

## 0.1

**Introduction**

Please give a general description and introduction to your organization

Dampskibsselskabet NORDEN A/S (NORDEN) operates globally in dry cargo and product tankers with one of the most modern and competitive fleets in the industry comprising 209\* vessels.

In dry cargo, NORDEN is active in all major vessel types. The Company is one of the world's largest operators in Panamax and Handymax, in addition to having growing activities in the Handysize and Post-Panamax vessel types as well as activities in Capesize. NORDEN Handysize Pool and NORDEN Post-Panamax Pool operate the Company's vessels in addition to tonnage from Interorient Navigation Company Ltd. (INC).

In tankers, NORDEN's activities comprise Handysize and MR product tankers. These are operated commercially by the 50% owned Norient Product Pool, which also operates vessels from INC and is one of the largest product tanker pools in the world.

NORDEN's core fleet consists of owned vessels and vessels on long-term charters with purchase options. The core fleet is supplemented by vessels chartered on a short-term basis or for individual voyages, and this mix allows the Company to rapidly adjust the size of the fleet and the costs to changing market conditions. A large number of purchase options for both active vessels and vessels for delivery increase flexibility and contribute to the value creation.

NORDEN has offices in Hellerup (Denmark), Singapore (Singapore), Shanghai (China), Annapolis (USA), Rio de Janeiro (Brazil) and Mumbai (India) as well as site offices at yards in Asia. The Company has 233\* employees on shore and 570\* at sea. Norient Product Pool has 44\* employees in Hellerup, Singapore, Annapolis and Limassol (Cyprus).

NORDEN was founded in 1871 and is one of the oldest listed shipping companies in the world. Management focus is long term and is based on the Company's vision, mission and values. The goal is for the Company to continuously develop for the benefit of its stakeholders and to achieve high, stable earnings. The NORDEN share is listed on NASDAQ OMX Copenhagen A/S, and the Company has approximately 18,000\* shareholders registered by name.

*\*Numbers are stated at 31 December 2010*

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**0.2****Reporting Year**

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Fri 01 Jan 2010 - Fri 31 Dec 2010

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**0.3****Country list configuration**

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country
Denmark
Brazil
China
India
Singapore
United States of America
International Waters

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**0.4**

### Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

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0.5

Please select if you wish to complete a shorter information request

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0.6

### Modules

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire.

If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email [respond@cdproject.net](mailto:respond@cdproject.net).

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

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### Further Information

NORDEN operates on international waters and therefore the above selected countries will only be relevant in relation to emissions from electricity, district heating and car activity relating to NORDEN's offices.

**Module: Management [Investor]**

**Page: 1. Governance**

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1.1

**Where is the highest level of direct responsibility for climate change within your company?**

Individual/Sub-set of the Board or other committee appointed by the Board

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**1.1a**

**Please identify the position of the individual or name of the committee with this responsibility**

Dampskibsselskabet NORDEN A/S (NORDEN) has set up a Corporate Social Responsibility Executive Body (the CSR Body) appointed by the Board of Directors in April 2008. The CSR Body has the overall responsibility for ensuring that NORDEN has a systematic management approach to environmental and social sustainability (in which the issues of climate change is included). The CSR Body holds frequent meetings where climate change is discussed when relevant. Climate change issues are discussed in connection with the Company's strategy, annual reports, completion of the CDP Questionnaire, CSR reports and similar.

The Chairman of the CSR Body is Chief Financial Officer Michael Tønnes Jørgensen, and he therefore ultimately is responsible for handling issues relating to climate change. The Chief Financial Officer reports directly to the Board of Directors. The CSR Body develops strategies, policies, measures and new initiatives relating to CSR, ensures implementation of future initiatives with regard to climate change, and reports to the Board of Directors. The Technical Department oversees the climate-related and environmental efforts regarding the ongoing operation and development of the owned fleet. Furthermore, as of 1 January 2011, NORDEN has established a new dedicated corporate CSR function to oversee CSR matters.

The CSR Body reports to the Board of Directors, and the Board of Directors discusses the main lines and essential new initiatives at least twice a year in connection with the strategy and budget process and approval of the CSR report.

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**1.2**

**Do you provide incentives for the management of climate change issues, including the attainment of targets?**

No

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**1.2a**

**Please complete the table**

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
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2.1

**Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities**

Integrated into multi-disciplinary company wide risk management processes

2.1a

**Please provide further details (see guidance)**

The shipping business is cyclical. Identification of the greatest risks and opportunities is therefore an integral part of the Company's strategy formulation and the presentation of all important decisions to the Board of Directors. NORDEN has a number of plans and procedures in order to manage commercial, financial, credit, market and other risks and opportunities. These plans and procedures are presented to and approved by the Board of Directors. The Board of Management reports on a monthly basis to the Board of Directors on the development within the specific areas. Risk management in NORDEN is described in detail in the Company's annual report 2010 on pages 64-66 (please see attached) and on the Company's website.

NORDEN has people looking into future regulation, risks and opportunities. These people are looking at customer relations and requirements, risks and opportunities due to climate change, including rough weather and severe ice conditions, trading patterns, attracting new customers and legal requirements improving the foundation on which NORDEN operates.

Seaborne transportation is recognised as the most carbon friendly means of moving cargo and NORDEN is constantly looking for opportunities to bring on new customers who wish to take advantage of the environmental benefits of seaborne transportation.

2.2

**Is climate change integrated into your business strategy?**

Yes

2.2a

**Please describe the process and outcomes (see guidance)**

NORDEN's vision, mission and values are the cornerstone of the Company's management. The management focus is long-term, and the goal is for the Company to continuously develop for the benefit of its stakeholders and to achieve high, stable earnings within the risk framework set out by the Board of Directors. Since the Corporate Social Responsibility (CSR) and climate efforts originate from the Company's values, these efforts are a method to advance the goal of living the Company's values.

The Danish Shipowners' Association has set a general target for reducing CO2 emissions from the Danish shipping industry. The target for 2020 is a 25% reduction in CO2 emissions from the 2007 level: 15% as a result of technical improvements and another 10% as a result of speed reductions. NORDEN has since 2007 taken several initiatives, including a climate action plan targeted at vessels owned by the Company, to support continuous CO2 reductions and to reduce SOx and NOx emissions. The initiatives improve the climate by reducing propulsion resistance and optimising engine fuel efficiency which are important factors in reducing emissions to air. The initiatives are evaluated on an ongoing basis. Some have shown to have only a minor effect on emissions reductions and it has therefore been decided not to continue with these initiatives. Furthermore, in 2010 the initiatives have been supplemented by the installation of electrical heaters on Handysize product tankers.

The following are the initiatives which reduce emissions of CO2, SOx and NOx and which are being introduced on all newbuildings and acquired vessels on an ongoing basis:

1. Latest design of main engine slide valves - ensures clean combustion in the ship's engine.
2. CASPER system - Computer Analysis of Ship PERFORMANCE monitors and makes it possible to achieve optimal speed in relation to fuel consumption.
3. Main engine cylinder oil scrape down analysis system - optimal lubrication and better combustion.
4. Alpha-lubrication system - minimises the combustion of lubricating oil.
5. Torque measuring system - best possible calibration of the engine.
6. Full blasting of underwater hulls.
7. Propeller polishing.
8. Increased frequency of overhauls of the vessel's turbo chargers.
9. Increased frequency of overhauls of the vessel's scavenge air coolers.
10. Increased frequency of overhauls of the vessel's fuel oil pumps and injectors.
11. GreenSteam™ - a system for trim optimisation.
12. Electrical heaters - improves energy efficiency.

The target for 2010 was to reduce CO2 emissions from owned vessels by 3.5%, compared to not applying any initiatives, based on the above action items (excluding slow steaming). With an actual reduction of 4.7%, this target was met. For 2011, the target is again 3.5%. The reduction in our 2011 target for CO2 reduction compared to the reduction of 2010 is justifiable because of the planned expansion of NORDEN's owned fleet from 28 vessels at the end of 2010 to more than 45 vessels at the end of 2011. Newbuildings entering the fleet already have many of the innovative features from our "12 point" plan installed from the yard, meaning that these should not be counted in as "new initiatives made on existing fleet".

Other initiatives beside the above mentioned will contribute to a larger reduction in CO2 emissions.

Besides the above described climate action plan, NORDEN is also taking other initiatives to reduce CO2 emissions, including the shift to new bottom paint which will decrease the vessels' propulsion resistance in water. The effect is a reduction of bunker consumption of up to 2% and thereby a corresponding reduction of CO2 and SOx emissions.

Furthermore, Norient Product Pool, which operates all of NORDEN's tanker vessels, has developed the system MOEPS (Master's Operations Environmental Performance System) which is a tool for voyage optimisation and thereby reduction in the consumption of bunker fuel. In 2010, MOEPS was applied to operate on

average 34 vessels in the spot market, and it is estimated that MOEPS has reduced CO2 and SOx emissions by 16%.

The focus on improving the climate and the environment has proven a competitive advantage when negotiating contracts.

Besides the initiatives on existing vessels, on which NORDEN can implement measures to a certain extent, the Company has made energy efficiency an important parameter when contracting new vessels or entering into agreements on long-term chartered tonnage. This is good for the environment but also for NORDEN on the bottom line. NORDEN is in dialogue with shipyards and business partners in optimising vessel designs. For instance, the Company has in collaboration with a shipyard and business partners optimised two Handysize vessels on order by installing a larger main engine and a larger propeller. The change will reduce the consumption of bunker fuel by 11%. Furthermore, in 2010 NORDEN entered into two long-term agreements to charter new Japanese-built Panamax vessels, so-called "eco-ships". Five similar agreements have been entered into so far in 2011. The design of the vessels is expected to reduce the consumption of bunker fuel and thereby CO2 and SOx emissions by 15-20% per vessel compared to the conventional designs.

In addition hereto, NORDEN expects to strengthen its work on energy efficiency on future vessels through the internal project "NORDEN Eco vessel of the future" with participation of several departments. The aim of the project is to select a set of practicable emission reduction technologies, using an MR product tanker as reference vessel. The aim is to reduce emissions by up to 25%.

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## 2.2b

Please explain why not

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## 2.3

**Do you engage with policy makers to encourage further action on mitigation and/or adaptation?**

Yes

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## 2.3a

**Please explain (i) the engagement process and (ii) actions you are advocating**

NORDEN engages with policy makers through its membership of and active engagement in the Danish Shipowners' Association, the International Association of Independent Tanker Owners (Intertanko) and International Chamber of Shipping (ICS). Through these organisations, NORDEN supports giving the International Maritime Organization (IMO) the mandate to enforce global climate and environmental requirements for all shipping companies worldwide.

Furthermore, when appropriate, NORDEN provides input to relevant policies and discussions regarding the shipping industry's contribution to climate change and

how to best minimise such changes.

Finally, NORDEN is a partner in "Green Ship of the Future" which is a partnership established in 2008 between the Danish government and companies from the Danish maritime industry. The partners have joined forces in order to develop strategies to reduce air emissions from ships by 30% on CO<sub>2</sub>, 90% on SO<sub>x</sub> (sulphur oxide) and NO<sub>x</sub> (nitrogen oxide). NORDEN is currently involved in two projects under "Green Ship of the Future" and the Company continues to assess whether the technologies included in the projects under "Green Ship of the Future" are viable in the fleet and in the Company's normal operating modes. A description of the two projects in which NORDEN is currently involved is available in the Company's Corporate Social Responsibility Report 2010 (please see attached).

#### Attachments

[https://webadmin.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/2.Strategy/NORDEN Annual Report 2010.pdf](https://webadmin.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/2.Strategy/NORDEN%20Annual%20Report%202010.pdf)

[https://webadmin.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/2.Strategy/Corporate Social Responsibility Report 2010.pdf](https://webadmin.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/2.Strategy/Corporate%20Social%20Responsibility%20Report%202010.pdf)

### Page: 3. Targets and Initiatives

#### 3.1

**Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?**

Absolute target

#### 3.1a

**Please provide details of your absolute target**

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO <sub>2</sub> e)	Target year	Comment
	Scope 1	99%	25%	2007	362000	2020	The Danish Shipowners' Association has set a general target for reducing CO <sub>2</sub> emissions from the Danish shipping industry. The target for 2010 is a 25% reduction

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
							in CO2 emissions from the 2007 level: 15% as a result of technical improvements and another 10% as a result of speed reductions. NORDEN sets a new reduction target every year since the size of the fleet changes due to the Company's flexible business model. The target for 2010 was to reduce CO2 emissions from owned vessels by 3.5%, and with an actual reduction of 4.7%, this target was exceeded. However, the 4.7% reduction of CO2 emissions is not directly related to the difference in the actual CO2 emissions from 2009 to 2010 since CO2 emissions are affected by a number of conditions: the fleet size and composition, the number of ship days, voyage duration, speed and routes, volumes transported, ballast voyages, weather conditions together with climate and environmental initiatives. Furthermore, the percentage effect is calculated based on assumptions about engine size, engine type and ballast conditions, and the effect of the initiatives (as described in question 2.2a) is estimated based on guidelines from IMO and Intertanko.

3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
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3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comments
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**3.1d**

Please provide details on your progress against this target made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
	23%	33%	The percentage complete is based on the parts of the owned fleet for which NORDEN tracks and has obtained data that can be validated. The composition of NORDEN's fleet in 2020 will most likely consist of vessels that have not yet been built, and therefore the vessels included in the fleet in 2007 will not be included in the fleet in 2020.

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**3.1e**

Please explain (i) why not; and (ii) forecast how your emissions will change over the next five years

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**3.2**

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

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**3.2a**

Please provide details (see guidance)

Transport by ship is the most environmentally friendly means of transport. If the same amount of goods were to be transported by airfreight instead of by ship, the CO2 emissions would be 100 times greater. If lorries were to perform the same function, the world's CO2 emissions would increase tenfold. However, the shipping industry emitted about 2.7% of the global emissions of CO2 in 2007 (source: Second IMO GHG Study 2009), and therefore, NORDEN will continuously work towards reducing emissions to air.

The initiatives as described in question 2.2a are applied on vessels owned by NORDEN, and since the Company charters many of its vessels out to other companies, these will benefit from the applied initiatives, thereby gaining advantage of the reduced consumption of bunker fuel as a result of NORDEN's initiatives.

Since the size of the fleet changes on an ongoing basis, NORDEN sets a new target for CO2 emissions reductions every year which is applied on vessels owned by the Company:

- In 2008, the objective was to reduce CO2 emissions from owned vessels by 2.0%. This was met with an actual reduction of 2.4%.
- In 2009, the objective was to reduce CO2 emissions from owned vessels by 2.0%. This was met with an actual reduction of 3.3%.
- In 2010, the objective was to reduce CO2 emissions from owned vessels by 3.5%. This was met with an actual reduction of 4.7%.
- In 2011, the objective is to reduce CO2 emissions from owned vessels by 3.5%.

The effect is calculated based on assumptions about engine size, engine type and ballast conditions, and the effect of the initiatives is estimated based on guidelines from IMO and Intertanko. Det Norske Veritas (DNV) has verified the data and calculations of the emissions reductions for 2010 and, in DNV's opinion, NORDEN's data provide a fair and credible representation of the Company's effort. The assurance statement from DNV is attached.

### 3.3

**Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)**

Yes

### 3.3a

**Please provide details in the table below**

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Transportation: fleet	Latest design of slide valves - ensures clean combustion in the ship's engine. This activity is voluntary, fully developed and affects scope 1 emissions.			>3 years
Transportation: fleet	CASPER system - Computer Analysis of Ship PERFORMANCE monitors and makes it possible to achieve optimal speed in relation to fuel consumption. This activity is voluntary, fully developed and affects scope 1 emissions.			<1 year
Transportation: fleet	Main engine cylinder oil scrape down analysis system - optimal lubrication and better combustion. This activity is voluntary, fully developed and affects scope 1 emissions.			1-3 years
Transportation: fleet	Alpha-lubrication system - minimises the combustion of lubricating oil. This activity is voluntary, fully developed and affects scope 1 emissions.			>3 years

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Transportation: fleet	Torque measuring system - best possible calibration of the engine. This activity is voluntary, fully developed and affects scope 1 emissions.			<1 year
Transportation: fleet	Full blasting of underwater hulls. This activity is voluntary, fully developed and affects scope 1 emissions.			>3 years
Transportation: fleet	Propeller polishing. This activity is voluntary, fully developed and affects scope 1 emissions.			<1 year
Transportation: fleet	Increased frequency of overhauls of the vessel's turbo chargers. This activity is voluntary, fully developed and affects scope 1 emissions.			1-3 years
Transportation: fleet	Increased frequency of overhauls of the vessel's scavenge air coolers. This activity is voluntary, fully developed and affects scope 1 emissions.			1-3 years
Transportation: fleet	Increased frequency of overhauls of the vessel's fuel oil pumps and injectors. This activity is voluntary, fully developed and affects scope 1 emissions.			1-3 years
Transportation: fleet	GreenSteamTM - a system for trim optimisation. This activity is voluntary, fully developed and affects scope 1 emissions.			>3 years
Transportation: fleet	Electrical heaters - improve energy efficiency. This activity is voluntary, fully developed and affects scope 1 emissions.			<1 year

### 3.3b

#### What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Employee engagement	NORDEN holds internal workshops in order to determine what new initiatives to take in order to optimise the vessels with a view to reducing the consumption of bunker fuel. NORDEN has initiated an internal project, "NORDEN Eco vessel of the future", with participation of several departments. The aim of the project is to select a set of practicable emissions reductions technologies, using an MR product tanker as reference vessel.
Other	NORDEN makes use of knowledge sharing with other shipowners and suppliers, including yards, suppliers of sub-components, and the classes. Furthermore, the Company participates in trade fairs in order to obtain new knowledge on emissions reductions.

### 3.3c

If you do not have any emissions reduction initiatives, please explain why not

#### Further Information

Reductions of CO2 emissions are based on average considerations relating to fleet composition, sailing patterns and performance of the main engine etc. In order to give an indication of what the savings of CO2 emissions correspond to, NORDEN has estimated the achieved savings in kWh, where the following assumptions are used:

- Average vessel consumption of 30 tonnes bunker per vessel per day which is equal to about 346,000 kWh (calorific value: 41.47; conversion factor used (from Tera Joule to MWh): 277.78) per vessel per day.
- 270 sailing days per year (on average the reduction measures have been implemented for 51% of the year's vessel months since NORDEN regularly buys and sells vessels).
- 28 owned vessels (which was the figure as per 31 December 2010).

The total savings equal 62,000 MWh, corresponding to the annual energy consumption of about 12,000 average households (4 persons).

#### Attachments

[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/3.TargetsandInitiatives/Assurance statement from Det Norske Veritas.pdf](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/3.TargetsandInitiatives/Assurance%20statement%20from%20Det%20Norske%20Veritas.pdf)  
[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/3.TargetsandInitiatives/2011\\_05\\_29 Assurance Statement\\_Norden\\_co2\\_2010.pdf](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/3.TargetsandInitiatives/2011_05_29%20Assurance%20Statement_Norden_co2_2010.pdf)

## Page: 4. Communication

### 4.1

Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in other places than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section Reference	Identify the attachment
In annual reports (complete)	Page 40-42	NORDEN annual report 2010
In voluntary communications (complete)	Page 7-12	Corporate Social Responsibility Report 2010

## Attachments

[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/NORDEN Annual Report 2010.pdf](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/NORDEN%20Annual%20Report%202010.pdf)

[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Corporate Social Responsibility Report 2010.pdf](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/4.Communication/Corporate%20Social%20Responsibility%20Report%202010.pdf)

## Module: Risks and Opportunities [Investor]

### Page: 5. Climate Change Risks

#### 5.1

**Have you identified any climate change risks (current or future) that have potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply**

Risks driven by changes in regulation

Risks driven by changes in physical climate parameters

Risks driven by changes in other climate-related developments

#### 5.1a

**Please describe your risks driven by changes in regulation**

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
1	Fuel/energy taxes and regulations	Levies on bunker fuel.	Increased operational cost	>10 years	Indirect (Supply chain)	More likely than not	Low
2	Air pollution limits	Accelerating limitations of sulphur content in bunker fuel.	Increased operational cost	6-10 years	Direct	Virtually certain	Medium-high

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**5.1b**

**Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions**

ID 1:

Levies on bunker fuel would increase NORDEN's operating costs. A suggestion of a levy on bunker fuel is in the region of USD 40-80 per tonne of bunker fuel, however, this is very uncertain. If levies on bunker fuel are introduced, the costs will be distributed on the customers to the extent possible, although there will be a delay before this will happen.

ID 2:

As the upper limit of sulphur content allowed in bunker fuel is lowered, global demand for bunker fuel with a low sulphur content grows, and this will most likely cause the price of bunker fuel with a low sulphur content to increase. The rise in the price of such bunker fuel will in turn cause the daily running costs of the vessels to increase. The bunker suppliers will need to identify ways to ensure that the sulphur content in bunker fuel complies with the future regulations, which from 2015 will make it mandatory that the sulphur content in bunker fuel is maximum 0.1% in the Emission Control Areas (the North Sea, the Baltic sea and the English Channel). It is currently not possible to get bunker fuel with a sulphur content of only 0.1%.

In order to obtain bunker fuel with a low sulphur content, NORDEN will disperse the purchase of bunker fuel to more parts of the world. Furthermore, NORDEN has taken several initiatives which make the Company's fleet more energy efficient, including initiatives aimed at reducing the sulphur content in bunker fuel. Reductions methods are included in NORDEN's climate action plan, which consists of the following:

1. Latest design of main engine slide valves – ensures clean combustion in the ships engine.
2. CASPER system - Computer Analysis of Ship PERFORMANCE monitors and makes it possible to achieve optimal speed in relation to fuel consumption.
3. Main engine cylinder oil scrape down analysis system - optimal lubrication and better combustion.
4. Alpha-lubrication system - minimises the combustion of lubricating oil.
5. Torque measuring system - best possible calibration of the engine.
6. Full blasting of underwater hulls.
7. Propeller polishing.
8. Increased frequency of overhauls of the vessel's turbo chargers.
9. Increased frequency of overhauls of the vessel's scavenge air coolers.
10. Increased frequency of overhauls of the vessel's fuel oil pumps and injectors.
11. GreenSteam™ - a system for trim optimisation.
12. Electrical heaters - improve energy efficiency.

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**5.1c**

**Please describe your risks that are driven by change in physical climate parameters**

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
3	Snow and ice	Rough weather such as regions with ice.	Other: Disruptions	Current	Direct	Likely	Medium-high
4	Tropical cyclones	Rough weather such as cyclones and high sea.	Increased operational cost	Current	Direct	Likely	Medium-high
5	Other physical climate drivers	Rough and abnormal weather conditions as forecasted by the Intergovernmental Panel on Climate Change (IPCC) are likely to alter the intensity and significance of physical challenges (e.g. as a result of an increase in the frequency of severe storms and freak waves (>25 meters)).	Increased operational cost	Current	Direct	Likely	Medium-high
6	Change in precipitation pattern	The current La Niña.	Reduced demand for goods/services	Current	Direct	More likely than not	Low-medium

#### 5.1d

**Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions**

ID 3 + 4:

The physical risks relating to rough and severe weather conditions may increase the risk of damage to the vessels, which may imply more days in dock and fewer days for earnings.

Furthermore, more damage to vessels resulting from rough and severe weather conditions is likely to increase maintenance and insurance costs.

ID 5:

Rough and abnormal weather conditions can cause delayed arrival and departure of vessels as well as late discharge and load of cargoes, and cancellation of cargoes due to force majeure. This could imply additional expenses for NORDEN since the operator of the vessel bears the costs related to bad weather conditions.

Rough and abnormal weather conditions can lead to longer voyages and therefore lower earnings since NORDEN bears the risks relating to changing weather conditions.

ID 6:

The current La Niña implies abnormal weather conditions. Sea level pressure below average and sea surface temperatures above average in the western tropical Pacific and eastern Indian Ocean resulting from La Niña have led to rainfall much above average in parts of Australia, Indonesia and Southeast Asia. It is estimated that the flooding in Queensland, Australia, has caused a loss of coal exports of 30 million tonnes. Furthermore, the corn and soybean output is expected to curb in

the US and China.

ID 3 + 4 + 5 + 6 (regarding methods to manage the risks and costs associated with these actions):

Physical challenges related to extreme weather conditions are integrated into NORDEN's daily operation of owned and chartered vessels - e.g. use of the best available technology for constant monitoring of the position of vessels (using GPS), monitoring of weather conditions, weather routing, route planning, type of vessel in operation (i.e. special requirements regarding construction) and well-trained, educated and qualified staff. Hence, different types of physical challenges posed by climate change are already factored in. An increase in intensity and significance of those risks can immediately be responded to by escalating the activities already in place. Thus, NORDEN considers the physical challenges to be manageable in a foreseeable future. It is clear that the newest technology and training of staff are mandatory to be able to ensure proper management of extreme weather events both in the short and long run. These methods are not expected to entail additional costs for NORDEN.

### 5.1e

**Please describe your risks that are driven by changes in other climate-related developments**

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
7	Reputation	The reputation of first of all NORDEN as a shipping company but also the shipping industry in general.	Reduced demand for goods/services	Current	Direct	Unlikely	High
8	Uncertainty in market signals	Changes in the demand for transportation.	Reduced demand for goods/services	Current	Direct	More likely than not	High
9	Other drivers	Possible gradual transition from fossil fuels to other energy sources.	Inability to do business	Unknown	Direct	About as likely as not	High

### 5.1f

**Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions**

ID 7:

Due to the debate about the shipping industry's contribution to climate change, climate change may be perceived by the public and politicians as a reputation issue for the shipping industry. Shipping accounts for 80-90% of all transport (source: Review of Maritime Transport, United Nations Conference on Trade and Development (UNCTAD), 2008). There are no precise figures on how much CO2 is presently emitted by shipping, but it is estimated to be around 2.7% of global

emissions of CO2 in 2007 (source: Second IMO GHG Study 2009). Despite the fact that shipping is the most environmentally friendly means of transport causing far lower CO2 emissions, and thus less environmental impact per transported tonne of cargo, than for example train, lorry or air transport, it is essential that the industry continuously takes measures to reduce emissions and participates in the debate in order not to risk damaging its reputation and license to operate. NORDEN takes part in the debate through its involvement in the Danish Shipowners' Association, the International Chamber of Shipping (ICS) and the International Association of Independent Tankers Owners (Intertanko), and directly through the Company's own media and other channels.

To NORDEN, the reputational challenges imply a constant and high awareness of the developments in the debate and an increasing effort to communicate actively. It is important that stakeholders know that NORDEN makes efforts to address environmental and climate-related issues through for example efficiency measures. NORDEN's fourth response to the CDP Questionnaire is an example of the Company's awareness and of its wish to communicate its efforts.

ID 8:

Climate change can also cause market-related impacts as demand for transportation of different types of goods to and from different geographical regions of the world may change, which could lead to changes in income for NORDEN. The Company's flexible business model implies that the Company can adapt to changes easily and thereby adjust to changes in market conditions. NORDEN has both owned and chartered vessels (NORDEN owns approx. 15% of the operated fleet). This implies that the Company, to a great extent, is equipped to meet changes and demands in the market place. Hence, the impact is currently manageable and not considered to be significant in a foreseeable future.

The market challenges imply that NORDEN constantly monitors, and thereby is aware of, the development in market demand and supply, and therefore is able to adapt its business to changing market conditions which may potentially lead to changes in income.

ID 9:

Climate change has caused a limited number of advanced economies to suggest a gradual transition from fossil fuels, such as coal and oil, to other energy sources. This may impact NORDEN's operations since a significant part of the cargo transported by the Company consists of coal and oil products.

If restrictions on fossil fuels come into force, it will initially lead to a decrease in income for NORDEN. However, if restrictions are to happen, there will be substitutes to other kinds of energy sources. NORDEN is already targeting contracts on the transportation of such substitutes.

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5.1g

Please explain why you do not consider your company to be exposed to risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

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5.1h

Please explain why you do not consider your company to be exposed to risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

5.1i

Please explain why you do not consider your company to be exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

**Page: 6. Climate Change Opportunities**

6.1

**Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply**

- Opportunities driven by changes in regulation
- Opportunities driven by changes in physical climate parameters
- Opportunities driven by changes in other climate-related developments

6.1a

**Please describe your opportunities that are driven by changes in regulation**

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
10	General environmental regulations, including planning	Possible reduction of port costs for energy efficient vessels.	Reduced operational costs	Current	Direct	Very likely	Low-medium
11	General environmental regulations, including planning	As described in 5.1a and 5.1b, the shipping industry is likely to be included in greenhouse gas regulations.	Reduced operational costs	>10 years	Indirect (Supply chain)	More likely than not	Low

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
12	Other regulatory drivers	Possible gradual transition from fossil fuels to other energy sources.	New products/business services	>10 years	Indirect (Supply chain)	About as likely as not	Medium

## 6.1b

**Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions**

ID 10:

The Port of Rotterdam has already introduced reductions in port costs for vessels that have a "Ship Energy Efficiency Management Plan" (SEEMP) approved by the Class (reduction of costs depends on the size of the vessel). The SEEMP is a set of operational initiatives to reduce emissions, and several of these are already part of NORDEN's own climate initiatives to reduce emissions. NORDEN has the SEEMP deployed on part of the owned fleet and expects to have the SEEMP implemented on the entire owned fleet during 2011.

Besides the Port of Rotterdam, other ports are expected to follow suit by introducing the same possible reduction of port costs. NORDEN monitors the development in this expansion. A possible reduction in port costs will reduce operational costs for NORDEN when vessels having the SEEMP implemented call into these ports.

ID 11:

This is the fourth year NORDEN is answering the CDP Questionnaire and like the previous years, the shipping industry is not subject to regulation in the area of greenhouse gas (GHG) emissions. The disappointing outcomes of the UN Climate Change Conference 2009 (COP15) in Copenhagen, Denmark, in December 2009 and the UN Climate Change Conference 2010 (COP16) in Cancún, Mexico, in December 2010 did not result in regulation of the shipping industry. However, considering the industry's contribution to climate change as a whole and the related ongoing debate amongst various stakeholders, including politicians, regulation is expected to follow eventually.

The Kyoto Protocol places regulation of the shipping industry in the hands of the UN international shipping organisation, the International Maritime Organization (IMO). Whether regulation will have an impact on NORDEN depends on the scope of the regulation. NORDEN supports international regulation of the shipping industry and is of the opinion that only a global regulation scheme can reduce the risk of regional regulation schemes being used. NORDEN supports IMO's work through the Danish Shipowners' Association, the International Chamber of Shipping (ICS) and the International Association of Independent Tanker Owners (Intertanko). NORDEN supports giving IMO a mandate to enforce regulation with equal requirements for all shipping companies worldwide.

NORDEN welcomes industry-specific regulation given that it is transparent, global and fair in scope and thus does not affect the competitive market mechanisms. Under these circumstances, regulation will favour the shipping companies which are most carbon efficient, e.g. in terms of fuel efficiency. NORDEN would consider such regulation an opportunity rather than a risk since NORDEN has a modern and efficient fleet.

Global regulation targeting the entire transport sector would be advantageous for the shipping industry which has far lower CO2 emissions (and thus less environmental impact per transported cargo) than for example train, lorry or air transport.

Climate change and CO2 emissions are global challenges requiring global solutions, and NORDEN considers it important to find international solutions to this global problem as such solutions will result in the best environmental improvements and ensure equal competition for all shipping companies worldwide.

NORDEN believes that a coherent and comprehensive future IMO framework should be:

- effective in contributing to the reduction of total GHG emissions
- binding and equally applicable to all Flag States in order to avoid evasion
- cost efficient
- able to limit or effectively minimise distortion of competition
- environmentally sustainable without penalising global trade and growth
- target-based and not prescribing specific methods
- promoting and facilitating technical innovation and R&D in the shipping industry
- accommodating to front runners in the field of energy efficient technologies
- practicable, transparent, fraud free and easy to administer

These principles have been laid down by IMO's Marine Environment Protection Committee.

At the end of 2010, NORDEN operated a core fleet, including owned and chartered vessels with purchase and extension options, consisting of 70 vessels with an average of 2.9 years of operation. All tanker vessels are double-hulled. This together with the low average of years of operation makes NORDEN's fleet one of the most modern fleet's in the world. And since newer vessels, all other things being equal, consume less bunker fuel, such a fleet will produce less CO2 and SOx emissions per tonne-mile. NORDEN believes this will prove an advantage for the Company if new regulation is imposed on the shipping industry.

ID 12:

If the use of fossil fuels is to be gradually reduced in certain Western European countries, a substitution towards bio fuels is likely to take place. This may create new business opportunities, in the form of transportation of biomass, which will eventually create new income. Furthermore, such a gradual transition may imply more energy efficient vessels in the future, reducing operating costs. In relation to operation of vessels, bio fuel is not a possible substitute for bunker fuel in vessel engines today.

NORDEN will continue targeting new business such as transportation of biomass. In 2009, the Company signed its first wood pellet contract, a 15-year contract on the transportation of wood pellets from the US to the Netherlands. And in 2010, the Company signed its first wood chips contract, a 3-year contract on the transportation of wood chips from Liberia to Continental Europe. Biomass and wood products constitute the second largest commodity in NORDEN's cargo book going forward.

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## 6.1c

**Please describe the opportunities that are driven by changes in physical climate parameters**

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
13	Change in precipitation pattern	The end of the current La Niña.	Increased demand for existing products/services	Current	Indirect (Supply chain)	More likely than not	Medium
14	Snow and ice	Operation of vessels classed to sail in ice-filled waters.	Increased demand for existing products/services	Current	Direct	Virtually certain	Medium-high
15	Snow and ice	Melting of ice in the northern hemisphere creating an opportunity to transport via the Northern Sea Route.	Reduced operational costs	1-5 years	Direct	More likely than not	Medium
16	Other physical climate drivers	Rough weather leading to changes in sailing patterns.	Other: Increased income	Current	Direct	Likely	Medium-high

#### 6.1d

**Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions**

ID 13:

The end of the current La Niña will entail that the weather conditions will stabilise from the abnormal conditions caused by the current La Niña. The end of the current La Niña will result in larger harvest of corn and soybean in the US and China and larger harvest of crops in Argentina, Brazil and Uruguay. The increase in crops could increase the demand for NORDEN's vessels to transport the crops to other places in the world.

The Company keeps a close eye on changes in crops as a consequence of changing weather conditions such as La Niña and El Niño.

ID 14:

NORDEN has ice-reinforced vessels classed to navigate in ice-filled waters. An unusually cold winter again meant that the waters in the northern part of Europe, North America and Asia quickly iced up and that the ice was thicker than usual. This effectively closed off certain ports for vessels without ice-class and increased demand for ice-reinforced vessels. Companies receive premiums for their ice-reinforced vessels.

NORDEN makes use of its vessels that are reinforced to navigate in ice-filled waters (as per 31 December 2010, Norient Product Pool operated 32 ice-reinforced tankers and NORDEN operated 3 dry cargo ice-reinforced vessels).

The past rough winter has implied increased use of vessels that are able to sail in ice-filled waters, which has increased demand for NORDEN's ice-reinforced vessels.

ID 15:

Climate change may lead to the Northern Sea Route being used as an alternative to the Suez Canal and Panama Canal. NORDEN continuously monitors this

possibility which may lead to reduced operational costs for the Company.

ID 16:

Rough weather may imply that several areas cannot be navigated in, making transport distances longer, which in turn is likely to increase the income for NORDEN.

NORDEN uses the best available technology for constant monitoring of the position of vessels (using GPS), monitoring of weather conditions, weather routing, route planning, type of vessels in operation (i.e. special requirements regarding construction) and well-trained, educated and qualified staff. Hence, different types of physical opportunities posed by climate change are already factored in. It is clear that the newest technology and training of staff are mandatory to be able to ensure proper management of extreme weather events both in the short and long run. These methods are not expected to entail additional costs for NORDEN.

#### 6.1e

**Please describe the opportunities that are driven by changes in other climate-related developments**

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
17	Reputation	Reputational opportunities since shipping is the most environmentally friendly means of cargo transport. And to NORDEN specifically since the Company has a young fleet and furthermore has taken several initiatives to reduce emissions of CO2.	Increased demand for existing products/services	Current	Direct	Likely	High
18	Other drivers	Introduction of new commodities to be transported.	New products/business services	Current	Direct	Likely	High

#### 6.1f

**Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions**

ID 17:

At industry level, it is essential that measures are taken to further reduce emissions (thereby ensuring that the industry keeps its current position as best in class). I.e. the shipping industry accounts for 80-90% of all transport and is the most environmentally friendly means of cargo transport.

To NORDEN, an advantage exists in the market place due to high efficiency of the vessels owned by the Company. At the end of 2010, NORDEN's core fleet had an average of 2.9 years of operation, and the newest technology is installed onboard the vessels. Currently, the newest technologies used are focusing on optimising the usage of bunker fuel in the diesel engines of the vessels. This has been the objective for many years now - and since diesel engines are foreseen

to remain the main propulsive power in shipping - this is expected to continue. However, NORDEN has an opportunity to gain a competitive edge by actively increasing its profile as a responsible shipping company which continuously works towards lowering its CO2 emissions. This is a factor of influence for obtaining future customers that is likely to increase in significance.

Furthermore, NORDEN would look forward to doing business with customers who are interested in informing consumers etc. of transportation-specific emissions.

To NORDEN, the reputational opportunity implies a constant and high awareness of the developments in the debate and an increasing effort to communicate new initiatives. It is important that stakeholders know that NORDEN makes an effort to address climate issues through for example efficiency measures.

To the extent that NORDEN's customers find it important that the Company has a modern and energy efficient fleet, it will have positive financial implications for NORDEN. Customers who today consider this important include mainly oil majors and to a lesser, but increasing, extent large dry cargo customers.

ID 18:

Climate change has introduced new commodities to be transported such as biomass, including wood pellets and wood chips. In 2009, NORDEN signed its first contract of transportation of wood pellets, a 15-year contract to transport wood pellets from the US to the Netherlands. In 2010, NORDEN signed its first contract of transportation of wood chips, a 3-year contract to transport wood chips from Liberia to Continental Europe.

NORDEN is constantly focusing on finding new commodities to be transported and will continue targeting new business such as transportation of different types of biomass.

The introduction of new transported commodities will increase income for NORDEN.

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6.1g

Please explain why you do not consider your company to be exposed to opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

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6.1h

Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

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6.1i

Please explain why you do not consider your company to be exposed to opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

## Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]

### Page: 7. Emissions Methodology

#### 7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Fri 01 Jan 2010 - Fri 31 Dec 2010	528285	534

#### 7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

#### 7.2a

If you have selected "Other", please provide details below

### 7.3

Please give the source for the global warming potentials you have used

Gas	Reference
Other: Carbon dioxide	IPCC Fourth Assessment Report (AR4 - 100 year)

### 7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Residual fuel oil	3.13	metric tonnes CO2 per metric tonne	Second IMO GHG Study 2009
Diesel/Gas oil	3.19	metric tonnes CO2 per metric tonne	Second IMO GHG Study 2009
Electricity	283.58	Other: gram CO2 per kWh	Greenhouse Gas Protocol Initiative, for Denmark
Electricity	84.22	Other: gram CO2 per kWh	Greenhouse Gas Protocol Initiative, for Brazil
Electricity	788.13	Other: gram CO2 per kWh	Greenhouse Gas Protocol Initiative, for China
Electricity	943.36	Other: gram CO2 per kWh	Greenhouse Gas Protocol Initiative, for India
Electricity	543.93	Other: gram CO2 per kWh	Greenhouse Gas Protocol Initiative, for Singapore

### Further Information

NORDEN's emissions reporting relates to all CO2 emissions from the Company's shipping operations at sea, the car fleet (14 owned and 41 leased), the land-based administration activities (both head office and overseas offices) and emissions from business travel activity.

Shipping itself is the Company's primary and most significant source of CO2 emissions. The CO2 emissions from land-based activities and business travel activities are highly insignificant compared to the CO2 emissions from the shipping operations at sea. However, by including these emissions, NORDEN involves its employees in the CO2 debate which motivates the long-term effort needed from the employees.

At the end of 2010, NORDEN owned 28 vessels (all under the Company's full control). "Full control" in this connection means that NORDEN owns the vessels, has the right to impose own standards, has the decision-making rights and has the opportunity to invest in the best available technology. Some of the owned vessels were chartered out to other companies. As a result of NORDEN's flexible business model, the Company also operated some 180 vessels held on charter for shorter or longer periods of time. The Company controls these vessels only commercially. CO2 emissions from NORDEN's fleet are thus influenced by the combination of vessels which the Company chooses to include in its portfolio.

Scope 1 CO2 emissions: Scope 1 includes CO2 emissions from the vessels that were owned by the Company in 2010. When NORDEN owns the vessels, it has full financial and operational control within the boundaries of the international shipping rules, regulations and planning to which all shipping companies are subject. The Company's CO2 emissions from owned vessels are calculated by multiplying the bunker fuel quantity (metric tonnes) consumed by the CO2 emissions factor for each bunker type (please see question 7.4), and CO2 emissions from the combustion of biologically sequestered carbon have been excluded as prescribed by the Greenhouse Gas Protocol. Scope 1 CO2 emissions also include emissions from 14 owned company cars. The calculation of the CO2 emissions from these cars is based on the Greenhouse Gas Protocol's "GHG emissions from transport or mobile sources", in which different "activity data" is put into a mathematical spreadsheet model, "Transport Tool", and the estimated CO2 emissions are then calculated. The chosen vehicle type is "Passenger Car - Gasoline - Year 2005-present" and distance is set to 20,000 km annually. The basis for calculations has been expanded which explains the small deviations in the emissions figures from the ones published in the Corporate Social Responsibility Report 2010.

Scope 2 CO2 emissions: Scope 2 includes CO2 emissions from land-based activities at NORDEN's offices worldwide. Emissions included in Scope 2 are emissions from electricity and district heating. The methodology used to calculate the Company's CO2 emissions under Scope 2 is based on the amount of electricity and district heating used during 2010. Electricity is already measured in kWh and therefore the total estimated amount of electricity used in 2010 is multiplied by the CO2 emissions factor valid for the different countries in which NORDEN has offices. The emissions factors used to obtain the amount of CO2 emissions from electricity are the ones provided by The Greenhouse Gas Protocol Initiative in the spread sheet "Indirect CO2 emissions from Purchased Electricity, Heat, or Steam", sheet "EFs Electricity Intl All Fuels". For the countries in which NORDEN has offices, the factors are as given above in question 7.4 (emissions factors are from 2005 since this is the most recent year when these emissions factors have been provided). All factors are in gram CO2 per kWh. District heating is measured in GJ and therefore the amount of district heating used in GJ is converted to kWh by using an online energy converter (to be found here: <http://www.onlineconversion.com/>). Only the head office in Denmark uses district heating. To obtain the amount of CO2 emissions resulting from district heating, the above mentioned emissions factor 283.582 for Denmark is used.

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## Attachments

[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/7.EmissionsMethodology/Indirect CO2 emissions from Purchased Electricity, Heat, or Steam.xlsx](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/7.EmissionsMethodology/Indirect%20CO2%20emissions%20from%20Purchased%20Electricity,%20Heat,%20or%20Steam.xlsx)

[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/7.EmissionsMethodology/Transport Tool.xlsx](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/7.EmissionsMethodology/Transport%20Tool.xlsx)

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## Page: 8. Emissions Data - (1 Jan 2010 - 31 Dec 2010)

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### 8.1

**Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory**

Financial control

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**8.2a**

**Please provide your gross global Scope 1 emissions figure in metric tonnes CO2e**

528285

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**8.2b**

**Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 1 breakdown**

Boundary	Gross global Scope 1 emissions (metric tonnes CO2e)	Comment
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**8.2c**

**Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 1 Total**

Gross global Scope 1 emissions (metric tonnes CO2e) - Total Part 1	Comment
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**8.2d**

**Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 2**

Gross global Scope 1 emissions (metric tonnes CO2e) - Other operationally controlled entities, activities or facilities	Comment
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---

**8.3a**

**Please provide your gross global Scope 2 emissions figure in metric tonnes CO2e**

534

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8.3b

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 breakdown

Boundary	Gross global Scope 2 emissions (metric tonnes CO2e)	Comment
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---

8.3c

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 Total

Gross global Scope 2 emissions (metric tonnes CO2e) - Total Part 1	Comment
--	---------

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8.3d

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 2

Gross global Scope 2 emissions (metric tonnes CO2e) - Other operationally controlled entities, activities or facilities	Comment
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8.4

Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

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8.4a

Please complete the table

Reporting Entity	Source	Scope	Explain why the source is excluded
------------------	--------	-------	------------------------------------

8.4

Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
Emissions from electricity used at NORDEN's office in Annapolis, US.	Scope 2	Utilities are provided at no additional assessment by the landlord, and landlord has not been able to specify what part of the rent relates to electricity and what part relates to rent of office. However, electricity emissions from the office are estimated to be in the region of the emissions from the other overseas offices and therefore represent a rather insignificant part of NORDEN's total CO2 emissions.

8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and Scope 2 figures that you have supplied and specify the sources of uncertainty in your data gathering, handling, and calculations

Scope	Uncertainty Range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Assumptions Other: Consumption measurement	The main sources of uncertainty in the total scope 1 figure relate to measurement of the bunker consumption of the owned vessels and assumptions relating to the usage of owned cars and the emissions factors used. However, emissions from car activity are insignificant compared to emissions from vessel operation.
Scope 2	Less than or equal to 2%	Data Gaps	The main source of uncertainty in the total scope 2 figure relates to the data provided by NORDEN's electricity and district heating providers.

---

8.6

**Please indicate the verification/assurance status that applies to your Scope 1 emissions**

Verification or assurance complete

---

8.6a

**Please indicate the proportion of your Scope 1 emissions that are verified/assured**

More than 90% but less than or equal to 100%

---

8.6b

**Please provide further details of the verification/assurance undertaken, and attach the relevant statements**

Type of verification or assurance	Relevant standard	Relevant statement attached
Verification	Other: Det Norske Veritas	

---

8.7

**Please indicate the verification/assurance status that applies to your Scope 2 emissions**

Verification or assurance complete

---

8.7a

**Please indicate the proportion of your Scope 2 emissions that are verified/assured**

More than 90% but less than or equal to 100%

---

**8.7b**

**Please provide further details of the verification/assurance undertaken, and attach the relevant statements**

Type of verification or assurance	Relevant standard	Relevant statement attached
Verification	Other: Det Norske Veritas	

---

**8.8**

**Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?**

Yes

---

**8.8a**

**Please provide the emissions in metric tonnes CO<sub>2</sub>e**

3244

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**Further Information**

Based on estimates from the oil industry, diesel oil, used primarily for auxiliary engines, contains between 0% and 5% of fatty acid methyl ester (FAME) which is biologically sequestered. However, the advantage of adding biologically sequestered carbon in the form of FAME for auxiliary engine fuel is offset to a certain degree by the detrimental effect on engine durability.

The percentage used to calculate CO<sub>2</sub> emissions from biologically sequestered carbon is 2.5% since diesel oil contains between 0% and 5% of biologically sequestered carbon.

CO<sub>2</sub> emissions from biologically sequestered carbon from owned vessels under scope 1 are estimated to be 495 metric tonnes.

CO2 emissions from biologically sequestered carbon from operated vessels under scope 3 are estimated to be 2,749 metric tonnes.

**Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)**

**9.1**

**Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?**

Yes

**9.1a**

**Please complete the table below**

Country	Scope 1 metric tonnes CO2e
Denmark	5
Brazil	10
China	5
India	5
Singapore	5
United States of America	38
International Waters	528217

**9.2**

**Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)**

By facility

**9.2a**

Please break down your total gross global Scope 1 emissions by business division

Business Division	Scope 1 metric tonnes CO2e
-------------------	----------------------------

---

9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 metric tonnes CO2e
Owned vessels	528217
Owned company cars	66

---

9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 metric tonnes CO2e
----------	----------------------------

---

9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 metric tonnes CO2e
----------	----------------------------

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10.1

Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

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**10.1a**

Please complete the table below

Country	Scope 2 metric tonnes CO2e
Denmark	480
Brazil	1
China	13
India	19
Singapore	21

---

**10.2**

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

---

**10.2a**

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 metric tonnes CO2e
-------------------	----------------------------

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**10.2b**

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 metric tonnes CO2e
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10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 metric tonnes CO2e
----------	----------------------------

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**Page: 11. Emissions Scope 2 Contractual**

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11.1

**Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?**

Yes

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11.1a

You may report a total contractual Scope 2 figure in response to this question. Please provide your total global contractual Scope 2 GHG emissions figure in metric tonnes CO2e

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11.1b

Explain the basis of the alternative figure (see guidance)

---

11.2

**Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?**

No

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11.2a

Please provide details including the number and type of certificates

Type of certificate	Number of certificates	Comments
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**Further Information**

According to the Company's energy provider, DONG Energy, approximately 25% of the electricity used by NORDEN's head office is produced from renewable energy sources (wind, water, sun, waste, biomass and biogas). At this stage, NORDEN is not able to estimate a total percentage of purchased MWh from renewable energy for all land-based operations.

NORDEN is in the process of entering into a climate partnership agreement with the Company's energy provider, DONG Energy, on the purchase of renewable energy certificates for its head office in Denmark.

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**Page: 12. Energy**

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12.1

**What percentage of your total operational spend in the reporting year was on energy?**

More than 60% but less than or equal to 65%

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12.2

**Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year**

Energy type	MWh
Fuel	1948836
Electricity	724
Heat	967
Steam	0
Cooling	0

### 12.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Other: Intermediate fuel oil (IFO)	1872761
Other: Marine diesel oil (MDO) and marine gas oil (MGO)	76075

### Further Information

The interval provided in question 12.1 relates to offshore operations only.

## Page: 13. Emissions Performance

### 13.1

How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Increased

### 13.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Acquisitions	30	Increase	The number of owned vessels which contribute to the predominant share of scope 1 CO2 emissions had grown by 50% at year-end 2010.
Change in methodology	565	Increase	In 2009, scope 1 CO2 emissions included emissions from vessels that were both owned and operated by the Company. In 2010, scope 1 CO2 emissions include emissions from all vessels owned by the Company. This contribution leads to a significant increase in the number of vessels being reported. In the following questions where the changes from previous years are described, the changes are described using the methodology of 2010 in 2009.

### 13.2

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
0.00024	metric tonnes CO2e	unit total revenue	9	Increase	During 2010, NORDEN's scope 1 and scope 2 emissions constituted 528,820 tonnes CO2 and revenue constituted USD 2189.6 million. During 2009, NORDEN's scope 1 and scope 2 emissions constituted 379,872 tonnes CO2 and revenue constituted USD 1,756.0 million. The reported intensity figure is not meaningful since income from chartered vessels is included in revenue but not in scope 1 and scope 2 CO2 emissions.

### 13.3

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
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Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
658.55	metric tonnes CO2e	FTE Employee	3	Increase	During 2010, NORDEN's scope 1 and scope 2 emissions constituted 528,820 tonnes CO2 and full time equivalent employees at year-end constituted 803 employees. During 2009, NORDEN's scope 1 and scope 2 emissions constituted 379,872 tonnes CO2 and full time equivalent employees at year-end constituted 592 employees which resulted in an intensity figure of 641.68. The reported intensity figure is not meaningful since the employees of NORDEN operate both owned and chartered vessels which not only relate to scope 1 and scope 2 CO2 emissions, but also scope 3 CO2 emissions.

13.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
3.13	metric tonnes CO2e	Other: Tonne bunker fuel	8	Increase	During 2010, NORDEN's scope 1 and scope 2 emissions constituted 528,820 tonnes CO2 and bunker fuel constituted 168,799 tonnes. During 2009, NORDEN's scope 1 and scope 2 emissions constituted 379,872 tonnes CO2 and bunker fuel constituted 131,092 tonnes which resulted in an intensity figure of 2.90. The intensity figure has increased by 8% from 2009 to 2010. However, the two intensity figures are difficult to compare since the composition of the fleet is of major importance. Larger vessels are more efficient compared to smaller vessels, and the Company's fleet consisted of a larger portion of smaller vessels during 2010 than 2009.

14.1

**Do you participate in any emission trading schemes?**

No, and we do not currently anticipate doing so in the next two years

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14.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
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14.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

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14.2

Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

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14.2a

Please complete the following table

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits retired	Purpose e.g. compliance
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## Further Information

However, again in 2010, NORDEN bought CO2 quotas in order for the Company's website to be CO2 neutral.

## Page: 15. Scope 3 Emissions

### 15.1

Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
Fuel- and energy-related activities (not included in Scope 1 or 2)	2277103	The Company's CO2 emissions from the approx. 180 chartered and operated vessels are calculated as the bunker fuel quantity (metric tonnes) consumed on a voyage times the duration (number of days) of the voyage (calculated pro rata) times the CO2 emissions factor for each bunker type. The CO2 emissions factor used is found in the "Second IMO GHG Study 2009", which is 3.13 for residual fuel oil/intermediate fuel oil (IFO) and 3.19 for marine diesel oil (MDO) and marine gas oil (MGO). The result of this calculation is the reported annual CO2 emissions for vessels chartered and operated by NORDEN (including the tanker vessels operated by NORDEN via Norient Product Pool). The basis of the calculations has been expanded which explains the small deviations in the emissions figures from the ones published in the Corporate Social Responsibility Report 2010.	
Business travel	1652	The CO2 emissions are obtained from NORDEN's travel agencies, including InStone, Marine Travel and ViaTravel.	
Other: Leased cars	195	The methodology used to calculate CO2 emissions from the leased cars is based on the Greenhouse Gas Protocol's "GHG emissions from transport or mobile sources" in which different "activity data" is put into a mathematical spreadsheet model, "Transport Tool", (please see attached) and the estimated CO2 emissions are then calculated. The chosen vehicle type is "Passenger Car - Gasoline - Year 2005-present" and distance is set to 20,000 km annually.	

### 15.2

**Please indicate the verification/assurance status that applies to your Scope 3 emissions**

Not verified or assured

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**15.2a**

Please indicate the proportion of your Scope 3 emissions that are verified/assured

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**15.2b**

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
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**15.3**

**How do your absolute Scope 3 emissions for the reporting year compare to the previous year?**

Increased

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**15.3a**

**Please complete the table**

Reason	Emissions value (percentage)	Direction of Change	Comment
Other: A number of factors, see comment	1	Increase	CO2 emissions are affected by a number of conditions: the number of ship days, voyage duration, speed (slow steaming) and routes, volumes transported, ballast voyages, weather conditions together with climate and environmental initiatives. These factors can explain the slight increase in CO2

Reason	Emissions value (percentage)	Direction of Change	Comment
			emissions from 2009 to 2010.

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**Attachments**

[https://www.cdproject.net/Sites/2011/69/22369/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/15.Scope3Emissions/Transport Tool.xlsx](https://www.cdproject.net/Sites/2011/69/22369/Investor%20CDP%202011/Shared%20Documents/Attachments/InvestorCDP2011/15.Scope3Emissions/Transport%20Tool.xlsx)

**Module: Sign Off**

**Page: Sign Off**

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**Please enter the name of the individual that has signed off (approved) the response and their job title**

Michael Tønnes Jørgensen, Chief Financial Officer

**Carbon Disclosure Project**