Carbon Disclosure Project

CDP 2011 Investor CDP 2011 Information Request

Teekay Corporation

Module: Introduction

Page: Introduction

0.1
Introduction
Please give a general description and introduction to your organization

This is a combined CDP submission for Teekay Corporation and Teekay Petrojarl. In previous years, Teekay Corporation and Teekay Petrojarl had provided separate CDP submissions.

Founded in 1973 by the late Torben Karlshoej, Teekay is a transnational company with a fleet of over 150 vessels, offices in 16 countries and approximately 6,400 seagoing and shore-based employees. We are a recognized leader in safety, quality, and service. Our mission is to be the premier provider of marine services to our customers in the oil and gas industry.

Our expertise is organized into five business units: Teekay Tanker Services, Teekay Navion Shuttle Tankers and Offshore, Teekay Gas Services, Teekay Marine Services and Teekay Petrojarl.

We are a leading provider of international crude oil and gas marine transportation services and we also offer offshore oil production, storage and off-loading services, primarily under long-term, fixed-rate contracts. Over the past decade, we have undergone a major transformation from being primarily an owner of ships in the cyclical spot tanker business to being a growth-oriented asset manager in the “Marine Midstream” sector. This transformation has included our expansion into the liquefied natural gas (or LNG) and liquefied petroleum gas (or LPG) shipping sectors through our publicly-listed subsidiary Teekay LNG Partners L.P. (NYSE: TGP), further growth of our operations in the offshore production, storage and transportation sector through our publicly-listed subsidiary Teekay Offshore Partners L.P. (NYSE: TOO), through our 100% ownership interest in Teekay Petrojarl AS, and expansion of our conventional tanker business through our publicly-listed subsidiary, Teekay Tankers Ltd. (NYSE: TNK).

The Teekay organization was founded in 1973. We are incorporated under the laws of the Republic of The Marshall Islands as Teekay Corporation and maintain our principal executive headquarters at 4th floor, Belvedere Building, 69 Pitts Bay Road, Hamilton, HM 08, Bermuda.

Teekay Petrojarl is operating in the offshore oil production, storage and transportation sector, as well as in the conventional tanker business. Teekay Petrojarl is the largest operator of Floating Production, Storage and Offloading (FPSO) vessels in the North Sea. Teekay Petrojarl owns and operates five FPSOs (two on Norwegian and two on UK continental shelves, in addition to one on the Siri Field off the south-eastern coast of Brazil). The operating fleet also includes two shuttle tankers (Petronordic and Petroatlantic), one storage tanker (Apollo Spirit) and a 40 percent ownership in the FPSO Ikdam, operating offshore Tunisia.

The Teekay Petrojarl head office is in Trondheim, Norway and we have operations offices in Macaé, Brazil and Aberdeen, Scotland. A total of 650 persons are employed, working on- and offshore. Teekay Petrojarl is committed to responsible health, safety, environment and quality practices, and has a long, proven track record of safely operating FPSO vessels in one of the harshest environments in the world. Teekay Petrojarl is part of Teekay Corporation. Teekay Corporation has a 100% ownership interest in Teekay Petrojarl.

Teekay Petrojarl is involved in the production of oil from offshore oil fields. However, as Petrojarl acts as an FPSO and related services contractor to oil production companies that own and operate the fields, the CDP Oil and Gas Module is not relevant to Teekay Petrojarl, and therefore is not included in this CDP submission.

0.2
Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is

the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year. Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

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

0.3
Country list configuration

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

Select country
International Waters
Canada
United States of America
United Kingdom
Norway
Singapore
Australia
Brazil

0.4
Currency selection

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

USD($)

0.5
Please select if you wish to complete a shorter information request

0.6
Modules
As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire.
If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email respond@cdproject.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Teekay Petrojarl is involved in the production of oil from offshore oil fields. However, as Petrojarl acts as an FPSO and related services contractor to oil production companies that own and operate the fields, the CDP Oil and Gas Module is not relevant to Teekay Petrojarl, and therefore is not included in this CDP submission.

Module: Management [Investor]

Page: 1. Governance

1.1

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

Senior Manager/Officer

1.1a
Please identify the position of the individual or name of the committee with this responsibility

The overall responsibility for climate change within Teekay Corporation is managed within the Teekay Corporation business unit Teekay Marine Services (TMS). TMS is responsible for technical ship operations and management, which is the source of the majority of Teekay's greenhouse gas (GHG) emissions. TMS is headed by a business unit President, who has the overall responsibility for minimizing our impacts on the environment, which includes climate change. The company's progress and status regarding climate change is reviewed as a part of Teekay's annual Environmental Leadership Program (ELP). Status reports on progress with ELP initiatives and statistics are reviewed quarterly at Teekay Marine Services senior management meetings attended by the TMS President and his direct reports at the Senior Vice President and Vice President level. The President of TMS reports to the Board on activities of the Environmental Leadership Program, including climate change issues, at least once annually.

Within Teekay Petrojarl, the President of Teekay Petrojarl, who is also a member of the board, is responsible for climate change within the company.

1.2
Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

1.2a
Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
Other: Full-time shore staff and senior vessel officers	Monetary reward	Within the Teekay Marine Services (TMS) business unit, which is responsible for vessel operations, individual and team annual performance assessment is partially dependent on achievement of various objectives contained in the annual Environmental Leadership Program, which includes items related to greenhouse gas management.
All employees	Monetary reward	Within Teekay Petrojarl all full-time shore staff and senior vessel officers are entitled to bonus pay based on a combination of individual, team and company performance. Such performance assessment is partially dependent on achievement of various objectives, including objectives stated in annual HSE programmes where goals related to air emissions are set. Teekay Petrojarl also has an annual Climate Competition, where staff are challenged to propose ideas on how to reduce emissions to air. The winner(s) receive recognition and a monetary prize.

Page: 2. Strategy

2.1
Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

2.1a
Please provide further details (see guidance)

Teekay has a number of risk assessment processes that are used by our operating units to identify and assess risks associated with their key processes. At the enterprise level, the VP, Risk Management and Internal Audit is responsible for coordinating the entity level assessment involving senior leadership from the

business and corporate units. The results of the Enterprise Risk Assessment are communicated to the company's general management team and the Board of Directors. When evaluating enterprise wide risks, all business and corporate units are involved in the identification of and assessment of significant risks and therefore the scope of the process is truly company wide. A full enterprise risk assessment is performed annually with an update at mid-year. We utilize a classic risk assessment methodology in assessing the significance of the identified risk through ranking (on a scale of 0 - 5) the impact and probability of each risk occurring - after taking into account any mitigating controls the company has implemented. The resulting score represents the residual risk ranking. Within our enterprise risk assessment methodology, we assign a dollar value to the impact of a risk occurring. When combined with the probability of the risk occurring, the result is the potential financial impact to the company. In addition to this potential financial impact, it is important to include the cost of mitigating controls the company has implemented in order to arrive at the total financial implication to the company.

At the level of vessel operations, each year, Teekay's Manager of Environment is responsible for and will conduct an assessment of environmental hazards, which includes our impact on climate change. The scope includes any hazards related to vessel operations. Hazards are scored based on the severity, probability of occurrence, degree of public attention, and the countermeasures currently in place. The type of risks considered when evaluating the overall risk of greenhouse gas emissions and climate change include regulatory and financial impacts, reputational impacts, and customer and stakeholder demands and expectations. The assessment and review of hazards identifies priority issues that will be addressed under our Environmental Leadership Program, which outlines specific annual projects and activities. The completed assessment of hazards and the Environmental Leadership Program are communicated to vessel staff onshore and at sea, as well as senior management.

Within Teekay Petrojarl, risks and opportunities are addressed in all relevant areas of our operations. We systematically identify and prioritize potential risks and opportunities. When prioritizing and implementing measures, we seek to achieve a well-founded and sound balance between issues like health and safety of our personnel, protection of the environment, reputation of our company, owners and our customers, and financial results and other business aspects. Risk management in Teekay Petrojarl is documented. Managers are obliged to manage and communicate risks and opportunities systematically. Our employees actively report risks and opportunities in daily operations. At the enterprise / project level the Value Assurance Board supports and advises decision makers (project owners) through early phase evaluation to identify and assess the risk and opportunity picture. The assessment includes, e.g., influence on HSE performance and risk picture, influence on future operational flexibility, influence on customer relation, reputation or other business risks, and environmental effects. Teekay Petrojarl has a number of risk assessment processes that are used by our operating units to identify and assess risks associated with their key processes. We apply standard industry accepted methodology as we assess probability for an unwanted event to occur, in combination with the event's severity, as risk is defined (quantitatively). Environmental risks are evaluated specifically as we evaluate our vessels' environmental aspects within various areas, including activities leading to air emission. Matrices have been developed as risks and environmental aspects have been weighted. Responsible positions for high risk related activities are identified as part of the work to control the risks occurring from such activities. Teekay Petrojarl has developed a management system which is certified according to ISO 14001. As part of our steering system the Environmental Advisor prepares an annual Environmental Management Review where environmental risks are covered. Evaluation of our environmental aspects is part of the environmental management system.

2.2
Is climate change integrated into your business strategy?

No

2.2b
Please explain why not

Responsible safety and environmental practices is a core value for Teekay, and therefore forms a part of our business strategy.

At this time, our response to climate change is not integrated into our overall business strategy since historically there has not been strong regulatory, customer, or stakeholder demand to respond to climate change within our industry.

However, Teekay is currently preparing a vision for our company for the next 10 years. This vision will be released soon, and will include sustainability as a core value. We are aware of the challenges and opportunities that climate change and the need to reduce greenhouse gas emissions presents for our company and our industry. We have investigated new business opportunities such as providing services to

carbon capture and storage, and offshore wind energy projects. Our commitment to innovation will continue our search for efficiency improvements and new low-emissions business opportunities.
Teekay will continue to mitigate the risks to our business from climate change and climate policy, while investigating and pursuing new opportunities. Our response to climate change is part of our current 5-year Environmental Strategy, which consists of: strict compliance with statutory requirements as a minimum; using sustainable best practices and technologies where possible to improve performance; striving for energy efficient operations ; reducing emissions and wastes at the source of generation where possible; collaborating with customers to improve environmental performance; collaborating with contractors, vendors and suppliers to encourage responsible environmental practices.

To mitigate carbon related risks, we continue to improve our greenhouse gas inventory, which enables us to better identify opportunities for emissions reductions. We are implementing new initiatives to reduce fuel consumption and emissions, such as more efficient propeller designs and improved cargo heating processes. Since our charterers often have influence over some vessel operational decisions, such as speed, we continue to collaborate with key customers to explore opportunities for fuel savings. To engage staff we have increased our internal communication of environmental issues, and are now producing an annual Sustainability Report. Regular reports are also provided to senior management and the Board of Directors on fuel and emissions reduction initiatives and developments in greenhouse gas legislation. We have also increased our external communications to better inform stakeholders of our environmental solutions.

To reduce the risk of fragmented, regional regulatory responses, Teekay is actively working with Intertanko and other shipping industry associations to develop greenhouse gas legislation through the IMO. We also see new business opportunities in providing solutions that reduce CO2 emissions outside of our own operations. This includes the development of offshore CO2 transportation to support carbon capture and storage, and solutions to bring currently uneconomical sources of LNG into the market through compressed natural gas (CNG) transportation, and the development of floating LNG (FLNG) liquefaction and FSRU units. Given our expertise in offshore shuttle tankers, FPSOs and LNG transportation, Teekay has a competitive advantage in creating these new business opportunities.

2.3
Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

2.3a
Please explain (i) the engagement process and (ii) actions you are advocating

Teekay works with various associations to propose, debate, and advocate for various regulatory options to reduce GHG emissions. Teekay is a member of, or in routine discussion with organizations such as the International Association of Independent Tanker Owners (Intertanko), the International Chamber of Shipping (ICS), regional chambers of shipping, and the Oil Companies International Marine Forum (OCIMF). In addition, Teekay will discuss or provide feedback on proposals directly with policymakers when asked for comment. Teekay, with the support of Intertanko, has prepared a submission to the International Maritime Organization, to better define how the proposed Energy Efficiency Design Index (EEDI) will be applied for twin-engine shuttle tankers. The EEDI will set minimum efficiency standards for new vessels. In the past, Teekay submitted a proposal with Intertanko, to better define a rolling average in the Energy Efficiency Operational Indicator (EEOI). The EEOI is a proposed tool to measure the efficiency of existing vessels.

Page: 3. Targets and Initiatives

3.1
Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

No

3.1e
Please explain (i) why not; and (ii) forecast how your emissions will change over the next five years

Our overall greenhouse gas emissions are significantly influenced by overall market conditions, and by factors outside of our control, which include the speed and scheduling requirements of our customers. Therefore, we have so far found it challenging to implement a specific greenhouse gas reduction target.

However, we continue to use the IMO recommended Energy Efficiency Operational Indicator (EEOI) as one measure of fleet environmental performance. In 2010, our fleet EEOI was 13.10 grams of CO2 per metric-tonne-mile.

At this time, we cannot forecast total emissions over the next 5 years with certainty, as total emissions will be influenced by overall market conditions. However, as we intend to continue the growth of Teekay, we expect emissions to increase in the next few years.

Within Teekay Petrojarl, GHG emission reduction plans have been discussed, and some of our FPSOs had planned initiatives (HSE program) to reduce their GHG emissions in 2010. The Teekay Petrojarl Senior Leadership Team have anchored the goal to get a better understanding of what our emissions are and how we can reduce them in the company strategy. Monitoring of emissions for all operations are established and visualized to create a better understanding both on- and offshore of what effects our day to day operational decisions have on the emission volumes. During the coming years we expect direct emissions to be reduced per vessel due to more environmentally friendly fuel and enhancements related to engines. Regarding Scope 2 emissions we do not expect radical changes from today.

3.2
Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

No

3.3
Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes

3.3a
Please provide details in the table below

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: processes	Improved cargo heating procedure. Some oil cargos must remain heated onboard during transit. By implementing a process to optimize heating routines, the amount of fuel used to perform cargo heating can be reduced. Our improved cargo heating process was implemented in 2009. Since then, we have reduced the amount of fuel used for cargo heating from 8 metric tonnes per day to 3.9 metric tonnes, or roughly a 50% reduction in fuel used for cargo heating. In total, this saved roughly 50 metric tonnes of fuel per voyage for 120 voyages carrying heated cargo in 2010, or 6000 MT in total. At a cost of $650 per tonne, this saves more than $3 million annually in avoided fuel costs. The cost to implement this service is approximately $100,000 annually for the fleet.	3000000	100000	<1 year
Transportation: use	Teekay implemented the CASPER (Computerized Analysis of Ship PERformance) service on all vessels in 2009. With CASPER, the vessel's hull and propeller performance is regularly monitored and any anomaly is highlighted for corrective action. Appropriate maintenance is then carried out to ensure vessel performance is returned to optimal levels. The vessel's performance is referenced to sea trial conditions to derive an	4000000	700000	<1 year

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Transportation: use	empirical relation called "Added Resistance". This term is used to monitor the effectiveness of the hull and propeller condition on an ongoing basis. Proper timing of propeller and hull cleaning can save 1% - 3% per year for an Aframax vessel. In 2010, we estimate a total savings due to avoided fuel costs of $4 million. The cost to implement the service is roughly $700,000 per year for the fleet.			
	At a cost of $125,000 per vessel, retrofitting a Propeller Boss Cap Fin (PBCF) device improves the efficiency of the propeller. Through testing, we have found efficiency gains of roughly 3-4% while sailing, resulting in lower fuel consumption and emissions. Assuming a residual fuel price of $650 per tonne, installation of a PBCF device can save an Aframax vessel more than $150,000 per year in fuel costs.	150000	125000	<1 year
Process emissions reductions	Teekay Petrojarl is establishing policies to minimize flaring for all vessels.			

3.3b
What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Financial optimization calculations	We investigate and evaluate a variety of energy efficiency technologies, designs and processes each year. Projects that demonstrate payback periods of 3-5 years are considered for implementation, taking into consideration factors such as the risk, maturity, and ease of installation and operation of the technology or process.

Further Information

Other activities implemented or in development to reduce emissions include:
• New Shuttle Tanker and Suezmax designs that will significantly reduce fuel consumption
• Award-winning VOC reduction system to reduce cargo vapour emissions
• Weather routing, and R&D of new voyage decision planning software
• Vessel trim optimization
• Energy conservation training and awareness programs

Page: 4. Communication

4.1
Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in other places than in your CDP response? If so, please attach the publication (s)

Publication	Page/Section Reference	Identify the attachment
In annual reports (underway) – this is our first year	Sections: "Performance Summary", and "Climate Change"	Teekay 2010 Sustainability Report
In annual reports (underway) – previous year attached	Pages 2, 12, 13	Teekay Petrojarl 2009 Sustainability Report
In voluntary communications (complete)	Page 1	Innovative Solutions to Reduce Emissions

Further Information

Teekay will release and distribute its first Sustainability Report in June 2011.

Teekay Petrojarl publishes details of our emissions in our annual Teekay Petrojarl Sustainability Report, which undergoes an Application Level check from the Global Reporting Initiative (GRI). The report for 2010 will be issued in June 2011. The 2009 Teekay Petrojarl Sustainability Report is attached.

Attachments

https://www.cdproject.net/Sites/2011/04/18404/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/2009_Sustainability_Report.pdf
https://www.cdproject.net/Sites/2011/04/18404/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Innovative Solutions to Reduce Emissions.pdf

Module: Risks and Opportunities [Investor]

Page: 5. Climate Change Risks

5.1
Have you identified any climate change risks (current or future) that have potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

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

5.1a
Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	Emission reporting obligations	The requirement to monitor and report emissions in some or several jurisdictions may increase.	Increased operational cost	Current	Direct	Virtually certain	Low
	Carbon taxes	An emissions tax or levy scheme may be enacted globally through the International Maritime Organization (IMO).	Increased operational cost	1-5 years	Direct	More likely than not	High
	Cap and trade schemes	An emissions trading scheme may be enacted globally through the International Maritime Organization (IMO).	Increased operational cost	1-5 years	Direct	More likely than not	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	Product efficiency regulations and standards	The Energy Efficiency Design Index (EEDI) will set minimum energy efficiency standards for the construction of new vessels, and may result in increased costs to new vessel construction.	Increased capital cost	1-5 years	Direct	Very likely	Medium
	Lack of regulation	Slow progress by the International Maritime Organization (IMO) could encourage unilateral and non-harmonized responses from some or several jurisdictions.	Increased operational cost	Unknown	Direct	About as likely as not	Medium
	General environmental regulations, including planning	Worldwide restriction on GHG emissions could reduce demand for fossil fuel based energy, and thus reduce demand for our services.	Reduced demand for goods/services	Unknown	Indirect (Client)	Unknown	Unknown

5.1b

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

Due to concern over the risk of climate change, a number of countries have adopted, or are considering the adoption of, regulatory frameworks to reduce greenhouse gas emissions. These regulatory measures include, among others, adoption of cap and trade regimes, carbon taxes, increased efficiency standards, and incentives or mandates for renewable energy. Compliance with changes in laws, regulations and obligations relating to climate change could increase our costs related to operating and maintaining our vessels and require us to install new emission controls, acquire allowances or pay taxes related to our greenhouse gas emissions, or administer and manage a greenhouse gas emissions program. Revenue generation and strategic growth opportunities may also be adversely affected.

The International Maritime Organization (IMO) continues to work towards the adoption of greenhouse gas emissions regulation for the marine shipping industry. Regulations covering both the design of new vessels and the operation of all vessels are the focus of current regulatory proposals. A new vessel Energy Efficiency Design Index (EEDI) is in the final stages of preparation. This regulation will mandate a minimum level of energy efficiency from new vessels, and is intended to become more stringent over time. The regulation will apply to all vessels trading worldwide.

The IMO is also continuing with efforts to create a market-based mechanism that will provide a financial incentive to reduce fuel consumption and thus greenhouse gas emissions. This regulation may take the form of an emissions tax, a cap-and-trade scheme, a performance standard, or some combination of those concepts. The IMO intends this regulation to be flag neutral (that is, applying to all vessels worldwide). However, some developing countries argue that any mandatory GHG reduction regulations should apply only to developed countries, adopting the “common but differentiated responsibilities” (CBDR) principle under the United Framework Convention on Climate Change (UNFCCC).

The European Commission has stated that it will unilaterally propose GHG legislation to take effect in 2013 if the IMO is unable to deliver global regulations by the end of 2011. The regulation would apply to vessels trading in EU waters or calling EU ports.

Lastly, increasing requirements to monitor and report greenhouse gas emissions and management policies could result in increased administrative costs.

Any passage of new climate control legislation or other regulatory initiatives by the IMO, European Union, or other countries or states where we operate that restrict emissions of greenhouse gases could have a significant financial and operational impact on our business that we cannot predict with certainty at this time. Any market-based mechanism applied by the IMO will likely apply a cost on emissions, and thus the costs of fuel consumption for our vessels. This would raise the operating costs of our vessels, and marine transportation costs in general. This could lead to decreased profits or lower demand for marine transport. However, since much of Teekay’s fleet trades on time-charter agreements wherein the charterer pays the cost of bunkers, the impact of added fuel charges may have less impact on Teekay than on some of our competitors trading primarily on the spot market. The financial impact of any market based mechanism enacted by the IMO depends on the type of mechanism and the level of financial inventive. Assuming an emissions charge was enacted similar to permit prices in the EU ETS market, the annual cost for Teekay to cover all emissions could be upwards of $100 million USD. A portion of these costs would be borne by Teekay, and a portion by our charterers.

Unilateral action by the EU would have similar impacts as a global market based mechanism enacted by the IMO, but could also lead to the adoption of more regional regulations that would increase compliance costs for our vessels trading in many geographic areas.

The EEDI may result in increased costs in the construction of new vessels if shipbuilders are required to change designs to meet new requirements. Since the level of improvement to be achieved under the EEDI has not yet been decided, it is difficult to estimate the added costs of new vessel construction. New vessel designs may require changes such as lower friction hull forms and propellers/rudders, reductions in total installed power, and energy savings devices such as waste heat recovery.

To mitigate the potential risks of the EEDI on our Shuttle Tanker business, Teekay has in cooperation with INTERTANKO submitted a paper to the IMO Marine Environmental Protection Committee (MEPC), arguing that due to operational and safety requirements, twin-engine Shuttle Tankers should be granted special consideration in the EEDI framework. This initiative required staff time, but no added financial expenses.

We have also continued to expand the scope and completeness of our GHG monitoring system in order to better conform to the guidelines of the GHG Protocol / ISO 14064. This aids in ensuring weaknesses in our monitoring and mitigation of environmental aspects are better identified and corrected. This initiative requires a continuing level of staff resources. In 2010, we also engaged an external consultant to assess our GHG monitoring and reporting system and provide recommendation for improvement. This incurred fees of roughly $60,000 in 2011.

Teekay continues to implement a number of activities to reduce the fuel consumption and thus GHG emissions from our vessels. By reducing emissions, we can partially mitigate the risks of any impending regulations. Some activities and their associated costs are reported in 3.3a.

5.1c
Please describe your risks that are driven by change in physical climate parameters

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	Change in precipitation extremes and droughts	Climate change may result in an increase in severe weather	Reduction/disruption in production capacity	Current	Direct	Unlikely	Low

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		events that could affect our vessels, offshore assets, and ability to trade in certain temporarily affected regions.					

5.1d

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

The IPCC Fourth Assessment Report states that an increase in some forms of extreme weather has already been observed, and this trend is likely to continue in the future. Therefore, this risk may already have increased and will continue indefinitely. The geographic scope is worldwide. The IPCC states that heavy precipitation events are observed and forecasted for all regions, whereas an increase in tropical cyclones occurs in tropical regions.

An increase in severe weather events could increase safety risks for vessels and crews. An increase in severe weather events may also result in more frequent closures or delays in accessing some ports or offshore facilities. This could temporarily limit our ability to trade in the affected areas. Severe weather events may also disrupt or damage infrastructure supporting the energy supply chain, both upstream and downstream, temporarily resulting in less oil production and less demand for marine transport in the affected areas.

Vessels may need to deviate from planned course to avoid adverse or dangerous weather. This could result in added fuel consumption costs. Vessel staff are trained to manage adverse weather conditions. Port or terminal closures due to severe weather are likely to be temporary, and our business is regionally diversified and not dependent on any one port or region. A longer-term loss of infrastructure due to damage from severe weather events could have a larger financial cost to our business. The cost could include the loss of business in the region, and the cost of repositioning vessels to other areas. Any added costs due to more frequent severe weather events are difficult to estimate at this time.

Policies are in place to mitigate the risks of weather events to vessels and crew. This includes the use of weather monitoring, weather routing and policies for vessel operations in adverse weather conditions. Since these procedures are already in place, there are no added costs. In addition, through our operation of the world's largest Shuttle Tanker fleet, combined with our FPSO experience, Teekay has become a leader in harsh weather marine offshore solutions. To mitigate the risks of downturns in any one segment or region, our business is diversified across geographic regions and by market segment.

5.1e

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

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	Reputation	A poor environmental reputation of the marine shipping sector could result in less demand for our services.	Reduced demand for goods/services	Current	Direct	About as likely as not	Unknown
	Changing consumer behaviour	The threat of climate change could encourage consumers to reduce energy use, especially	Reduced demand for goods/services	>10 years	Indirect (Client)	Likely	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		from fossil fuels, which could reduce demand for our services.					

5.1f
Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions

Adverse effects upon the oil and gas industry relating to climate change may adversely affect demand for our services. Although we do not expect that demand for oil and gas will lessen dramatically over the short term, in the long term climate change may reduce the demand for oil and gas or increased regulation of greenhouse gases may create greater incentives for the use of alternative energy sources. Any long-term material adverse effect on the oil and gas industry could have a significant financial and operational adverse impact on our business that we cannot predict with certainty at this time.

Teekay, and the marine shipping industry, face a reputational risk. Articles published in the popular press in recent years suggest a reputation of poor environmental management may already be developing for the industry. This opinion is not confined to any specific region, but may be more prevalent in Europe and North America. A poor public opinion of marine shipping could put pressure on customers of marine shipping to consider alternative transport options. Or, the public may directly act against ship owner/operating companies through protests, boycotts, etc.

As there are few competitive alternatives to the long distance transport of oil and oil products, any reputational risk may not significantly shift modes of transport.

Teekay is working with INTERTANKO (the International Association of Independent Tanker Owners) and other industry groups and IMO members to support and encourage the prompt adoption, through the IMO, of global flag-neutral regulations to reduce GHG emissions from marine shipping. Adoption of global regulations should improve the industry's reputation of responsible environmental management, and reduce the likelihood of regional based regulations. The costs of these efforts include staff time and related travel costs for IMO and industry meetings. However, an estimate of costs specifically for these activities is not available.

Page: 6. Climate Change Opportunities

6.1
Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

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

6.1a
Please describe your opportunities that are driven by changes in regulation

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
	General environmental regulations, including planning	Greenhouse gas restrictions may drive transport demand towards marine shipping due to its efficiency and low emissions per tonne-	Increased demand for existing products/services	Unknown	Direct	About as likely as not	Unknown

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		mile compared to other means of transport.					
	International agreements	Greenhouse gas restrictions could increase demand for carbon capture and storage (CCS).	New products/business services	1-5 years	Direct	Likely	Medium

6.1b
Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

Marine shipping emits less CO2 per tonne-mile on average than air, truck or rail transport. GHG regulation could therefore encourage a modal shift towards marine transport. This opportunity exists in all regions we trade, and may become apparent as GHG regulations are increasingly enacted for land and aviation industries in the coming years. The development of more GHG regulatory regimes worldwide could shift transportation demand towards marine sources. As a leading transporter of the world's seaborne oil and LNG, Teekay stands to benefit from an increase in marine transport demand.

GHG regulation may encourage the development of carbon capture and storage (CCS) projects. Teekay has worked with I.M. Skaugen SE to develop logistics solution for CCS projects. This opportunity will likely be realized first in the North Sea area where CCS operations already exist. The development of offshore CCS projects serviced by marine transportation of CO2 would be a unique opportunity for Teekay. As the world's largest operator of offshore Shuttle Tankers, Teekay has a unique ability to offer the expertise and the assets to service this growing industry.

Teekay had worked jointly with I.M. Skaugen SE to develop the complete logistics solution for the Carbon Capture and Storage demonstration project being lead by the UK affiliate of German power utility RWE npower. I.M. Skaugen and Teekay participated in the project as part of an industrial group formed to encompass the full range of expertise needed to demonstrate carbon capture, transport and eventual undersea storage. In 2007, Teekay was awarded a contract to study the ship transportation of CO2. The contract was awarded by Gassco AS, a Norwegian government owned company which owns and operates the oil and gas pipeline system on the Norwegian continental shelf. The scope of the study was to provide transportation costs for CO2 between Norwegian ports and offshore underground deposit sites.

All of the described opportunities could result in one or more of the following:
• Increased charter rates for some or all segments of the Teekay fleet;
• The ability to increase the number of vessels and assets in some or all segments of the Teekay fleet;
• New business opportunities for Teekay. For example, CO2 transporting Shuttle Tankers, and a growth in FLNG (Floating LNG liquefaction) and Compressed Natural Gas (CNG) transport.

An estimate of the dollar value of these opportunities is not provided here.

6.1c
Please describe the opportunities that are driven by changes in physical climate parameters

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	Change in precipitation extremes and droughts	An increase in severe weather events could lead to increased demand for	Increased demand for existing products/services	Unknown	Direct	About as likely as not	Medium

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		our expertise in the operation of offshore assets in harsh environments.					

6.1d
Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

Climate change may result in an increase in severe weather events. Being the largest operator of Floating Production, Storage and Offloading (FPSO) vessels in the North Sea, Teekay Petrojarl has a long, proven track record of safely operating FPSO vessels in one of the harshest environments in the world. This is seen as an opportunity, especially in geographical regions having less harsh environment conditions than the North Sea today.

The opportunity is related to a potential growth in the demand for harsh environment Floating, Production , Storage and Offloading vessels (FPSOs). Teekay Petrojarl has not taken any specific action in relation to the described opportunity. The described opportunity could result in increasing demand for our services, potentially affecting rates as well as the number of vessels and assets. An estimate of the value of these opportunities is not provided here.

6.1e
Please describe the opportunities that are driven by changes in other climate-related developments

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
	Changing consumer behaviour	Increased demand for LNG as a fuel/energy source	Increased demand for existing products/services	Current	Direct	Very likely	Medium

6.1f
Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

GHG regulation worldwide may also increase demand for cleaner, low CO2 emitting fuels such as LNG. As the third largest independent operator of gas carriers, Teekay stands to benefit from an increase in demand for LNG. Additionally, a worldwide increase in demand for LNG and LNG transport would provide Teekay with opportunities to expand its fleet of LNG vessels.

In 2008, Teekay received approval from the American Bureau of Shipping (ABS) for a Floating LNG (FLNG) concept. Teekay sees this as a significant future growth area that is more cost-effective than on-shore liquefaction, allows greater flexibility through redeployment, and with a shorter time to market than shore based plants. Teekay Petrojarl has inhouse personnel working with FLNG. Process engineers are continuously evaluating optimization in cooperation with the oil companies. Investment estimates are not provided here.

Teekay is also at the forefront of the pursuit to find a commercial solution for the transportation of compressed natural gas (CNG), and have partnered with other organizations to pursue the development of innovative containment technologies for CNG. If commercialized, we expect the market for CNG shipping to be considerable.

All of the described opportunities could result in one or more of the following:
• Increased charter rates for some or all segments of the Teekay fleet;
• The ability to increase the number of vessels and assets in some or all segments of the Teekay fleet;
• New business opportunities for Teekay. For example, CO2 transporting Shuttle Tankers, and a growth in FLNG (Floating LNG liquefaction) and Compressed Natural Gas (CNG) transport.

An estimate of the dollar value of these opportunities is not provided here.

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

Page: 7. Emissions Methodology

7.1
Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Fri 01 Jan 2010 - Fri 31 Dec 2010	5423347	881

7.2
Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
ISO 14064-1

7.2a
If you have selected "Other", please provide details below

7.3
Please give the source for the global warming potentials you have used

Gas	Reference
Other: Carbon dioxide	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Methane	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Nitrous oxide	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HCFC-22	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-134a	Other: DETR/DTI 2000. U.K. Department of Environment, Transport, and Regions (DETR), U.K. Department of Trade and Industry (DTI). Refrigeration & Air Conditioning CFC and HCFC Phase Out: Advice on Alternatives and Guidelines for Users.
Other: HFC R-404a	Other: DETR/DTI 2000. U.K. Department of Environment, Transport, and Regions (DETR), U.K. Department of Trade and Industry (DTI). Refrigeration & Air Conditioning CFC and HCFC Phase Out: Advice on Alternatives and Guidelines for Users.
Other: HFC R-407C	Other: DETR/DTI 2000. U.K. Department of Environment, Transport, and Regions (DETR), U.K. Department of Trade and Industry (DTI). Refrigeration & Air Conditioning CFC and HCFC Phase Out: Advice on Alternatives and Guidelines for Users.
Other: HFC R-507	Other: DETR/DTI 2000. U.K. Department of Environment, Transport, and Regions (DETR), U.K. Department of Trade and Industry (DTI). Refrigeration & Air Conditioning CFC and HCFC Phase Out: Advice on Alternatives and Guidelines for Users.
Other: CO2-equivalents (as used by the Norwegian Oil Producers	Other: CO2 + 21*CH4 +3*nmVOC [tons]

7.4
Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Residual fuel oil	3114	Other: g CO2 / kg	MEPC 59/4/15, “Energy Efficiency Operational Indicator – Report of the correspondence group

Fuel/Material/Energy	Emission Factor	Unit	Reference
Diesel/Gas oil	3186	Other: g CO2 / kg	MEPC 59/4/15, “Energy Efficiency Operational Indicator – Report of the correspondence group
Liquefied Natural Gas (LNG)	2693	Other: g CO2 / kg	MEPC 59/4/15, “Energy Efficiency Operational Indicator – Report of the correspondence group
Electricity		metric tonnes CO2e per MWh	Various factors from US EIA, and Norway Ministry of Energy’s "klimaløftet"

Further Information

We have set our base year as 2010. This is because CDP reports in earlier years reported on Teekay and Teekay Petrojarl separately. In addition, some material Scope 1 sources were not included in prior years due to a lack of available data.

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

8.1
Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Operational control

8.2a
Please provide your gross global Scope 1 emissions figure in metric tonnes CO2e

5423347

8.3a
Please provide your gross global Scope 2 emissions figure in metric tonnes CO2e

881

8.4
Are there are any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

Yes

8.4a
Please complete the table

Source	Scope	Explain why the source is excluded
Cargo venting emissions	Scope 1	The loading and transport of hydrocarbon products produces vapors that are normally released when cargo tanks have to be vented due to the build up of pressure. Cargo vapors consist mostly of volatile organic compounds (VOC). Cargo related Volatile Organic Compound (VOC) emissions are not currently measured due to a lack of recognized measurement or estimation method. However, based on existing industry research, we believe methane in VOC cargo emissions may account for roughly 8% of our total GHG emissions.
Office electricity	Scope 2	Our largest offices worldwide are providing office electricity consumption data, but estimates from smaller offices are not yet available.

8.5

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

Scope	Uncertainty Range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 10% but less than or equal to 20%	Data Gaps Assumptions Metering/ Measurement Constraints Published Emissions Factors Data Management	1. Exclusion of sources listed in 8.4a. Inclusion of these sources in the future would contribute towards larger total Scope 1 emissions. 2. Human error. Staff onboard and ashore routinely record and submit environmental data. While data is routinely checked to ensure reliability and accuracy, data errors can still occur. These errors are likely to be random, and should not result in any over or under reporting of actual emissions. 3. Some smaller emissions sources (e.g., emissions from onboard incineration, IG generators and VOC plants) are estimated rather generally, and may differ significantly from actual emissions. However, since these emissions sources are relatively small, the overall impact of the estimation error may not be significant to the total estimate of Scope 1 emissions. 4. No direct monitoring of emissions is conducted onboard. Reported emissions therefore likely diverge from actual emissions, however there is no way of knowing if this results in an overestimate or underestimate of actual emissions. 5. Inaccurate volume or flow measurements at offshore facilities (Teekay Petrojarl).
Scope 2	More than 20% but less than or equal to 30%	Metering/ Measurement Constraints	Most of our offices occupy only a portion within a larger building managed by third party building management companies. Sub-metering of our specific energy consumption is not available, and therefore must be estimated as a portion of overall building energy use. In some cases, this may result in a higher level of uncertainty. However, as our scope 2 emissions are small relative to Scope 1 emissions, the uncertainty is not likely to result in a material error.

8.6
Please indicate the verification/assurance status that applies to your Scope 1 emissions

Not verified or assured

8.7
Please indicate the verification/assurance status that applies to your Scope 2 emissions

Not verified or assured

8.8
Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

No

Further Information

The increase in our reported scope 1 emissions in 2010 over 2009 is largely due to the inclusion of Teekay Petrojarl emissions in 2010, which previously were reported separately by Teekay Petrojarl.

Teekay Petrojarl's scope 1 GHG emissions are reported partly based on customers' (licence holder on the fields where we produce oil) calculations. Some of these companies have performed a third party verification of their numbers.

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

9.1

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

Yes

9.1a
Please complete the table below

Country	Scope 1 metric tonnes CO2e
International Waters	4742485
Norway	114845
United Kingdom	509278
Brazil	56739

9.2
Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division
By facility
By GHG type

9.2a
Please break down your total gross global Scope 1 emissions by business division

Business Division	Scope 1 metric tonnes CO2e
Conventional Fleet	2271588
LNG Fleet	1251916
Shuttle Tanker Fleet	790459
Other Fleet	292354
Floating, Production , Storage and Offloading vessels (FPSOs)	646317
Petrojarl Tankers	34545

9.2b
Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 metric tonnes CO2e
Teekay Fleet (Conventional, LNG, Shuttle, Other)	4742485
Petrojarl Varg FPSO	73462
Petrojarl 1 FPSO	41383
Petrojarl Banff FPSO	300554
Petrojarl Foinaven FPSO	174179
Petrojarl Cidade De Rio Das Ostras FPSO	56739
Petrojarl Tankers (Petroatlantic + Petronordic)	34545

9.2c
Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 metric tonnes CO2e
CO2	5312489
CH4	33069
N20	36058
HFCs	38393
Other: VOC	3338

Further Information

The sum of emissions reported in 9.2a is different from the total reported in 8.2. This is because some emission sources are estimate only for the entire Teekay fleet, and not estimated separately by business

unit. These emissions are therefore not included in 9.2a. The excluded emissions represent less than 3% of our total Scope 1 emissions.

VOC emissions reported in 9.2c are currently estimated only for Teekay Petrojarl.

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

10.1
Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

10.1a
Please complete the table below

Country	Scope 2 metric tonnes CO2e
Canada	453.87
United States of America	196.49
United Kingdom	53.70
Norway	46.77
Singapore	57.67
Australia	72.89

10.2
Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By facility

10.2b
Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 metric tonnes CO2e
Vancouver, Canada office	453.87
Houston, USA office	196.49
Glasgow, UK office	53.70
Stavanger, Norway office	7.31
Trondheim, Norway office	39.46
Singapore office	57.67
Sydney, Australia office	72.89

Further Information

Scope 2 emissions from offices listed in response to Q10 include our largest offices worldwide, and therefore represent the majority of our total Scope 2 emissions. In 2011, we will report also for some smaller offices.

Page: 11. Emissions Scope 2 Contractual

11.1
Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?

Yes

11.2

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

No

Page: 12. Energy

12.1
What percentage of your total operational spend in the reporting year was on energy?

More than 20% but less than or equal to 25%

12.2
Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy type	MWh
Fuel	18670878
Electricity	4210.49
Heat	
Steam	
Cooling	119.1

12.3
Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Residual fuel oil	13882059
Diesel/Gas oil	515564
Liquefied Natural Gas (LNG)	4273255

Page: 13. Emissions Performance

13.1
How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Increased

13.1a
Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in boundary	13	Increase	In previous years, Teekay Petrojarl reported separately. The inclusion of Teekay Petrojarl in this year's submission increased combined GHG emissions by roughly 13%.
Change in output	7	Increase	Emissions increased in our LNG and Shuttle Tanker fleets due to the introduction of new vessels in each fleet and a stronger shipping market in 2010.

13.2

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
0.00262	metric tonnes CO2e	unit total revenue		N/A	In 2010, 5,424,228 MT of CO2e per $2,068,878,000 USD in total revenues. Data is not available for previous years.

13.3
Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
847.55	metric tonnes CO2e	FTE Employee		N/A	In 2010, 5,424,228 MT of CO2e per 6400 total staff. Data is not available for previous years.

13.4
Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
13.10	metric tonnes CO2e	Other: grams CO2e per metric tonne-mile	4.5	Decrease	Emissions per tonne-mile measured in grams CO2e per metric tonne-mile decreased from 2009. Some of the reasons for the reduction are: 1. A market shift from Aframax to Suezmax vessels in the Conventional fleet. Larger vessels tend to have lower EEOI values due to their economies of scale. 2. A reduction in EEOI values in the LNG fleet as the market improved and larger vessels performed more voyages in 2010. 3. A general reduction in emissions per tonne-mile in each business unit.
251		Other: oil equivalent exported (m3)	34.8	Increase	Teekay Petrojarl measures CO2e emissions per oil equivalent exported. In 2010, Petrojarl emitted 251 kilograms CO2e per oil equivalent exported (kg CO2/m³). The increase over 2009 is the result of operating in mature fields with increasing amounts of produced water (i.e. more water and fewer hydrocarbons per volume liquid produced).

Page: 14. Emissions Trading

14.1
Do you participate in any emission trading schemes?

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

14.2
Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

Page: 15. Scope 3 Emissions

15.1
Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them

15.2
Please indicate the verification/assurance status that applies to your Scope 3 emissions

Not verified or assured

15.3
How do your absolute Scope 3 emissions for the reporting year compare to the previous year?

We don't have any emissions data

Module: Sign Off

Page: Sign Off

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

Pradeep Kalé
Vice President, HSEQ
Teekay Marine Services

Morten Mehli
Vice President, HSE
Teekay Petrojarl

Carbon Disclosure Project