



# Carbon accounting report 2018

## Storebrand Livsforsikring (SBL) - Trygg AS

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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 covers 10 properties from Trygg AS in Storebrand Livsforsikring (SBL), as listed below. The fund invests only in properties in Norway. The report does not include Luramyerveien 9 (665 m<sup>2</sup>) or Luramyerveien 11(5 110 m<sup>2</sup>), due to lack of data from the reporting year. These properties count for 2,5% of the total m<sup>2</sup> for all properties. The climate accounts have therefore a coverage ratio of 97,5% out of a total of 238 452 m<sup>2</sup>.

- Filipstad Brygge 1
- Sameiet Kjeller'n - Parkering
- Ruseløkkvn. 3, Oslo
- Haakon VII gt 10, Oslo
- Ruseløkkvn. 14, Oslo
- Akersgt. 35-39, Oslo
- Kvadrat Kjøpesenter
- City Syd Kjøpesenter
- Luramyerveien 9, Sandnes (not included in 2018)
- Luramyerveien 11, Sandnes v/Kvadrat (not included in 2018)

The input data is based on information from both internal and external data sources and then converted into tonnes CO<sub>2</sub>-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 (tCO <sub>2</sub> e)	Emissions (distribution)
<b>Scope 1 total</b>						
<i>Electricity*</i>				31 018.2	1 395.8	71.1%
Electricity Nordic mix		753 072.0	kWh	753.1	33.9	1.7%
Electricity Nordic mix	Leietakere	30 265 122.0	kWh	30 265.1	1 361.9	69.4%
<i>DH Nordic locations</i>				9 106.3	156.6	8.0%
District heating NO/Oslo		7 687 080.0	kWh	7 687.1	115.3	5.9%
District heating NO/Trondheim		881 940.0	kWh	881.9	33.2	1.7%
District cooling NO/Oslo		537 300.0	kWh	537.3	8.1	0.4%
<b>Scope 2 total</b>				40 124.5	1 552.4	79.1%
<i>Waste</i>				-	370.7	18.9%
Waste, energy recovered	Usortert	679 701.0	kg	-	341.2	17.4%
Waste mix, recycled	Sortert	1 386 827.0	kg	-	29.5	1.5%
<i>Vann</i>				-	39.5	2.0%
Water,ground		68 443.0	m <sup>3</sup>	-	39.5	2.0%
<b>Scope 3 total</b>				-	410.2	20.9%
<i>Total</i>				40 124.5	1 962.7	100.0%
<i>*Alternative Electricity emissions-Market based method (RECs, GoO)</i>					8964.3	

## Yearly report – GHG emissions (tCO2e)

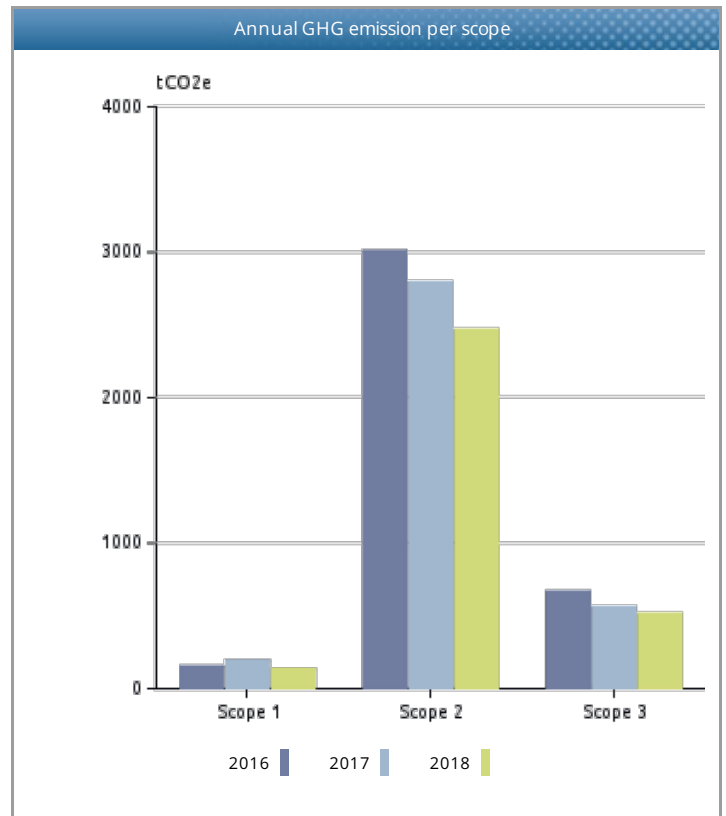
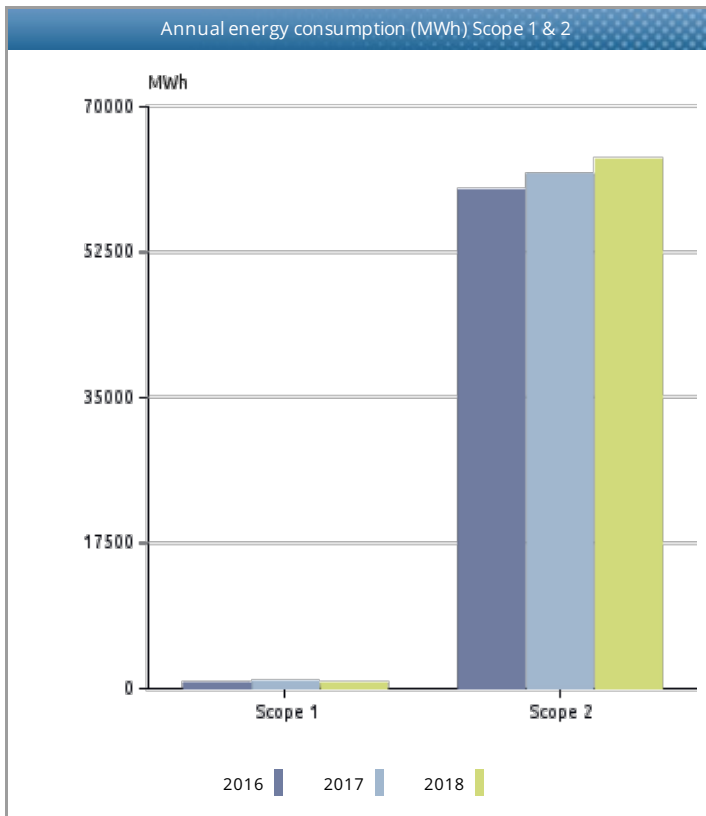
Category	Description	2016	2017	2018	% change from previous year
<b>Scope 1 Emissions</b>					
<i>DH Nordic locations</i>					
District cooling NO/Oslo		34.6	7.8	8.1	3.1%
District heating NO/Oslo		113.7	115.2	115.3	0.1%
District heating NO/Trondheim		28.1	34.9	33.2	-4.7%
<i>Electricity*</i>					
Electricity Nordic mix	Fellesanlegg	756.9	592.2		-100.0%
Electricity Nordic mix		5.2	93.8	33.9	-63.9%
Electricity Nordic mix	Leietakere	1 025.7	963.6	1 361.9	41.3%
<b>Scope 2 Emissions</b>		<b>1 964.2</b>	<b>1 807.5</b>	<b>1 552.4</b>	<b>-14.1%</b>
<i>Waste</i>					
Waste mix, recycled	Sortert	44.2	45.6	29.5	-35.3%
Waste, energy recovered	Usortert	346.3	334.3	341.2	2.1%
<i>Vann</i>					
Water,ground		32.0	37.0	39.5	6.6%
<b>Scope 3 Emissions</b>		<b>422.4</b>	<b>417.0</b>	<b>410.2</b>	<b>-1.6%</b>
<b>Total</b>		<b>2 386.6</b>	<b>2 224.5</b>	<b>1 962.7</b>	<b>-11.8%</b>
<b>Percentage change</b>			<b>-6.8%</b>	<b>-11.8%</b>	
<i>*Alternative Electricity emissions-Market based method (RECs, GoO)</i>		<i>9226.2</i>	<i>8723.9</i>	<i>8964.3</i>	
<b>Percentage change</b>			<b>-5.4%</b>	<b>2.8%</b>	

## Key Figures Consumption

	Category	Description	Unit	2016	2017	2018
<b>Scope 2</b>	<b>DH Nordic locations</b>					
	District cooling NO/Oslo		kWh	785 300	521 090	537 300
	District heating NO/Oslo		kWh	7 579 958	7 679 598	7 687 080
	District heating NO/Trondheim		kWh	1 016 110	925 370	881 940
	<b>Electricity*</b>					
	Electricity Nordic mix		kWh	92 802	1 804 383	753 072
	Electricity Nordic mix	Leietakere	kWh	18 316 161	18 529 896	30 265 122
<b>Scope 3</b>	Electricity Nordic mix	Fellesanlegg	kWh	13 515 513	11 389 166	
	<b>Waste</b>					
	Waste mix, recycled	Sortert	kg	1 379 688	1 425 652	1 386 827
	Waste, energy recovered	Usortert	kg	689 771	665 940	679 701
	<b>Vann</b>					
Water, ground		m3	55 460	64 199	68 443	

## Key energy and climate performance indicators

Name	Unit	2016	2017	2018	% change from previous year
Sum locations kWh/m2		177.5	175.6	168.2	-4.2%
Sum square meters (m2)		232 677	232 551	238 452	2.5%
Total energy scope 1 +2 (MWh)		41 305.8	40 849.5	40 124.5	-1.8%
Total emissions (s1+s2+s3) (tCO2e)		2 238.6	2 224.5	1 962.7	-11.8%
Scope 1 + 2 emissions (tCO2e)		1 964.2	1 807.5	1 552.5	-14.1%
kgCO2/m2 (Scope1+2)	m2	8.4	7.7	6.5	-15.5%
Total eiendom kgCO2e/m2 (Scope1+2+3)	m2	9.6	9.5	8.2	-13.6%



## 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 CO<sub>2</sub> equivalents: CO<sub>2</sub>, CH<sub>4</sub> (methane), N<sub>2</sub>O (laughing gas), SF<sub>6</sub>, 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 CO<sub>2</sub>e 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:**

[Department for Business, Energy & Industrial Strategy](#) (2018). Government emission conversion factors for greenhouse gas company reporting (DEFRA)

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WBCSD/WRI (2015). GHG protocol Scope 2 guidance: An amendment to the GHG protocol corporate standard. World Business Council on Sustainable Development (WBCSD), Geneva, Switzerland /World Resource Institute (WRI), Washington DC, USA, 117 pp.

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.