

Carbon Accounting Report 2020

This report provides an overview of the organisation's greenhouse gas (GHG) emissions, which is an integrated part of the organisation's climate strategy. Carbon accounting is a fundamental tool in identifying tangible measures to reduce GHG emissions. The annual carbon accounting report enables the organisation to benchmark performance indicators and evaluate progress over time.

This report comprises the following organisational units:

The input data is based on consumption data from internal and external sources, which are converted into tonnes CO₂-equivalents (tCO₂e). The carbon footprint analysis is based on the international standard; *A Corporate Accounting and Reporting Standard*, developed by the Greenhouse Gas Protocol Initiative (GHG Protocol). The GHG Protocol is the most widely used and recognised international standard for measuring greenhouse gas emissions and is the basis for the ISO standard 14064-1.

Reporting Year Energy and GHG Emissions

Emission source	Description	Consumption	Unit	Energy (MWh)	Emissions tCO ₂ e	% share
Transportation total				322.6	73.8	0.9 %
Diesel (NO)	201481 Thon Kjoepesenter Midt AS	217.0	liters	2.3	0.5	-
Diesel (NO)	201490 Thon Kjoepesenter Nord AS	1,832.0	liters	19.1	4.0	-
Diesel (NO)	201460 Droebak City AS	1,838.0	liters	19.2	4.0	-
Diesel (NO)	101530 Thon Storo AS	2,181.0	liters	22.7	4.8	0.1 %
Diesel (NO)	101501 OTE Eiendom AS	762.0	liters	7.9	1.7	-
Diesel (NO)	101515 Gardermoen Park AS	179.0	liters	1.9	0.4	-
Diesel (NO)	101500 Olav Thon Eiendomsselskap ASA	715.0	liters	7.5	1.6	-
Diesel (NO)	104540 Time Park Service AS	3,372.0	liters	35.1	7.4	0.1 %
Diesel (NO)	203498 Amfi Drift AS	1,311.0	liters	13.7	2.9	-
Diesel (NO)	201476 Thon Kjoepesenter Soer AS	128.0	liters	1.3	0.3	-
Diesel (NO)	101532 Bergen Storsenter AS	103.0	liters	1.1	0.2	-
Petrol	201481 Thon Kjoepesenter Midt AS	-	liters	-	-	-
Petrol	201490 Thon Kjoepesenter Nord AS	117.0	liters	1.1	0.3	-
Petrol	201460 Droebak City AS	-	liters	-	-	-
Petrol	101530 Thon Storo AS	-	liters	-	-	-
Petrol	101501 OTE Eiendom AS	36.0	liters	0.3	0.1	-
Petrol	101515 Gardermoen Park AS	271.0	liters	2.6	0.6	-
Petrol	101500 Olav Thon Eiendomsselskap ASA	58.0	liters	0.6	0.1	-
Petrol	104540 Time Park Service AS	2,938.0	liters	28.2	6.8	0.1 %
Petrol	203498 Amfi Drift AS	16,429.0	liters	157.7	38.0	0.5 %
Petrol	201476 Thon Kjoepesenter Soer AS	41.0	liters	0.4	0.1	-
Petrol	101532 Bergen Storsenter AS	-	liters	-	-	-
Scope 1 total				322.6	73.8	0.9 %
Electricity total				114,681.7	4,702.0	57.2 %
Electricity Nordic mix		114,681,718.0	kWh	114,681.7	4,702.0	57.2 %
Scope 2 total				114,681.7	4,702.0	57.2 %
Waste total				-	3,437.2	41.8 %
Residual waste, incinerated		6,437,923.0	kg	-	3,231.8	39.3 %
Residual waste, recycled		8,918,011.0	kg	-	190.0	2.3 %
Residual waste, landfill		35,273.0	kg	-	15.4	0.2 %
Business travel total				-	5.9	0.1 %
Continental/Nordic, RF	204497 Amfi Kreativ AS	9,260.0	pkm	-	1.4	-
Continental/Nordic, RF	101530 Thon Storo AS	1,036.0	pkm	-	0.2	-
Continental/Nordic, RF	101560 Aasane Storsenter DA	-	pkm	-	-	-
Continental/Nordic, RF	201011 Amfi Bygg Roseby AS	-	pkm	-	-	-
Domestic, RF	204497 Amfi Kreativ AS	15,710.0	pkm	-	3.8	-
Domestic, RF	101530 Thon Storo AS	-	pkm	-	-	-
Domestic, RF	101560 Aasane Storsenter DA	653.0	pkm	-	0.2	-
Domestic, RF	201011 Amfi Bygg Roseby AS	1,403.0	pkm	-	0.3	-
Scope 3 total				-	3,443.2	41.9 %
Total				115,004.3	8,219.0	100.0 %

Reporting Year Market-Based GHG Emissions

Category	Unit	2020
Electricity market-based	tCO ₂ e	30,161.3
Scope 2 market-based	tCO ₂ e	30,161.3
Total market-based	tCO ₂ e	33,678.3

Annual GHG Emissions

Category	Description	2018	2019	2020	% change from previous year
Transportation total		-	-	73.8	-
Diesel (NO)	201481 Thon Kjoepesenter Midt AS	-	-	0.5	100.0 %
Diesel (NO)	201490 Thon Kjoepesenter Nord AS	-	-	4.0	100.0 %
Diesel (NO)	201460 Droebak City AS	-	-	4.0	100.0 %
Diesel (NO)	101530 Thon Storo AS	-	-	4.8	100.0 %
Diesel (NO)	101501 OTE Eiendom AS	-	-	1.7	100.0 %
Diesel (NO)	101515 Gardermoen Park AS	-	-	0.4	100.0 %
Diesel (NO)	101500 Olav Thon Eiendomsselskap ASA	-	-	1.6	100.0 %
Diesel (NO)	104540 Time Park Service AS	-	-	7.4	100.0 %
Diesel (NO)	203498 Amfi Drift AS	-	-	2.9	100.0 %
Diesel (NO)	201476 Thon Kjoepesenter Soer AS	-	-	0.3	100.0 %
Diesel (NO)	101532 Bergen Storsenter AS	-	-	0.2	100.0 %
Petrol	201481 Thon Kjoepesenter Midt AS	-	-	-	100.0 %
Petrol	201490 Thon Kjoepesenter Nord AS	-	-	0.3	100.0 %
Petrol	201460 Droebak City AS	-	-	-	100.0 %
Petrol	101530 Thon Storo AS	-	-	-	100.0 %
Petrol	101501 OTE Eiendom AS	-	-	0.1	100.0 %
Petrol	101515 Gardermoen Park AS	-	-	0.6	100.0 %
Petrol	101500 Olav Thon Eiendomsselskap ASA	-	-	0.1	100.0 %
Petrol	104540 Time Park Service AS	-	-	6.8	100.0 %
Petrol	203498 Amfi Drift AS	-	-	38.0	100.0 %
Petrol	201476 Thon Kjoepesenter Soer AS	-	-	0.1	100.0 %
Petrol	101532 Bergen Storsenter AS	-	-	-	100.0 %
Scope 1 total		-	-	73.8	100.0 %
Electricity total		-	-	4,702.0	-
Electricity Nordic mix		-	-	4,702.0	100.0 %
Scope 2 total		-	-	4,702.0	100.0 %
Waste total		-	-	3,437.2	-
Residual waste, incinerated		-	-	3,231.8	100.0 %
Residual waste, recycled		-	-	190.0	100.0 %
Residual waste, landfill		-	-	15.4	100.0 %
Business travel total		-	-	5.9	-
Continental/Nordic, RF	204497 Amfi Kreativ AS	-	-	1.4	100.0 %
Continental/Nordic, RF	101530 Thon Storo AS	-	-	0.2	100.0 %
Continental/Nordic, RF	101560 Aasane Storsenter DA	-	-	-	100.0 %
Continental/Nordic, RF	201011 Amfi Bygg Roseby AS	-	-	-	100.0 %
Domestic, RF	204497 Amfi Kreativ AS	-	-	3.8	100.0 %
Domestic, RF	101530 Thon Storo AS	-	-	-	100.0 %
Domestic, RF	101560 Aasane Storsenter DA	-	-	0.2	100.0 %
Domestic, RF	201011 Amfi Bygg Roseby AS	-	-	0.3	100.0 %
Scope 3 total		-	-	3,443.2	100.0 %
Total		-	-	8,219.0	100.0 %
Percentage change		-	-	100.0 %	

Annual energy consumption (MWh) Scope 1 & 2

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Annual Market-Based GHG Emissions

Category	Unit	2018	2019	2020
Electricity market-based	tCO ₂ e	-	-	30,161.3
Scope 2 market-based	tCO ₂ e	-	-	30,161.3
Total market-based	tCO ₂ e	-	-	33,678.3
Percentage change		-	-	100.0 %

Methodology and sources

The Greenhouse Gas Protocol initiative (GHG Protocol) was developed by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). This analysis is done according to *A Corporate Accounting and Reporting Standard Revised edition*, currently one of four GHG Protocol accounting standards on calculating and reporting GHG emissions. The reporting considers the following greenhouse gases, all converted into CO₂-equivalents: CO₂, CH₄ (methane), N₂O (laughing gas), SF₆, HFCs, PFCs and NF₃.

For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share approach and the control approach. The most common consolidation approach is the control approach, which can be defined in either financial or operational terms.

The carbon inventory is divided into three main scopes of direct and indirect emissions.

Scope 1 includes all direct emission sources. This includes all use of fossil fuels for stationary combustion or transportation, in owned and, depending on the consolidation approach selected, leased, or rented assets. It also includes any process emissions, from e.g. chemical processes, industrial gases, direct methane emissions etc.

Scope 2 includes indirect emissions related to purchased energy; electricity and heating/cooling where the organisation has operational control. The electricity emission factors used in Cemasys are based on national gross electricity production mixes from the International Energy Agency's statistics (IEA Stat). Emission factors per fuel type are based on assumptions in the IEA methodological framework. Factors for district heating/cooling are either based on actual (local) production mixes, or average IEA statistics.

In January 2015, the GHG Protocol published new guidelines for calculating emissions from electricity consumption. Primarily two methods are used to "allocate" the GHG emissions created by electricity generation to the end consumers of a given grid. These are the location-based and the market-based methods. The location-based method reflects the average emission intensity of the grids on which energy consumption occurs, while the market-based method reflects emissions from electricity that companies have purposefully chosen (or not chosen).

Organisations who report on their GHG emissions will now have to disclose both the location-based emissions from the production of electricity, and the market-based emissions related to the potential purchase of Guarantees of Origin (GoOs) and Renewable Energy Certificates (RECs).

The purpose of this amendment in the reporting methodology is on the one hand to show the impact of energy efficiency measures, and on the other hand to display how the acquisition of GoOs or RECs affect the GHG emissions. Using both methods in the emission reporting highlights the effect of all measures regarding electricity consumption.

The location-based method: The location-based method is based on statistical emissions information and electricity output aggregated and averaged within a defined geographic boundary and during a defined time period. Within this boundary, the different energy producers utilize a mix of energy resources, where the use of fossil fuels (coal, oil, and gas) result in direct GHG-emissions. These emissions are reflected in the location-based emission factor.

The market-based method: The choice of emission factors when using this method is determined by whether the business acquires GoOs/RECs or not. When selling GoOs or RECs, the supplier certifies that the electricity is produced exclusively by renewable sources, which has an emission factor of 0 grams CO₂e per kWh. However, for electricity without the GoO or REC, the emission factor is based on the remaining electricity production after all GoOs and RECs for renewable energy are sold. This is called a residual mix, which is normally substantially higher than the location-based factor. As an example, the market-based Norwegian residual mix factor is approximately 7 times higher than the location-based Nordic mix factor. The reason for this high factor is due to Norway's large export of GoOs/RECs to foreign consumers. In a

market perspective, this implies that Norwegian hydropower is largely substituted with an electricity mix including fossil fuels.

Scope 3 includes indirect emissions resulting from value chain activities. The scope 3 emissions are a result of the company's upstream and downstream activities, which are not controlled by the company, i.e. they are indirect. Examples are business travel, goods transportation, waste handling, consumption of products etc.

In general, the carbon accounting should include information that users, both internal and external to the company, need for their decision making. An important aspect of relevance is the selection of an appropriate inventory boundary which reflects the substance and economic reality of the company's business relationships.