

## KLP

This report is an independent review of the company's Carbon Footprint Analysis based on the total energy consumption related to corporate operations. The carbon footprint gives a general overview of the company's greenhouse gas emissions, converted into CO<sub>2</sub> - equivalents and it is based on reported data from internal and external systems.

The analysis facilitates the identification of possible measures to reduce the energy consumption and thus also the overall carbon footprint. The purposes of the carbon indicators are to measure the carbon intensity per employee and per value creation in addition to showing environmental transparency towards external players.

The analysis is based on the international standard **Greenhouse Gas Protocol Initiative (GHG protocol)**, which is the most important standard for measuring greenhouse gas emissions, developed by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). The GHG protocol consists of two accounting standards explaining how to calculate and report GHG emissions and was the basis for the ISO standard 14064-1. The GHG protocol founds its carbon inventory and reporting on three main scopes of direct and indirect 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.

The company's total emissions for 2011 are **955** tonnes CO<sub>2</sub>.

Oslo, 2 April 2012



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## Key figures emissions

Category	Consumption	Energy eq. (MWh) <sup>1</sup>	Emissions (tonnes CO <sub>2</sub> ) <sup>2</sup>	Percentage
Petrol	26 137 l	238,6	60,4	6 %
Diesel	20 121 l	200,4	51,0	5 %
Electric cars	- kWh	-	-	0 %
Fuel oil / kerosene	- l	-	-	0 %
Natural gas	- m3	-	-	0 %
<b>Sum scope 1</b>		<b>439,0 MWh</b>	<b>111,4 tonnes CO<sub>2</sub></b>	<b>12 %</b>
Electricity (EL)	2 519 508 kWh	2 519,5	282,2	30 %
District heating (DH)	1 595 570 kWh	1 595,6	211,5	22 %
<b>Sum scope 2</b>		<b>4 115,1 MWh</b>	<b>493,7 tonnes CO<sub>2</sub></b>	<b>52 %</b>
Flights	2 680 871 km		333,1	35 %
Train	- km	-	-	0 %
General waste	62 756 kg		16,9	2 %
Paper	18 029 kg		-	0 %
Sorted waste	39 172 kg		-	0 %
Metal	- kg		-	0 %
Plastic	- kg		-	0 %
Electronic waste	1 500 kg		-	0 %
<b>Sum scope 3</b>		<b>- MWh</b>	<b>350,0 tonnes CO<sub>2</sub></b>	<b>37 %</b>
<b>Total CO<sub>2</sub> emissions KLP</b>		<b>4 554,1 MWh</b>	<b>955,1 tonnes CO<sub>2</sub></b>	<b>100 %</b>
<i>EL rental property</i>	<i>81 138 665 kWh</i>	<i>81 138,7</i>	<i>9 087,5</i>	<i>67 %</i>
<i>DH rental property</i>	<i>37 277 588 kWh</i>	<i>37 277,6</i>	<i>4 558,8</i>	<i>33 %</i>
<i>Heating oil rental property</i>	<i>- l</i>	<i>-</i>	<i>-</i>	<i>0 %</i>
<b>Sum scope 3 (rental property)</b>		<b>118 416,3 MWh</b>	<b>13 646,4 tonnes CO<sub>2</sub></b>	<b>100 %</b>
<b>Total CO<sub>2</sub> emissions KLP incl. rental property</b>		<b>122 970,4 MWh</b>	<b>14 601,5 tonnes CO<sub>2</sub></b>	

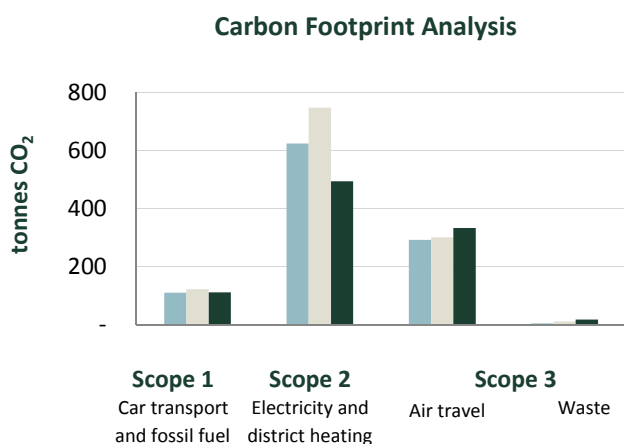
1) Energy equivalent is calculated for the corporate main operations (scope 1 and 2) to show the yearly energy intensity related to the corporate daily activities.

2) The energy and carbon indicators do not include emissions from the rental properties.

## Energy and carbon indicators

	2009	2010	2011	10/11
Total corporate CO <sub>2</sub> emissions (tonnes CO <sub>2</sub> ):	1 030,1	1 180,8	955,1	-19,1 %
Total energy consumption scope 1 and 2 (MWh):	6 365,3	6 727,8	4 554,1	-32,3 %
CO <sub>2</sub> emissions per employee (tonnes CO <sub>2</sub> / employee):	1,4	1,5	1,2	-21,1 %

## Carbon Footprint Analysis



■ 2009 ■ 2010 ■ 2011 **Reporting according to the Greenhouse Gas Protocol**

### Scope 1: Direct emissions

Comprises all direct emissions from company controlled sources, such as company vehicles, own power and heat generation, transportation of employees etc.

### Scope 2: Indirect emissions

This level concerns all emissions from purchased energy, mainly electricity or district heating.

### Scope 3: Indirect emissions

Comprises other indirect emissions from company activities originating from sources not controlled by the company, such as, emissions from sub-suppliers, service and waste management.

Key figures emissions (tonnes CO<sub>2</sub>)

Category	2009	2010	Notes	2011	10/11
Petrol	49,1	57,2	1	60,4	6 %
Diesel	60,7	65,1	1	51,0	-22 %
Electric cars	-	-		-	-
Natural gas	-	-		-	-
<b>Sum scope 1</b>	<b>109,8</b>	<b>122,3</b>		<b>111,4</b>	<b>-9 %</b>
Electricity (EL)	357,8	364,0	2	282,2	-22 %
District heating/ -cooling (	266,5	383,7	3	211,5	-45 %
<b>Sum scope 2</b>	<b>624,3</b>	<b>747,7</b>		<b>493,7</b>	<b>-34 %</b>
Flights	292,1	300,4	4	333,1	11 %
Train	-	-		-	-
General waste	3,9	10,4	5	16,9	63 %
Paper	-	-	5	-	0 %
Sorted waste	-	-		-	-
Electronic waste	-	-		-	-
<b>Sum scope 3</b>	<b>296,0</b>	<b>310,8</b>		<b>350,0</b>	<b>13 %</b>
<b>Total CO<sub>2</sub> emissions KLP</b>	<b>1 030,1</b>	<b>1 180,8</b>		<b>955,1</b>	<b>-19 %</b>
<i>EL rental property</i>	<i>5 930,1</i>	<i>8 276,4</i>		<i>9 087,5</i>	<b>10 %</b>
<i>DH rental property</i>	<i>3 010,4</i>	<i>4 466,7</i>		<i>4 558,8</i>	<b>2 %</b>
<i>Heating oil rental property</i>	<i>77,2</i>	<i>197,1</i>	6	-	<b>-100 %</b>
<i>Sum scope 3 (rental property)</i>	<i>9 017,7</i>	<i>12 940,2</i>		<i>13 646,4</i>	<b>5 %</b>
<i>Total CO<sub>2</sub> emissions KLP incl. rental prc</i>	<i>10 047,8</i>	<i>14 120,9</i>		<i>14 601,5</i>	<b>3 %</b>

## Notes

- Emissions from reported usage of fuel from 14 company cars and car allowance. KLP have one electric car at their disposal. Previous natural gas consumption at the offices in Copenhagen has not been reported for 2011.
- Reported use of electricity in the offices in Oslo (KLP building), Bergen and Trondheim. The offices in Oslo at Paleet and in Holberg terrasse are no longer in use. The electricity use in the first half of 2010 derives from Paleet and Holberg terrasse, while the second half of the year was spent in the KLP building. The total energy consumption in Oslo was reduced by 35 % from 2010 to 2011, the energy use in Trondheim was halved, while the Bergen office cut electricity use with 15 %. No energy use has been reported from the Copenhagen office. The emission factor for electricity is based on the Nordic average production mix for electricity between 2006-2010 and gives 112 gCO<sub>2</sub>/kWh.
- Estimated and reported amount of district heating and cooling in the KLP building in Oslo in 2011. The energy use in the first half of 2010 derives from Paleet and Holberg terrasse, while the second half of the year was spent in the KLP building. The emission factors are calculated based on information from the suppliers Hafslund fjernvarme. The emission factors for district heating was reduced by 10 % in 2011.
- Reported air flight emissions from travel operator Berg-Hansen. The calculation does not take into account additional emissions due to stopovers and circling, or other indirect emissions from air traffic (radiative forcing) contributing to a doubled global warming effect.
- Emissions from energy recovery of general waste. Material recovery of other waste fractions gives an environmental benefit and does in this context not contribute to greenhouse gas emissions. The increase in general waste is due to improved monitoring and data quality and transfer to a new office building in Oslo.
- None of the KLP properties made use of heating oil in 2011.

## Reference

- Scope 1 - Carbon indicator for fuel; DEFRA 2011  
 - Energy converting for fuel; DEFRA, NVE, NP, BP and Statoil Forskningscenter (2001-2008).
- Scope 2 - Carbon indicator for electricity is calculated from a Nordic production mix. Reference: Nordel and PointCarbon.  
 - Carbon indicator for district heating is calculated out of an energy mix, reported from the district heating supplier.
- Scope 3 - Carbon indicator for flights is calculated based on information from Lavutslippsutvalget and DEFRA.  
 - Carbon indicator for transportation of goods; SINTEF, DEFRA, SSB, NSB, Swedish National Road and Transport Research Institute.  
 - Carbon indicator for the management of general waste: Grønn Byggallianse and recycled waste (energy- or material recycle) from Avfall Norge. Either the process of waste is energy- or recycling of waste materials, it gives in this context, zero emission.