Carbon accounting report 2018

SpareBank 1 Østlandet

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.

The report includes all registered emissions in SpareBank 1 Østlandet bank.

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-I.

Energy and GHG emissions

Category	*Description*	*Consumption*	*Unit*	*Energy* (MWh eqv)	*Emissions* (tCO2e)	*Emissions* (distribution)
Transportation				*80.8*	*19.5*	*3.5%*
Diesel (B5)		3 594.0	liters	38.0	9.2	1.7%
Petrol		4 478.0	liters	42.9	10.3	1.9%
Stationary combustion				*41.8*	*10.3*	*1.9%*
Burning oil		4 070.0	liters	41.8	10.3	1.9%
Scope 1 total				122.7	29.8	5.4%
*Electricity**				*6 378.0*	*287.0*	*51.9%*
Electricity Nordic mix		6 377 965.0	kWh	6 378.0	287.0	51.9%
DH Nordic locations				*910.5*	*9.0*	*1.6%*
District heating NO/Oslo		59 050.0	kWh	59.0	0.9	0.2%
District heating NO/Hamar		851 480.0	kWh	851.5	8.1	1.5%
District heating general				*841.3*	*11.1*	*2.0%*
District heating Bio 90%		841 316.0	kWh	841.3	11.1	2.0%
Scope 2 total				8 129.8	307.1	55.5%
Air travel				-	*59.5*	*10.8%*
Continental, RF		55 385.0	pkm	-	9.0	1.6%
Intercontinental, RF		20 159.0	pkm	-	4.3	0.8%
Nordic, RF		155 043.0	pkm	-	46.3	8.4%
Business travel				-	*117.2*	*21.2%*
Mileage all. car (NO)		835 494.0	km	-	117.0	21.2%
Mileage all. electric car (NO)		29 060.0	km	-	0.2	-
Waste				-	*24.6*	*4.4%*
Waste,incinerated		44 775.0	kg	-	22.5	4.1%
Paper,recycled		79 210.0	kg	-	1.7	0.3%
Glas,recycled		1 170.0	kg	-	-	-
Organic,recycled		10 732.0	kg	-	0.2	-
Plastic,recycled		912.0	kg	-	-	-
WEEE,recycled		3 738.0	kg	-	0.1	-
Wood waste,recycled		50.0	kg	-	-	-
Hazardous waste, recycled		3 100.0	kg	-	0.1	-
Papir				-	*14.7*	*2.7%*
Paper,office		12 855.0	kg	-	14.7	2.7%
Scope 3 total				-	216.0	39.1%
Total				*8 252.5*	*552.9*	*100.0%*
**Alternative Electricity emissions-Market based method (RECs, GoO)*					*370.8*	

SpareBank 1 Østlandet had in 2018 total greenhouse gas emissions of 553 tonnes CO2 equivalents (tCO2e). Greenhouse gas emissions in 2018 is distributed as follows:

Scope 1: 30.4 tCO2e - 5.5%
Scope 2: 307 tCO2e - 55.5%
Scope 3: 216 tCO2e - 39%

There has been an increase in all Scopes from 2017 to 2018. Total there is an increase of 21.7%, equivalent to 99 tCO2e. Energy consumption per area is 183 kWh / m2, and total energy consumption is 8 253 MWh.

Scope 1:

Stationary combustion: Consumption of light fuel oil at the office in Rendalen, Otnes. The number changes slightly from year to year as the timing of refilling changes. Light fuel oil is responsible for issuing 10.3 tCO2e in 2018.

Transportation: All actual consumption of fossil fuels in the company's vehicles (owned, rented, leased) both in Hedmark and Oslo. The use of diesel (B5) and gasoline is in 2018 corresponding to 19.5 tCO2e.

Scope 1 has a total increase of 17.3% from 2017 to 2018.

Scope 2

Electricity: Measured consumption of electricity in own or rented premises / buildings for all offices and premises in SpareBank 1 Østlandet. The table in this report shows greenhouse gas emissions from electricity calculated by using the location-based emission factor Nordic mix. Emissions from electricity use are 287 tCO2e, an increase of 40.9% from last year. This is due to the fact that all locations in Oslo are included in this climate account than in the previous reporting year.

District heating: Use of district heating in owned / rented buildings in Hamar has increased by 7% from 2017, which is of total emissions parallel to 19.2 tCO2e. Oslo’s district heating is included for the first year with a total emission of 0.9 tCO2e.

Scope 2 has a total increase of 38% from 2017 to 2018.

Scope 3

Air travel: Measured number of trips in pkm per region for the entire Sparebank 1 Østlandet. Emissions from flights corresponds to 59.5 tCO2e, which accredits for 10.8% of total emissions in 2018.

Mileage allowance: In 2018, compensation was given for 835 494 km with diesel / petrol car, corresponding to 117 tCO2e, which covers 21.2% of the total climate account for SpareBank 1 Østlandet. It was reported 29 060 km with electric car which corresponds to 0.2 tCO2e.

Waste: It is reported waste in kg divided by different waste fractions, as well as treatment method (recycled, energy recovered, deposited). The figures apply to Hedmark locations and to waste registered from the office spaces at Youngstorvet in Oslo. Waste accounts for 24.6 tCO2e emissions in 2018, and constitutes 4.1% of total registered greenhouse gas emissions. Emissions related to glass waste and wood waste are below 0.1 tCO2e. This is relatively small, therefore only marked as a line in the table.

Paper: Consumption of office paper (12 855 kg) in Hedmark and Oslo / Akershus corresponds to 14.7 tCO2e in 2018.

Scope 3 has a total increase of 4.5% from 2017 to 2018.

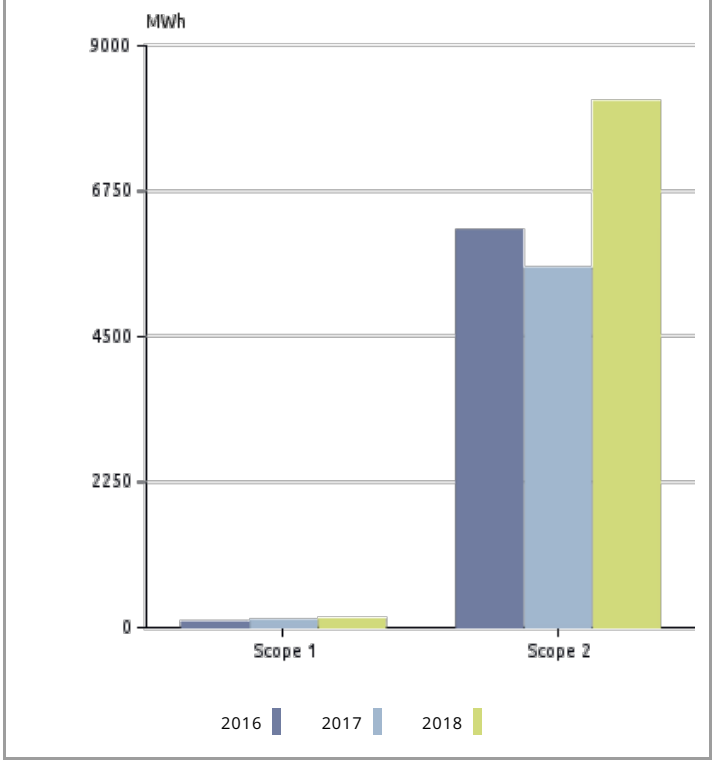
Yearly report – GHG emissions (tCO2e)

Category	*Description*	*2016*	*2017*	*2018*	*% change from previous year*
Stationary combustion					-
Burning oil		5.1	10.3	10.3	0.2%
Transportation					-
Diesel (B5)		8.8	9.4	9.2	-2.7%
Petrol		4.4	5.7	10.3	81.9%
Scope 1 Emissions		18.4	25.4	29.8	17.3%
District heating general					-
District heating Bio 90%		11.8	11.1	11.1	0.5%
DH Nordic locations					-
District heating NO/Hamar		6.8	7.6	8.1	6.6%
District heating NO/Oslo				0.9	100.0%
*Electricity**					-
Electricity Nordic mix		255.1	203.6	287.0	40.9%
Scope 2 Emissions		273.6	222.3	307.1	38.1%
Air travel					-
Continental, RF		11.0	7.4	9.0	21.2%
Intercontinental, RF		24.4	6.2	4.3	-30.4%
Nordic, RF		33.2	43.7	46.3	5.8%
Waste					-
Glas,recycled		0.1	-	-	-
Hazardous waste, recycled				0.1	100.0%
Organic,recycled		0.4	0.4	0.2	-45.3%
Paper,recycled		0.9	0.8	1.7	123.1%
Plastic,recycled		0.1	0.1	-	-68.9%
Waste,incinerated		22.1	19.4	22.5	15.9%
WEEE,recycled		0.1	0.1	0.1	-11.1%
Wood waste,recycled				-	-
Business travel					-
Mileage all. car (NO)		91.5	112.8	117.0	3.7%
Mileage all. electric car (NO)			-	0.2	489.5%
Papir					-
Paper,office		12.1	15.7	14.7	-6.8%
Scope 3 Emissions		195.7	206.6	216.0	4.5%
Total		487.7	454.3	552.9	21.7%
Percentage change			*-6.8%*	*21.7%*	
**Alternative Electricity emissions-Market based method (RECs, GoO)*				*370.8*	
Percentage change			-	-	

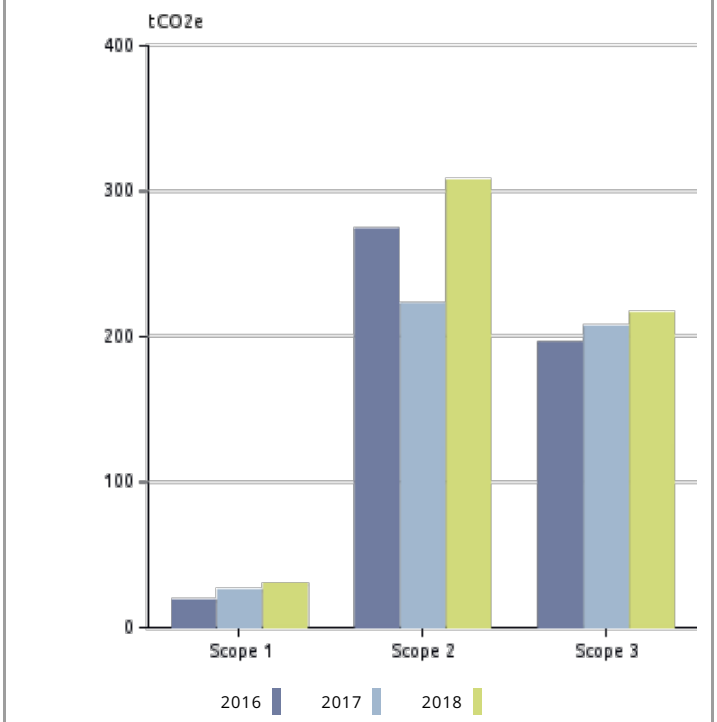
Key energy and climate performance indicators

Name	*Unit*	*2016*	*2017*	*2018*	*% change from previous year*
Sum locations kWh/m2		186.1	168.3	182.2	8.3%
Total emissions (s1+s2+s3) (tCO2e)		487.7	454.3	552.9	21.7%
Totale (s1+2+3) tCO2e/årsverk		1.1	0.6	0.8	19.8%
Total (s1+2+3) tCO2e/omsetning		0.3	0.2	0.2	-12.5%
FTE		462.0	705.0	716.0	1.6%

Annual energy consumption (MWh) Scope 1 & 2



Annual GHG emission per scope



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 marked-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.