

Carbon Accounting Report 2020

Storebrand Eiendomsfond Norge KS (SEN KS)

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 100 % of the SEN KS portfolio, consisting of 16 properties totalling 391.385 m² in 2020, as listed below.

The fund invests in properties in Norway only.

1. Grev Wedels Plass 9
2. Brynsalleen 6
3. Nydalsveien 36-38
4. Gullhaug Torg 2B
5. Philip Pedersens vei 7-9 (Lysaker Polaris)
6. Solheimsgaten 7A-E
7. Østfoldhallen Kjøpesenter Retail (Dikeveien)
8. Østfoldhallene Big Box (Dikeveien)
9. Metro Kjøpesenter
10. Gneisveien 16-18 (Bergerterminalen)
11. Gneisveien 12 (Berger Omlastningsentral)
12. Torvuttaket 19 (Deli Skog Syd Øst)
13. Båntjernveien 12 - 15
14. Fornebu Hotell
15. Lagårdsveien 44
16. Destilleriveien 11 (included from 2019, the first full operational year)
17. Våler Distribusjonslager (sold and excluded from 2019 accounts)

The 2020 accounts include the buildings' tenant emissions from both energy and water consumption as well as waste production and handling. Tenant energy emissions are allocated in scope 1 and 2. The practice of allocating energy related emissions from tenant spaces in scope 3 is becoming common, and is allowed according to the GHG protocol. This will be considered going forward.

The input data is based on information from both internal and external data sources and then converted into tonnes CO₂-equivalents. 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.

Reporting Year Energy and GHG Emissions

Emission source	Description	Consumption	Unit	Energy (MWh)	Emissions tCO ₂ e	% share
Stationary combustion total				395.3	84.8	3.1 %
Burning oil	Oppv/kjøøl	47.0	kWh	-	-	-
LPG (Propane)		379,678.0	kWh	379.7	81.4	3.0 %
LPG (Propane)	Oppv/kjøøl	15,593.0	kWh	15.6	3.3	0.1 %
Scope 1 total				395.3	84.8	3.1 %
Electricity total				48,274.1	1,979.2	72.9 %
Electricity Nordic mix	Fellesanlegg	9,636,731.0	kWh	9,636.7	395.1	14.6 %
Electricity Nordic mix	Leietakere	38,637,373.0	kWh	38,637.4	1,584.1	58.3 %
Electricity Nordic mix		-	kWh	-	-	-
DH Nordic locations total				9,915.4	121.7	4.5 %
District heating NO/Oslo		3,710,223.0	kWh	3,710.2	52.7	1.9 %
District heating NO/Fredrikstad		598,172.0	kWh	598.2	3.2	0.1 %
District heating NO/Lysaker/Fornebu/Lilleaker		538,090.0	kWh	538.1	5.2	0.2 %
District heating NO/Bergen		1,409,817.0	kWh	1,409.8	12.5	0.5 %
District heating NO/Nydalen		1,016,570.0	kWh	1,016.6	21.7	0.8 %
District cooling NO/Nydalen		409,930.0	kWh	409.9	6.6	0.2 %
District cooling NO/Bergen		1,055,480.0	kWh	1,055.5	10.9	0.4 %
District cooling NO/Lysaker/Fornebu/Lilleaker		1,177,110.0	kWh	1,177.1	8.9	0.3 %
District heating general total				34.2	-	-
District heating, renewable	Bioolje	34,190.0	kWh	34.2	-	-
Scope 2 total				58,223.7	2,100.9	77.4 %
Waste total				-	494.9	18.2 %
Residual waste, incinerated	Usortert	861,891.0	kg	-	432.7	15.9 %
Residual waste, recycled	Sortert	2,921,445.0	kg	-	62.2	2.3 %
Water total				-	34.8	1.3 %
Water supply, municipal		101,231.0	m ³	-	34.8	1.3 %
Scope 3 total				-	529.7	19.5 %
Total				58,619.0	2,715.4	100.0 %
KJ			211,028,414,400.0			

Annual GHG Emissions (tCO₂e)

Category	Description	2018	2019	2020	% change from previous year
Stationary combustion total		134.7	155.4	84.8	-45.4 %
Burning oil		66.8	32.6	-	-100.0 %
Burning oil	Oppv/kjøøl	-	-	-	369.9 %
LPG (Propane)		67.9	114.3	81.4	-28.7 %
LPG (Propane)	Oppv/kjøøl	-	8.5	3.3	-60.6 %
Scope 1 total		134.7	155.4	84.8	-45.4 %
Electricity total		2,285.0	2,088.1	1,979.2	-5.2 %
Electricity Nordic mix	Fellesanlegg	546.6	439.2	395.1	-10.0 %
Electricity Nordic mix	Leietakere	1,153.9	1,648.9	1,584.1	-3.9 %
Electricity Nordic mix		584.5	-	-	-
DH Nordic locations total		209.4	208.9	121.7	-41.8 %
District heating NO/Oslo		74.1	80.1	52.7	-34.2 %
District heating NO/Fredrikstad		2.8	10.4	3.2	-69.0 %
District heating NO/Lysaker/Fornebu/Lilleaker		69.4	12.3	5.2	-57.9 %
District heating NO/Stavanger/Sandnes		12.0	5.3	-	-100.0 %
District heating NO/Bergen		-	46.0	12.5	-72.7 %
District cooling water to air (inactive)		11.6	-	-	-100.0 %
District heating NO/Nydalen		30.0	47.3	21.7	-54.2 %
District cooling NO/Nydalen		9.5	7.6	6.6	-13.7 %
District cooling NO/Bergen		-	-	10.9	100.0 %
District cooling NO/Lysaker/Fornebu/Lilleaker		-	-	8.9	100.0 %
Electricity Green total		-	-	-	-
Electricity Renewable onsite		-	-	-	-100.0 %
District heating general total		-	-	-	-
District heating, renewable	Bioolje	-	-	-	-
Scope 2 total		2,494.4	2,297.0	2,100.9	-8.5 %
Waste total		461.3	596.8	494.9	-17.1 %
Residual waste, incinerated	Usortert	395.4	528.2	432.7	-18.1 %
Residual waste, recycled	Sortert	65.9	68.6	62.2	-9.3 %
Water total		52.6	38.8	34.8	-10.3 %
Water supply, municipal		-	38.8	34.8	-10.3 %
Water supply, groundwater		52.6	-	-	-
Scope 3 total		513.9	635.6	529.7	-16.7 %
Total		3,143.0	3,087.9	2,715.4	-12.1 %
Percentage change			-1.8 %	-12.1 %	

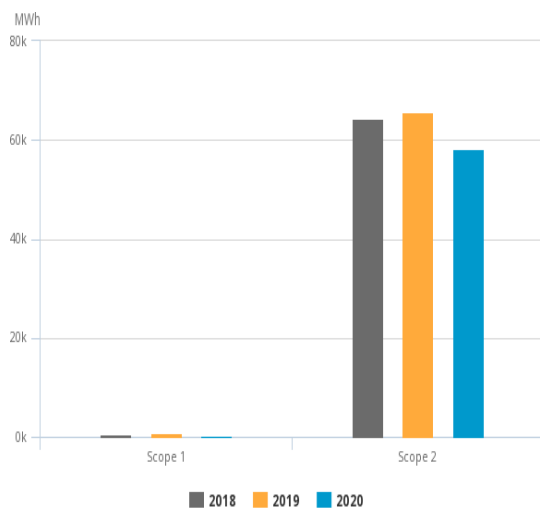
Annual Market-Based GHG Emissions

Category	Unit	2018	2019	2020
Electricity market-based	tCO ₂ e	14,674.8	10,922.3	12,696.1
Scope 2 market-based	tCO ₂ e	14,884.2	11,131.2	12,817.7
Total market-based	tCO ₂ e	15,532.8	11,922.1	13,432.3
Percentage change			-23.2 %	12.7 %

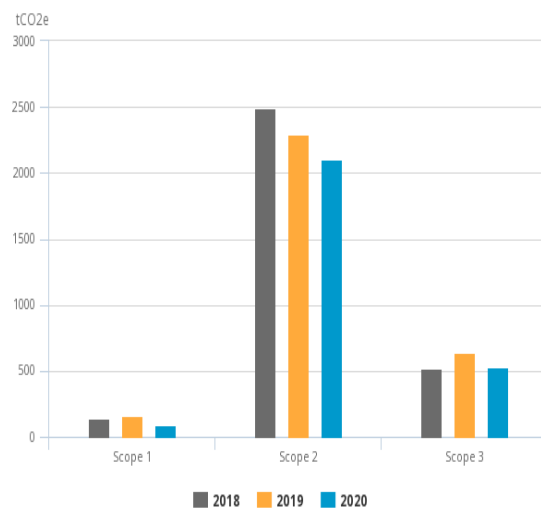
Annual Key Energy and Climate Performance Indicators

Name	Unit	2018	2019	2020	% change from previous year
Total energy scope 1 +2 (MWh)		64,785.6	66,426.7	58,619.0	-11.8 %
Sum energy per location (MWh)		64,198.3	65,722.2	58,223.7	-11.4 %
Sum square meters (m ²)		359,924.0	390,596.0	391,385.0	0.2 %
Sum locations kWh/m ²		178.4	168.3	148.8	-11.6 %
kgCO ₂ /m ² (Scope1+2)		7.3	6.3	5.6	-11.1 %
kWh/m ² (Scope1+2)		180.0	170.1	149.8	-11.9 %
Total eiendom kgCO ₂ e/m ² (Scope1+2+3)		8.7	7.9	6.9	-12.2 %
Total eiendom kgCO ₂ e/m ² (S1+2+3)		8.7	7.9	6.9	-12.2 %
Areal	m ²	359,934.0	390,596.0	391,385.0	0.2 %

Annual energy consumption (MWh) Scope 1 & 2



Annual GHG emission per scope



Methodology and sources

Methodology

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 organization 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).

Organizations 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.

Sources

[Department for Business, Energy & Industrial Strategy](#) (2020). Government emission conversion factors for greenhouse gas company reporting (DEFRA)

IEA (2020). CO2 emission from fuel combustion, International Energy Agency (IEA), Paris.

IEA (2020). Electricity information, International Energy Agency (IEA), Paris.

IMO (2019). Reduction of GHG emissions from ships - Third IMO GHG Study 2014 (Final report). International Maritime Organisation, <http://www.iadc.org/wp-content/uploads/2014/02/MEPC-67-6-INF3-2014-Final-Report-complete.pdf>

IPCC (2014). IPCC fifth assessment report: Climate change 2013 (AR5 updated version November 2014). <http://www.ipcc.ch/report/ar5/>

AIB, RE-DISS (2020). Reliable disclosure systems for Europe – Phase 2: European residual mixes.

WBCSD/WRI (2004). The greenhouse gas protocol. A corporate accounting and reporting standard (revised edition). World Business Council on Sustainable Development (WBCSD), Geneva, Switzerland /World Resource Institute (WRI), Washington DC, USA, 116 pp.

WBCSD/WRI (2011). Corporate value chain (Scope 3) accounting and reporting standard: Supplement to the GHG Protocol corporate accounting and reporting standard. World Business Council on Sustainable Development (WBCSD), Geneva, Switzerland /World Resource Institute (WRI), Washington DC, USA, 149 pp.

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.