



SPAREBANKEN SØR

Carbon accounting report 2019

Sparebanken Sør

The aim of this report is to get an overview of the organisation's greenhouse gas (GHG) emissions, which is an integrated part of the company's climate strategy. The carbon accounting is a fundamental tool in order to identify concrete measures to reduce the energy consumption and corresponding GHG emissions. The annual report enables the organisation to benchmark performance indicators and evaluate progress over time.

This report comprises Sparebanken Sør.

The input data is based on information from both internal and external data sources and then converted into tonnes CO₂-eq. The analysis is based on the international standard; A Corporate Accounting and Reporting Standard, developed by the Greenhouse Gas Protocol Initiative (GHG protocol). This is the most important standard for measuring greenhouse gas emissions and was the basis for the ISO standard 14064-1.

Energy and GHG emissions

Category	Description	Consumption	Unit	Energy (MWh eqv)	Emissions (tCO ₂ e)	Emissions (distribution)
<i>Transportation</i>				97.0	22.8	5.5%
Petrol		2 100.0	liters	20.2	4.9	1.2%
Diesel (NO)		7 500.0	liters	76.8	17.9	4.3%
Scope 1 total				97.0	22.8	5.5%
<i>Electricity</i>				4 352.3	169.7	40.7%
Electricity Nordic mix		4 352 285.0	kWh	4 352.3	169.7	40.7%
<i>DH Nordic locations</i>				1 005.6	24.8	5.9%
District heating NO/Arendal		697 120.0	kWh	697.1	22.0	5.3%
District heating NO/Kristiansand		308 458.0	kWh	308.5	2.7	0.7%
<i>Electric vehicles</i>				25.5	1.0	0.2%
Electric car Nordic		150 000.0	pkm	25.5	1.0	0.2%
Scope 2 total				5 383.4	195.5	46.8%
<i>Air travel</i>				-	103.6	24.8%
Continental/Nordic		454 082.0	pkm	-	38.0	9.1%
Intercontinental		469 365.0	pkm	-	48.5	11.6%
Domestic		126 663.0	pkm	-	17.1	4.1%
Nordic		7 321.0	pkm	-	-	-
<i>Business travel</i>				-	81.5	19.5%
Mileage all. car (NO)		582 291.0	km	-	81.5	19.5%
<i>Waste</i>				-	14.1	3.4%
Waste mix, incinerated		27 602.0	kg	-	13.9	3.3%
Paper waste, recycled		10 834.0	kg	-	0.2	0.1%
Glass waste, recycled		358.0	kg	-	-	-
Organic waste, recycled		736.0	kg	-	-	-
Plastic waste, recycled		135.0	kg	-	-	-
Scope 3 total				-	199.2	47.7%
Total				5 480.3	417.5	100.0%
<i>Electricity market-based</i>						
<i>Scope 2 market-based</i>						25.8
<i>Total market-based</i>						247.8

Carbon accounting

In 2019, the total GHG emissions for Sparebanken Sør were calculated to be 417,5 tonnes CO₂-eq (tCO₂e). This is a reduction of 58,9 tCO₂e, corresponding to 12,4 % compared to 2018.

The GHG emissions for 2019 are allocated to the different scopes accordingly: 22,8 tCO₂e (5,5%) to Scope 1, 195,5 tCO₂e (46,8 %) to Scope 2 and 199,2 tCO₂e (47,7 %) to Scope 3. There has been a reduction in Scope 1 and 2 from 2018 to 2019 due to a reduction in purchased fuels, and a reduction in consumption of electricity and district heating. A change in the emission factors used has also had a positive effect on the emissions.

Scope 1

Transportation:

Actual consumption of fossil fuels in company vehicles (owned, rented, leased). Diesel and petrol consumption account for emissions corresponding to 22,8 tCO₂e in 2019. This is a 31,8 % reduction in emissions compared to 2018. The actual reduction in purchased fuels from 2018 to 2019 was 3 600 litres. There has also been a change in the applied emission factor from 2018 to 2019, from Diesel (B5) to Diesel (NO). This change was made as Diesel (NO) gives a more accurate picture of emissions from diesel consumption in Norway. Diesel (NO) has a 12 % biodiesel blend, whereas Diesel (B5) only has a 5 % blend. The emission factor for Diesel (NO) is therefore lower than the factor for Diesel (B5).

Scope 2

Electricity:

Measured consumption of electricity in self owned or rented premises/buildings. The main body of the table included in this report presents location-based electricity emissions using the emission factor Electricity Nordic mix. Emissions from electricity consumption have been reduced by 33,3 % since 2018. Note that the emission factor Electricity Nordic mix has been reduced by 13,3 % since 2018, suggesting that electricity is being produced from sources with lower GHG emissions in 2019, compared to the previous year (e.g. hydro power instead of natural gas). Actual electricity consumption in 2019 was reduced by 23,0 % compared to 2018.

Emissions from electricity calculated with a market-based factor is presented at the bottom of the main body of this report, and in the table Market-based GHG emission summary. As Sparebanken Sør have purchased guarantees of origin for their 2019 electricity consumption, the market-based emissions from electricity consumption equal zero. The practice of presenting electricity emissions with two different emission factors is further explained under Scope 2 in Methodology and sources.

District heating: Use of district heating in self owned or rented premises/buildings. Total emissions from district heating in 2019 amount to 24,8 tCO₂e, which is a reduction of 13,5 tCO₂e (35,1 %) compared to 2018. In 2018 "District Heating Arendal" was the only emission factor applied to the carbon accounting. In 2019, Sparebanken Sør also applied the factor for "District Heating Kristiansand".

Company owned electric vehicles: Sparebanken Sør owns six electric vehicles. The use of these vehicles account for a total emission of 1,0 tCO₂e. Usage has increased by 25 000 km, equivalent to a 2,9 % increase in emissions. This is due to an increase of total number of vehicles (five in 2018 vs. six in 2019).

Scope 3

Air travel: Measured in pkm per region. Emissions from air travel correspond to 103,6 tCO₂e, accounting for 24,8 % of the total emissions in 2019. Emissions from air travel have increased by 62,1 % since 2018. Note that the emission factor has changed from "number of journeys" to "pkm" to give a more accurate picture of the emissions caused by flights.

Mileage allowance: In 2019, mileage allowance was paid for 582 291 km which corresponds to an emission of 81,5 tCO₂e. This is an increase in emissions of 9,1 %, caused by an increase in reported kilometres of 48 576 km.

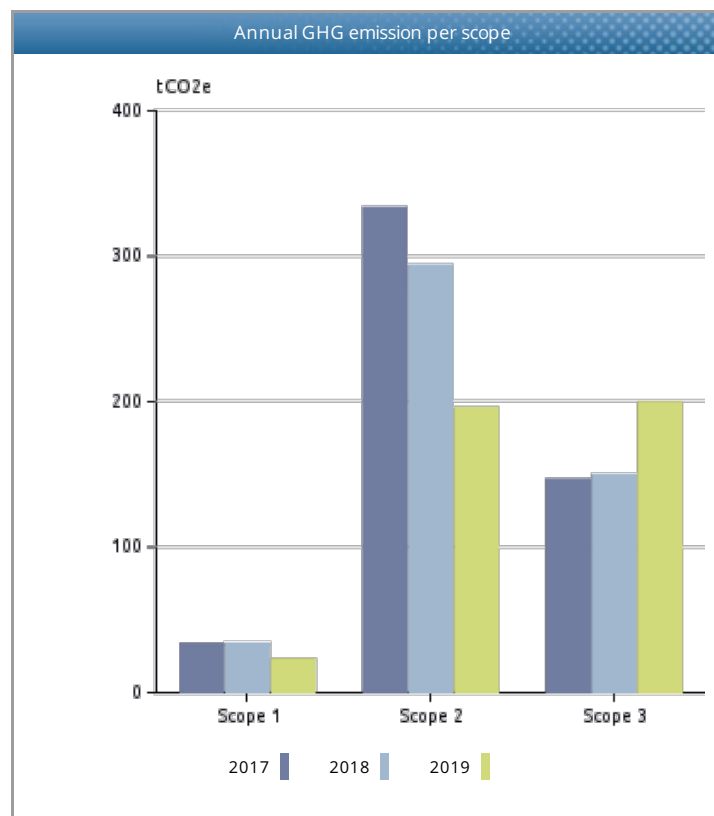
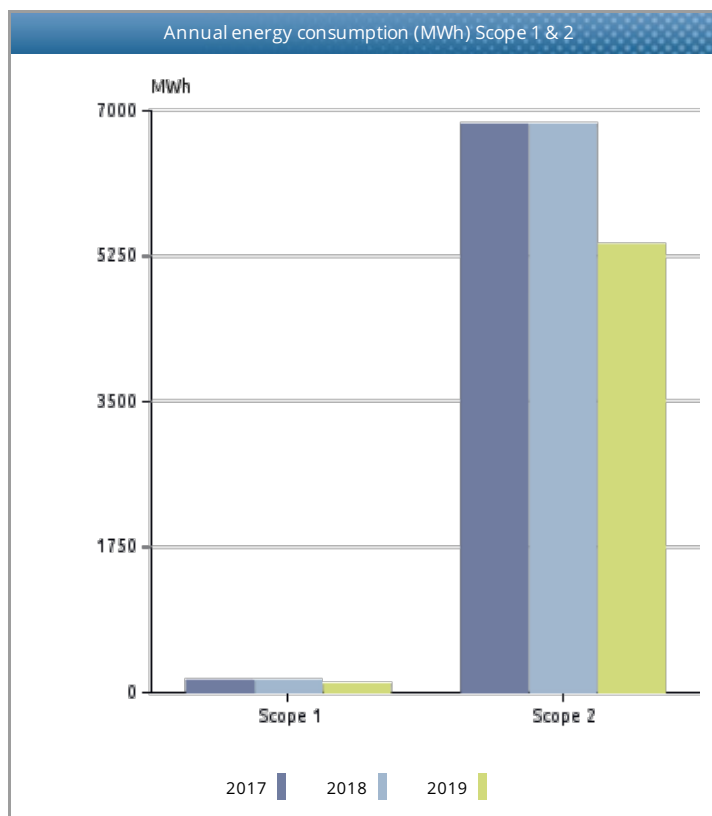
Waste: Reported waste fractions in kg with consideration of treatment method (recycled, energy recovered, landfill). In 2019 waste accounted for 14,1 tCO₂e, representing 3,4 % of total emissions. Waste fractions with emissions lower than 0,1 tCO₂e, such as waste related to glass, organic waste and plastic, are only marked with a line (-) in the presented tables.

Yearly report – GHG emissions (tCO₂e)

Category	Description	2017	2018	2019	% change from previous year
<i>Transportation</i>					-
Diesel (B5)		30.5	30.7		-100.0%
Diesel (NO)				17.9	100.0%
Petrol		2.8	2.8	4.9	75.7%
Scope 1 Emissions		33.2	33.4	22.8	-31.8%
<i>DH Nordic locations</i>					-
District heating NO/Arendal		38.2	38.2	22.0	-42.3%
District heating NO/Kristiansand				2.7	100.0%
<i>Electric vehicles</i>					-
Electric car Nordic		1.1	1.0	1.0	2.9%
<i>Electricity</i>					-
Electricity Nordic mix		293.9	254.3	169.7	-33.3%
Scope 2 Emissions		333.2	293.5	195.5	-33.4%
<i>Air travel</i>					-
Continental/Nordic		9.1	9.1	38.0	316.2%
Domestic				17.1	100.0%
Intercontinental		9.5	10.2	48.5	375.9%
Nordic		39.9	44.6	-	-100.0%
<i>Waste</i>					-
Glass waste,recycled		-	-	-	-
Organic waste,recycled		-	-	-	-
Paper waste,recycled		0.4	0.2	0.2	-5.7%
Plastic waste,recycled		-	-	-	-
Waste mix,incinerated		10.6	10.6	13.9	30.4%
<i>Business travel</i>					-
Mileage all. car (NO)		76.9	74.7	81.5	9.1%
Scope 3 Emissions		146.3	149.5	199.2	33.3%
Total		512.7	476.4	417.5	-12.4%
Percentage change			-7.1%	-12.4%	

Key energy and climate performance indicators

Name	Unit	2017	2018	2019	% change from previous year
Total energy scope 1 +2 (MWh)		6 967.9	6 967.9	5 480.3	-21.3%
Total emissions (s1+s2+s3) (tCO2e)		512.7	476.4	417.5	-12.4%
Total tCO2e/FTE		1.2	0.9	0.9	0.6%
MWh/FTE		16.1	13.6	12.3	-9.7%
MWh/m2 (Scope 2)	m2	0.2	0.2	0.3	13.3%
FTE		432.0	512.0	446.0	-12.9%
Heated area (m2)		29 239.0	29 239.0	20 334.0	-30.5%



Market-based GHG emissions summary

<i>Category</i>	<i>Unit</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>
<i>Electricity market-based</i>	<i>tCO2e</i>			
<i>Scope 2 market-based</i>	<i>tCO2e</i>	<i>39.3</i>	<i>39.1</i>	<i>25.8</i>
<i>Total market-based</i>	<i>tCO2e</i>	<i>218.8</i>	<i>222</i>	<i>247.8</i>
<i>Percentage change</i>			<i>1.5 %</i>	<i>11.6 %</i>

Methodology and sources

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

This analysis is based on the operational control aspect that defines what should be included in the carbon inventory, as well as in the different scopes. When using the control approach to consolidate GHG emissions, companies shall choose between either the operational control or financial control criteria. Under the control approach, a company accounts for the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest but has no control.

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

Scope 1 Mandatory reporting includes all direct emission sources where the organisation has operational control. This includes all use of fossil fuels for stationary combustion or transportation, in owned, leased or rented assets. It also includes any process emissions, from e.g. chemical processes, industrial gases, direct methane emissions etc.

Scope 2 Mandatory reporting includes indirect emissions related to purchased energy; electricity or heating/cooling where the organisation has operational control. The electricity emissions factors used in CEMAsys is based on national gross electricity production mixes on a 3 years rolling average (IEA Stat). The Nordic electricity mix covers the weighted production in Sweden, Norway, Finland and Denmark, which reflects the common Nord Pool market area. Emission factors per fuel type are based on assumption in the IEA methodological framework. Factors for district heating/cooling are either based on actual (local) production mixes, or average IEA stat.

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* method. The location-based method reflects the average emissions intensity of grids on which energy consumption occurs, while the market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice).

Businesses who report on their GHG emissions will now have to disclose both location-based emissions from the production of electricity and the market-based emissions related to the potential purchase of Guaranties of Origin (GoO).

The purpose of this amendment in the reporting method is on one hand to show the impact of energy efficiency and saving measures, and on the other hand to display how the acquisition of GoOs 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 factor using this method is determined by whether the business acquires GoOs or not. When selling GoOs, the supplier certify that the electricity is produced by only renewable sources, which has an emission factor of 0 grams of CO₂e per kWh. However, for electricity without the guarantee of origin, the emission factor is based on the remaining electricity production after all GoOs 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 to foreign consumers. In a market perspective, this implies that Norwegian hydropower is largely substituted with an electricity mix including fossil fuels.

Scope 3 Voluntary reporting of indirect emissions from purchased products or services in the value chain. The scope 3 emissions are a result of the company's different activities, which are not controlled by the company, i.e. they're indirect. Examples are business travel, goods transportation, waste handling, consumption of products etc. In general, the GHG report

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 that reflects the substance and economic reality of the company's business relationships.

References:

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This list of references may not be complete. Depending on the use of the CEMAsys emission factors database, there are a number of different local and national sources. If necessary, please contact CEMAsys Help Desk for further details.