

Module: Introduction**Page: Introduction****CC0.1****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. NORDEN's active fleet consists of a total of 242 owned and chartered vessels.

In Dry Cargo, NORDEN is active in all major vessel types. NORDEN is one of the world's largest operators in Panamax and Supramax, in addition to having considerable activities in the Handysize and Post-Panamax vessel types as well as activities in Capesize.

In Tankers, NORDEN's activities comprise Handysize and MR product tankers. NORDEN's vessels are operated commercially by Norient Product Pool, which is one of the largest product tanker pools in the world.

NORDEN's core fleet consists of owned vessels and vessels on long-term charter with purchase option. The core fleet is supplemented by vessels chartered on a short-term basis or for individual voyages, and this mix allows NORDEN to rapidly adjust the size and costs of the fleet to changing market conditions. Purchase and extension options on many chartered vessels increase flexibility of the fleet and also contribute to the value creation.

With offices in Denmark, Singapore, China, India, the USA and Brazil, a network of port captains as well as site offices at shipyards in China and South Korea, NORDEN seeks to keep close contact with customers and business contacts. NORDEN has 305 employees on shore and 673 on board owned vessels. In addition, Norient Product Pool has 57 employees at its offices in Denmark, Cyprus, Singapore, the USA and Brazil.

NORDEN was founded and listed in 1871 and is one of the oldest listed shipping companies in the world. Management focus is long-term and rooted in NORDEN's vision, mission and values. The goal is for NORDEN to continuously develop for the benefit of its stakeholders and to achieve high, stable earnings.

(Numbers are stated at 31 December 2014).

CC0.2**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
Wed 01 Jan 2014 - Wed 31 Dec 2014

CC0.3**Country list configuration**

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, 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

CC0.4**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(\$)

CC0.6**Modules**

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.

If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.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.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

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

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a**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 Executive Body) appointed by the Board of Directors in April 2008. The CSR Executive 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 are included).

The CSR Executive Body holds frequent meetings, approximately every 2 months, where climate change is discussed when relevant. Climate change issues are discussed in connection with NORDEN's strategy, annual reports, completion of the CDP Questionnaire, Corporate Social Responsibility (CSR) reports and similar.

The Chairman of the CSR Executive Body is NORDEN's Chief Financial Officer Michael Tønnes Jørgensen, and he is therefore ultimately responsible for handling issues relating to climate change. The Chief Financial Officer reports directly to the Board of Directors.

Besides the Chairman, the CSR Executive Body also consists of 4 other members described below:

- Asger Lauritsen, Senior Vice President and head of the Technical Department is responsible for the Technical Department and thereby for crewing, health and safety, piracy, dry docking, maintenance of vessels and NORDEN's Climate Action Plan.

- Jens Christensen, Vice President and Head of Dry Cargo Operations, is responsible for all dry cargo operations, among others coordinating, implementing and ensuring all relevant operational services in connection with a dry cargo voyage.

- Christian Ingerslev, Vice President and Head of NORDEN Dry Cargo Industrial Bulk team is responsible for developing new business and larger industrial contracts with a longer time frame for all dry cargo vessel sizes.

- Steven Sandorff, Director and Head of NORDEN Tanker Department is responsible for overlooking daily operations by rendering commercial support, monitoring performance of owned vessels and liaising with technical, fuel efficiency, claims and other relevant in-house departments, as well as monitoring performance of third party vessels and liaising with external owners and managers.

This mix of competences ensures that all aspects of NORDEN's business which might have an impact on climate change or might be impacted by climate change are discussed. The CSR Executive Body debates, approves and reviews NORDEN's CSR strategy, policies, measures and new initiatives relating to CSR. The CSR Executive Body also 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. In addition, in January 2011, NORDEN established a dedicated corporate CSR Department, which is in charge of creating and implementing NORDEN's CSR strategy, policies, Code of Conduct and action plan. It is also in charge of CSR reporting, internal and external communication on CSR and initiating new CSR activities. The CSR Department presents their work and ideas to the CSR Executive Body, who is in charge of approving, debating and reviewing them. The CSR Executive 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.

CC1.2

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

No

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment

Further Information

Page: CC2. Strategy

CC2.1

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

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Senior manager/officer	NORDEN operates globally and has customers all over the world. Few coastal areas worldwide have not been visited by a NORDEN vessel during the past year. Even though, we operate globally, we have chosen, on the basis of our risk and opportunity assessment, to focus our monitoring on specific geographical areas, such as the Baltic region and the US Gulf	Up to 1 year	

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

At a company level, our Corporate Secretariat Department focuses on looking into future regulation, risks and opportunities by reading and analysing external reports and by plotting data into our own model to evaluate the impact on the market from our view. They also look 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 which may improve or worsen the foundation on which NORDEN operates.

NORDEN has also created a fuel efficiency team consisting of qualified engineers who in cooperation with other departments monitor the specific vessel's bunker consumption and thereby analyse the reasons for why a vessel might consume more bunker than expected, by i.a. analysing the impact of weather on bunker consumption.

At an asset level, the assessment and monitoring of risk and opportunities by NORDEN's dry cargo and tanker departments are integrated into their daily business operations. They monitor the market and use trend reports when deciding how to position their vessels. For instance, when there are signs of a harsh and severe winter, and thereby a possible increase in demand for our ice-class reinforced vessel, we position these near the North Atlantic region to be able to meet this demand. Moreover, the departments make use of external weather routing companies to assist them in pinpointing the best navigation route and thereby managing physical risks or opportunities driven by climate change, such as severe harsh winters, storms, floods and droughts.

NORDEN also has a number of plans and procedures in order to manage risks and opportunities. The Executive Management reports to the Board of Directors on the monitored risks and the development within the specific areas on a monthly basis. NORDEN's risk management is described in detail in the enclosed Annual Report 2014, pages 59-62.

CC2.1c

How do you prioritize the risks and opportunities identified?

The identified risks and opportunities are prioritised based on their consistency with our business strategy, CSR strategy and market trends. The prioritisation of risks is described in more detail in our enclosed Annual Report 2014 on pages 59-62. The Executive Management is responsible for identifying material risks and developing NORDEN's risk management. Exposures and utilisation of the framework are reported to the Board of Directors on a monthly basis.

Operational risk is defined as the risk of loss due to insufficient or failed internal procedures, human error or faulty systems or caused by external events. The operation of vessels is exposed to a number of risks. In terms of value, the most material events covered by insurance are oil spills and total loss (lost value of owned vessels, purchase options and charter parties). NORDEN covers these risks by taking out insurances with recognized international insurance companies. We further minimise these risks by operating a modern fleet and by investing in the maintenance of the vessels and in staff awareness of both external and internal environment. In general, an increased operational risk is seen in the market due to recent years' poor market conditions, which e.g. causes many ship owners to economise on maintenance. Therefore, NORDEN has great focus on the condition of the vessels in connection with short-term charters.

Safety of the vessel and its crew always comes first. So if NORDEN identifies a risk that can threaten the safety or security of our crew, it is given top priority.

Moreover, risk and opportunities which can affect bunker consumption are given high priority, as bunker constitutes approximately 63% of total voyage costs. One of the possible opportunities and/or risks the fuel efficiency team looks at is the weather and how rough/bad weather can impact a vessel's bunker consumption. The reduction of bunker consumption is proportionally linked with a reduction in CO2 emissions.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment
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CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

NORDEN's vision, mission and values are the cornerstone of our management. The management focus is long-term, and the goal for NORDEN is 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 NORDEN's values, these efforts are a method to advance the goal of living our values.

The Danish Shipowners' Association has set a long-term general target for reducing CO2 emissions from the Danish shipping industry. The target is to reduce the relative CO2 emissions from owned vessels by 25% by 2020 compared to the 2007 level, of which 15% should be as a result of technical improvements and another 10% as a result of speed reductions.

Since 2007, NORDEN has taken several initiatives, including a Climate Action Plan targeted at our owned vessels, to support continuous CO2 reductions and to reduce SOx and NOx emissions. The initiatives benefit the climate by reducing propulsion resistance and optimising engine fuel efficiency which are important factors in reducing emissions to air. The initiatives in the Climate Action Plan are evaluated on an ongoing basis. In 2007, the Climate Action Plan consisted of 14 fuel saving initiatives. Each year, the initiatives were evaluated based on impact or whether they could profitably be combined with another initiative. As a result, the number of initiatives have now been reduced to 10, where 4 initiatives have been integrated into initiative 9 "Increased service and check of main engine performance". In 2013, we replaced initiative 10, which focused on funding environmental research, with the initiative "Variable Sea Water Cooling Pump capacity". All the initiatives are described below. They are being introduced on all newbuildings and acquired vessels on an ongoing basis:

1. Slide fuel valves for main engines: improves the combustion of the main engine and ensures a cleaner engine.
2. CASPER vessel performance monitoring system: ensures an overview of the development of the fuel efficiency for each individual vessel in the fleet
3. Alpha lubricator system for the main engine: ensures an effective dosage of cylinder lubrication oil, and a reduction of the cylinder oil consumption can be obtained.
4. M/E cylinder oil scrape down analysis for the main engines: ensures an effective dosage of cylinder lubrication oil via the Alpha Lubricating System and a reduction of the cylinder oil consumption can be obtained.
5. Shaft torque monitoring system: ensures online real-time monitoring of the propulsion power delivered to the propeller.
6. Electrical heaters: instead of using the large capacity oil fired boiler to "top-up" steam at low engine loads and/or in cold weather, a small electrical heating system can be installed and it efficiently generates the required "to-up" steam.
7. Advanced hull coating: reduces marine growth on the underwater hull.
8. Propeller cleaning: adoption of propeller cleaning on an average 6 months' basis.
9. Increased service and check of main engine performance: more frequent check and service intervals of the turbo charger, fuel oil pump and air cooler.
10. Variable Sea Water Cooling Pump capacity: can adjust the cooling capacity to the actual cooling demand, electrical power drawn from the main switch board can be reduced and thereby auxiliary engine fuel oil consumption will be reduced

The short-term target for 2014 (short-term is here defined as 1 year) was to reduce CO2 emissions from owned vessels by 4.3%, compared to not applying any initiatives, based on the above action items. With an actual reduction of 10.7%, this target was met. For 2015, the target is 4.7%.

Besides the above described Climate Action Plan, NORDEN has also taken other initiatives to reduce CO2 emissions by creating a fuel efficiency team. It consists of qualified engineers who in cooperation with other departments monitor the specific vessel's bunker consumption and thereby analyse the reasons for why a vessel might consume more bunker than expected, by for instance analysing the impact of weather on bunker consumption. As bunker constitutes approximately

63% of total voyage costs, it is given high priority to minimise bunker consumption through concrete initiatives, monitoring and so on. For instance, the fuel efficiency team also looks at the weather and how rough and bad weather can impact a vessel's bunker consumption. The reduction of bunker consumption ultimately leads to a reduction in CO2 emissions.

In order to be ready for the new Sulphur (SOx) regulation to be introduced in January 2015, where all Emission Control Areas (ECA) will introduce a sulphur content limit of 0.1%, NORDEN has created an ECA taskforce, whose role and objective it is to assess the impact of the SOx regulations both in terms of risk and opportunities for NORDEN. In addition, they are monitoring which technologies, if any, would be the most relevant and viable to invest in.

One part of the long-term strategy (long-term is here defined as 3 years or more) is to focus on ECO vessels. NORDEN's long-term aim is to replace existing non-ECO vessels with ECO vessels, so our core fleet only consists of ECO vessels. In 2014, NORDEN received 2 eco tanker vessels and 4 long term chartered eco dry cargo vessels with purchase option. We ordered 6 eco dry cargo vessels to be delivered in 2016-2018. We also ordered 1 long term chartered eco tanker vessel with purchase option and 1 long term chartered eco dry cargo vessel with purchase option. In total within the next 3 years, NORDEN will receive 4 eco tanker vessels, 12 eco dry cargo vessels, 1 long term chartered eco tanker vessel with purchase option and 4 long term chartered eco dry cargo vessels with purchase option.

Focus on improving climate and environment has proven a competitive advantage when negotiating contracts. Moreover, the decision to implement fuel efficient measures on existing vessels as well as focusing on energy efficiency when contracting new vessels or entering into agreements on long-term chartered tonnage, reduces our bunker consumption and costs as these vessels consume less bunker oil and thereby emit less CO2. Our operational costs decrease which then enables us to be more competitive and be an attractive business partner.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

No, and we currently don't anticipate doing so in the next 2 years

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Trade associations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
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CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Danish Shipowners' Association	Consistent	<p>The Danish Shipowners' Association, which NORDEN is an active member of, is the only association which has collected and published its members' fleets' fuel consumption data. Instead of waiting for a political compromise to combat climate change, the Danish Shipowners' Association and NORDEN want the whole shipping industry to be more proactive. A way to do so is by creating more transparency by registering fuel consumption and CO2 emissions, like NORDEN does. The Danish Shipowners' Association has set a long-term general target for reducing CO2 emissions from the Danish shipping industry. The target is to reduce the relative CO2 emissions from owned vessels by 25% by 2020 compared to the 2007 level, of which 15% should be as a result of technical improvements and another 10% as a result of speed reductions.</p>	<p>Climate change and CO2 emissions are global challenges requiring global solutions, and NORDEN considers it important to find international solutions to these global problems as such solutions will result in the best environmental improvements and ensure equal competition for all shipping companies worldwide. 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 that the International Maritime Organization (IMO) be given the mandate to enforce global climate and environmental requirements and regulations for all shipping companies worldwide. NORDEN believes that a coherent and comprehensive future IMO framework should be:</p> <ul style="list-style-type: none"> •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 to limit or effectively minimise distortion of competition •environmentally sustainable without penalising global trade and growth •target-based and not prescribing specific method •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. <p>These principles have been laid down by IMO's Marine Environment Protection Committee. In addition, when appropriate, NORDEN provides input to relevant policies and discussions regarding the shipping industry's contribution to climate change and how to best minimise the adverse impact of climate change. 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 vessels by 30% in CO2, 90% in SOx (sulphur oxide) and NOx (nitrogen oxide). NORDEN is currently involved in two projects under "Green Ship</p>

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
			of the Future", and NORDEN continues to assess whether the technologies included in the projects under "Green Ship of the Future" are viable in the fleet and in NORDEN's normal operating modes.

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

NORDEN has developed a Corporate Social Responsibility (CSR) strategy, which transparently describes NORDEN's 7 CSR focus areas and future targets, i.a. CO2 efficiency and environmental management.

The focus areas and set targets guide NORDEN's work within e.g. climate and thereby ensure that our input to relevant policies and discussions are in line with our ambitions, position and targets. For instance, our target to reduce CO2 emissions from owned vessels, exclusive of vessels on contract to third parties, by 25% by 2020 compared to the 2007 level, is aligned with the target set by the Danish Shipowners' Association. To support this target, we actively engage in a working group to define how Danish shipowners, who have committed to reaching the target set forth by the Danish Shipowner's Association, can transparently communicate their results and ensure common methods of calculation based on IMO's standard EEOI (Energy Efficiency Operational Indicator).

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

Yes

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

The shipping industry emitted about 2.7% of the global emissions of CO2 in 2007 (source: Second IMO GHG Study 2009).

CO2 efficiency is one of NORDEN's focus area in our CSR strategy. Our target is to reduce our CO2 emissions by 25% compared to 2007 levels by 2020, exclusive of vessels on contract to third parties. To reach this target, we focus on 3 different areas: technical improvements, speed optimisation and maintaining a young,

modern and fuel efficient fleet.

NORDEN continuously works towards reducing emissions to air and thereby actively supports the global effort to limit global temperature rise to less than 2 degrees Celsius.

Further Information

Attachments

[https://www.cdp.net/sites/2015/69/22369/Climate Change 2015/Shared Documents/Attachments/ClimateChange2015/CC2.Strategy/NORDENAnnualreport2014.pdf](https://www.cdp.net/sites/2015/69/22369/Climate%20Change%202015/Shared%20Documents/Attachments/ClimateChange2015/CC2.Strategy/NORDENAnnualreport2014.pdf)

Page: CC3. Targets and Initiatives

CC3.1

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

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Scope 1	99%	25%	2007	362000	2020	NORDEN aims at reducing the relative CO2 emissions from dry cargo vessels by 25% by 2020 compared to the 2007 level, and from tankers by 25% by 2020

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
							compared to the 2007 level. Out of the 25%, 15% should be a result of technical improvements and 10% a result of speed reduction. This target is in line with the target set by the Danish Shipowners' Association. In order to assess how close NORDEN is to reaching this target, we use the International Maritime Organisation's (IMO) Energy Efficiency Operational Indicator (EEOI) when calculating our CO2 emissions. The EEOI enables us to compare our yearly CO2 reduction regardless of changes in the fleet size, as EEOI is defined as CO2 emitted per metric ton of cargo transported, per nautical miles sailed. In 2014, NORDEN reduced CO2 emissions by 18.8 % for owned tankers and by 2.1 % for owned dry cargo vessels. The reduction of CO2 emissions is a result of a combination of various focus areas and activities: the initiatives included in NORDEN's Climate Action Plan (technical improvements), right steaming and virtual arrival voyages (speed optimisation) and investments in fuel efficient vessels (maintaining a young and modern fleet).

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment

CC3.1c

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	Comment
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CC3.1d

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
Abs1	53.3%	28.1%	NORDEN aims at reducing the relative CO2 emissions from dry cargo vessels by 25% by 2020 compared to the 2007 level, and from tankers by 25% by 2020 compared to the 2007 level. Out of the 25%, 15% should be a result of technical improvements and 10% a result of speed reduction. This target is in line with the target set by the Danish Shipowners' Association. In order to assess how close NORDEN is to reaching this target, we use the International Maritime Organisation's (IMO) Energy Efficiency Operational Indicator (EEOI) when calculating our CO2 emissions. The EEOI enables us to compare our yearly CO2 reduction regardless of changes in the fleet size, as EEOI is defined as CO2 emitted per metric ton of cargo transported, per nautical miles sailed. In 2014, NORDEN reduced CO2 emissions by 18.8 % for owned tankers and by 2.1 % for owned dry cargo vessels. The reduction of CO2 emissions is a result of a combination of various focus areas and activities: the initiatives included in NORDEN's Climate Action Plan (technical improvements), right steaming and virtual arrival voyages (speed optimisation) and investments in fuel efficient vessels (maintaining a young and modern fleet).

CC3.1e

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

CC3.2

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

Yes

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

Seaborne transportation 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 replace seaborne transportation, global CO2 emissions would increase tenfold. Hence, NORDEN's customers reduce their CO2 emissions when transporting their goods by ship instead of by air or on lorries.

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 10 fuel saving initiatives in NORDEN's Climate Action Plan are applied on vessels owned by NORDEN, and since we charter many of our vessels out to other companies, these companies will benefit from the applied initiatives, thereby gaining advantage from the reduced consumption of bunker fuel as a result of NORDEN's fuel saving initiatives. It also has a positive impact on their Scope 2 emissions.

Since the size of the fleet changes continuously, NORDEN sets a new target for the reduction of CO2 emissions as a result of the Climate Action Plan's fuel saving initiatives on owned vessels every year.

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 was to reduce CO2 emissions from owned vessels by 3.5%. This was met with an actual reduction of 5.4%.
In 2012, the objective was to reduce CO2 emissions from owned vessels by 3.5%. This was met with an actual reduction of 7.7%.
In 2013, the objective was to reduce CO2 emissions from owned vessels by 4%. This was met with an actual reduction of 10.4%.
In 2013, the objective was to reduce CO2 emissions from owned vessels by 4.3%. This was met with an actual reduction of 10.7%.
In 2015, the objective will be to reduce CO2 emissions from owned vessels by 4.7%.

The fuel saving initiatives from the Climate Action Plan reduced CO2 emissions from owned vessels by 10.7% in 2013. This amounts to estimated annual CO2 savings of 139,553 metric tons of CO2 in 2014. This benefits the environment, NORDEN and the customer or company which charters NORDEN's vessels.

The effect of the Climate Action Plan initiatives are 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. The external third party PricewaterhouseCoopers has verified the data and calculations of the emissions reductions for 2014.

NORDEN is not considering originating any credits.

CC3.3

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

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	10	139553
Not to be implemented		

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Transportation: fleet	Slide fuel valves for main engines. These improve the combustion of the main engine and ensure a cleaner engine. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 49 vessels.	10495	Scope 1	Voluntary	957080	3675000	1-3 years	21-30 years	
Transportation: fleet	CASPER – Vessel performance monitoring. It ensures an overview of the development of the fuel efficiency for each individual vessel in the fleet. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 49 vessels	5522	Scope 1	Voluntary	503532	347900	<1 year	21-30 years	As we pay an annual fee to use the system, the life time of the initiative depends on how long we wish to make use of it. It can be used throughout the whole of the vessel's life, approx. 20 years
Transportation: fleet	Alpha lubricator system for the main engines. It ensures an effective dosage of cylinder lubrication oil and a reduction of	2009	Scope 1	Voluntary	183180	9400000	>25 years	21-30 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	the cylinder oil consumption can be obtained. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 47 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 47 vessels.								
Transportation: fleet	M/E cylinder oil scrape down analysis for the main engines. It ensures an effective dosage of cylinder lubrication oil via the Alpha Lubricating System and a reduction of the cylinder oil consumption can be obtained. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 49 vessels.	2099	Scope 1	Voluntary	191416	580000	1-3 years	21-30 years	
Transportation: fleet	Shaft torque monitoring system. It ensures an online realtime monitoring of the propulsion power delivered to the propeller.	18780	Scope 1	Voluntary	1712520	1225000	<1 year	21-30 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 49 vessels.								
Transportation: fleet	Electrical heater. Instead of using a large capacity oil fired boiler to “top up” steam at low engine loads and/or in cold weather, a small electrical heating system can be installed and will efficiently generate the required “top up” steam. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 10 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 10 vessels.	8776	Scope 1	Voluntary	800312	850000	1-3 years	21-30 years	
Transportation: fleet	Advanced hull coating. It reduces marine growth on the underwater hull. This activity is voluntary, fully developed and affects Scope 1. It has been	34271	Scope 1	Voluntary	3125136	4900000	1-3 years	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 49 vessels								
Transportation: fleet	Propeller cleaning. Adoption of propeller cleaning on an average 6 months' basis. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 49 vessels.	43057	Scope 1	Voluntary	3926300	588000	<1 year	<1 year	
Transportation: fleet	Increased service and check of main engine performance. More frequent check and service intervals of the turbo charger, fuel oil pump and air cooler. This activity is voluntary, fully developed and affects Scope 1. It has been implemented on 49 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required	12560	Scope 1	Voluntary	1145372	1470000	1-3 years	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	and payback period) are for all 49 vessels								
Transportation: fleet	Variable Sea Water Cooling Pump capacity: It can adjust the cooling capacity to the actual cooling demand, electrical power drawn from the main switch board can be reduced and thereby auxiliary engine fuel oil consumption will be reduced. This activity is voluntary, fully developed, and affects Scope 1. It has been implemented on 22 vessels. All the figures stated in this question (annual CO2 savings, annual monetary savings, investment required and payback period) are for all 22 vessels.	1984	Scope 1	Voluntary	180908	660000	1-3 years	1-2 years	

CC3.3c

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 previously initiated an internal project, "Eco vessel of the future", with participation of several departments. The aim of the project was to select a set of practicable emissions reduction technologies, using an MR product tanker as reference vessel. Moreover, NORDEN has established a fuel efficiency team consisting of qualified engineers, who in cooperation with other departments, monitor the specific vessels' bunker consumption and thereby analyse the reasons why a vessel might consume more bunkers than expected, by for instance analysing the impact of weather on bunker consumption.
Other	NORDEN makes use of knowledge sharing with other shipowners and suppliers, including yards, suppliers of sub-components and the classes. In addition, NORDEN participates in trade fairs in order to obtain new knowledge on emissions reduction activities.

CC3.3d

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

Further Information

Page: CC4. Communication

CC4.1

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

Publication	Status	Page/Section reference	Attach the document
In mainstream financial reports in accordance with the CDSB Framework	Complete	Page 44-45, Corporate Social Responsibility	https://www.cdp.net/sites/2015/69/22369/Climate Change 2015/Shared Documents/Attachments/CC4.1/NORDENannualreport2014.pdf

Publication	Status	Page/Section reference	Attach the document
In voluntary communications	Complete	Page 4-6 CO2 efficiency; Page 14.15 Transparency; Page 16-17 Environmental Management; Page 23-24 Facts Figure and Assurance, Table 1 Environmental Performance	https://www.cdp.net/sites/2015/69/22369/Climate Change 2015/Shared Documents/Attachments/CC4.1/NORDENCSRreport2014.pdf

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the 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

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Fuel/energy taxes and regulations	<p>There are currently several proposals put forward in the International Maritime Organisation (IMO) concerning market-based mechanisms to reduce greenhouse gas emissions from the shipping industry. One of these proposals concerns the introduction of a levy on bunker fuel. A proposal of a levy on bunker fuel is in the region of USD 25 per ton of bunker fuel; however, this is still very uncertain. There is currently no overwhelming support for the various proposals among the IMO countries. Therefore, the timeframe for the introduction of the</p>	Increased operational cost	>6 years	Direct	About as likely as not	Low-medium	<p>If a levy on bunker fuel is introduced, it would increase NORDEN's operating costs as bunker fuel costs account for approximately 63% of total voyage costs. In 2014, NORDEN's fuel consumption amounted to approximately 922,900 metric tons. If a levy on bunker fuel of USD 25 per ton was introduced, NORDEN would in 2014 have had an increase in bunker costs of approximately USD 23.1 million.</p>	<p>To ensure that NORDEN is more resistant to increasing fuel prices as well as future levies on bunker fuel, NORDEN focuses greatly on CO2 efficiency and fuel efficiency, which are directly linked to each other. NORDEN has decided to focus on three areas to become more fuel and CO2 efficient and thereby also minimise the financial impact that future levies on bunker fuel would have on NORDEN. These areas are: technical improvements, speed optimisation and investments in fuel efficient vessels. For instance, within the area of technical improvements,</p>	<p>The costs of the activities vary depending on the focus area, i.e. whether we invest in new ECO vessels or performance systems to optimise our speed. With the Climate Action Plan, NORDEN has had non-recurring investment costs in the amount of approximately USD 23.7 million since 2007 by implementing the 10 initiatives on owned vessels. However, these investments have resulted in savings of 139,553 metric tons of CO2 and USD 12.7 million solely in 2014.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>levy is very uncertain, but we expect it to be more than 10 years in the future. If a levy on bunker fuel is introduced, it would increase NORDEN's operating costs as bunker fuel costs account for approximately 63% of total voyage costs.</p>							<p>NORDEN has developed a Climate Action Plan in 2007 consisting of 10 fuel saving measures. The plan is updated yearly to include new initiatives and to phase out ones that have become inefficient or irrelevant. Investments in fuel efficient vessels continue to be an essential part of NORDEN's strategy to maintain a young, modern and fuel efficient fleet. In 2014, NORDEN received 2 eco tanker vessels and 4 long-term chartered eco dry cargo vessels with purchase option. We ordered 6 eco dry cargo vessels to be delivered in 2016-2018. We also ordered 1 long term</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								chartered eco tanker vessel with purchase option and 1 long term chartered eco dry cargo vessel with purchase option. Besides investments in new fuel efficient vessels, NORDEN continuously evaluates how existing vessels can be optimised.	
Air pollution limits	A new sulphur (SOx) regulation will be introduced in January 2015, where all Emissions Control Areas (ECA) will introduce a sulphur content limit of 0.1%. This is a huge challenge as it is doubtful that enough low sulphur fuel oil will be available in 2015. Consequently, NORDEN will have to use gas	Increased operational cost	1 to 3 years	Direct	Virtually certain	Medium-high	As it is doubtful that enough low sulphur fuel oil will be available in 2015, we will have to use gas oil instead of fuel oil. This may result in an increase of more than 50% in bunker costs when sailing in the ECAs. If the regulation had come into effect in 2014, we would have bought 163000 metric tonnes of low	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 steps in making our fleet more energy efficient, including initiatives aimed at reducing the sulphur content in bunker fuel. Reduction	Since 2007, NORDEN has had non-recurring investment costs in the amount of approximately USD 23.7 million by implementing the initiatives in our Climate Action Plan on NORDEN's owned vessels. However, the investments in these have resulted in savings of 139,553 metric tons of CO2 and

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	oil instead of fuel oil, and this may result in an increase of more than 50% in bunker costs when sailing in the ECAs. For NORDEN and the rest of the shipping industry, this increase is likely to cause rising freight rates in all ECAs.						<p>sulphur gas oil instead of low sulphur fuel oil to be able to sail in the ECAs. This would have resulted in increased costs of approximately USD 41-49 million.</p>	<p>methods are included in NORDEN's Climate Action Plan, consisting of 10 fuel saving measures, and this is updated yearly to include new initiatives and to phase out ones that have become inefficient or irrelevant. Moreover, NORDEN has created a taskforce whose role and objective it is to assess the impact of the upcoming SOx regulations, both in terms of risk and opportunities for NORDEN. In addition, they are monitoring which technologies, if any, would be the most relevant and viable to invest in</p>	<p>USD 12.7 million solely in 2014.</p>

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
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, freakwaves (>25 metres), floods and droughts). NORDEN operates globally in dry cargo and product tankers and therefore physical challenges such as severe storms, freakwaves, floods and droughts can affect our ability to sail and hence our business operations. Rough and abnormal weather conditions may increase the risk of damage to vessels that may imply more days in dock, fewer days for generating earnings and increase in maintenance and	Increased operational cost	Up to 1 year	Direct	Likely	Low	Rough and abnormal weather conditions may increase the risk of damage to vessels that may imply more days in dock, fewer days for generating earnings and increase in maintenance and insurance costs. The range of costs from small to total loss damages, i.e. vessels that are beyond repair, lies between USD 0-40 million per event. Other risks are delayed arrival and departure, late discharge and loading of cargoes, and cancellation of cargoes due to force majeure, which could increase our costs	Handling of physical challenges related to extreme weather conditions are integrated into our 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, route planning, type of vessel in operation and well-trained 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	As the physical challenges related to extreme weather conditions are already integrated into NORDEN's daily operations and operational costs, it involves zero additional costs (USD 0) for NORDEN to monitor these. In case an incident requires NORDEN to make use of our insurance, NORDEN has an excess of approximately USD 100,000 per incident.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>insurance costs. These weather conditions can also cause delayed arrival and departure times for vessels as well as late discharge and loading 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. Moreover, rough and abnormal weather conditions can lead to delayed port arrivals. In cases such as these, two risks are involved. One is the risk of missing out on business opportunities as the cargo holder might choose another cargo carrier (shipping company). The other risk is the possibility of missing the discharge date, which will result in lower earnings.</p>							<p>immediately be responded to by escalating the activities already in place. It is clear to us that new technology and training of staff is necessary to be able to ensure proper management of extreme weather events both in the short and long term. Our Dry Cargo Department makes use of an external weather routing company to pinpoint the best navigation route, avoiding rough weather which could compromise the safety of the crew and/or damage the vessel and increase the vessel's fuel consumption and CO2 emissions. Our tankers use an external weather routing system that</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>monitors the weather and sends forecasts to the vessels, whereby the Master - in dialogue with the operator and the weather routing company as required - can continuously ensure optimal performance throughout the journey. Moreover, adequate insurance is important, and hence, we continuously make sure that our insurance is up to date and relevant in relation to the different incidents which we might face</p>	

CC5.1c

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other drivers	<p>During the past years, climate changes, e.g. extreme weather conditions, have increased focus on alternative energy sources in order to decrease pollution and greenhouse gas emissions. Previously, it has primarily been the developed countries, which made the transition from fossil fuels to alternative energy sources as the costs of the latter are much higher. However, with the extensive pollution experienced in major cities in China, the country is now considering the transition as well. The increased focus on alternative energy sources may potentially impact NORDEN in the very long term as one of our current core focus areas is</p>	Other: decrease income	>6 years	Direct	Likely	High	<p>Transport of coal represents 20% of total demand for dry cargo vessels and a global decrease in the use of coal will have significant impact on the overall income levels for our vessels. A 5% drop in overall trade in coal volumes would remove 1% of the demand. A 1% reduction in overall demand for Dry Cargo vessel would lead to a general rate reduction of approx. 750 USD/day for all vessels. NORDEN has entered recent years with around 30,000 vessel days in Dry Cargo and the decrease in market rates of 750 USD/day would lead to a loss of USD 22.5 million</p>	<p>NORDEN continuously monitors the market developments, e.g. drilling activities, power plant developments, demand, prices, rules and regulations, etc., but also the new trading patterns and commodities within the market. This will enable us to position properly in order to deal with the transition in due time. This is conducted by NORDEN's Corporate Secretariat Department, which also focuses on looking into future regulations, risks and opportunities. This is done by reading and analysing external reports and by plotting data into our own model to evaluate the impact on the market from our view. As NORDEN's largest commodity is coal, we have much contact with energy</p>	<p>There are currently zero additional costs (USD 0) as monitoring the development of and demand for alternative energy sources and conventional fossil fuels is already integrated in our existing market analysis. NORDEN has a department charged with this specific task, but the segments are also monitoring developments. The specific department consists of 3 full-time employees and costs approximately USD 250,000 annually.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	transporting energy based on fossil fuels. In Tankers, our business is primarily devoted to refined oil products while in Dry Cargo, coal constitutes approximately 32% of our transported volumes in 2014.							companies, and in their efforts to become more environmentally friendly, we have a good footing. Thus, in 2012, we signed a major contract transporting biomass from the USA to Europe. As mentioned, the transition from fossil fuel is very slow and far off in the future, and, therefore, NORDEN will have time to adapt and target other commodities, thus taking advantage of the opportunities this risk could bring.	

CC5.1d

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

CC5.1e

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

CC5.1f

Please explain why you do not consider your company to be exposed to inherent 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

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities 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

CC6.1a

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
General environmental regulations, including planning	Several ports have already introduced reductions in port costs for vessels which have energy efficient and fuel saving initiatives implemented and/or so-called "green certificates". A possible reduction in port costs will reduce operational costs for NORDEN as we have implemented various fuel saving measures in connection with our Climate Action Plan on our owned vessels, which will ultimately reduce our CO2 emissions. For instance, the Port of Long Beach in	Reduced operational costs	Up to 1 year	Direct	Virtually certain	Low	In 2014, NORDEN saved USD 138,424 on dockage costs when in the Port of Long Beach in Southern California. These savings were due to the reduction of dockage payable to the Port of Long Beach as a result of our compliance with the Voluntary Vessel Speed Reduction Programme.	NORDEN has developed a Climate Plan Action consisting of 10 initiatives that reduce our vessels' CO2 emissions and fuel consumption. These initiatives are continuously evaluated based on impact and whether they could profitably be combined with other initiatives. Moreover, NORDEN also assesses on an ongoing basis if other reduction emissions initiatives could be relevant to implement. NORDEN also monitors the development of new ports	There are zero additional costs (USD 0) associated with monitoring new ports as the monitoring process is already included in existing market analyses. We have one department for this specific task which costs approx. USD 250,000 annually. The implementation of the 10 initiatives (Climate Action Plan) on owned vessels has required a non-recurring investment of approx. USD 23.7 million since 2007. The annual savings of these in 2014 were approx. USD 12.8 million and 139,553 metric

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>Southern California is committed to reducing air pollution in Southern California and therefore gives a reduction in dockage payable to the Port of Long Beach if the vessels are in compliance with the Voluntary Vessel Speed Reduction Programme. NORDEN has remained compliant with this programme and has therefore been awarded the port cost reductions as well as received the Green Flag Environmental Achievement Award for our commitment to reducing air pollution. This reduction in</p>							<p>which introduce port cost reductions.</p>	<p>tons of CO2</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	dockage payable to the Port in Long Beach will decrease our operational costs for voyages to Long Beach.								

CC6.1b

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other physical climate opportunities	The increase of harsh and severe winters, resulting in an abundance of ice and frozen waters due to climate change, may pose various challenges to shipping such as limitations of accessibility to	Premium price opportunities	>6 years	Direct	Likely	Low-medium	Generally, harsh winters with abundance of ice have positive impacts on freight rates as the vessels that can sail under these conditions are in high demand. Since NORDEN has a number of ice-reinforced vessels and since	The shipping business is cyclical. Identification of the greatest risks and opportunities is therefore an integral part of NORDEN's strategy formulation. Our Corporate Secretariat Department	There are zero costs (USD 0) associated with monitoring this opportunity, as the monitoring process is included in existing market, opportunity and risk analyses. The investments required to ice-reinforce vessels

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>certain ports, difficulty in navigating vessels and increased damages on vessels. NORDEN has numerous ice-reinforced vessels that can sail through thick ice water. This means that if harsh and severe winters arise, we can gain access to ports that standard vessels cannot and thereby secure voyages and increase our earnings. Moreover, there is a premium on ice reinforced vessels which can lead to an increase in revenue for NORDEN when there is a need for these vessels.</p>						<p>there is a premium offered for these vessel types, it is likely to have a significant positive financial impact on NORDEN of an estimated maximum of 1% of NORDEN's revenue, corresponding to a maximum of USD 20 million in 2014.</p>	<p>focuses on looking into future regulations, risks and opportunities. The Department also looks 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 which may improve or worsen the foundation on which NORDEN operates. We have a number of plans and procedures in order to manage various risks and opportunities. For instance, our Dry Cargo Department makes use of an</p>	<p>vary depending on whether it is a new vessel which is ice-fitted during the building process or an existing vessel which is fitted with ice-reinforcement technology. The last vessel NORDEN fitted with ice-reinforcement technology cost approximately USD 2.5 million.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>external weather routing company to pinpoint the best navigation route. Thereby, we try to avoid rough weather, which could compromise the safety of the crew and/or damage the vessel, as well as increase the vessel's fuel consumption and consequently its CO2 emissions. The departments monitor the market and use trend reports when deciding how to position their vessels. When there are signs of a harsh and severe winter and thus a possible increase in demand for our ice reinforced vessels, we position these near the North Atlantic region to be able to meet this demand.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								We have invested in a number of ice-reinforced vessels. In 2014 NORDEN owned 8 ice-reinforced dry cargo vessels, and Norient Product Pool, which operates all NORDEN's tankers, owned 1 ice-reinforced tanker vessel	

CC6.1c

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	There is increased focus on companies which decrease their environmental footprint and are environmentally	Increased demand for existing products/services	Up to 1 year	Direct	Likely	Low	NORDEN could increase revenues and earnings as we can attract new customers or retain existing ones by actively	For NORDEN, the reputational opportunity implies a constant and high awareness of developments in	Focus on communicating climate-related issues, e.g. through the completion of the CDP questionnaire

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>responsible. This focus is an advantage for NORDEN as we have strong focus on energy efficiency and the reduction of CO2 emissions. To the extent that NORDEN's customers find it important that we have a modern and energy efficient fleet, it will have positive financial implications for NORDEN. Customers who presently consider this an important factor mainly include oil majors and, though to a lesser but increasing extent, large dry cargo companies. NORDEN has the opportunity to gain a competitive edge by actively increasing our</p>						<p>increasing our profile as a responsible shipping company, which continuously works towards reducing CO2 emissions. This is a factor of influence for obtaining future customers, which is likely to increase in significance due to increasing fuel prices and focus on decreasing companies' environmental footprint.</p>	<p>the debate and increasing efforts to communicate new initiatives. It is important that stakeholders know that NORDEN makes an effort to address climate issues through e.g. CO2 efficiency measures. NORDEN communicates both internally and externally about our climate initiatives. Externally, NORDEN's Corporate Social Responsibility (CSR) report and CDP questionnaire are used. NORDEN also communicates about our strategy to own a modern fleet</p>	<p>and NORDEN's Corporate Social Responsibility report (CSR), has resulted in extra costs in the form of working hours. It is estimated that the completion of both the CDP questionnaire and the CSR report annually costs approx. USD 30,000. Moreover, there are zero additional costs (USD 0) for NORDEN in continuing to focus on a flexible business model consisting of owned and chartered vessels.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>profile as a responsible shipping company, which continuously works towards reducing CO2 emissions. This is a factor of influence for obtaining future customers, which is likely to increase in significance due to increasing fuel prices and focus on decreasing companies' environmental footprint. In addition, NORDEN likes doing business with customers who are interested in informing consumers, etc. of transportation-specific emissions.</p>							<p>which is traditionally more fuel efficient and which had an average age of operation of 4.7 years in 2014. Moreover, NORDEN communicates about our Climate Action Plan with various climate initiatives on owned vessels, which reduced CO2 emissions on owned vessels by 10.7 % in 2014, as well as other fuel efficiency measures.</p>	
Other drivers	<p>During the last decade, climate changes have led to an increased</p>	Other: Increase income	Up to 1 year	Direct	Likely	High	<p>Since the cost of alternative energy is much higher than</p>	<p>NORDEN continuously monitors market developments in</p>	<p>There are zero additional costs (USD 0) associated with</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>focus on alternative energy sources in order to reduce pollution and greenhouse gas emissions. It is primarily the developed countries, which are making the transition as the cost of alternative energy is much higher than fossil fuels. This means that developed countries in Europe and North America are gradually substituting fossil fuels with other energy sources, thus freeing up their resources for export while emerging markets and developing countries in Asia and South America are increasing their demand for conventional energy forms</p>						<p>fossil fuels it is the developed countries that are gradually substituting fossil fuels with other energy sources, while emerging markets are increasing their demand for conventional energy forms such as coal. Coal constitutes 32 % of NORDEN's transported dry cargo volumes, and the increased demand from emerging markets for conventional energy forms such as coal could thus lead to an increase in NORDEN's revenue.</p>	<p>order to assess whether these developments will result in changing product demands and/or trading patterns. This is conducted by NORDEN's Corporate Secretariat Department, which also focuses on looking into future regulations, risks and opportunities. This is done by reading and analysing external reports and by plotting data into our own model to evaluate the impact on the market from our view. Moreover, the Department also looks at customer relations and</p>	<p>monitoring market developments, as the monitoring process is included in existing market, opportunity and risk analyses. NORDEN has one department charged with this specific task, the Corporate Secretariat Department, but the dry cargo and tanker segments also monitor the developments. The Corporate Secretariat Department has 3 full-time employees focusing on this task at a cost of approximately USD 250,000 annually.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	such as coal. Coal constitutes 32% of NORDEN's transported dry cargo volumes, and the increased demand from emerging markets for conventional energy forms such as coal could thus lead to increased income for NORDEN due to among other things new orders, longer voyages and thereby higher earnings.							requirements, risks and opportunities due to climate change – including rough weather and severe ice conditions, trading patterns, attracting new customers and legal requirements which may improve or worsen the foundation on which NORDEN operates.	

CC6.1d

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

CC6.1e

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

CC6.1f

Please explain why you do not consider your company to be exposed to inherent 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

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

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

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Mon 01 Jan 2007 - Mon 31 Dec 2007	362000

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 2	Tue 01 Jan 2013 - Tue 31 Dec 2013	443

CC7.2

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

Other

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

The following 2 methodologies have been used: 1) IMO "Guidelines for Voluntary Use of the Ship Energy Efficiency Operational Indicator (EEOI)" 2009 2) CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency

CC7.3

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

Gas	Reference
CO2	Other: IMO "Guidelines for Voluntary Use of the Ship Energy Efficiency Operational Indicator (EEOI)" 2009; CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency

CC7.4

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
Residual fuel oil	3.1144	metric tonnes CO2 per metric tonne	IMO "Guidelines for Voluntary Use of the Ship Energy Efficiency Operational Indicator (EEOI)" 2009
Diesel/Gas oil	3.2060	metric tonnes CO2 per metric tonne	IMO "Guidelines for Voluntary Use of the Ship Energy Efficiency Operational Indicator (EEOI)" 2009
Electricity	303	Other: Gram CO2 per kWh	CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency, Conversion indicators for Denmark
Electricity	64	Other: Gram CO2 per kWh	CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency, Conversion indicators for Brazil
Electricity	743	Other: Gram CO2 per kWh	CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency, Conversion indicators for China
Electricity	951	Other: Gram CO2 per kWh	CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency, Conversion indicators for India
Electricity	519	Other: Gram CO2 per kWh	CO2 emissions from fuel combustion highlights 2011 edition, International Energy Agency, Conversion indicators for Singapore

Further Information

NORDEN's emissions reporting relate to all CO2 emissions from our shipping operations at sea, the car fleet (8 owned and 52 leased), the land-based administrative activities (both head office and overseas offices) and emissions from business travel activities. Shipping itself is NORDEN'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. But by including these emissions, NORDEN involves our employees in the CO2 debate which motivates the long-term effort needed from the employees. At the end of 2014, NORDEN owned 46 vessels (all under NORDEN'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. All of the owned vessels are part of Scope 1. As a result of NORDEN's flexible business model, we also operated some 196 vessels held on charter for shorter or longer periods of time at the end of 2014. NORDEN only controls these vessels commercially. These chartered vessels are part of Scope 3, which also includes business travel by air transport and leased company cars. Scope 1 includes CO2 emissions from the vessels which were owned by NORDEN in 2014. When NORDEN owns the vessels, we have full financial and operational control within the boundaries of the international shipping rules, regulations and planning to which all shipping companies are subject. NORDEN'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, 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 8 owned company cars. The emissions from owned company cars are calculated based on the following assumptions: all the cars are diesel cars with a yearly usage of 20,000 km per car, 12 km/l, and CO2 emissions of 2.65 kg/l. The conversion factor is from Key2Green. 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 NORDEN's CO2 emissions under Scope 2 is based on the amount of electricity and district heating used during 2014. Electricity is already measured in kWh and therefore the total estimated amount of electricity used in 2014 is multiplied by the CO2 emissions factor valid for the different countries in which NORDEN has offices. These factors are from the International Energy Agency's conversion indicators for 2011 stated in the publication "CO2 emissions from fuel combustion, highlights 2011 edition" for the specific countries we are located in. District heating is measured in Mwh at NORDEN's overseas offices, but in GJ at its head office in Denmark. The amount of district heating used in GJ at the head office in Denmark is converted to kWh by using the Global Reporting Initiative's conversion standard.

Page: CC8. Emissions Data - (1 Jan 2014 - 31 Dec 2014)

CC8.1

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

Financial control

CC8.2

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

380046.6

CC8.3

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

438.5

CC8.4

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

Yes

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
Emissions from electricity and heating from NORDEN's office in the United States of America	No emissions from this source	Emissions are relevant but not yet calculated	Scope 2 includes CO2 emissions from our land-based activities at NORDEN's offices worldwide. Emissions included in Scope 2 are emissions from electricity and district heating. Utilities from the office in the USA are integrated in the rental costs and provided at no additional assessment by the landlord. The landlord has not been able to specify what part of the rent relates to electricity and heating and what part relates to rent of office. However, electricity and heating 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

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
			of NORDEN's total CO2 emissions from Scope 1, 2 and 3 combined.

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions 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	The main sources of uncertainty in the total Scope 1 data refer to the assumptions concerning owned cars. The CO2 emissions from owned company cars are calculated based on the following assumptions: all the cars are diesel cars with a yearly usage of 20,000 km per car, 12 km/l, and CO2 emissions of 2.65 kg/l. The conversion factor is from Key2Green. As CO2 emissions from owned company cars are insignificant compared to CO2 emissions from owned vessels, NORDEN believes that this assumption can be used.
Scope 2	Less than or equal to 2%	Data Gaps	The main source of uncertainty in the total Scope 2 data relates to the data provided by NORDEN's electricity and district heating providers and whether they have measured the accurate energy consumption.

CC8.6

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

Third party verification or assurance complete

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/69/22369/Climate Change 2015/Shared Documents/Attachments/CC8.6a/Auditors report.zip	-Page 2-4 in the attached document "CDP verification statement signed by PWC" - Page 29 "Independent Auditor's Report" in the document "NORDEN Corporate Social Responsibility Report 2014"	ISAE3000	100

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
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CC8.7

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

Third party verification or assurance complete

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/69/22369/Climate Change 2015/Shared Documents/Attachments/CC8.7a/Auditors report.zip	-Page 2-4 in the attached document "CDP verification statement signed by PWC" - Page 29 "Independent Auditor's Report" in the document "NORDEN Corporate Social Responsibility Report 2014"	ISAE3000	100

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Emissions reduction activities	The total reduction of CO2 emissions from NORDEN's 10 fuel saving initiatives in our Climate Action Plan has been verified by an external third party, PricewaterhouseCoopers, who has also verified our Scope 1,2 and 3 data. In 2014, the total reduction of CO2 emissions from our 10 fuel saving initiatives was 139,553 metric tonnes of CO2.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

2637

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 extent by the detrimental effect on engine durability. The percentage used to calculate CO2 emissions from biologically sequestered carbon is 2.5% since diesel oil contains between 0% and 5% of biologically sequestered carbon. CO2 emissions from biologically sequestered carbon from owned vessels under scope 1 are estimated to be 473 metric tonnes. CO2 emissions from biologically sequestered carbon from operated vessels under scope 3 are estimated to be 2164 metric tonnes.

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Denmark	4.3
Brazil	8.7
China	4.3
India	0
Singapore	0
United States of America	17.3
International Waters	380012

CC9.2

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

By facility

CC9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Owned vessels	380012		
Owned company cars	34.6		

CC9.2c

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
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CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
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CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)
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Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)
Denmark	362.2	1195.5	715.4
Brazil	0.9	14.2	0
China	14	18.8	0
India	38.3	40.2	0
Singapore	23.1	44.6	0

CC10.2

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

CC10.2a

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

Business division	Scope 2 emissions (metric tonnes CO2e)

CC10.2b

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

Facility	Scope 2 emissions (metric tonnes CO2e)

CC10.2c

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

Activity	Scope 2 emissions (metric tonnes CO2e)
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CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)
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Further Information

Page: CC11. Energy

CC11.1

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

More than 30% but less than or equal to 35%

CC11.2

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

Energy type	MWh
Fuel	11034594
Electricity	833.3
Heat	480

Energy type	MWh
Steam	0
Cooling	0

CC11.3

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

Fuels	MWh
Residual fuel oil	10631295
Diesel/Gas oil	403299

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Tracking instruments, Guarantees of Origin	715.4	Since 2011, NORDEN has entered into a partnership with the Danish energy group DONG Energy, which implies that all our electrical consumption at our head office in Copenhagen, Denmark emanates from renewable energy, more particularly from windmills. DONG Energy provides NORDEN with certificates with reference to the international standard RECS: Renewable Energy Certificate System

Further Information

CC12.1

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

Increased

CC12.1a

Please identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	45	Decrease	Eventhough NORDEN's Scope 1 and 2 increased from 314,514 in 2013 to 380,485 tons CO2 in 2014, the below described 10 emission reduction activities implemented during 2014, resulted in the increase only being minor. Actually, the emission reduction activities resulted in total CO2 emissions reductions of 139,553 metric tons solely in 2014. NORDEN implemented 10 emissions reduction activities as part of NORDEN's Climate Action Plan. These initiatives were: 1. Slide fuel valves for main engines: improve the combustion of the main engine and ensure a cleaner engine. 2. CASPER vessel performance monitoring system: ensures an overview of the development of the fuel efficiency for each individual vessel in the fleet 3. Alpha lubricator system for the main engine: ensures an effective dosage of cylinder lubrication oil, and a reduction of the cylinder oil consumption can be obtained. 4. M/E cylinder oil scrape down analysis for the main engines: ensures an effective dosage of cylinder lubrication oil via the Alpha Lubricating System and a reduction of the cylinder oil consumption can be obtained. 5. Shaft torque monitoring system: ensures online real-time monitoring of the propulsion power delivered to the propeller. 6. Electrical heaters: instead of using the large capacity oil fired boiler to "top-up" steam at low engine loads and/or in cold weather, a small electrical heating system can be installed and efficiently generate the required "top-up" steam. 7. Advanced hull coating: reduces marine growth on the underwater hull. 8. Propeller cleaning: adoption of propeller cleaning on an average 6 months' basis. 9. Increased service and check of main engine performance: more frequent check and service intervals of the turbo charger, fuel oil pump and air cooler. 10. Variable Sea Water Cooling Pump capacity: can adjust the cooling capacity to the actual cooling demand, electrical power drawn from the main switch board can be reduced and thereby auxiliary engine fuel oil consumption will be reduced.
Divestment			

Reason	Emissions value (percentage)	Direction of change	Comment
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other			

CC12.2

Please describe your gross global 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	Reason for change
0.00019	metric tonnes CO2e	unit total revenue	27	Increase	During 2014, NORDEN's Scope 1 and 2 emissions constituted 380,485.1 tons CO2 and revenue amounted to USD 2,038.1 million. During 2013, NORDEN's Scope 1 and 2 emissions constituted 314,514 tons of CO2 and revenue amounted to USD 2,145.9 million. In 2013, we chartered a higher amount of owned vessels out to third parties, which meant that we did not operate these vessels and hence did not purchase fuel for them. This reduced our Scope 1 emissions considerably. Hence in 2014, where we

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
					operated more of our owned vessels, we purchased fuel for these thereby increasing our Scope 1 emissions compared to 2013. Naturally, we thereby also increased our intensity figure. We would like to point out that the reported intensity figure is not representative and meaningful since income from chartered vessels is included in revenue but the CO2 emissions associated with chartered vessels are part of Scope 3 and not Scope 1 and Scope 2.

CC12.3

Please describe your gross global 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	Reason for change
389.04	metric tonnes CO2e	FTE employee	34	Increase	During 2014, NORDEN's Scope and 2 emissions constituted 380,485.1 tons CO2. At year end, NORDEN had 978 full time equivalent employees. During 2013, NORDEN's Scope 1 and 2 emissions constituted 314,514 tons of CO2 and at year end, NORDEN had 1,085 full time equivalent. The increase in intensity figure is due to a decrease in the number of employees simultaneously with an increase in CO2 emissions from 2013. The increase in CO2 emissions is, as previously mentioned, due to the following. In 2013, we chartered a higher number of owned vessels out to third parties, which meant that we did not operate these vessels and hence did not purchase fuel for them. This reduced our Scope 1 emissions considerably. Hence in 2014, where we operated more of our owned vessels, we purchased fuel for these thereby increasing our Scope 1 emissions compared to 2013.

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
					We would like to point out that the reported intensity figure is not representative and 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 emissions.

CC12.4

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	Reason for change
3.12	metric tonnes CO2e	Other: Ton of bunker fuel	0.06	Decrease	During 2014, NORDEN's Scope and 2 emissions constituted 380,485.1 tons CO2 and bunker fuel constituted 121,900 metric tons. During 2013, NORDEN's Scope 1 and 2 emissions constituted 314,514 tons of CO2 and bunker fuel constituted 100,700 metric tons. The decrease in intensity figure is attributable to the implementation of NORDEN's 10 reduction emission activities from our Climate Action Plan. Without these, the intensity figure would have increased.

Further Information

The CO2 emissions for 2013 have been recalculated and restated in NORDEN's CSR report 2014 as well as in this CDP report. The deviations in figures from last year's CSR report are due to challenges in connection with the implementation of new technical systems

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.1a

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

CC13.1b

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

CC13.2

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

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

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 cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Not relevant, explanation provided				As a shipping company, NORDEN's primary purpose is to transport commodities between different locations. NORDEN operates both in the dry cargo and tanker segment and thereby transports commodities such as coal,

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					<p>grain, steel, cement, iron ore, fuel oil, gas oil, gasoline, naphtha etc. NORDEN does not purchase the above commodities but merely provides transportation. The only commodity, which NORDEN purchases, is fuel to enable operation of its vessels. This is included in Scope 1 for NORDEN owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities". Consequently, the category "Purchased goods and services" has been deemed not relevant.</p>
Capital goods	Not relevant, explanation provided				<p>NORDEN purchases vessels which are used to transport our customers' commodities between different locations. Emissions from the use of these vessels, which arise from fuel consumption, are included in Scope 1 for owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities". Consequently, the category "Capital goods" has been deemed not relevant.</p>
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	2599541	<p>Fuel figures for tankers and dry cargo vessels are registered when arriving/bunkering/departing a port in IMOS (Integrated Maritime Operating System). For tankers, the figures are partly updated manually by the operators or the operators can import the fuel figures</p>		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			<p>stated by the Captain via MOEPS through an established integration to IMOS. For dry cargo vessels, the fuel figures are manually entered by the operator into IMOS. The total fuel consumption for tankers and dry cargo vessels is calculated by adding the fuel which is already on the vessel at the beginning of the voyage with the bunker oil purchased during the voyage. Finally, the fuel that remains on the vessel when the voyage ends is subtracted. This is done for each vessel and registered in IMOS. CO2 emissions from vessels are calculated on the basis of the fuel quantity consumed on a voyage multiplied by the duration of the voyage (calculated pro rata) multiplied by the CO2 emissions factor for each fuel type (for residual fuel oil, the CO2 emissions factor is 3.1144, and for marine diesel oil and marine gas oil the CO2 emissions factor is 3.206. Source: "Guidelines for Voluntary Use of the Ship Energy Efficiency Operational Indicator (EEOI)" from 2009.</p>		
Upstream transportation and distribution	Not relevant, explanation provided				<p>NORDEN transports commodities between different locations and thereby emissions arise from the consumption of fuel which enables operations of vessels. These emissions are included in Scope 1 for NORDEN owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities". Moreover, the use of air transport is accounted for in Scope 3 under the</p>

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					category "Business travel", and the use of leased cars is accounted for in Scope 3 under the category "Employee commuting". Consequently, the category "Upstream transportation and distribution" has been deemed not relevant.
Waste generated in operations	Not relevant, explanation provided				NORDEN does not have any influence or control over waste disposal for vessels owned or operated by third parties, i.e. chartered vessels. NORDEN's business model which comprises of a mix of long-term chartered vessels with purchase option and vessels chartered short term or for single voyages makes it a complex matter to define the boundaries for waste reporting. For a significant amount of the time, the data on waste for the different voyages is unavailable, which means that it is quite improbable to create a realistic overview of waste disposal for all vessels chartered by NORDEN in a given year. Therefore, the category "Waste generated in operations" has been deemed not relevant.
Business travel	Relevant, calculated	2967	The CO2 emissions from business travels are calculated according to the guidelines from the 3 travel agencies which NORDEN uses. For voyage distances of less than 1,000 km, the factor 0.18 per km is used to calculate the CO2 emissions, while for voyage		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			distances of more than 1,000 km, the factor 0.11 per km is used. NORDEN has received a report from each travel agency which illustrate the total number of voyages, kilometres and CO2 emissions aligned with the above calculation methodology.		
Employee commuting	Relevant, calculated	225	Leased company cars are calculated based on the following assumptions: All cars are diesel cars with a yearly usage of 20,000 km per car, 12 km/l, and CO2 emissions of 2.65 kg/l. The conversion factor is from Key2Green. NORDEN had 60 leased cars in 2014.		
Upstream leased assets	Not relevant, explanation provided				As the category "upstream leased assets" is only applicable to companies that operate leased assets (i.e. lessees) according to "the corporate value chain (scope 3) accounting and reporting standard", NORDEN has deemed it not relevant as we do not operate leased assets. The vessels taken in on time charter are already accounted for in Scope 3 under the category "Fuel and energy related activities".
Downstream transportation and distribution	Not relevant, explanation provided				According to "the corporate value chain (scope 3) accounting and reporting standard", the category "downstream transportation and distribution" includes emissions from transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					<p>operations and the end consumer in vehicles and facilities not owned or controlled by the reporting company. NORDEN does not sell any commodities but merely sells the transport of commodities to our customers. The emissions from transport of different commodities are already accounted for in Scope 1 for owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities". Consequently, the category "Downstream transportation and distribution" is not deemed relevant</p>
Processing of sold products	Not relevant, explanation provided				<p>According to "the corporate value chain (scope 3) accounting and reporting standard", the category "processing of sold products" includes emissions from processing of sold commodities by third parties subsequent to sale by the reporting company. NORDEN does not sell any commodities but merely sells the transport of commodities to our customers. The emissions from transport of different commodities are already accounted for in Scope 1 for owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities".</p>

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Use of sold products	Not relevant, explanation provided				According to "the corporate value chain (scope 3) accounting and reporting standard", the category "use of sold products" includes emissions from the use of goods and services sold by the reporting company in the reporting year. End users include both consumers and business customers who use final products. NORDEN does not sell any commodities, but merely provides transportation of different commodities for our customers who sell them to end users. The emissions from transport of different commodities are already accounted for in Scope 1 for owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities". Consequently, the category "Use of sold products" is not deemed relevant.
End of life treatment of sold products	Not relevant, explanation provided				According to "the corporate value chain (scope 3) accounting and reporting standard", the category "end of life treatment of sold products" includes emissions from the waste disposal and treatment of products sold by the reporting company in the reporting year at the end of their life. NORDEN does not sell any commodities, but merely provides transportation of different commodities for our

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					customers who sell them to end users. The emissions from transport of different products are already accounted for in Scope 1 for owned vessels and in Scope 3 for chartered vessels under the category "Fuel and energy related activities". Consequently, the category "End-of-life treatment of sold products" is not deemed relevant.
Downstream leased assets	Not relevant, explanation provided				According to "the corporate value chain (scope 3) accounting and reporting standard", the category "upstream leased assets" is only applicable to companies which receive payments from lessees (i.e. lessors). NORDEN has consequently deemed the category "Downstream leased assets" not relevant as we do not lease assets.
Franchises	Not relevant, explanation provided				According to "the corporate value chain (scope 3) accounting and reporting standard" the category "franchises" is only applicable to franchisors or franchisees. NORDEN is neither a franchisor nor franchisee and consequently the category "Franchises" is not deemed relevant.
Investments	Not relevant, explanation provided				According to "the corporate value chain (scope 3) accounting and reporting standard", the category "investments" is only applicable to investors (i.e.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					companies which make an investment with the objective of making a profit) and companies which provide financial services. NORDEN's core business is none of the above, but instead deals with transport of commodities between locations. Consequently, the category "Investments" has not been deemed relevant.
Other (upstream)					
Other (downstream)					

CC14.2

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

Third party verification or assurance complete

CC14.2a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/69/22369/Climate Change 2015/Shared Documents/Attachments/CC14.2a/Auditors report.zip	-Page 2-4 in the attached document "CDP verification statement signed by PWC" - Page 29 "Independent Auditor's Report" in the document "NORDEN Corporate Social Responsibility Report 2014"	ISAE3000	100

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Change in output	14	Decrease	NORDEN decreased the number of chartered vessels in 2014. NORDEN chartered 240 vessels at the close of 2013, while we only chartered 196 vessels at the close of 2014.
Business travel	Change in	1	Decrease	The decrease of the CO2 emissions is due to a decrease of the crew's

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
	output			business travel to and from NORDEN's owned vessels as well as a decrease in general business travel among employees.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

NORDEN focuses on cooperating and engaging in dialogue with suppliers to ensure decent social, economic, ethical and environmental conditions. In collaboration with the International Marine Purchasing Association (IMPA) and the Danish shipowner J.Lauritzen, NORDEN has created a Responsible Supply Chain Management system called IMPA ACT. The system is among other things based on the general principles contained in the UN Global Compact, the UN Guiding Principles on Business and Human Rights and the International Bill of Human Rights. IMPA ACT contains among other things a Supplier Code of Conduct, a Supplier Self Assessment Questionnaire, an implementation plan, as well as a common database. The latter enables us to access information regarding suppliers that have already been through the process and are in compliance with the Supplier Code of Conduct, as well as suppliers that are currently in the process. As many shipping companies share the same suppliers, creating a standardised system to ensure compliance throughout the industry will reduce bureaucracy both for suppliers, who will not have to spend time adhering to countless Codes of Conducts, and for shipping companies, who will be able to benefit from their peers' assessment of common suppliers. The engagement strategy is based on dialogue and mutual development. Both NORDEN and the supplier should develop and implement the following 3 processes within human and labour rights, environment and anti-corruption: a policy statement, due diligence and remediation. In 2014, NORDEN continued engaging with the 5 suppliers chosen in 2013 as well as started engaging with 5 new first-tier suppliers, which was the target set for 2014. These suppliers were selected based on spend, dependency and frequency. They all received the Supplier Code of Conduct and the Self Assessment Questionnaire where the processes required within i.a. the environment are explained. Within the environmental area, we expect suppliers to establish processes that cover all significant impacts on the external environment (including energy, natural resources, air, water, land and soil, noise, odour, waste, chemicals etc.) and supports the principles in the Rio Declaration on Environment and Development. More specifically, suppliers should ensure processes for: • Air emissions and impact on global warming (greenhouse gases); • Impact on the ozone layer (Montreal Protocol Annexes) • Prohibition of use of certain materials and substances, including safe handling/transport of dangerous substances; • Distance to residential neighbourhoods for production sites; • Soil, ground water and surface water

contamination • Treatment and reduction of waste water; • Water consumption and leakage; • 'Eco-efficiency', consumption of raw materials, and consumption of energy; • Export of waste and re-use of material; • Subsidising of environmental projects (e. g. protection of the rainforest etc.). • Use and handling of GMOs (Genetically Modified Organisms); • Animal welfare. • Bio-Diversity: conservation, impact on diversity, use of genetic material, technology transfer. • The Precautionary Principle (Do not let scientific doubt about negative environmental impacts of a given action stop you from preventing and mitigating such possible impacts). The engagement process is successful when the supplier has established the relevant processes within the areas of environment, anti-corruption and human and labour rights. This will be visible through reports, documentation and audits from the suppliers which support the fact that they have created relevant processes.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
10	30%	NORDEN selects suppliers to engage with based on 3 criteria: spend, dependency and frequency. NORDEN's target was to engage in dialogue with 5 suppliers in 2014, and, this target has been reached. Moreover, NORDEN continued to engage in dialogue with the 5 suppliers chosen in 2013. New contracts with suppliers now include a clause stating that they have to abide by our Supplier Code of Conduct where requirements for processes for the environment and climate, among others, are described.

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
We do not have any data	As per the principles of the UN Guiding Principles, the supplier dialogue does not focus on performance but on processes. Therefore we do not ask for or receive our suppliers' specific GHG emissions data, but rather a completed self-assessment where they describe which processes they have within the areas of environment, anti-corruption and human and labour rights. If they do not have any processes and policies within one of the above mentioned areas, we engage in dialogue with them and set an agreed upon timeframe for the supplier to develop these processes and policies.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Michael Tønnes Jørgensen	NORDEN's CFO and Chairman of the CSR Executive Body	Chief Financial Officer (CFO)

Further Information

CDP 2015 Climate Change 2015 Information Request