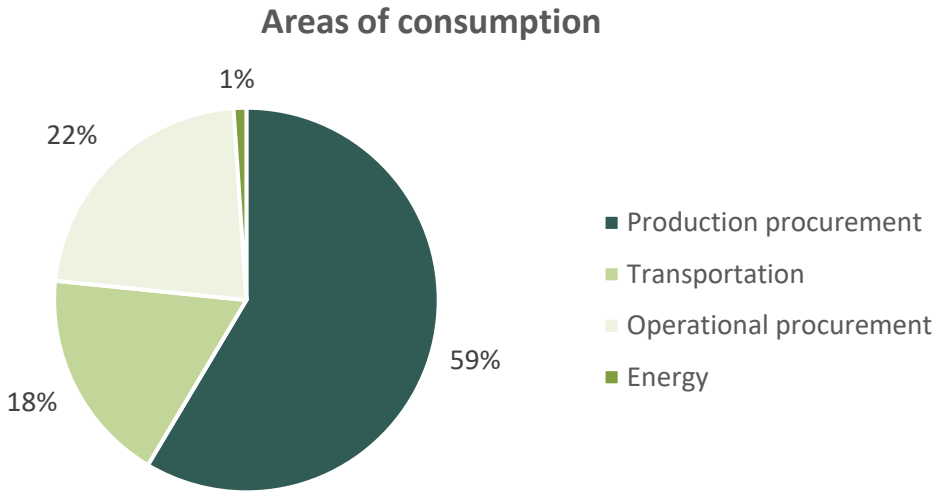
4.3 Aven Holmestrand

The total emissions from Aven Holmestrand are presented below, first divided into consumption areas (as described in section 3.2) and then divided into scopes (as described in section 3.1).

4.3.1 Consumption areas

Table 17: Ton CO_2e emissions from Aven Holmestrand divided by consumption areas in 2023.

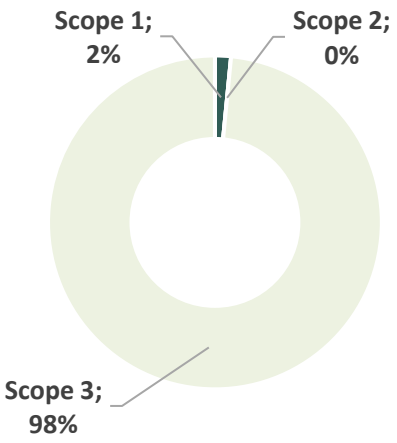
Areas of consumption	Ton CO_2e	Share of emissions
Production procurement	3.070	59%
Transportation	945	18%
Operational procurement	1.171	22%
Energy	56	1%
Total	**5.242**	**100%**
Ton CO_2e / 1.000 m^3 wood products	128	



4.3.2 Scopes

Table 18: Ton CO_2e emissions from Aven Holmestrand divided by scopes in 2023.

Scope	Ton CO_2e	Share of emissions
Scope 1	81	2%
Scope 2	0	0%
Scope 3	5.161	98%
Total	**5.242**	**100%**



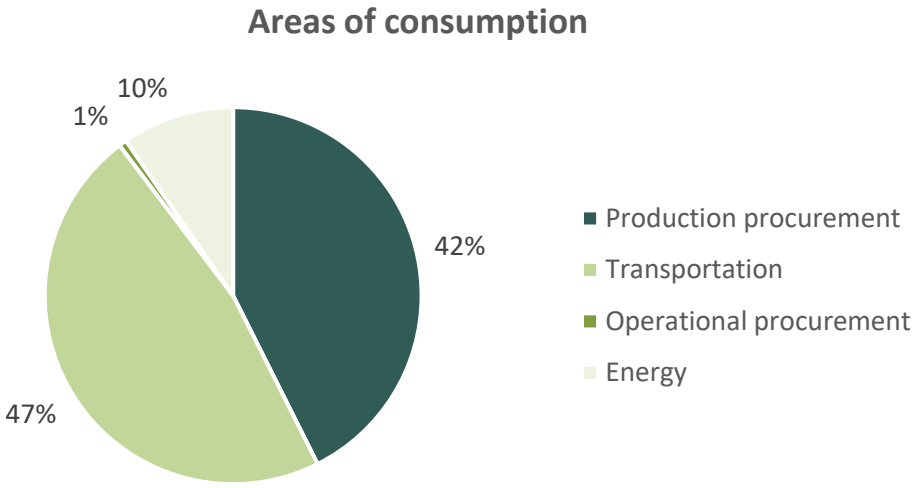
4.4 Industrial Pallets

The total emissions from industrial pallets are presented below, first divided into consumption areas (as described in section 3.2) and then divided into scopes (as described in section 3.1).

4.4.1 Consumption areas

Table 19: Ton CO_2e emissions from industrial pallets divided by consumption areas in 2023.

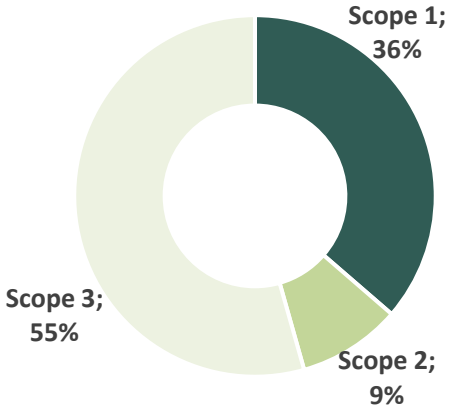
Areas of consumption	Ton CO_2e	Share of emissions
Production procurement	654	42%
Transportation	723	47%
Operational procurement	10	1%
Energy	148	10%
Total	**1.534**	**100%**
Ton CO_2e / 1.000 m^3 wood products	51	



4.4.2 Scopes

Tabel 20: Ton CO_2e emissions from industrial pallets divided by scopes in 2023.

Scope	Ton CO_2e	Share of emissions
Scope 1	558	36%
Scope 2	142	9%
Scope 3	834	55%
Total	**1.534**	**100%**



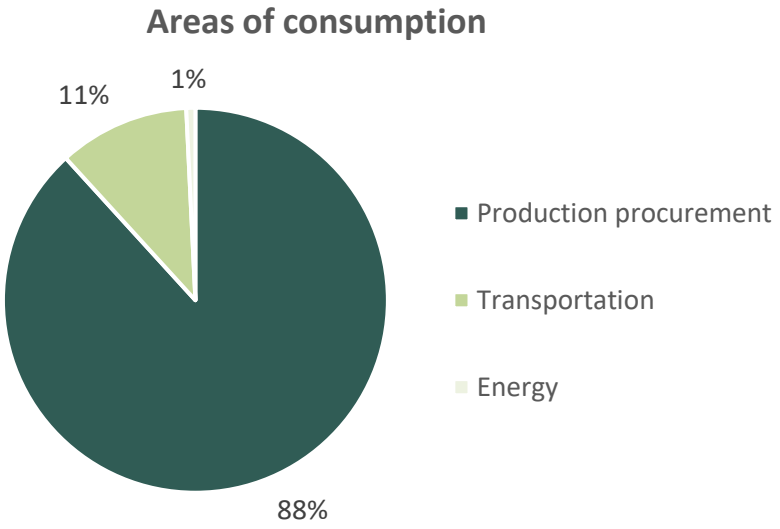
4.5 Røyrås

The total emissions from Røyrås are presented below, first divided into consumption areas (as described in section 3.2) and then divided into scopes (as described in section 3.1).

4.5.1 Consumption areas

Tabel 21: Ton CO_2e emissions from Røyrås divided by consumption areas in 2023.

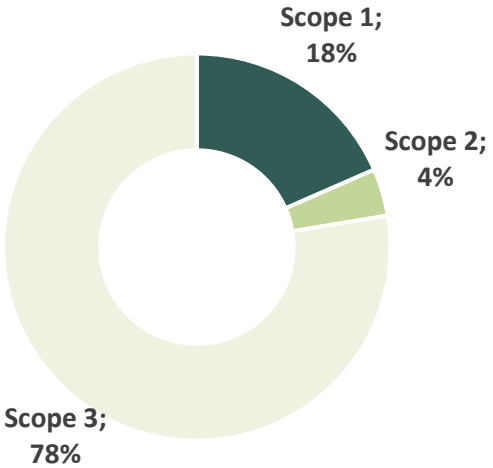
Areas of consumption	Ton CO_2e	Share of emissions
Production procurement	1.968	88%
Transportation	246	11%
Operational procurement	0	0%
Energy	17	1%
Total	**2.231**	**100%**
Ton CO_2e / 1.000 m^3 wood products	102	



4.5.2 Scopes

Tabel 22: Ton CO_2e emissions from Røyrås divided by scopes in 2023.

Scope	Ton CO_2e	Share of emissions
Scope 1	695	18%
Scope 2	148	4%
Scope 3	2.922	78%
Total	**3.765**	**100%**



5 Method

The following section describes the methods and data used in the preparation of the climate accounts for DTE 2023.

The climate account follows the Greenhouse Gas Protocol (GHG Protocol), an internationally recognized standard for compiling climate accounts. Results for climate calculations are reported in CO_2 equivalents (CO_2e) and include the following greenhouse gases, calculated in CO_2e based on the "Global Warming Potential"[5] for individual gases. The GWP values used are derived from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report.

- Carbon dioxide (CO_2) (GWP = 1 kg CO_2e/kg)
- Metane (CH_4) (GWP = 28 kg CO_2e/kg)
- Nitrous gas (N_2O) (GWP = 273 kg CO_2e/kg)

Other greenhouse gases (SF_6, HFCs, PFCs) are not included due to limitations in the applied emission factors, and their contributions are not considered relevant.

5.1 Scope 1, 2 and 3

This climate report follows the GHG protocol and CO_2 emissions are therefore calculated in the defined scopes:

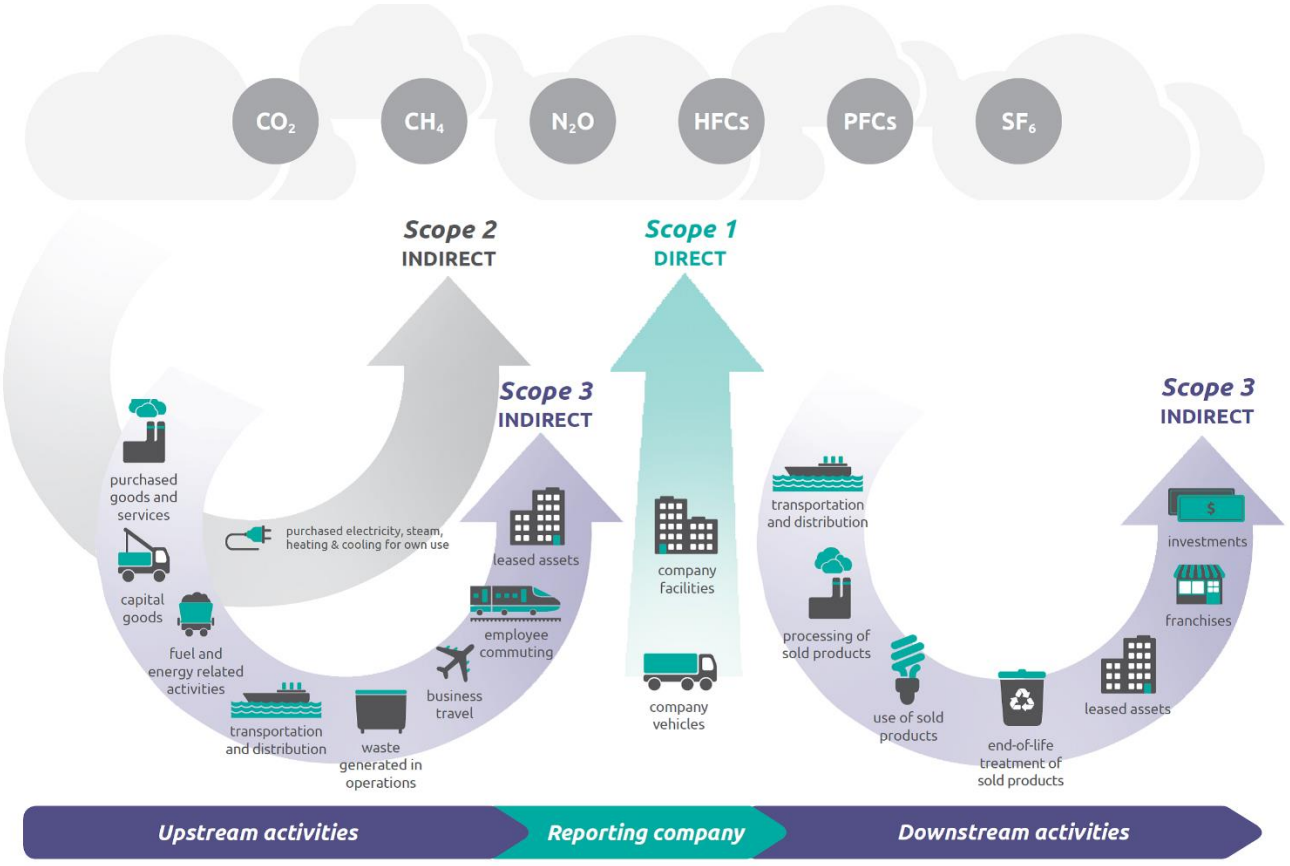
- **Scope 1** includes the direct emissions originating from DTE's activities and processes, such as fuel consumption in the company's vehicles and fuel for heating and processes.

- **Scope 2** includes the indirect emissions from the production of the energy DTE consumes from the collective utility network, including electricity and district heating.

- **Scope 3** includes the indirect emissions from the supply chain, stemming from the extraction of raw materials, transportation, and the production of materials, products, and services consumed by DTE.

The figure below provides a graphical representation of these scopes, as per the GHG Protocol:

[5] https://www.epa.gov/ghgemissions/understanding-global-warming-potentials



5.2 Location-based and market based method

When using the **location-based calculation method**, emissions are calculated using an emission factor equivalent to the average composition of the electricity grid, as depicted in Figure 9 Visual illustration of the location-based method of CO_2e emissions from electricity consumption.

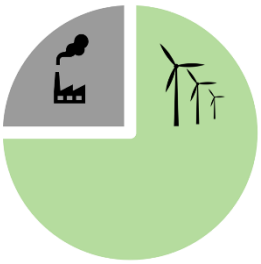


Figure 9 Visual illustration of the location-based method of CO_2e emissions from electricity consumption.

When using the **market-based calculation method** (also known as the electricity declaration) , trading of renewable energy on the market is taken into account, which affects the emission factor used.

Here, part of the electricity from renewable energy sources is purchased as green certificates (Figure Figure 10 Visual illustration of the market-based method of CO_2e emissions from electricity.-

a). The certificates are therefore not considered part of the energy mix on the grid for companies and organizations that do not contribute to green certificate trading (Figure Figure 10 Visual illustration of the market-based method of CO_2e emissions from electricity.-b).

Therefore, the emission factor used for those not trading green certificates is based on a higher share of non-renewable energy (Figure Figure 10 Visual illustration of the market-based method of CO_2e emissions from electricity.-c).

As a consequence, the electricity consumption of a company that does not buy green certificates is associated with a higher emission factor when using the market-based approach than when using the location-based approach.

If the company purchases green power from recognized programs, the emissions from electricity consumption in scope 2 are attributed zero emissions.

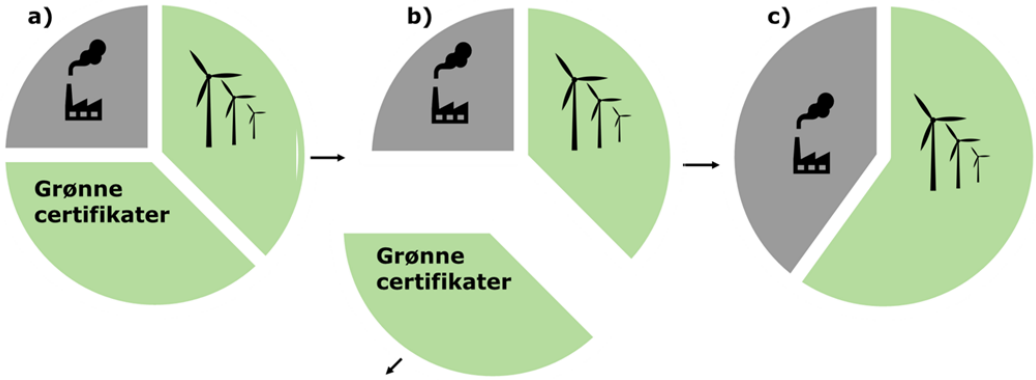


Figure 10 Visual illustration of the market-based method of CO_2e emissions from electricity.

The total electricity consumption at DTE in 2022/2023 was covered by green certificates, which is why results are primarily presented according to this calculation method.

5.3 Updating the emission factors

Emission factors from EXIOBASE have been updated to be calculated using the latest IPCC methodology (IPCC Sixth Assessment Report, AR6), which includes the latest updates on how greenhouse gas emissions are calculated, as developed by the Intergovernmental Panel on Climate Change (IPCC). In the 2022 Climate Account, EXIOBASE emission factors were calculated using the IPCC 2013 version (AR5). Updating the emission factors to the latest version of this methodology results in a general change in the results where monetary activity data is used, which is a smaller part of DTE's data foundation. Results from 2022 are recalculated so they are comparable.

5.4 Data

The majority of the data used to prepare this climate report has been obtained from DTE's internal systems. This includes energy data, transport data and accounting data. This applies to energy data, transportation data and accounting data. In cases where it has not been possible to extract data directly from DTE's accounting systems, data has primarily been obtained from invoices, including invoices for electricity, fuel and water consumption, as well as operational and production-related purchases.

The climate calculations have been made by NIRAS based on the total data set and emission factors obtained. Emission factors for calculating emissions from the individual activities/processes in DTE's operations and production can be found in Appendix 2. Table 23 describes the assumptions and data used in the calculation of emissions from scope 1, 2 and 3.

Table 23: Data basis, approach and assumptions for the climate calculations for DTE.

Categories	Data description	Unit	Data source and assumptions
Scope 1			
Owned and leased vehicles	Fuel consumed in DTE's own and leased vehicles.	Liters Km DKK/SEK/ NOK	in liters is obtained from the energy audit account or invoice. A share of fuel is calculated based on how many kilometers the respective vehicle has driven, calculated from internal systems. A smaller share of fuel is calculated from financial data (in DKK/NOK/SEK), on accounts where repairs are sometimes also included. From a conservative point of view, whole amounts are included, as there is no distribution key for what constitutes fuel and repairs respectively.
	LPG gas used in DTE's own trucks	Liters	Data obtained from energy audit data sheets, quantified in liters of gas.
Gas consumption	Consumption of natural gas for heating	m^3	Data obtained from data sheets from the energy audit, quantified in Nm^3 of natural gas.
Direct greenhouse gas emissions	-Not applicable-	-	-Not applicable-
Scope 2			
Electricity	Consumption of electricity	kWh	DTE Denmark: Data obtained from DTE's data hub, via API. The data includes electricity for heating (although not specified in the data). The total electricity consumption, quantified in kWh, in the Energy Audit is 1.4% higher than the total amount obtained from the data hub. DTE Norway/Sweden: Data obtained from invoive.
	Green certificates		RECS certificate from Seas-NVE has been received as documentation.
District heating	Consumption of district heating	GJ	Data obtained from data sheets from the energy audit, quantified in kWh.
Scope 3			
1 – Products and services	Consumption in monetary units	DKK/SEK/ NOK	Consumption in monetary units is extracted from DTE's internal accounting systems. Data is specified based on unique account numbers and processed separately at a detailed level. For Røyrås and industrial pallets, procurement data is partially collected manually through invoices.
	Consumption in physical units	M3/kg/pcs. etc.	The majority of consumption quantified in physical units is also obtained from DTE's accounting systems. Some consumption items are supplemented with assessments requested from DTE's suppliers.

			For Røyrås and industrial pallets, the data is collected manually through invoices from suppliers.
2 – Capital goods	Consumption in monetary units	DKK/SEK/ NOK	Consumption in monetary units is extracted from DTE's accounting systems and processed at a detailed level. Postings include significant purchases of assets that are subsequently depreciated.
3 – Fuel- and energy-related activities	The category is calculated based on data already quantified in scope 1 and 2.		See description of data for Scope 1 and 2.
4 – Upstream, transportation and distribution	Transportation of primary material procurement	Ton.km	Procurement data is extracted from DTE's internal systems/obtained from invoices. When data is retrieved, kilometers driven and quantity in kg are stated. If the quantity is measured in m^3, it is converted to tons using the conversion factor for density. If the specific transport distance is not measured by DTE, it is estimated via Google Maps for truck transport and ports.com for ship transport.
5 – Waste generated in the company	Waste	kg	Quantities distributed among individual fractions have been provided by the waste management company.
6 – Business travel	Transport in employees' own cars for professional use (driven kilometers).	Km/DKK	Where possible, data for transportation in employees' own company cars has been obtained from DTE's internal systems as the number of kilometers travelled. Data obtained from DTE's accounting data, quantified in monetary units (DKK), has been converted to kilometers driven based on the government's rate for driving allowance.
	Business travel and travel related to meetings.	DKK/SEK/ NOK	Consumption data has been extracted from DTE's accounting system in Danish kroner.

Appendix 1: Scope 3 categories

Scope 3 category	Category description
1. Purchased goods & services	Emissions associated with the extraction, production and transport of products and services purchased or acquired by the reporting company in the reporting year.
2. Capital goods	Emissions associated with the extraction, production and transport of capital goods purchased or acquired by the reporting company in the reporting year.
3. Fuel- and energy-related activities	Emissions associated with the extraction, production and transport of fuels and energy purchased or acquired by the reporting company in the reporting year and not already included in scope 1 or 2.
4. Upstream transportation & distribution	Emissions associated with the transport and distribution of products purchased by the reporting company in the reporting year between the company's tier 1 suppliers and the company's own operations (in vehicles and facilities not owned or controlled by the reporting company). Emissions associated with transport and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g. of products sold) and transport and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company).
5. Waste generated in operations	Emissions associated with the disposal and treatment of waste generated in the reporting company's operations during the reporting year (in facilities not owned or controlled by the reporting company).
6. Business travel	Emissions from employee transport for business-related activities in the reporting year (in vehicles not owned or operated by the reporting company).
7. Employee commuting	Emissions from the transport of employees between their homes and workplaces during the reporting year (in vehicles not owned or operated by the reporting company).
8. Upstream leased assets	Emissions from the operation of assets leased by the reporting organization (lessee) in the reporting year and not included in scope 1 and 2 - reported by lessee.
9. Downstream transportation & distribution	Emissions from the transport and distribution of products sold by the reporting company during the reporting year between the reporting company's operations and the end consumer (if not paid by the

	reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company).
10. Processing of sold products	Emissions from processing of intermediate products sold in the reporting year by downstream companies (e.g. manufacturers).
11. Use of sold products	End use of goods and services sold by the reporting organization in the reporting year.
12. End of life treatment of sold products	Emissions from disposal and treatment of waste from products sold by the reporting company in the reporting year at the end of the product life.
13. Downstream leased assets	Emissions from operation of assets owned by the reporting organization (lessor) and leased to other entities during the reporting year and not included in scope 1 and 2 - reported by the lessor
14. Franchises	Emissions from operating franchises in the reporting year and not included in scope 1 and 2 - reported by franchisor
15. Investments	Emissions from operating investments (including equity and debt investments and project financing) in the reporting year and not included in scope 1 and 2.

The categories are further described in the GHG Protocol:
https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf

Appendix 2: List of reference for emission factors

Name of emission factor	Reference
Relevant EXIOBASE categories (monetary units) [DKK/SEK/NOK]	EXIOBASE v3.3.16b2 (2011 hybrid), restructured with country breakdown, (released August 2020); Inflation rate: eurostat, HICP - Inflation rate
Relevant EXIOBASE categories (Physical units) [kg]	EXIOBASE v3.3.16b2 {DK} (product market, hybrid units, purchaser price)
Raw wood [m³]	ecoinvent 3.6, Sawlog and veneer log, softwood, measured as solid wood under bark {DE}| softwood forestry, spruce, sustainable forest management | Cut-off, U (af EPD-projekt, NIRAS 2021), density declared by DTE
Packaging wood [m³]	ecoinvent 3.6, Sawnwood, board, softwood, dried (u=10%), planed {NO}| planing, board, softwood, u=10% | Cut-off, U (of EPD-project, NIRAS 2021)
Pallets [1p]	ecoinvent 3.6, EUR-flat pallet {RER}| production | Cut-off, U (of EPD-project, NIRAS 2021))
Special pallets [1p]	ecoinvent 3.6, EUR-flat pallet {RER}| production | Cut-off, U (of EPD-project, NIRAS 2021))
Pallet frames [1p]	ecoinvent 3.6, Pallet collars {RER}| production | Cut-off, U (of EPD-project, NIRAS 2021))
Wood chip blocks, EUROBLOKCS [m³]	Chipboard Block {DE} (of EPD-projckt, NIRAS 2021), UIC 435-2 (2014), Correspondance with Euroblock Gmbh
Wod chip blocks, generic [m3]	ecoinvent 3.6
Boards/veneer[m³]	ecoinvent 3.6, Plywood, for indoor use {RER}| production | Cut-off, U (af EPD-projekt, NIRAS 2021) Ecoinvent 3 - allocation, cut-off by classification - unit)
Nails [kg]	Ecoinvent 3.6, Steel, low-alloyed, hot rolled {RER}| production | Cut-off, U 2019 og Wire drawing, steel {RER}| processing | Cut-off, U 2019 (af EPD-projekt, NIRAS 2021)
Fittings [kg]	Ecoinvent 3.6, Steel, low-alloyed, hot rolled {RER}| production | Cut-off, U 2019
Sawdust [kg]	Ecoinvent 3.8, (Sawdust, wet, measured as dry mass {Europe without Switzerland}| market for sawdust, wet, measured as dry mass | Cut-off, U)
Electricity consumption, DK [kWh]	Location based: Scope 2: Environmental declaration 2022 with 125 % method from "electricity decleration 2022". Scope 3: 5% Distribution losses - upstream emissions based on data from IPCC AR5 and the declared electricity mix in the environmental declaration. Market-based: Scope 2: Emissions - all electricity covered by green certificates. Scope 3: Upstream emissions from offshore wind turbines from IPCC Arc5
Electricity consumption, NO [kWh]	Product declaration for electricity suppliers who do not buy guarantees of origin, NVE
Electricity consumption, SE [kWh]	Boverkets climate data base
District heating	Environmental declaration District heating central Avedøre Holme 2022
Natural gas [Nm³]	Calculated from: Energistatistik 2020 (Energistyrelsen, 2021), UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2022), and Evida (2021)
Water [m³]	Calculated from EXIOBASE v3.3.16b2 (2020)

Diesel, car DK [liter]	Calculated from: Blending percentages (Energistyrelsen, 2022), Energistatistik 2022 (Energistyrelsen, 2023), and UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023)
Diesel, car [km]	Calculated from: DCE (2020), Persontransport efter transportmiddel (DST, 2020), og UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023)
Diesel, car [DKK]	Calculated from: Blending percentages (ENS, 2022), Energistatistik 2022 (Energistyrelsen, 2023), and UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023). Average consumer prices on diesel in 2023 (DrivkraftDanmark) Source: https://www.drivkraftdanmark.dk/priser/diesel-autodiesel/
Diesel, truck [km]	Calculated from: Energistatistik 2022, Energistyrelsen, s.59, and UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023), IPCC 6th Assessment Report, 2023 (AR6)
Truck transport [ton.km]	Ecoinvent proces: 1 tkm Transport, freight, lorry >32 metric ton, EURO6 {RER}| transport, freight, lorry >32 metric ton, EURO6 | Cut-off, U (af projekt EPD_DTE 2021)
El, car [km]	Calculated from: (Region Hovedstaden, 2024, Elbilers klimapåvirkning), Energinet, Miljøvaredeklaration 2022 (https://energinet.dk/media/21bh2lh4/milj%C3%B8deklarationer-2022-med-revision.pdf), og UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023)
Gasoline, car [km]	Calculated from: DCE (2020), Persontransport efter transportmiddel (DST, 2020), UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023)
Hybrid, car [km]	Calculated from: Environmental impacts of future urban deployment of electric vehicles: assessment framework and case study of Copenhagen for 2016–2030 (Bohnes et al., 2017), Energistatistik 2022, and UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2023)
Diesel (17%) [liter]	NS-EN ISO 14083:2023 table K1
Gasoline (17%) [liter]	NS-EN ISO 14083:2023 table K1
Ship transportation [ton.km]	Ecoinvent proces: 1 tkm Transport, freight, sea, bulk carrier for dry goods {GLO}| transport, freight, sea, bulk carrier for dry goods | Cut-off, U (af projekt EPD_DTE 2021)
Truck gas [kg]	UK Government GHG Conversion Factors, DEFRA dataset 2021 (WTW)
Driving allowance [DKK]	Calculated from: DCE (2020), UK Government GHG Conversion Factors for Company Reporting (DEFRA, 2022) and Base Carbone v17 (ADEME, 2019)
Waste treatment – Scenarios [kg]	Direct from EXIOBASE v3.3.16b2 (2020) or calculated EMF from EXIOBASE v3.3.16b2 (2020).