Carbon accounting report 2018

DNB

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

This report comprises all units within DNB ASA, including international affiliates. Scope 3 emissions do not include indirect GHG emissions related to purchased energy made by DNB Commercial Property.

The input data is based on information from both internal and external data sources 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				*2 008.8*	*451.0*	*3.4%*
Diesel (B5)		-	km	-	-	-
Diesel (B5)		10 877.0	liters	115.0	27.8	0.2%
Diesel (B5)		-	kgCO2	-	-	-
Diesel		17 467.3	liters	185.7	46.9	0.4%
Petrol		37 791.0	liters	361.7	87.1	0.7%
Diesel (NO)		8 778.4	liters	92.3	21.4	0.2%
Diesel (SE)		100 156.0	liters	1 043.6	217.9	1.6%
Petrol (SE)		22 187.0	liters	210.6	49.8	0.4%
Stationary combustion				-	-	-
Natural gas		-	kWh	-	-	-
Scope 1 total				2 008.8	451.0	3.4%
*Electricity**				*37 326.5*	*3 856.3*	*29.0%*
Electricity Nordic mix		30 079 464.3	kWh	30 079.5	1 353.6	10.2%
Electricity Germany		82 424.0	kWh	82.4	37.7	0.3%
Electricity Singapore		595 285.0	kWh	595.3	244.1	1.8%
Electricity USA		1 327 944.0	kWh	1 327.9	608.2	4.6%
Electricity China		164 848.0	kWh	164.8	107.6	0.8%
Electricity Luxembourg		320 000.0	kWh	320.0	84.5	0.6%
Electricity United Kingdom		346 420.1	kWh	346.4	120.2	0.9%
Electricity Brazil		-	kWh	-	-	-
Electricity Latvia		3 159 591.0	kWh	3 159.6	410.7	3.1%
Electricity Poland		1 103 991.0	kWh	1 104.0	811.4	6.1%
Electricity India		27 475.0	kWh	27.5	21.2	0.2%
Electricity Greece		36 633.0	kWh	36.6	21.6	0.2%
Electricity Chile		82 424.0	kWh	82.4	35.5	0.3%
DH Nordic locations				*16 201.0*	*330.0*	*2.5%*
District heating SE/Stockholm		200 992.4	kWh	201.0	7.3	0.1%
District heating NO/Oslo		4 963 171.0	kWh	4 963.2	74.4	0.6%
District heating Denmark mix		65 358.0	kWh	65.4	7.6	0.1%
District cooling SE/Stockholm		141 336.5	kWh	141.3	7.8	0.1%
District heating NO/Trondheim		759 551.0	kWh	759.6	28.6	0.2%
District heating NO/Bergen		1 226 089.0	kWh	1 226.1	24.5	0.2%
District heating Latvia mix		-	kWh	-	-	-
District heating LI/Vilnius		-	kWh	-	-	-
District cooling NO/Oslo		4 716 726.0	kWh	4 716.7	70.8	0.5%
District heating Norway mix		4 127 758.0	kWh	4 127.8	109.0	0.8%
District heating general				*1 340.2*	-	-
District heating Bio 80%		-	kWh	-	-	-
District cooling Seawater		1 340 180.0	kWh	1 340.2	-	-
Heat fuel specific				-	-	-
Heat-natural gas		-	kWh	-	-	-
Scope 2 total				54 867.7	4 186.3	31.5%
Air travel				-	*6 443.5*	*48.4%*
Continental		13 831 662.0	pkm	-	1 187.3	8.9%
Intercontinental		26 029 742.0	pkm	-	2 925.0	22.0%
Domestic		14 775 869.0	pkm	-	2 331.2	17.5%
Business travel				-	*626.7*	*4.7%*
Mileage all. car (NO)		4 361 849.0	km	-	610.7	4.6%
Mileage all. electric car (NO)		307 083.0	km	-	2.4	-
Mileage all. avg.		75 605.0	km	-	13.7	0.1%
Waste				-	*252.5*	*1.9%*
Waste,incinerated		462 131.9	kg	-	232.0	1.7%
Paper,recycled		403 742.9	kg	-	8.6	0.1%
Glas,recycled		33 275.2	kg	-	0.7	-

Metal,recycled		3 598.0	kg	-	0.1	-
Organic,recycled		64 501.3	kg	-	1.4	-
Plastic,recycled		14 835.0	kg	-	0.3	-
WEEE,recycled		7 152.0	kg	-	0.2	-
Wood waste,recycled		3 310.0	kg	-	0.1	-
Special waste		-	kg	-	-	-
Mineral oil,incinerated		204.0	kg	-	0.6	-
Hazardous waste, recycled		707.0	kg	-	-	-
Waste mix (SE)		-	kg	-	-	-
Waste mix, recycled		-	kg	-	-	-
Waste mix, landfill		14 598.1	kg	-	8.6	0.1%
Sorted waste, recycled		360.0	kg	-	-	-
Autolease customers w/ climate ce				*98.3*	*1 330.5*	*10.0%*
Diesel		-	liters	-	-	-
Diesel (NO)		9 598.0	liters	98.3	23.4	0.2%
Diesel (SE)		605 120.0	liters	-	1 307.1	9.8%
Water consumption				*-*	*20.2*	*0.2%*
Water supply		58 803.0	m3	-	20.2	0.2%
Scope 3 total				98.3	8 673.4	65.2%
Total				*56 974.8*	*13 310.7*	*100.0%*
**Alternative Electricity emissions-Market based method (RECs, GoO)*						

Scope 1

Fuel use has increased since last year partly due to the inclusion of Poland this year. Each year, as reporting becomes more precise and thorough, certain increases in consumption may occur. However, despite an increase in total consumption, total emissions have been reduced due to more precise emissions factors. In past years, we have used a standard emission factor for diesel consumption with an assumption of 5% biodiesel. Last year, a more precise measurement was calculated for Norwegian diesel where the minimum requirement is 10% biodiesel (Miljødirektoratet, 2018). A similar emission factor has been calculated for Swedish diesel. Therefore, we have changed the diesel emission factor from diesel (B5) to diesel (NO) and diesel (SE), which will be continually updated with measurements of current biodiesel levels.

Scope 2

Electricity consumption has been reduced in most locations. However, due to the inclusion of the Latvia office this year, the total consumption has increased slightly from last year leading to an increase in emissions of 1,6%. Energy consumption for offices with less than 50 full time employees as well as Latvia is estimated. However, the level of uncertainty and the actual impact is considered low.

Notably, the Nordic electricity emission factor is reduced with 13,7% since 2017, reflecting an electricity mix increasingly produced from sources with lower greenhouse gas emissions (like hydro power as compared to natural gas) in 2018 as compared with the year before.

Scope 3

The reported air travel data is actual travel distance (person kilometre) per region reported by the travel agency and comprise all units within DNB ASA, including international affiliates.

*Scope 2 electricity: DNB ASA purchases Guarantees of Origination (GoO) of renewable energy production covering all its electricity consumption. The GHG emissions calculated in scope 2 for purchased electricity is calculated according to locations based method (total of 3 856 tCO2). Hence, the scope 2 GHG emissions calculated according to the marked based methodology will be zero. For more explanation, read chapter

"Methodology and Sources" under Scope 2.

Note: values below 0.1 are not displayed in tables in this report and are therefore marked with a hyphen, "-".

Yearly report – GHG emissions (tCO2e)

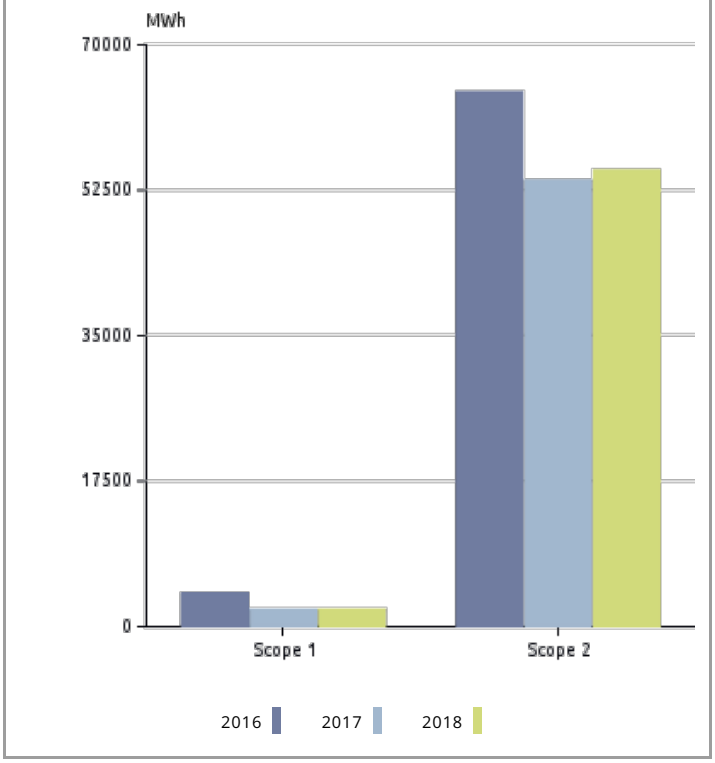
Category	*Description*	*2016*	*2017*	*2018*	*% change from previous year*
Transportation					-
Diesel		343.8	107.3	46.9	-56.2%
Diesel (B5)		-			-
Diesel (B5)		382.2	299.9	27.8	-90.7%
Diesel (NO)				21.4	100.0%
Diesel (SE)				217.9	100.0%
Petrol		242.1	75.8	87.1	15.0%
Petrol (SE)				49.8	100.0%
Stationary combustion					-
Natural gas		19.0	-	-	-
Scope 1 Emissions		987.0	483.0	451.0	-6.6%
DH Nordic locations					-
District cooling NO/Oslo		211.9	63.3	70.8	11.8%
District cooling SE/Stockholm		0.5	4.8	7.8	62.8%
District heating Denmark mix		8.0	9.6	7.6	-20.6%
District heating Latvia mix		151.3	-	-	-
District heating LI/Vilnius		391.4	-	-	-
District heating NO/Bergen		22.6	38.3	24.5	-35.9%
District heating NO/Oslo		68.2	74.3	74.4	0.2%
District heating NO/Trondheim		21.9	27.2	28.6	5.1%
District heating Norway mix		42.7	120.3	109.0	-9.4%
District heating general					-
District cooling Seawater		-	-	-	-
District heating Bio 80%		0.1	-	-	-
*Electricity**					-
Electricity Brazil		3.6	2.8	-	-100.0%
Electricity Chile		41.9	36.6	35.5	-2.9%
Electricity China		129.1	125.3	107.6	-14.1%
Electricity Estonia		165.0	-		-
Electricity Germany		13.0	12.7	37.7	196.2%
Electricity Greece		36.9	29.0	21.6	-25.6%
Electricity India		22.1	21.6	21.2	-2.2%
Electricity Latvia		197.3	-	410.7	100.0%
Electricity Lithuania		681.2	-		-
Electricity Luxembourg		144.7	139.2	84.5	-39.3%
Electricity Nordic mix		2 066.1	1 678.1	1 353.6	-19.3%
Electricity Poland		864.9	832.6	811.4	-2.5%
Electricity Singapore		375.0	300.9	244.1	-18.9%
Electricity United Kingdom		149.8	0.1	120.2	85 762.9%
Electricity USA		607.3	616.0	608.2	-1.3%
Heat fuel specific					-
Heat-natural gas		64.4	-	-	-
Scope 2 Emissions		6 481.2	4 132.7	4 179.0	1.1%
Air travel					-
Continental		1 257.6	1 334.1	1 187.3	-11.0%
Domestic		2 941.3	2 408.3	2 331.2	-3.2%
Intercontinental		1 862.6	2 945.9	2 925.0	-0.7%
Nordic		-			-
Autolease customers w/ climate ce					-
Diesel		1 255.0	677.1	-	-100.0%
Diesel (NO)				23.4	100.0%
Diesel (SE)				1 307.1	100.0%
Waste					-
Glas,recycled		0.6	0.8	0.7	-7.3%

Hazardous waste, recycled		-		-	-
Hazardous waste,incinerated		-			-
Metal,recycled		0.1	0.2	0.1	-54.7%
Mineral oil,incinerated			9.9	0.6	-94.2%
Organic,recycled		0.6	0.6	1.4	111.7%
Paper,recycled		12.8	12.7	8.6	-32.4%
Plastic,recycled		0.5	0.5	0.3	-35.8%
Silicium,landfill			-		-
Sorted waste, recycled				-	-
Special waste		0.1	0.1	-	-100.0%
Waste mix (SE)			-	-	-
Waste mix, landfill		142.5	8.4	8.6	1.8%
Waste mix, recycled			0.8	-	-100.0%
Waste,incinerated		268.6	278.5	232.0	-16.7%
WEEE,recycled		0.6	0.2	0.2	-29.0%
Wood waste,recycled		0.4	0.1	0.1	-26.0%
Business travel					-
Mileage all. avg.		98.6	3.4	13.7	299.1%
Mileage all. avg.		-			-
Mileage all. car (NO)		651.3	627.1	610.7	-2.6%
Mileage all. electric car (NO)				2.4	100.0%
Water consumption					-
Water supply		17.7	29.5	20.2	-31.5%
Scope 3 Emissions		8 510.9	8 338.3	8 673.4	4.0%
Total		15 979.1	12 954.0	13 303.4	2.7%
Percentage change			*-18.9%*	*2.7%*	
**Alternative Electricity emissions-Market based method (RECs, GoO)*					
Percentage change			-	-	

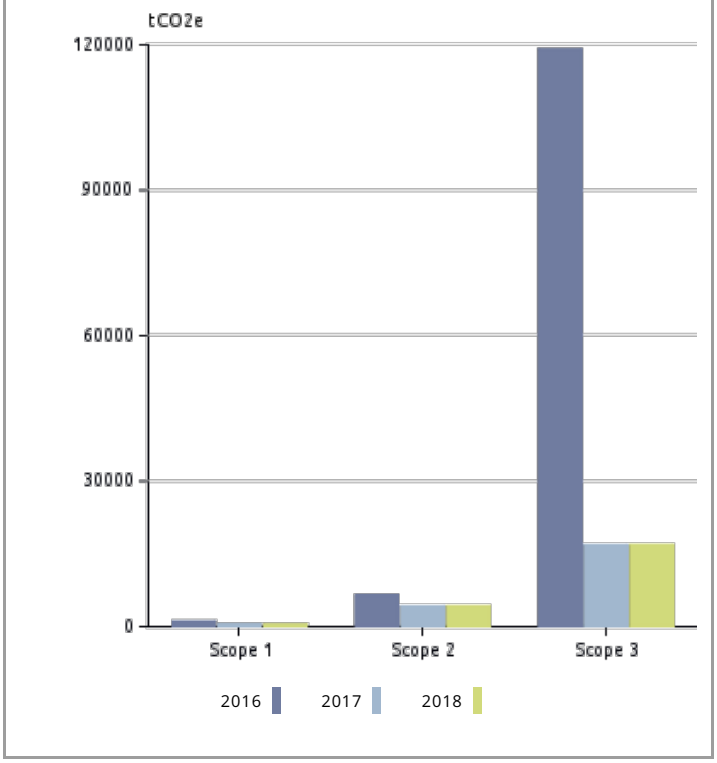
Key energy and climate performance indicators

Name	*Unit*	*2016*	*2017*	*2018*	*% change from previous year*
Total energy scope 1 +2 (MWh)		68 270.3	55 659.2	56 876.5	2.2%
Total emissions (s1+s2+s3) (tCO2e)		126 567.6	21 389.9	21 457.6	0.3%
Scope 1 + 2 emissions (tCO2e)		7 480.2	4 622.8	4 637.3	0.3%

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.