

CDP2010 REPORTING GUIDANCE

Introduction to CDP:

The Carbon Disclosure Project (CDP) is a not-for-profit organization working to create lasting relationships between various stakeholders regarding the implications to commercial and non-commercial operations presented by climate change. **CDP's mission is to collect and distribute high quality information that motivates investors, corporations and governments to take action to prevent dangerous climate change.**

This document provides guidance to assist those completing the CDP 2010 information request.

If you have not completed a CDP information request before or you would like to know more about how others respond, please refer to the CDP [website](#), where you can view responses to previous CDP iterations, and learn more about CDPs operations.

Guidance covering the following CDP programs:

1. **Investor CDP:** A request for information from companies issued on behalf of institutional investors;
2. **CDP Supply Chain:** A request for information from companies issued on behalf of their private sector customers; and
3. **CDP Public Procurement:** A request for information from companies issued on behalf of their public sector customers;

The CDP 2010 information request is composed of a series of modules. You will be presented with a common set of questions (Q1-22, or CDP core module), plus one or more additional modules contained within CDPs Online Response System (ORS), depending upon whether you meet certain criteria. The additional modules are as listed below:

1. Electric Utility sector;
2. Auto and Auto Component Manufacturing sector;
3. Oil and Gas sector; and
4. Supplier module.

CDP modules:

Depending upon which programs you are being asked to respond to, you may be presented with a combination of the following modules:

Program:	Core Modules:	Additional Modules:
Investor CDP	Core Module (Q1-22)*	Electric Utility
		Auto &Auto Component Manufacturing
		Oil & Gas
CDP Supply Chain	Core Module (Q1-22)*	
	Supplier Module	
CDP Public Procurement	Core Module (Q1-22)*	
	Supplier Module	
Investor CDP AND CDP Supply Chain/ CDP Public Procurement	Core Questions (Q1-22)*	Electric Utility
	Supplier Module	Auto & Auto Component Manufacturing
		Oil & Gas

*Companies that meet certain criteria will have the option to answer an abridged core module. Please read further for more detailed information regarding whether these criteria may apply to your company.

Investor CDP: Once in the ORS, you may be presented with the Electric Utility, Auto, or Oil and Gas sector modules, in addition to the core module (Q1-22). Depending upon where your company is headquartered and the number of times you have been asked to respond, you may be presented with the option of answering a shortened version of the core questions: "the shortened module ". This shorter version of the request is designed to introduce climate change reporting to companies where the full request may not be appropriate, e.g. companies headquartered in countries where climate change reporting may be in the early stages of development. If you wish to show your company's leadership in the field of climate change reporting, you are welcome to answer the full information request. If you have not been presented with the option to respond to the shortened module, your company will not be eligible to select this module.

CDP Supply Chain AND/OR CDP Public Procurement: The ORS will ~~either~~ present you with questions 1-22 and the supplier module; if you meet certain criteria, you will be presented with the option of responding to a small and medium sized enterprise (SME) module and the supplier module. ~~CDP realizes that customers may invite companies to participate that will qualify as small to and the supplier module.~~ The SME request differs from the shortened module provided to companies responding to the investor request. All companies included in the Supply Chain program will be presented with the supplier module. This includes questions covering how to attribute emissions to your customer's

purchases from you. You will not be asked to answer the additional sector modules (Electric Utilities, Auto and Auto Component Manufacturing, and Oil and Gas) unless your company has also received an information request via the CDP Investor program.

Investor CDP AND CDP Supply Chain/ CDP Public Procurement: The ORS will either present you with questions 1-22 and the supplier module, or the option to answer the shortened module and the supplier module. If you have been asked to respond to CDP by both the Investor program and the Supply Chain/ Public Procurement programs you may also be asked to answer the Oil and Gas, Electric Utility, or Auto sector modules, depending upon the sector in which your company operates in.

The timelines for the start and finish of the Investor and Supply Chain/Public Procurement programs differ. Those participating in the Investor and Supply Chain/Public Procurement programs will receive a second request to complete the supplier module after the initial investor request. Companies should first complete the investor module by the deadline. The supplier module can be completed at a later date. Please see “**Deadline for Responses**” below for the exact closing dates.

Oil & Gas (O&G), Electric Utility (EU), and Auto & Auto Components (AU) sector companies: In addition to questions 1-22, specific questions have been prepared for companies in the Oil and Gas, Electric Utility, and Auto and Auto Component Manufacture sectors. These are based on reporting frameworks devised by the Institutional Investors Group on Climate Change, Ceres and the Investors Group on Climate Change (Australia/ New Zealand). These modules will be presented within the ORS if you operate within certain sectors. They can be previewed on the [CDP website](#). Companies with businesses in these sectors should answer questions 1-22 for all businesses within their consolidated boundary and provide information specific to businesses in those sectors in answer to the additional questions. If you have not been assigned a sector-specific module that you consider would be appropriate for your company to answer, please select the module.

Within the [PDF of the core module](#), there are notes and prompts that apply only to companies answering the supplemental modules.

Where specific guidance appears in this document for EU, AU and O&G companies, it is marked as follows:

- **For Oil and Gas Sector Companies**
- **For Electric Utility Companies**
- **For Auto and Auto Component Manufacturers**

Deadline for Responses:

Please review which program you are being asked to respond to and submit your response accordingly. Deadlines differ between the CDP Investors and CDP Supply Chain/CDP Public Procurement programs.

- CDP Investors: 31 May;
- CDP Supply Chain and Public Procurement: 31 July; and
- CDP Investor AND CDP Supply Chain/ Public Procurement: 31 May for the Investor module and 31 July for the supplier module.

How to Respond:

Please read the questions carefully and provide all relevant information in your answer in the format requested by the ORS. A short, direct answer is better than a long response with additional information not relevant to the question. Answers should be as specific as possible to your company.

Online Response System (ORS) Overview:

Companies are asked to respond to the information request using the ORS. If you are unable to respond via the ORS, please email: respond@cdproject.net.

To access to the ORS, companies first have to register for the year's disclosing cycle through the MyCDP Portal. The registration process is as follows:

- CDP's Customer Relationship Management (CRM) system contains the email addresses of an organization's staff members. An email will be sent to these staff members containing a link allowing them to register their company to participate in the latest CDP request through the MyCDP portal webpage.
- When a company enters the MyCDP portal they will be presented with a registration page, asking them to verify specific company details for the CDP CRM system, e.g. the country where they are headquartered. If the user wishes to do so, they can update that information or continue to the ORS.
- The first member of the organization to register for the disclosing cycle of a given year will be the CDP "registered user" for that year. Other users will be able to introduce and save data into the ORS, but only the registered user will be able to submit the data to CDP once the request is complete.
- The first page of the ORS is an introduction page. This page holds necessary fields including reporting years and the country lists for you to select the countries for which you will be providing information. This will allow your CDP information request to be configured.

Once the company has registered, confirmed or changed their details at the MyCDP portal and set the configuration details at the introduction page, they will be able to begin the process of responding.

Note that this year CDP will be introducing text limits in the ORS. Answers requiring text answers will be limited to 5,000 characters, or roughly one page of text. Text fields in tables will limit responses to 2,400 characters.

Relevance Fields

In some instances if you consider that a question is not relevant to your business you will be given the opportunity to skip the question. However you will be asked to explain why the question is not relevant. This symbol “¿” indicates those questions in the PDF and in the ORS. For example, the symbol appears before Q12.2:

- ¿ Is question 12.2 relevant to your company? (Please select: Yes or No)
12.2 Please give your total gross global Scope 1 GHG emissions in metric tonnes of CO₂-e.

This pattern is followed wherever the ¿ appears.

Organizational Consolidation Boundary

References to “your organization” or to “your company” are to the group, companies, businesses or organizations within the consolidation boundary you identify in answer to Q10.1. The information request structure focuses on governance, risks and opportunities, strategy and information regarding emissions calculations. The consolidation approach is the first question in the emissions accounting portion of the request as it forms an essential part of the calculation methodology.

The consolidation approach you identify in answer to Q10.1 should be applied consistently for all answers unless stated otherwise.

Public or Private Response

You will be provided with the option to make your answers available to the public or keep them private, meaning they are only viewable by the investors or customers on whose behalf CDP writes. Depending upon the program you are participating in, you will be subject to the following terms and conditions.

Investor Program:

For public responses

Companies agree that a public response to CDP 2010 will be used by CDP in furtherance of its charitable mission and that the response may be:

- Made available as soon as it is received by CDP to its signatory investors, partners, appointed report writers, selected rating agencies and any other parties that CDP deem appropriate;
- Made publicly available at www.cdproject.net starting in September 2010 and stored and preserved on CDP’s servers indefinitely thereafter;
- Distributed through selected partners;
- Compiled in CDP databases and made available in original, modified or adapted form (for a fee or otherwise) for use by commercial and non-commercial organizations;
- Amalgamated with information about the responding company from other public sources including rating agencies and financial information distributors;
- Used as a best practice example in CDP literature and research;
- Used individually or as part of aggregate results in CDP’s reports and in any other research conducted or commissioned by CDP; and
- Used in any other way that accords with CDP’s charitable mission.

For non-public responses

Companies agree that a non-public response to CDP 2010 may be:

- Made available as soon as it is received by CDP to its signatory investors, partners and appointed report writers but not to any other parties; and
- Used in production of aggregate or anonymous statistics in any CDP report.

Supply Chain/Public Procurement Program:

For public responses

Companies agree that a public response to CDP 2010 will be used by CDP in furtherance of its charitable mission and that the response may be:

- Made available as soon as it is received by CDP to its Supply Chain/Public Procurement members, signatory investors, partners, appointed report writers, selected rating agencies and any other parties that CDP deem appropriate;
- Made publicly available at www.cdproject.net from the date of the report launch and stored and preserved on CDP’s servers indefinitely thereafter;
- Distributed through selected partners;
- Compiled in CDP databases and made available in original, modified or adapted form (for a fee or otherwise) for use by commercial and non-commercial organizations;
- Amalgamated with information about the responding company from other public sources including rating agencies and financial information distributors;
- Used as a best practice example in CDP literature and research;

- Used individually or as part of aggregate results in CDP's reports and in any other research conducted or commissioned by CDP; and
- Used in any other way that accords with CDP's charitable mission.

For non-public responses

Companies agree that a non-public response to CDP 2010 may be:

- Made available as soon as it is received by CDP to its requesting Supply Chain/Public Procurement members, partners and appointed report writers but not to any other parties; and
- Used in production of aggregate or anonymous statistics in any CDP report.

For all responses

CDP will at no point divulge the relationship between requesting members and supplier companies.

NOTE: Some responses to CDP Public Procurement members may be shared between members where those members are individual representatives of a larger organization. The primary example where this may occur is when multiple departments (agencies) of a national government participate individually but share data between them. For 2010 this includes the central government of the United Kingdom and the Federal government of the United States of America. Additionally, it is possible that disclosures held by public authorities may be subject to a Freedom of Information (FOI) request. Please refer to the letter you originally received from the requesting member for more details or contact publicprocurement@cdproject.net.

Response Changes

Where responses are submitted via the ORS, they will become read-only after submission and can only be amended by CDP staff. CDP can accept revisions to responses in writing at any time and will aim to make these available on the [CDP website](#) within five days of receipt.

CDP 2010 Rating Methodology

This rating methodology has been developed jointly by CDP and their global advisor, PricewaterhouseCoopers LLP (PwC). Originally this methodology rated disclosure only, assessing the comprehensiveness of a company's response to CDP. In 2009 a pilot project was conducted to devise a system that could be used to assess a company's performance in relation to climate change. The pilot project has led to performance rating being incorporated into the 2010 methodology, although companies' ratings for disclosure and performance will be given separately.

Companies with the top scores for disclosure qualify to be listed in the Carbon Disclosure Leadership Index (CDLI). ~~Top-rated companies with the top scores~~ for performance qualify to be listed in the Carbon Performance Leadership Index (CPLI).

In summary, each company scored using this methodology will be given a disclosure rating and a performance rating. The disclosure rating will replace what has previously been known as a CDLI score. The term "CDLI" will in future only be used to indicate the group of companies with the highest disclosure ratings. The term "CPLI" will be used to indicate the group of companies with the highest performance ratings.

The 2010 methodology will be used by PwC to rate responses and performance by companies in the Global 500, S&P 500 and FTSE 350 indices. Responding companies in other indices or samples should approach their [local CDP contact](#) to find out if their response will be rated. Companies that are being rated using the methodology are urged to read the methodology along with this guidance before completing the questionnaire. The methodology will be downloadable from the [Investor page](#) of the CDP website.

Disclosure Framework

CDP has written a draft framework which companies are invited to trial in reporting their greenhouse gas (GHG) emissions to CDP in 2010. The aim of the framework is to increase comparability of emissions figures, providing further guidance where required. It is not intended to introduce a new set of rules, rather it draws on existing reporting requirements and protocols, including the GHG Protocol, and will describe the approach that companies should take where they are subject to mandatory reporting requirements but also wish to provide information on emissions not covered by these requirements (see the [CDP website](#)).

CDP Calculation Tools

CDP will be producing a suite of calculation tools aimed at assisting and enabling companies responding to the CDP information request. These tools are due to be launched in 2010, with more information to follow.

CDP Calculator Partnerships

CDP is working with accredited service providers that have been selected based on partner criteria. The tools and services provided by these partner organizations have been tested by the Greenhouse Gas Management Institute and can offer valuable support to companies throughout the data gathering process. The carbon calculation tools are compatible with the Greenhouse Gas Protocol (GHG Protocol). Please visit the [CDP website](#) for information on our partner organizations.

CDP Verification Partnerships

CDP will work with accredited service providers that are selected based on partner and service criteria. The verification services provided by these partner organizations will support companies to ensure the disclosure of accurate data.

CDP Water Disclosure

CDP Water Disclosure is a new program which will help institutional investors better understand the business risks and opportunities associated with water scarcity and other water-related issues by increasing the availability of high quality information on this critical issue. The CDP Water Disclosure 2010 information request covers companies' water management and governance; risks and opportunities in their own operations and supply chains; and water metrics including withdrawals, discharges and intensity of use. In 2010 it will be sent (on 1 April) to approximately 300 companies in sectors that are water intensive or are exposed to particular water-related risk.

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QUESTION GUIDANCE

INTRODUCTION PAGE

Introduction: “Please give a general description and introduction to your organization.”

You are not required to give an introduction to your corporation, but please do so if you wish.

Are you participating in the Walmart Sustainability Assessment?

Please select if you wish to complete a shorter information request

Based on your company's profile, you have been given the option of answering a shortened information request. Depending upon where your company is headquartered and the number of times you have been asked to respond, you may be presented with the option of answering a shortened version of the core questions: “the shortened module “. This shorter version of the request is designed to introduce climate change reporting to companies where the full request may not be appropriate e.g. companies headquartered in countries where climate change reporting may be in the early stages of development. However, if you wish to show your company's leadership in the field of climate change reporting you are welcome to answer the full information request.

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.”

If you delete a country, after having introduced data for that country, the associated data will also be deleted.

Modules

If you are in the Electric Utility, Automobile and Auto Component and Oil and Gas sectors, the corresponding sector modules will be marked as default options to your information request.

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.

This reporting period should be applied to your answers for the entire information request unless the facility is provided to specify other reporting periods, for example in the sector specific modules.

We request data for more than one reporting period for some emission accounting questions: 10, 11, 12 and 13. 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.

If you are going to provide additional years of data, please give the dates of those reporting periods here. This will enable you to enter multiple years of data when you reach questions 10, 11, 12, and 13.

Please enter dates in following format: **day/month/year in full i.e. 31/01/2001**. Work backwards from the most recent reporting year.

If you do not have data for the entirety of your reporting year, you have the following options:

1. Extrapolate your data to cover the entire reporting year. This potential source of inaccuracy can be logged in answer to question 12.12; or
2. Leave the question blank.

Further Information Fields

Companies will have the ability to provide additional information beyond what the question requests in the “Further Information” fields and via the attachment facility. Please do not use these fields for providing your actual answer unless asked to do so. Information provided in these fields will not be scored unless you have been notified otherwise.

Navigation Bar

Across the top of the ORS, you will notice each listed module. By rolling your mouse over these modules, you will be able to see the different questions held within each module. Using this navigation bar will greatly improve your movement throughout the system.

Save Function

Within the ORS, there is a save function. As you navigate, your information will be saved regardless of whether you press the “Save” button. That said, if you happen to lose your internet connection any information on the current page that has not been saved will be lost. Companies are encouraged to save regularly to avoid the loss of information.

GOVERNANCE, RISK AND OPPORTUNITIES

Question 1: Group and Individual Responsibility: (CDP2009 Q25)

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

If it is at board committee or other executive body level:

1.2 What is the mechanism by which the board committee or other executive body reviews the company's progress and status regarding climate change?

If it is at a lower level:

1.3 Please state how overall responsibility for climate change is managed within your company.

Individual Performance: (CDP2009 Q26)

1.4 Do you provide incentives for the management of climate change issues, including the attainment of greenhouse gas (GHG) targets?

If so,

1.5 Please complete the table.

Who is entitled to benefit from those incentives?	The type of incentives

General Guidance

The Board of Directors (also known as "the Board" or "the Executive Board") is the group of persons appointed with joint responsibility for directing and overseeing the affairs of the company. Please distinguish between responsibility for climate change governance held at the board level and responsibility held at lower levels of the company.

~~You might consider describing~~ the accountability chain throughout the organization, detailing how divisions interact around climate change issues, and who manages that process. If climate change is not managed by the board, describe who does manage responsibility for climate change. Also highlight whether incentives play a role in the management of climate change issues.

Specific Guidance for Question 1.1: "Where is the highest level of responsibility for climate change within your company?"

Within the ORS you will be asked to choose one of the following three options:

- Governance is at the board committee or other executive body level;
- Governance is at a lower level;
- There is no individual or committee with overall responsibility for climate change.

If you choose: "Board committee or other executive body level", you will then be asked to make a further selection to specify how climate change responsibility is held. Answer options include:

- Board/executive board: Choose this value if the whole board is responsible for climate change in the company;
- Sub-set of the board: Choose this value if individual board members form a sub-group that is responsible for climate change in the company;
- Individual board member: Choose this value if it is an individual board member who is responsible for climate change in the company;
- Committee appointed by the board: Choose this value if the board has appointed a committee (~~not board level~~) that is responsible for climate change in the company; and
- Other (please specify): Choose this if none of the above options describe your company's arrangements.

Specific guidance for Question 1.2: "What is the mechanism by which the board committee or other executive body reviews the company's progress and status regarding climate change?"

If climate change is managed at the board level, you will be presented with and asked to answer Q1.2 in addition to selecting your answer to Q1.1. You should cover the frequency with which climate change issues are reviewed, ~~by describe~~ Describe any internal reporting processes that inform those with the highest level of responsibility for climate change and describe ~~ing~~ the mechanism by which status/ progress on climate change issues ~~is reviewed~~ are handled within your company.

A lower level equates responsibility at any position below board level. If you choose "At a lower level", you will then be asked to specify whether the person responsible reports directly to the board or not:

- Officer/manager reporting directly to board committee/board member;
- Officer/manager not reporting directly to board committee/board member; and
- Other (please specify).

Specific guidance for Question 1.3: "Please state how overall responsibility for climate change is managed within your company."

If climate change is not managed by the board, you will be presented with and asked to answer Q1.3 in addition to selecting your answer to Q1.1. You should indicate in Q1.3 the exact level of the person who has responsibility for

climate change. These can include the Chief Operating Officer, Chief Financial Officer, Environmental Affairs committees etc. Within the drop down menu you will have the opportunity to indicate whether the lower level manager is directly accountable to the board or not. You should also describe the frequency with which climate change issues are reviewed within your company, and the internal mechanism for reporting to whomever has the highest level of responsibility for climate change issues, including how issues are escalated through the company hierarchy.

If you have answered that there is no individual or committee with overall responsibility for climate change in answer to Q1.1, please describe how overall responsibility is managed within your company.

Specific Guidance for Question 1.5: “Please complete the table.”

If you answer that employees can benefit from an incentive program relating to climate change in answer to Q1.4, you will be asked to complete the table presented alongside Q1. In the ORS, multiple positions can be selected so that you may provide an accurate response, detailing who stands to benefit when the company meets its climate change-related objectives. The employees will be matched to the types of incentives including:

- Monetary: if the incentive is tied to a bonus or some form of financial remuneration;
- Recognition (Non-monetary): if the incentive is related to some form of recognition (e.g. employee of the year) or career progression scheme, but not tied directly to any form of financial remuneration; and
- Prize: if the incentive is related to other rewards including increased holiday allowances, free use of company products, etc.

Question 2: Process to Identify Risks and Opportunities (CDP2009 Q1-6)

2.1 Describe your company’s process for identifying significant risks and/or opportunities from climate change and assessing the degree to which they could affect your business, including the financial implications.

Specific Guidance for Question 2.1: “Describe your company’s process for identifying significant risks and/or opportunities from climate change and assessing the degree to which they could affect your business, including the financial implications.”

Generally the term “process” implies the means, framework or policy by which a company identifies risks and/or opportunities. This process is likely to differ from company to company and may consist of one or more of the following:

1. An in-house system of risk management applied throughout the company to identify operational risks and opportunities (including those associated with climate change);
2. A process dedicated solely to the identification of risks and opportunities associated with climate change; and
3. A process that forms part of the company’s overall approach to governance and/or compliance.

Where possible and if relevant, please provide a description of the process you use to identify each of the categories of risks and opportunities (regulatory, physical and other) in the information request. The description may include information about some or all of the following:

- The scope of the process, i.e. the breadth of potential issues/factors considered;
- Who in the organization or which department(s) undertakes the process e.g. is it staff working specifically on risks or on sustainability;
- Who in the company “owns” the process for identifying risks and opportunities and who is accountable for it;
- What is the frequency with which risks and opportunities are re-assessed;
- How the process allows companies to prioritize risks and opportunities;
- The criteria that are used to determine the materiality of risks/ assess the degree to which the risk could affect the business;
- How the process is used to quantify risks and opportunities in monetary terms;
- How risks/ opportunities are assessed at an organization-wide level and at an asset-level, e.g. the types of processes, and how these allow the company to prioritize risks and opportunities. Risks and opportunities may be organization-wide (impacts the full corporation, e.g. reputational risk) or at asset level (impacts territories or facilities, e.g. flooding);
- How the process is monitored, e.g. through a risk register; and
- Intended audience of the output, e.g. investors, the board etc.

Please do not describe financial implications of risks and opportunities at this point as there will be an opportunity to do so in subsequent questions in the Risks and Opportunities section.

Describing the process for assessing materiality across a broad range of risks and opportunities may be difficult. Therefore, examples are acceptable as a means of illustrating your approach.

If none of the above applies to your company, please describe how risks and opportunities are identified.

You will be asked to respond to this question via a text entry box.

Risks and Opportunities: General Guidance

Many of the challenges you face when reporting on climate change issues are common to other aspects of corporate reporting, requiring you to provide statements about your prospective condition. Some organizations, particularly accountancy firms and their governing bodies, have published guidance about how to prepare statements that contain forward-looking information.

Before completing the questions covering risks and opportunities you may wish to consult with the financial, legal, and/or compliance departments for advice on your company's general approach to the provision of forward looking statements and information concerning risks and opportunities.

~~As noted in the introduction to this guidance document, t~~he GHG Protocol ([Chapter 1](#)) sets out general guiding principles for reporting on GHG emissions. These are based on principles for financial reporting and, together with question specific guidance, may also be applied to reporting about risks and opportunities.

Of special note, please consider the following principles specifically:

1. **RelevanceSignificance:** When considering what to disclose, please identify and report information that is most likely to be of use and benefit to the audience requesting information. In particular, disclose information that is most likely to influence their economic decisions. An important component of **relevance significance** is materiality. CDP does not prescribe a materiality threshold as this depends upon individual circumstances. For specific guidance on how to determine materiality, companies can consult:
 - The [AA1000 AccountAbility Principles Standard 2008](#) on the principle of materiality; or
 - The [Materiality Framework](#) produced by AccountAbility in association with BT Group and Lloyds Register Quality Assurance.
2. **Understandable Information:** Dealing with forward-looking information and uncertainty can be difficult and makes communicating the nature of risks and opportunities and their implications complex at times. It is important that the information disclosed is understandable to a wide audience. Try to avoid reporting information that is too complex or extensive to be understood or used. Instead focus on the most significant information for your business.
3. **Reliability:** By definition, assessment of risks and opportunities will take place against the background of uncertainty. In order to minimize the levels of uncertainty, responses should be based on the most recent and accurate information available. The use of estimates and assumptions, and the degree of uncertainty in any estimates should be explicitly disclosed.

Please note that in CDP 2010 you are requested to limit answers to discussions of significant ~~and material~~ risks and opportunities.

If you need more detailed guidance on how to assess the risks and opportunities your company is facing in relation to climate change you might find "[The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks and Opportunities from Ecosystem Change](#)", published by WBCSD, WRI and the Meridian Institute, useful.

If you consider that your company is not exposed to risks/presented with opportunities related to climate change, you are asked to explain why this is the case. The answer should include a discussion of possible risks and opportunities with which you may be faced and some explanation of why these risks and opportunities have been discounted.

If you do not know if you are exposed to risks/presented with opportunities related to climate change, you are asked to explain why not.

~~In the sixth question in the risks and opportunities sections, you are asked to describe actions. Actions could include: data management, provision of new or upgraded goods and services, policies and procedures, plans, training, investment, etc.~~

How to Interpret/Use Risk and Opportunity Tables in the ORS

From CDP 2010 forward, you will be asked to respond to risks and opportunities questions via a table as presented below, in order to aid automated analysis of the data provided. For 2010 you will still be provided with the option to respond via a text entry box but you are encouraged to use the table. Specific guidance has been included due to the changes in format.

Risk/Opportunity	Region/Country	Timescale in Years	Comment
Air pollution limits	United States of America	Current	Comment pertaining solely to the risk
Carbon taxes	International Air Space	Uncertain	Comment pertaining solely to the risk
Add row...			

The table above represents how you may respond to Q3.1, Regulatory Risks. Within the ORS you will be provided with a list of relevant types of risks and opportunities for Q3 – 8. In addition to these listed risks and opportunities, you will be able to include data points that may not have been identified by CDP by choosing the "Other" option. Once the "Other" option is chosen, you will be able to specify the risk or opportunity. CDP recognizes that many of the risks and opportunities you face will be unique to your operations and has tried to provide a means for you to include specific information.

When completing the table please select the geography corresponding to the chosen risk or opportunity and use the comment field to include more specific information related to the risk/opportunity. For example:

- You might select as an opportunity type: “Creation of new financial markets”. You may then select a given country/market and specify that the time period for the opportunity to materialize is 0 to 5 years. If there is significant opportunity related to “Creation of new financial markets” in other areas of the globe, you might want to add another line, selecting the same opportunity value and a different country/region and time frame, e.g. 6 to 10 years.
- You might select as a risk type “Changes in precipitation patterns” and select a given country, specifying in the comment field that the specific risk is related to increased drought. You can then add another row, select the same risk type, “Changes in precipitation pattern”, select another country and in the comment field specify that the risk is related to increased incidence of snow.
- You might select “Reputational risks” as a risk type and select a given country/ market or define a “global” region if you are producing a unique product under a recognizable brand. If your company produces a variety of products that could face reputational risks globally, you may consider selecting the value “Reputational risk” more than once. In the comment field, it may be appropriate to specify the product names.

You should only add risks and opportunities that are **materially significant**, not all possible risks and opportunities.

In the comment field, CDP requests you provide only contextual information about the risk or opportunity you have selected. Please do not provide information regarding the business and financial implications of the risk or opportunity identified as these points will be covered in further questions.

Question 3: Regulatory Risks (CDP2009 Q1)

3.1 Do current and/or anticipated regulatory requirements related to climate change present significant risks for your company?

If a company selects “Yes” in answer to 3.1, it is then asked:

3.2 What are the current and/or anticipated significant regulatory risks related to climate change and the associated countries/regions and timescales?

3.3 Describe the ways in which the identified risks affect or could affect your business and your value chain.

3.4 Are there financial implications associated with the identified risks?

If indicated that there are financial implications:

3.5 Please describe them.

3.6 Describe any actions the company has taken or plans to take to manage or adapt to the risks that have been identified, including the costs of those actions.

If a company selects “No” in answer to 3.1, it is then asked:

3.7 *Please explain why you do not consider your company to be exposed to significant regulatory risks – current or anticipated.*

If a company selects “Don’t know” in answer to 3.1 it is then asked:

3.8 *Please explain why not.*

****Please note that Q3.7 will only be asked if you have answered that your company does not consider itself exposed to risks presented by climate change. Question 3.8 will only be asked if you have answered that your company doesn’t know whether it is exposed to risks presented by climate change.**

General Guidance

Regulatory risks arise from current and/or expected city, state, regional, national or global governmental policy on climate change. Risks include, but are not limited to, the imposition of emissions limits, energy efficiency standards and carbon trading schemes. Within the ORS you will be presented with a drop down menu and asked to select which types of regulatory risks are likely to affect your business throughout different geographies.

Regulation related to climate change may lead to additional costs for your organization, adversely affect your organization’s reputation or have other impacts that have to be addressed. The impact of regulation may be direct or indirect, affecting other organizations on which you rely. Additionally the regulatory risk may be current or anticipated. We ask you to answer this question on the basis of all risks that you have identified so please answer “Yes” even if you have gone on to remove the risk by taking action.

Specific Guidance for Question 3.2: “What are the current and/or anticipated significant regulatory risks related to climate change and the associated countries/regions and timescales?”

You will have the option to respond to Q3.2 via a text box or a table as presented below. Please also review the section of the guidance titled “How to Interpret/Use Risk and Opportunity Tables in the ORS” for more information. Values you may select include:

Risk	Description	Examples
International agreements	Internationally binding agreements negotiated within the frame of United Nations international conventions or	1. Kyoto Protocol

	any other internationally recognized protocol.	
Air pollution limits	A type of regulation that imposes specific air pollution concentration limits on emissions (command and control).	1. Oregon Clean Air Act Implementation Plan
Carbon taxes	A type of regulation that imposes specific economic incentives for polluters. The control of the pollutant is achieved by the internalization of its cost (in the form of a tax) by the regulated entity.	1. France – Carbon Tax 2. UK Climate Change Levy (CCL)
Cap and trade schemes	Regulation that caps the amounts of release of a product/pollutant. Permits are issued to trade in the ability to release the product/ pollutant. Acts as an economic incentive by creating a specific market where the permits are traded.	1. EU Emissions Trading Scheme 2. South Korea Emissions Trading Scheme 3. Japan Mandatory Cap and Trade Scheme
Emission reporting obligations	Regulations that demand the disclosure of data to authorities and/or to the public. Includes pollutant release and transfer registers and can include non-state regulatory obligations. May include energy reporting obligations as well as emissions reporting.	1. Australian National Greenhouse and Energy Reporting Act 2007 2. New Mexico Mandatory GHG Reporting Regulation
Fuel/energy taxes and regulations	Regulations aimed mainly at the consumption of fuel and/or other energy types but not specifically GHG emissions.	1. UK CRC Energy Efficiency Scheme 2. Virginia Energy Plan
Product efficiency regulations and standards	Regulations or standards that require specific efficiency in the production or commercialization of a given product, e.g. buildings regulations concerning energy efficiency.	1. EU Energy Performance of Buildings Directive
Product labeling regulations and standards	Regulations or standards that impose specific labeling requirements on products, e.g. can include GHG labeling of electricity.	1. EU directives on electricity appliance labeling 2. EU directive on electricity labeling
Voluntary agreements	Voluntary agreements are a particular type of environmental instrument where contracts between state authorities and companies are agreed and specific targets are negotiated between the parties.	1. UK Climate Change Agreements
General environmental regulations, including planning	Include wider regulations, such as Environmental Protection Acts (or Laws), planning and other regulations.	1. Environmental Protection Law of the People's Republic of China 2. UK Climate Change Act
Indirect exposure through suppliers and clients	Depending upon the industry you are involved in, any of the listed regulations may affect your business indirectly.	1. Walmart sustainability questionnaire
Uncertainty surrounding new regulation	As the world tries to grapple with climate change, it is likely that regulations will be enacted in individual territories in advance of an international agreement. As this is the case, any of the general categories could be applicable.	Any of the above.

The examples in the table were drawn from previous CDP responses, and are presented to illustrate how the values in the “Regulatory Risk” column of Q3.2 should be used. The risk types are set to a limited set of general categories, even though the specific description of the regulation might be different between companies and geographies. Please classify your risks based on the examples provided. It is expected that you will be able to specifically define the nature of your risk in the comments field. If needed, you can always select the option of inputting your own risk type.

If you opt to respond via the text box please include all regulatory risks, both general and specific to your company, as well as the timelines and countries to which these risks apply.

Specific Guidance for Question 3.3: “Describe the ways in which the identified risks affect or could affect your business and your value chain.”

Question 3.3 asks you to comment on the ways in which the identified regulatory risks will affect your business and value chain. “Value chain” refers to suppliers of goods and services, partner organizations and customers. For example, if you have identified “*Product efficiency regulations and standards*” as a regulatory risk that will affect company operations, you may expand upon this point in 3.3 highlighting that currently products do not meet emissions limits. You may also describe whether this will affect your supply chain, either upstream or downstream. Will this mean your company loses a large share of the market? How will this affect your relationships with your suppliers? How will national and international emissions targets affect demand for your products?

Please do not include financial assessments in answer to this question, but include this information in Q3.5.

Specific Guidance for Question 3.5: “Please describe them.”

Regulatory risks can imply ~~increased compliance costs related to company operations~~, payment of fines/ tariffs, involvement in carbon trading schemes etc. Please quantify the implications as much as possible. For instance, have you

paid or do you anticipate paying any penalties for regulatory non-compliance? ~~Do you anticipate having to purchase/have you purchased carbon credits in order to avoid compliance penalties?~~

Please keep information about the potential costs of identified risks separate from the cost of mitigating/adapting to these risks. Financial information regarding the costs of mitigation/adaptation should be included in answer to Q3.6.

Specific Guidance for Question 3.6: “Describe any actions the company has taken or plans to take to manage or adapt to the risks that have been identified, including the cost of those actions.”

Describe the measures you have in place for dealing with the effects of the risks you have identified. These “actions” could include divestments, contract re-negotiations etc. How might action to ensure compliance affect company profitability? Have you had to alter the production of products that do not meet efficiency standards in order to align with regulation? Will you consider selling portions of the company that could be perceived as non-carbon-compliant? How costly do you anticipate facility upgrades being? Can these costs be realized over a period of years, or do you anticipate large initial expenditures? Please include the actual or estimated costs of adapting to the regulatory risks identified.

Where there is no cost for action, please explicitly state this is the case.

Specific Guidance for Question 3.7: “Please explain why you do not consider your company to be exposed to significant regulatory risks – current or anticipated.”

Explain why there are no regulatory risks affecting your company either directly or indirectly via the value chain.

Specific Guidance for Question 3.8: “Please explain why not.”

For example, if your company has not considered the issue, please say so.

For Oil and Gas Sector Companies

Please provide a description of the exposure of assets and reserves to future climate change regulation in answer to Q3.3. Think about the impact of national and international emissions targets and how those can affect demand for oil and gas products. As governments pass fuel efficiency standards, the demand for gasoline/petrol may decline. Please also think if this will translate into your company having to create a cleaner fuel mix. Are there other instances where demand is likely to suffer due to regulation? Please also include information regarding the financial implications of climate related policy and regulation on your current and future company performance in answer to Q3.5.

For Electric Utility Companies

In addition to answering Q3.2, please comment specifically on how national and international targets on demand-management might affect demand for electricity in answer to Q3.3. You should give your views on how wholesale and retail power prices are affected by carbon prices in the different markets in which you operate. Please also give your company's views on the extent to which carbon prices are passed through, or may in the future be passed through, into electricity prices in the markets. ~~Blf possible, base this on current and planned regulatory requirements and incorporate the financial implications in answer to Q3.5~~ and 3.6, as appropriate.

For Auto and Auto Component Manufacturers

You should comment on the financial and strategic implications of current and planned national, regional, and international policies for increasing automobile fuel efficiency and developing “clean” engines for each of the markets in which you operate. ~~This can be incorporated into answers to Q3.2. You should also comment on how other related environmental policies, such as regulations and standards regarding air quality, use of alternative fuels and sustainable mobility could further impact your business.~~

Specifically, ~~in answer to Q3.3 you should disclose your views on how climate change policy could impact you in terms of sales. The financial cost of loss of market share should be described in Q3.5. Additional costs of complying with regulation should be described in Q3.6 and if applicable you may consider answering answer Q3.6 with information regarding how you have passed increased costs down the value chain. You should also comment on how other related environmental policies, such as regulations and standards regarding air quality, use of alternative fuels and sustainable mobility could further impact your business.~~

Question 4: Physical Risks (CDP2009 Q2)

4.1 Do current and/or anticipated physical impacts of climate change present significant risks to your company?

If a company selects “Yes” in answer to 4.1, it is then asked:

4.2 What are the current and/or anticipated significant physical risks, and their associated countries/ regions and timescales?

4.3 Describe the ways in which the identified risks affect or could affect your business and your value chain.

4.4 Are there financial implications associated with the identified risks?

If indicated that there are financial implications:

4.5 Please describe them.

4.6 Describe any actions the company has taken or plans to take to manage or adapt to the risks that have been identified, including the costs of those actions.

If a company selects “No” in answer to 4.1, it is then asked:

4.7 *Please explain why you do not consider your company to be exposed to significant physical risks – current or anticipated.*

If a company selects “Don't know” in answer to 4.1, it is then asked:

4.8 Please explain why not.

Oil and gas sector companies should include their estimate value of assets exposed to extreme weather events in table O&G2.1. References to O&G2.1 made in answer to Q4 will be scored.

**Please note that Q4.7 will only be asked if you have answered that your company does not consider itself exposed to risks presented by climate change. Question 4.8 will only be asked if you have answered that your company doesn't know whether it is exposed to risks presented by climate change.

General Guidance

Physical risks may arise from dramatic extreme weather events or subtle changes in weather patterns. Again, their impact may be direct or indirect, i.e. affecting other organizations on which your company relies. When identifying physical risks, please think objectively of the ways in which one physical change will affect parts of either the value chain, or the company's ability to conduct business as usual. Additionally the physical impacts may be current or anticipated. Please note that the question only asks about risks that are significant.

Information about physical risks associated with climate change can be found on the website of the [Intergovernmental Panel on Climate Change](#). See the synthesis document of the Fourth Assessment Report (AR4) and for more details follow the link from the homepage to the report by Working Group II, "[Impacts, Adaptation and Vulnerability](#)".

Specific Guidance for Question 4.2: "What are the current and/or anticipated significant physical risks, and their associated countries/ regions and timescales?"

You will have the option to respond to Q4.2 via a text box or a table as presented below. Please also review the section of the guidance titled "How to Interpret/Use Risk and Opportunity Tables in the ORS" for more information. Values you may select include:

Risk	Description	Examples
Changes in precipitation patterns	As temperature regimes change, seasons are likely to shrink or lengthen, affecting precipitation patterns.	<ol style="list-style-type: none"> 1. Floods – inland – increased incidence 2. Snow – reduced incidence 3. Snow – increased incidence 4. Water shortages – increased incidence 5. Water scarcity
Changes in frequency of extreme weather events	The increased incidence of storm events such as hurricanes can be traced to warming oceans. Increased flooding due to these extreme weather events and glacial melt is likely to increase as well. Temperature patterns such as heat waves and droughts are likely to occur with increased severity.	<ol style="list-style-type: none"> 1. Extreme weather events – increased incidence 2. Floods – coastal – increased incidence
Induced changes in natural resources	With changing precipitation patterns comes a change in natural resources. The IPCC forecasts that temperature regimes will change as well, having an effect on things like growing seasons. With these changes, it is likely that migration patterns will differ in addition to changes in plant species.	<ol style="list-style-type: none"> 1. Natural resource shortages 2. Coastal erosion 3. Water chemistry changes – lakes and rivers 4. Water chemistry changes – seas 5. Growing season changes affecting crops 6. Glacial retreat 7. Range of animal species including pests – changes to 8. Range of plant species including invasive – changes to 9. Permafrost degradation 10. Sea-level rise 11. Species diversity – reduced 12. Temperature pattern changes – land 13. Temperature pattern changes – sea
Induced changes in human and cultural resources		<ol style="list-style-type: none"> 1. Loss of cultural amenities 2. Infrastructure losses
Induced changes in supply chain and/ or customers	Physical changes can have indirect effects on your business operations.	<ol style="list-style-type: none"> 1. Weather-related disruption to energy supplies 2. Weather-related disruption to supply chain
Uncertainty of physical risks	Many physical changes are still considered speculative as the potential problems are interlinked.	<ol style="list-style-type: none"> 1. Uncertainty of physical risks

The examples in the table were drawn from previous CDP responses, and are presented to illustrate how the values in the “Physical Risk” column of Q4.2 should be used. The risk types are set to a limited set of general categories, even though the specific description of the risk might be different between companies and geographies. Please classify your risks based on the examples provided. It is expected that you will be able to specifically define the nature of your risk in the comments field. If needed, you can always select the option of inputting your own risk type.

If you opt to respond via the text box please include all physical risks, both general and specific to your company, as well as the timelines and countries to which these risks apply.

Specific Guidance for Question 4.3: “Describe the ways in which the identified risks affect or could affect your business and your value chain.”

Question 4.3 asks you to comment on the ways in which your identified physical risks will affect your business and value chain. For instance, if you identified “Water scarcity” as a physical risk then you may expand upon this point in 4.3, highlighting that your inability to produce hydropower is the ultimate outcome of this scarcity. Further to this point, you may describe how that will affect your operations and your customers. If you use hydropower to power your factories, this will impact your business productivity. If you provide power to customers, you may face serious deficiencies.

Please do not include financial assessments in answer to this question, but include this information in Q4.5.

Specific Guidance for Question 4.5: “Please describe them.”

Financial implications associated with physical risks generally imply increased costs related to company operations, such as increased energy costs due to decreased supply availability or costs to damaged infrastructure. You may also face indirect financial risks passed through the supply chain. With increasing process disruptions due to physical changes, you as a customer may face rising product prices. How will this affect your financial stability? Can you imagine physical risks greatly affecting the cost of your final products because of supply chain changes and product availability? More simply, have you assessed the potential costs that could be incurred to company property in light of physical changes?

Please keep information about the potential costs of identified risks separate from the cost of mitigating/adapting to these risks. Financial information regarding the costs of mitigation/adaptation should be included in answer to Q4.6.

Specific Guidance for Question 4.6: “Describe any actions the company has taken or plans to take to manage or adapt to the risks that have been identified, including the costs of those actions.”

Please describe the measures in place for dealing with the effects of the risks you have identified. These “actions” could include increased insurance coverage, investment in new technologies, research and development funding, diversification of company supply chain, contingency arrangements, contract re-negotiation, etc. If you have identified relocation as a way to minimize risk from physical exposure, please also include a rough estimate of how costly relocation will be. More generally, you might also consider commenting on how risks may be avoided or shared by working with partners, restructuring contracts, etc. Are you working to protect any partners from physical changes? Please include the actual or estimated costs of adapting to the physical risks identified.

Where there is no cost for action, please explicitly state this is the case.

Specific Guidance for Question 4.7: “Please explain why you do not consider your company to be exposed to significant physical risks – current or anticipated.”

Explain why there are no physical risks affecting your company either directly or indirectly via the value chain.

Specific Guidance for Question 4.8: “Please explain why not.”

For example, if your company has not considered the issue, please say so.

For Oil and Gas Sector Companies

Please describe how extreme weather events have affected or may affect your future operations in answer to Q4.3. Does your company manage or lease any offshore oil rigs that may be increasingly susceptible to extreme weather events? Will rising sea levels affect any coastal operations? Please include the methodology used for the integration of physical risks into company strategy and investment decisions and risk management in answer to Q4.6. References to O&G2.1 made in answer to Q4 will be scored.

For Electric Utility Companies

Please describe how extreme weather events have affected or may affect generating capacity, production, transmission and distribution. If appropriate, please comment on the impact of flooding, drought, heat waves or storms on hydroelectric plants, water-cooling systems, wind farms, etc. Please consider how long-term changes in temperature have affected or may affect peak load, seasonal fluctuations in demand or impact network carrying capacity.

Question 5: Other Risks (CDP2009 Q3)

5.1 Does climate change present other significant risks – current and/or anticipated – for your company?

If a company selects “Yes” in answer to 5.1, it is then asked:

5.2 What are the current and/or anticipated “other” significant risks, and their associated countries/ regions and timescales?

5.3 Describe the ways in which the identified risks could affect your business and your value chain.

5.4 Are there financial implications associated with the identified risks?

If indicated that there are financial implications:

5.5 Please describe them.

5.6 Describe any actions the company has taken or plans to take to manage or adapt to the other risks that have been identified, including cost of those actions.

If a company selects “No” in answer to 5.1, it is then asked:

5.7 Explain why you do not consider your company to be exposed to other significant risks – current or anticipated.

If a company selects “Don’t know” in answer to 5.1, it is then asked:

5.8 Please explain why not.

**Please note that Q5.7 will only be asked if you have answered that your company does not consider itself exposed to risks presented by climate change. Question 5.8 will only be asked if you have answered that your company doesn’t know whether it is exposed to risks presented by climate change.

General Guidance

This question is designed to capture any other climate change-related risks not covered by the previous questions on regulatory and physical risks. Examples would include commercial risks posed by changes in consumer attitudes, challenges in securing cost-effective supply, impacts on the recruitment and retention of talent or risks to your organization’s reputation. Again their impact may be direct or indirect, affecting other organizations on which your organization relies or is connected. The risks may be current or anticipated. Please note that the question only asks about risks that are significant.

Reporting on “Other Risks” can be quite challenging due to the scope of risks and the way climate issues might interrelate with other operational risks. In the first instance it may be beneficial to review any risk management plans in order to identify whether any climate change related risks have not already been reported in answer to questions 3 and 4.

Specific Guidance for Question 5.2: “What are the current and/or anticipated “other” significant risks, and their associated countries/ regions and timescales?”

You will have the option to respond to Q5.2 via a text box or a table as presented below. Please also review the section of the guidance titled “How to Interpret/Use Risk and Opportunity Tables in the ORS” for more information. Values you may select include:

Risk	Description	Examples
Changes in the availability and costs of goods and services	These risks can be seen as indirect in some instances, such as physical changes affecting your costs and disruptions to your supply chain.	<ol style="list-style-type: none"> 1. Increased cost of energy 2. Increased cost of materials 3. Increased transport costs 4. Reduced availability of energy/ fuels 5. Reduced availability of materials 6. Variable access to renewable energy
Reputational risks	This risk relates to whether you have taken public opinion into account. With a high GHG footprint, consumers may be less likely to purchase or use your services.	<ol style="list-style-type: none"> 1. High GHG footprint of input materials and/or services 2. Reputational risks
Financial risks	While you may not experience physical damage or consumer damage, if you invest or insure companies that are likely to be affected in these ways, you face financial risks.	<ol style="list-style-type: none"> 1. Risk in the lending portfolio 2. Risk in insurer’s portfolio of insured assets 3. Increased insurance costs
Market risk	The use of your goods or services could become unnecessary.	<ol style="list-style-type: none"> 1. Reduced customer demand for products
Unpredictability of risks	Reputational risks may arise with unforeseen consequences. As regulatory and physical changes occur, you may not be able to predict what other risks will arise.	<ol style="list-style-type: none"> 1. Unpredictability of risks

The examples in the table were drawn from previous CDP responses, and are presented to illustrate how the values in the “Other Risk” column of Q5.2 should be used. The risk types are set to a limited set of general categories, even though the specific description of the risk might be different between companies and geographies. Please classify your risks based on the examples provided. It is expected that you will be able to specifically define the nature of your risk in the comments field. If needed, you can always select the option of inputting your own risk type.

If you opt to respond via the text box, please include all other risks, both general and specific to your company, as well as the timelines and countries to which these risks apply.

Specific Guidance for Question 5.3: “Describe the ways in which the identified risks could affect your business and your value chain.”

Question 5.3 asks you to comment on the ways in which your identified risks will affect your business and value chain. Perhaps you have identified the high GHG footprint of materials and/or services as a risk that could potentially affect your

business. ~~Will you diversify your supply chain to try and minimize that footprint? Do you imagine changing the relationships you currently have with your suppliers? Please think about these issues when answering this question.~~

Please do not include financial assessments in answer to this question, but include this information in Q5.5.

Specific Guidance for Question 5.5: “Please describe them.”

Financial implications associated with risks generally imply costs related to changes in consumer demands and the subsequent effect on your company operations. You may lose market share due to changing customer behavior or reputational strain. This could be related to reduced demand due to the changing nature of available technologies and the relevance of your products.

Please keep information about the potential costs of identified risks separate from the cost of mitigating/adapting to these risks. Financial information regarding the costs of mitigation/adaptation should be included in answer to Q5.6.

Specific Guidance for Question 5.6: “Describe any actions the company has taken or plans to take to manage or adapt to the other risks that have been identified, including cost of those actions.”

Please describe the measures in place for dealing with the effects of the risks you have identified. These “actions” could include contingency plans to deal with increasing energy costs, ad campaigns to manage reputational risks, changes to production output in advance of reduced consumer demand, etc. If you face risk in your lending portfolio, how are you prepared to address potential profit losses? Are you considering changing your insurance coverage and if so, how is that likely to increase costs? You should also include the actual or estimated costs of adapting to the other risks identified. As regulation comes online and science develops, you may have a better idea of the regulatory and physical risks likely to affect your company, in which case the unpredictability of other risks may play an important role in preparing to operate in a carbon constrained world. Has your company set money aside to deal with a variety of contingencies related to climate change? If so, please comment further on how you anticipate this funding to be used.

If you have identified the high GHG footprint of supplied goods and/or services as a risk that could potentially affect your business, will you diversify your supply chain to minimize that footprint? Do you imagine changing the relationships you currently have with your suppliers?

Where there is no cost for action, please explicitly state this is the case.

Specific Guidance for Question 5.7: “Explain why you do not consider your company to be exposed to other significant risks – current or anticipated.”

Explain why there are no other risks affecting your company either directly or indirectly via the value chain.

Specific Guidance for Question 5.8: “Please explain why not.”

For example, if your company has not considered the issue, please say so.

For Auto and Auto Component Manufacturers

Please comment on changing demand and sales mix due to high fuel costs and implications for sales volumes, operating margins and company reputation.

Please also provide a brief overview of your company’s long-term strategy for increasing fuel economy and reducing greenhouse gas emissions, including any actions you are planning or taking to reduce the CO₂ emissions of the vehicles you manufacture. This may include, but is not limited to:

- Research and development investments;
- Mass production of cleaner technologies e.g. hybrids, electric cars, fuel cells (please include timelines);
- Alternative business models e.g. car rental, car sharing, 2/3 wheelers; and
- Partnerships between car manufacturers, equipment manufacturers and energy providers, e.g. oil and gas companies, electricity producers.

In order to explain current or planned actions to mitigate risks, you should disclose your CO₂ and/or fuel economy targets at group level and, where relevant, for specific markets. Targets should be expressed in gCO₂ per unit distance and/ or fuel economy (e.g. miles per gallon) and include a reference to the baseline and regulatory drivers against which performance is being measured.

Question 6: Regulatory Opportunities (CDP2009 Q4)

6.1 Do current and/or anticipated regulatory requirements on climate change present opportunities for your company?

If a company selects “Yes” in answer to 6.1, it is then asked:

6.2 What are the current and/or anticipated significant regulatory opportunities and their associated countries/ regions and timescales?

6.3 Describe the ways in which the identified opportunities could affect your business and your value chain.

6.4 What are the financial implications associated with the identified opportunities?

If indicated that there are financial implications:

6.5 Please describe them.

6.6 Describe any actions the company has taken or plans to take to exploit the opportunities that have been identified, including the investment needed to take those actions.

If a company selects “No” in answer to 6.1, it is then asked:

6.7 Explain why you do not consider your company to be presented with significant opportunities – current or anticipated.

If a company selects “Don’t know” in answer to 6.1 it is then asked:

6.8 Please explain why not.

**Please note that Q6.7 will only be asked if you have answered that you do not consider yourself able to benefit from opportunities presented by climate change. Question 6.8 will only be asked if you have answered that you don’t know whether you will benefit from opportunities presented by climate change.

General Guidance

Regulation on climate change-related issues may present opportunities for your organization if it is better suited than its competitors to meet those regulations, or more able to help others to do so. Possible scenarios would include a company whose products already meet anticipated standards designed to curb emissions or whose products will enable its customers to meet mandatory requirements. Regulation may also create new markets such as emission trading markets leading to new opportunities. Please note that the question only asks about opportunities that are significant ~~or material~~.

Specific Guidance for Question 6.2: “What are the current and/or anticipated significant regulatory opportunities and their associated countries/regions and timescales?”

You will have the option to respond to Q6.2 via a text box or a table as presented below. Please also review the section of the guidance titled “How to Interpret/Use Risk and Opportunity Tables in the ORS” for more information. Values you may select include:

Opportunity	Description	Examples
International agreements	Internationally binding agreements negotiated within the frame of United National international conventions or any other internationally recognized protocol.	1. Creation of new markets
Cap and trade schemes	Regulation that caps the amounts of release of a product/ pollutant. Permits are issued to trade in the ability to release the product/ pollutant. Acts as an economic incentive by creating a specific market where the permits are traded.	1. Creation of new financial markets
Emission reporting obligations	Regulations that demand the disclosure of data to authorities and/ or to the public. Includes pollutant release and transfer registers and can include non-state regulatory obligations. May include energy reporting obligations as well as emissions reporting.	1. Creation of new markets
Fuel/ energy taxes and regulations	Regulations aimed mainly at the consumption of fuel and/ or other energy types but not specifically GHG emissions.	1. Reduction in energy/fuel use in supply chain contributing to lower product costs 2. Reduced energy/fuel expenditure due to efficiency regulations
Product efficiency regulations and standards	Regulations or standards that require specific efficiency in the production or commercialization of a given product, e.g. buildings regulations concerning energy efficiency.	1. Reduced energy/fuel expenditure due to efficiency regulations 2. Increased lending opportunities to customers
Product labelling regulations and standard	Regulations or standards that impose specific labelling requirements on products e.g. can include GHG labelling of electricity.	1. Deployment of new products to meet regulations 2. Increased demand for existing products
Voluntary agreements	Voluntary agreements are a particular type of environmental instrument where contracts between state authorities and companies are agreed and specific targets are negotiated between the parties.	1. Benefits from government subsidies
General environmental regulations, including planning	Include wider regulations, such as Environmental Protection Acts (or Laws), planning and other regulations.	1. Benefits from government subsidies
Indirect exposure through suppliers and clients	Depending upon the industry you are involved in, any of the listed regulations may affect your business indirectly.	1. Reduction in energy/fuel use in supply chain contributing to lower product costs

The examples in the table were drawn from previous CDP responses, and are presented to illustrate how the values in the “Regulatory Opportunities” column of Q6.2 should be used. The opportunity types are set to a limited set of general categories, even though the specific description of the opportunity might be different between companies and geographies. Please classify your risks based on the examples provided. It is expected that you will be able to specifically define the nature of your opportunity in the comments field. If needed, you can always select the option of inputting your own opportunity type.

If you opt to respond via the text box, please include all regulatory opportunities, both general and specific to your company. Include the timelines and countries to which these opportunities apply.

Specific Guidance for Question 6.3: “Describe the ways in which the identified opportunities could affect your business and your value chain.”

Question 6.3 asks you to comment on the ways in which the identified regulatory opportunities could and do improve your business prospects. If you identified “Product efficiency regulations and standards Deployment of new products to meet regulations” in answer to Q6.2 and then specified the regulation that presents you with this opportunity in the comment column, you ~~should may want to~~ describe in answer to Q6.3 how regulation has encouraged your company to develop a new product, and its qualifications to meet requirements. Please also describe how large a proportion of your company this product could account for with regards to production, ~~and revenue generation. If sales of a new product are to rise by 70% in the next five years, but that will still only account for a small percent, please disclose this information. More generally, you might consider commenting on how opportunities are being maximized or shared by working with partners, restructuring contracts etc.~~

Please do not include financial assessments in answer to this question, but include this information in Q6.5.

Specific Guidance for Question 6.5: “Please describe them.”

Financial implications associated with opportunities generally imply increased sales or reduced costs. Increased demand for existing products (potentially due to products meeting efficiency standards) and reduced expenditure on energy due to efficiency improvement can all lead to increased profits.

Please provide contextual information. For example Where you have identified if sales of a new product are to rise by 70% in the next five years, but this will still only account for a small percent of your total sales income, please disclose this information. ~~“Increased demand for existing products” please provide details on the anticipated increase in profit.~~

In answer to 6.5, please indicate the size of the profits these regulatory opportunities might lead to or the amount of government subsidies that might be available. Then, in answer to 6.6 please indicate the costs attached to actions needed to secure these profits or subsidies.

Specific Guidance for Question 6.6: “Describe any actions the company has taken or plans to take to exploit the opportunities that have been identified, including the investment needed to take those actions.”

Please describe the measures in place to maximize the opportunities you have identified. These “actions” could imply initial costs, depending upon the opportunities relevant to your company. In some cases you may be able to benefit from government subsidies to aid in the development of products or technologies such as renewable energy or carbon capture technologies. ~~If this is the case, please~~ consider disclosing information regarding patents applied for in relation to products developed to benefit from regulatory opportunities. Other scenarios include the potential for new financial market developments based on clean technology or carbon mitigation products. If it is conceivable that your company could exploit such an opportunity, please describe how costly this may be.

Where there is no cost for action, please explicitly state this is the case.

Specific Guidance for Question 6.7: “Explain why you do not consider your company to be presented with significant opportunities – current or anticipated.”

Explain why there are no regulatory opportunities available to your company either directly or indirectly via the value chain.

Specific Guidance for Question 6.8: “Please explain why not.”

For example, if your company has not considered the issue, please say so.

For Electric Utility Companies

Please identify:

- The opportunities that national or international targets on energy efficiency and demand management might present for your company e.g. revenue implications from energy services business units;
- Your company's views on any opportunities that may result from policies on renewable energy or low-emissions technologies e.g. current or planned investments in these areas; and
- The extent to which you received financial incentives to reduce the electricity use of customers.

Question 7: Physical Opportunities (CDP2009 Q5)

7.1 Do current and/or anticipated physical impacts of climate change present significant opportunities for your company?

If a company selects “Yes” in answer to 7.1, it is then asked:

7.2 What are the current and/or anticipated significant physical opportunities and their associated countries/ regions and timescales?

7.3 Describe the ways in which the identified opportunities affect or could affect your business and your value chain.

7.4 Are there financial implications associated with the identified opportunities?

If indicated that there are financial implications:

7.5 Please describe them.

7.6 Describe any actions the company has taken or plans to take to exploit the opportunities that have been identified, including the investment needed to take those actions.

If a company selects “No” in answer to 7.1, it is then asked:

7.7 *Explain why you do not consider your company to be presented with significant opportunities – current or anticipated.*

If a company selects “Don't know” in answer to 7.1, it is then asked:

7.8 *Please explain why not.*

**Please note that Q7.7 will only be asked if you have answered that you do not consider yourself able to benefit from opportunities presented by climate change. Question 7.8 will only be asked if you have answered that you don't know whether you will benefit from opportunities presented by climate change.

General Guidance

Physical changes related to climate change may present opportunities in a variety of ways. Reduced sea ice may allow access to new areas for vessels. Changing temperature and rainfall may extend growing seasons for farmers. Alternatively your organization may have goods and services that enable others to adapt to physical changes.

Opportunities may be created by direct physical impacts or indirect impacts on organizations on which you rely. They may be current or anticipated. Please note that the question only asks about opportunities that are significant or material.

Physical opportunities will not present themselves to all companies participating in the CDP process, and where this is the case, CDP asks that companies explain why the question is not relevant. For those that stand to benefit from physical changes, it may be beneficial to review how changes that have already taken place have affected business in the last 10 years. This should help the responder get an idea of how changes are likely to affect company operations in coming months, years or decades. Possible questions to think about include whether how vulnerable is your supply chain will benefit from changes to the physical environment? Has the length of growing seasons changed already and ~~will it make a difference to~~ has this benefitted company profit? Would the melting of the ice caps allow access to previously untapped resources?

More information about physical changes associated with climate change can be found on the website of the [Intergovernmental Panel on Climate Change](#). See the synthesis document of the Fourth Assessment Report (AR4) and, for more details, follow the link from the homepage to the report by Working Group II, "[Impacts, Adaptation and Vulnerability](#)".

Specific Guidance for Question 7.2: "What are the current and/or anticipated significant physical opportunities and their associated countries/regions and timescales?"

You will have the option to respond to Q7.2 via a text box or a table as presented below. Please also review the section of the guidance titled "How to Interpret/Use Risk and Opportunity Tables in the ORS" for more information. Values you may select include:

Opportunity	Description	Examples
Changes in precipitation patterns	Opportunities can arise from more water/snow availability and/or decreased snow availability, depending on your business processes.	1. Rainfall – changing patterns 2. Snowfall – changing patterns
Changes in frequency of extreme weather events		1. Products for use in extreme weather events
Induced changes in natural resources and amenities	Increased growing seasons for crops incorporated into your products may translate into an opportunity. Additionally, <u>change in</u> the range of plant and animal species change could provide for increased business. Temperature patterns could translate to an increase in tourism or access to goods.	1. Growing season changes affecting crops 2. Range of animal species including pests – changes to 3. Range of plants species including pests – changes to 4. Reduced sea ice allowing for easier and longer sea passage 5. Sea level rise allowing increased access to ports 6. Temperature pattern changes – land 7. Temperature pattern changes – sea
Induced changes in supply chain and/or customers	If any of the goods you purchase have become more accessible you may be able to benefit through lower prices or increased product availability. Alternatively, if you provide products that enable customers to cope better with climate change, then you may benefit from increased sales.	1. Reduced cost/increased availability of goods or services that you purchase 2. Increased sales
Induced changes in human and cultural resources	As changes to land and ocean occur, the potential to access new areas could increase.	1. Increased tourism opportunities due to physical changes

The examples in the table were drawn from previous CDP responses, and are presented to illustrate how the values in the "Physical Opportunities" column of Q7.2 should be used. The opportunity types are set to a limited set of general categories, even though the specific description of the opportunity might be different between companies and

geographies. Please classify your risks based on the examples provided. It is expected that you will be able to specifically define the nature of your opportunity in the comments field. If needed, you can always select the option of inputting your own opportunity type.

If you opt to respond via the text box, please include all physical opportunities, both general and specific to your company. Include the timelines and countries to which these opportunities apply.

Specific Guidance for Question 7.3: “Describe the ways in which the identified opportunities could affect your business and your value chain.”

Question 7.3 asks you to comment on the ways in which the identified physical opportunities could and do improve your business prospects. If you ~~have said in Q7.2 that your business will benefit from changes in precipitation patterns, specifically changing patterns of snowfall, you should identified “Increased tourism opportunities due to physical changes” in answer to Q7.2, you may want to provide explain how this will affect your business in Q7.3. e-detail in answer to Q7.3 on how specific areas are likely to benefit the most. Through increased access to once remote ports? Through a more temperate climate? Please also describe how large a proportion of your company this new opportunity will affect, with regards to production and revenue generation. More generally, you might consider commenting on how you are planning on maximizing opportunities.~~

Please do not include financial assessments in answer to this question, but include this information in Q7.5.

Specific Guidance for Question 7.5: “Please describe them.”

Changing growing seasons, changes in the frequency of extreme weather events, and changes in product uses/relevance can all contribute to your profitability. You may also benefit from financial opportunities passed to you through the supply chain. Where changes to growing seasons translate to longer growing seasons and higher crop yields, you may consider commenting on how the increased supply of these goods contributes to lower prices within your supply chain. Please also comment on the potential size of the market created by opportunities.

In answer to 7.5, please indicate the increased savings or sales you that could be created by these physical opportunities. Then in answer to 7.6 please indicate the costs attached to actions needed to secure these financial benefits.

Specific Guidance for Question 7.6: “Describe any actions the company has taken or plans to take to exploit the opportunities that have been identified, including the investment needed to take those actions.”

Please describe the measures in place to maximize the opportunities you have identified. Depending on your industry, you may be able to benefit from the sale of new products for use in extreme weather events. After analyzing new growth patterns, will your company decide to diversify its business into different consumables? You are encouraged to think of scenarios like the ones above, and think about how your company stands to profit in light of new business opportunities.

Where there is no cost for action, please explicitly state this is the case.

Specific Guidance for Question 7.7: “Explain why you do not consider your company to be presented with significant opportunities– current or anticipated.”

Explain why there are no physical opportunities available to your company, either directly or indirectly via the value chain.

Specific Guidance for Question 7.8: “Please explain why not.”

For example, if your company has not considered the issue, please say so.

For Oil and Gas Sector Companies

Please comment on the increased and different opportunities created through climate change, such as accessibility to remote hydrocarbon basins in answer to Q7.2 and 7.3.

Question 8: Other Opportunities (CDP2009 Q6)

8.1 Does climate change present other significant opportunities – current and/or anticipated – for your company?

If a company selects “Yes” in answer to 8.1, it is then asked:

8.2 What are the current and/or anticipated “other” significant opportunities and their associated countries/regions and timescales?

8.3 Describe the ways in which the identified opportunities could affect your business and your value chain.

8.4 Are there financial implications associated with the identified opportunities?

If indicated that there are financial implications:

8.5 Please describe them.

8.6 Describe any actions the company has taken or plans to take to exploit the opportunities that have been identified, including the investment needed to take those actions.

If a company selects “No” in answer to 8.1, it is then asked:

8.7 *Explain why you do not consider your company to be presented with significant opportunities – current or anticipated.*

If a company selects “Don’t know” in answer to 8.1, it is then asked:

8.8 *Please explain why not.*

Oil and gas sector companies should include their financial contributions towards renewable and clean energy technologies in table O&G3.2. References to O&G3.2 made in answer to Q8 will be scored.

****Please note that Q8.7 will only be asked if you have answered that you do not consider yourself able to benefit from opportunities presented by climate change. Question 8.8 will only be asked if you have answered that you don’t know**

whether you will benefit from opportunities presented by climate change.

General Guidance

This question is designed to capture any other climate change-related opportunities not covered by the previous questions on regulatory and physical opportunities. Examples would include opportunities posed by changes in consumer attitude or improved standing due to your organization’s stance or actions on climate change.

Opportunities may arise directly or as a result of the effect of climate change on others. Opportunities may be current or anticipated. Please note that the question only asks about opportunities that are significant.

The ability of a company to diversify its operations and create new opportunities in the midst of increasing physical change and regulation is going to become increasingly important. This question provides companies with the means to share how they are developing products and reacting to a changing consumer environment. Please provide specific details of initiatives or products that the company is developing or managing related to climate change. Where products are in the development stage, please provide some general detail regarding their development and how the company foresees their benefits relating to climate change.

Specific Guidance for Question 8.2: “What are the current and/or anticipated “other” significant opportunities and their associated countries/regions and timescales?”

You will have the option to respond to Q8.2 via a text box or a table as presented below. Please also review the section of the guidance titled “How to Interpret/Use Risk and Opportunity Tables in the ORS” for more information. Values you may select include:

Opportunity	Description	Example
Increased efficiency of goods and services	Products with a higher efficiency rating or lower emissions may increase purchases, in light of rising energy costs and regulations to limit emissions.	1. Energy efficient products – increased demand 2. Reduced GHG emission products – increased demand
New energy products or services	The provision of new goods and services can provide increased opportunities for your company. These may include entering into the renewable energy market.	1. Energy storage services – provision 2. Renewable energy – provision 3. Low-carbon energy and fuel provision 4. Fuel cell technology 5. Low-carbon energy and fuel provision
Reputational opportunities and increased ability to attract and retain talent	Depending on your reputation, you may be able to attract a higher quality of job applicant.	1. Better motivated/ higher caliber staff
Financial opportunities	With uncertain physical changes, you may be able to capitalize on increased insurance cover.	1. Insurance services – provision
New services and/ or product market opportunities	A variety of new products have been and will be created to meet the needs of consumers and business operating in a carbon constrained world.	1. Expert advice on climate change – provision 2. Offset services – provision 3. Carbon capture and storage – provision

The examples in the table were drawn from previous CDP responses, and are presented to illustrate how the value in the “Other Opportunities” column of Q8.2 should be used. The opportunities types are set to a limited set of general categories, even though the specific description of the opportunity might be different between companies and geographies. Please classify your risks based on the examples provided. It is expected that you will be able to specifically define the nature of your opportunity in the comments field. If needed, you can always select the option of inputting your own opportunity type.

If you opt to respond via the text box, please include all other opportunities, both general and specific to your company. Include the timelines and countries to which these opportunities apply.

Specific Guidance for Question 8.3: “Describe the ways in which the identified opportunities could affect your business and your value chain.”

As an example, if you have identified “New services and/or product market opportunities” in answer to Q8.2 you may want to describe further in answer to Q8.3 which departments within your company are likely to benefit the most. How will this affect the rest of your company operations? If you identified “Reputational opportunities” you can further explain whether specific products will help in improving your company reputation, or whether the services you are providing are in high demand.

Please do not include financial assessments in answer to this question, but include this information in Q8.5.

Specific Guidance for Question 8.5: “Please describe them.”

Where you identified specific opportunities, please consider how this contributes to your company's profitability. If you have selected that you anticipate increased efficiency of services and/or products, you might think about providing specific information relevant to the individual products or services in question. The same is true if you have identified new products as an "other opportunity". Please also comment on the potential size of the market created by new opportunities.

Keep information regarding the potential scale of the financial benefits related to other opportunities separate from any estimates of costs that will have to be incurred to maximize these opportunities. This information should be given in answer to Q8.6.

Specific Guidance for Question 8.6: "Describe any actions the company has taken or plans to take to exploit the opportunities that have been identified, including the investment needed to take those actions."

Please describe the measures in place to maximize the opportunities you have identified. If you need to invest in order to ensure your company can take advantage of these opportunities, how much investment will be required?

Where there is no cost for action, please explicitly state this is the case.

Specific Guidance for Question 8.7: "Explain why you do not consider your company to be presented with significant opportunities – current or anticipated."

Explain why there are no other opportunities available to your company either directly or indirectly via the value chain.

Specific Guidance for Question 8.8: "Please explain why not."

For example, if your company has not considered the issue, please say so.

For Oil and Gas Sector Companies

Please describe your strategy for the development of non-fossil fuel products to diversify your portfolio in answer to Q8.2. Oil and gas sector companies should include their financial contributions towards renewable and clean energy technologies in table O&G3.2. A cross-reference from Q8 on other opportunities to O&G3.2 will be scored.

For Electric Utility Companies

Please disclose any investment in research and development that may result in GHG emission reductions, e.g. CO₂ capture and storage, clean coal technologies and energy storage.

For Auto and Auto Component Manufacturers

Please disclose any actions or plans to introduce of hybrid/electric vehicles and fuel cells.

Strategy

Question 9: Strategy (New for CDP 2010)

9.1 Please describe how your overall group business strategy links with actions taken on the risks and opportunities (identified in questions 3 to 8), including any emissions reduction targets or achievements, public policy engagement and external communications.

Targets: (CDP2009 Q23)

9.2 Do you have a current emissions reduction target?

If you do not have a target:

9.3 Please explain why not and forecast how your Scope 1 and Scope 2 emissions will change over the next 5 years.

If you are in the process of developing a target:

9.4 Please give details of the target(s) you are developing and when you expect to announce it/them.

If you have had a target and the date for completing it fell within your reporting year, please answer question 9.5 and 9.6.

9.5 Please explain if you intend to set a new target.

If you have an emissions reduction target:

9.6 Please complete the table.

Target type	Value of the target	Unit	Base year	Emissions in base year (metric tonnes CO ₂ -e)	Target year	GHGs and GHG sources to which the target applies	For recently completed targets only: Target met?	Comment

Emission Reduction Activities: (CDP2009 Q23)

9.7 Please use the table below to describe your company's actions to reduce its GHG emissions. (9.8)

9.8 Please explain why not. (Relevance field)

9.9 Please provide any other information you consider necessary to describe your emission reduction activities.

Actions	Achieved or anticipated annual energy savings (if relevant)	Achieved or anticipated annual reductions	Investment made or planned to enable actions (if relevant)	Achieved or anticipated annual monetary savings (if relevant)	Timescale of actions & associated investments (if relevant)

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Engagement with Policy Makers: (CDP2009 Q28)

9.10 Do you engage with policy makers on possible responses to climate change including taxation, regulation and carbon trading?

If so,

9.11 Please describe.

General Guidance

Company strategies and emissions reduction plans form an important part of their response to the risks and opportunities presented by climate change. Activities to reach targets can include reduced energy consumption, improved vehicle fleet management, installation of zero or low carbon electricity generators etc.

Specific Guidance for Question 9.1: “Please describe how your overall group business strategy links with actions taken on the risks and opportunities (identified in questions 3 to 8), including any emissions reduction targets or achievements, public policy engagement and external communications.”

Question 9.1 seeks information covering your overall strategy for operating in a carbon constrained world/economy, i.e. how is your overall corporate strategy influenced by climate change and its associated risks and opportunities? By group business strategy we mean the full corporate body on which you are reporting. However, it may also be appropriate for you to consider and comment on divisional (business unit) strategies. If you are responding to the Supply Chain request, please also include information specific to your requesting member, i.e. relevant business units.

This question complements Q2, asking you to comment on your company’s process for identifying risks and opportunities and the degree to which they affect the business. It also complements Q3 – 8, asking for comments on adaptation to specific risks and opportunities. Given the risks and opportunities identified previously with their financial implications and impacts on value chain, how is your company integrating climate change into its overall business strategy? Please show how the strategy is driving emission reduction targets and achievements in reducing emissions and managing the effects of climate change.

You should comment on how climate change is or will be integrated into larger strategic plans. If climate change has already been incorporated into company strategy, perhaps comment on the integration process and outcomes. Is your company meeting its interim goals in time to respond to risks and opportunities? In what way is your strategy better conceived than those of your competitors and how will it provide you with a strategic advantage? What are the most important components of that strategy: changing core business operations; changing the way business is communicated to client; development and incorporation of new technology?

You will be asked to respond to Q9.1 by filling in a text box.

Specific Guidance for Question 9.2: “Do you have a current emissions reduction target?”

Targets may be set and expressed in a variety of ways. Your company may have set a target to reduce GHG emissions by a certain percentage or mass of GHGs relative to a reference year (an absolute target). Alternatively your company may set an intensity target to reduce GHG emissions relative to a business metric. An alternative would be to set a target to halt growth in GHG emissions by a target date (a stabilization target). A rolling target has a moving reference year. The target is to reduce emissions relative to the previous year or the average, for example, of a period of previous years.

A current target is one where the end date of the target period has not yet been reached but the start date has passed.

You will be asked to respond to Q9.2 by selecting a value including:

- Yes;
- No;
- No, but we are developing one; and
- No, we had a target and the date for completing it fell within our reporting year.

Please select the last option if you had a target but have not selected a subsequent one.

Once you have selected the value applicable to your company, you will be asked to complete subsequent questions regarding your company strategy. Which questions are asked is dependent upon your answer to Q9.2.

Specific Guidance for Question 9.3: “Please explain why not and forecast how your Scope 1 and Scope 2 emissions will change over the next 5 years.”

You may not have an emissions reduction target because your company feels it is not necessary. You may not be included in any active or prospective regulation. Please explain your reasons and give a forecast of emissions, preferably a quantitative forecast.

You will be asked to respond to Q9.3 by filling in a text box.

Specific Guidance for Question 9.4 and 9.5: “Please give details of the target(s) you are developing and when you expect to announce it/them.”

Details would include the anticipated type of targets, whether they are absolute, intensity or stabilization targets, the breadth of GHG sources you anticipate it will cover, expected start and end dates, and any information you can give on its expected scale. Please provide this information for all proposed company targets.

You will be asked to respond to Q9.4 and 9.5 by filling in a text box.

Specific Guidance for Question 9.6: “Please complete the table.”

Note that Q9.6 regards emissions reduction targets exclusively. Other types of reduction targets (e.g. energy reduction targets), should not be reported here.

~~You may have company or group consolidated emission targets, e.g. the group as a whole has to achieve 10% reduction based on 2000 emission level, or targets by division, facility or other levels of consolidation. If you have a consolidated target, you should indicate so in the comment field, or state any difference in relation to the target and your consolidated reported emissions.~~

If you have targets at segment level^s of the company (business division, facility, country), please report a target for each segment. You may also calculate the overall effect of the different emission targets. Please state in the comments field to which segment the target applies and the percentage of your overall emissions for the reporting year the segment represents.

Example:

Company A has 15 different facilities and reported 250000 metric tonnes CO₂-e* Scope 1 and 200000 metric tonnes CO₂-e Scope2 emissions. However, its targets apply to only 2 installations. In the base year each had emissions of 100000 metric tonnes CO₂-e and 75000 tonnes CO₂-e for Scope 1 and 2 respectively. In this case, you should report two lines in Table 8: one for each facility. In the base year emissions, you should report emissions of 175000 t CO₂-e (the sum of Scope1+2).

Target type	Value of the target	Unit	Base year	Emissions in base year (metric tonnes CO ₂ -e)	Target year	GHG sources to which the target applies	Comment
Absolute reduction	25	Metric tonnes CO ₂ -e reduction relative to base year	2000	175	2010	Scope 1 + 2	Target applies to Facility A only, representing 35% of current emissions
Absolute reduction	35	Metric tonnes CO ₂ -e reduction relative to base year	2000	175	2010	Scope 1 + 2	Target applies to Facility B only, representing 40% of current emissions

*CO₂-e stands for carbon dioxide equivalent. This is the universal unit of measurement used to indicate the global warming potential (GWP) of a GHG, expressed in terms of the global warming potential of one unit of carbon dioxide. A metric tonne of CO₂-e equals one metric tonne of carbon dioxide or an amount of any other GHGs with an equivalent global warming potential.

In the first column CDP asks you to specify the target type. CDP has classified the types of emission targets in four different types:

- **Absolute target:** A target to reduce GHG emissions by a certain percentage or mass of GHGs relative to the emissions in a reference year. Examples of absolute targets are 20% reduction by 2010 compared to emissions in 2000 or 50000 metric tonnes CO₂-e reduction by 2010 relative to baseline of 250000 metric tonnes CO₂-e in year 2000.
- **Intensity target:** Alternatively organizations may set an intensity target to reduce GHG emissions relative to a business metric. Intensity targets are a good measure of efficiency. They are often expressed as a percentage, e.g. a 15% reduction by 2010 compared to a reference value of 350 metric tonnes CO₂/MWh calculated for the year 2000.
- **Stabilization target:** These propose to halt growth in GHG emissions by a target date, e.g. stabilize emissions growth to an absolute value of 300000 metric tonnes CO₂-e by year 2010, compared to 250000 metric tonnes CO₂-e in 2000 (base year).
- **Rolling targets:** The special characteristic of rolling targets is that they have a moving reference year. The target is to reduce emissions relative to the previous year or the average, for example, of a period of previous years. An example of a rolling target is a 1% yearly reduction relative to a rolling average of the five previous years, with the target ending in 2020.

In the second and third column you should then specify the numeric value of the target type you selected, e.g. specify a 20% reduction from the base year or 50000 metric tonnes CO₂-e reduction relative to base year. You may need to insert

your own units, especially if you use an intensity target, but where appropriate please use the units provided by CDP. This will help in the automated analysis of answers.

In the fourth column specify the base year (if using a rolling average you can also specify this using the “Other” option), and in the fifth the amount of emissions released in the base year. If you have an intensity target, you should specify the value of the intensity metric in the base year. In the sixth column, please specify the target year.

In the seventh column, “GHG sources to which the target applies”, you should specify if your target applies to Scope 1, Scope 2 or Scope 3 emissions, or a combination of these. Often, emission reduction targets only apply to certain emissions, e.g. if the target only applies to Scope 1 combustion emissions, you should select the ~~the~~-value “Scope 1” and state the target relates to combustion only in the comments field. If you have an electricity reduction target that you can express in terms of emission reductions you might want to select “Scope 2 (electricity only)”. The relevant point in this last example is that the target is not expressed in terms of MWh, but in terms of CO₂-e. You might want to provide some details in the comment field, e.g. if you have a number of sources but your target only applies to your main source, you should report the percentage that source contributes to the overall emissions of your company.

Finally, CDP asks you to provide any details and relevant information in relation to the specific target you have just reported.

Specific Guidance for Question 9.7: “Please use the table below to describe your company’s actions to reduce its GHG emissions.”

Actions – please describe	Annual energy saving	Annual energy savings - number	Annual energy savings - units	Annual emission reduction in metric tonnes CO ₂ -e	Reduction –achieved or anticipated	Investment - number	Investment -units	Monetary savings - number	Monetary savings - units	Monetary savings	Timescale of actions & associated investments (if relevant)
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In the first column, you are asked to describe the emission reduction activity. Column two will provide you with a drop-down menu containing options to explain whether there have been or are expected to be any annual energy savings as a result of the emission reduction activity, or if energy savings will not occur as a result of the emission reduction activity (the “Not relevant” option). You are then asked to provide a number for your annual energy savings. Please leave this blank if you have selected “Not relevant” for column one. In column four, please provide the units in which the energy savings were calculated. In column five, please give the number for the annual emission reductions in units of metric tonnes CO₂-e. Use the drop-down menu in column number six to explain if the reductions are achieved or anticipated.

Column seven asks you to disclose the investment figure associated with the reduction activity. Please leave this blank if there are is no information or if there were insignificant costs required for this activity. Using the drop-down menu options, in column eight state if the reduction activity has no cost or insignificant costs.

If the emission reduction activity has led or will lead to monetary savings, please disclose the number in answer to column nine. Leave blank if monetary savings are not relevant or not quantified. This must be stated in column eleven. Using the drop-down menu options in column ten, state the relevant currency. Leave it blank if monetary savings are not relevant or not quantified. If you cannot attribute monetary savings to a specific emission reduction activity because it is part of a package of measures and it is not appropriate to report the overall savings from that package, then please select not quantified. In column eleven, use the drop-down menu options to explain if savings have been achieved, anticipated, are not relevant or not quantified. Finally, explain the timescale of the action and period over which the investment will be made (if applicable).

Additional rows can be added to the table.

In certain cases, it might be difficult to separate the investments and effects of a group of measures. In these cases you can either report the all measures combined, or reasonably assign the costs and benefits through the several measures and report each one separately. You can then provide further details in Q9.9 about that group of measures and the achieved reductions.

Monetary savings may be a lump sum or may be cyclical (e.g. annual). Please average out non-annual monetary savings so that an annual figure can be given.

Specific Guidance for Question 9.8: “Please explain why not.”

You are asked to give a comprehensive answer to this question, explaining why your company is not taking action to reduce emissions or why it is not relevant for you to report those actions, given the wide range of drivers that companies say are leading them to take action in this area. Examples of these drivers are: regulation to reduce emissions and stakeholder pressure to reduce emissions, including customer expectations.

Specific Guidance for Question 9.10: “Do you engage with policy makers on possible responses to climate change including taxation, regulation and carbon trading?”

Engagement with policymakers may be conducted through a trade association or as an individual company. Engagement can include lobbying for regulations to be passed, rejected or amended in pursuit of company objectives, providing governments with industry insight and/or taking part in government trials.

If you are encouraging policymakers to take action to adapt or mitigate climate change, please ensure this is clear from your answer. For example, if you participate in consultations on proposed legislation, please be clear about the direction that you are encouraging policy-makers to take.

You will be asked to respond to Q9.10 by selecting either “Yes” or “No”. If you select “Yes” in answer to Q9.10, a text box will be presented for you to enter information regarding how you engage with policy makers on climate change issues.

If you select “No” in answer to Q9.10, you should proceed to question 10.1.

For Electric Utilities:

For electric utilities, activities to reduce emissions/energy use may include fuel switching at existing plants or investment in lower-emitting methods of generation. Please disclose this information if applicable.

GREENHOUSE GAS (GHG) EMISSIONS ACCOUNTING, INTENSITY, ENERGY AND TRADING

Emissions Accounting: General Guidance

The GHG Protocol divides emission sources into three categories, or “scopes”, which the responder will be asked to disclose in answer to questions 12, 13, and 15. These scopes are defined in the GHG Protocol as follows:

1. **Scope 1 Direct GHG emissions:** Direct GHG emissions occur from sources that are owned or controlled (according to the boundary set in the definitions below) by the reporting organization. For example:
 - **Stationary combustion:** combustion of fuels in stationary equipment such as boilers, furnaces, turbines, heaters, incinerators, engines, flares, etc;
 - **Mobile combustion:** combustion of fuels in transportation devices such as automobiles, trucks, buses, planes, ships, barges, trains etc;
 - **Process emissions:** emissions from chemical or physical processes such as CO₂ from the calcinations step in cement manufacturing, CO₂ from catalytic cracking in petrochemical processing, PFC emissions from aluminum smelting etc; and
 - **Fugitive emissions:** intentional or unintentional releases such as equipment leaks from joints, seals, packing and gaskets as well as fugitive emissions from coal piles, wastewater treatment, pits, cooling towers, gas processing facilities; methane emissions from coal mines and venting; hydrofluorocarbon emissions during the use of refrigeration and air conditioning equipment; and methane leakage from gas transport.
2. **Scope 2 GHG emissions:** Companies report the emissions from the generation of purchased energy, consumed in its owned or controlled equipment or in its operations, as Scope 2. For many companies purchased electricity represents one of the largest sources of GHG emissions and the most significant opportunity to reduce these emissions. Other common purchased energy forms are steam, heat or cold.
3. **Scope 3 GHG emissions:** GHG emissions arising as a consequence of the activities of the company but occurring from sources not owned or controlled by the company; thus, emissions that are outside the consolidation boundary.

Please refer to the GHG Protocol, Chapter 4, for comprehensive advice on what is included within each Scope.

You may also review Appendix D of the GHG Protocol, regarding “Industry Sectors and Scopes”. This table will help you identify the potential types of emissions within your sector and where they may arise within your boundaries.

The aim of categorizing emissions by “Scope” is to ensure, as far as possible, that double counting by organizations is minimized or, where it cannot be avoided, is identifiable.

Emissions under the scopes must be reported in metric tonnes of CO₂-e.. Please note that a metric tonne is equivalent to 2,204.6lbs. The “long ton”, a term generally used in Britain, is equivalent to 2,240lbs and the “short ton”, generally used in the USA, is equivalent to 2,000lbs.

When providing answers to questions 12, and 13 please do not deduct offset credits, Renewable Energy Certificates etc. or net off any estimated avoided emissions from the use of goods and services. Opportunities are provided elsewhere in the information request to give details of activities that reduce or avoid emissions.

According to the GHG Protocol, “the uncertainties that surround GHG project accounting make it difficult to establish that an offset is equivalent in magnitude to the internal emissions it is offsetting.”

Where the activities are relevant to a company’s disclosure, details should be provided in response to the following questions:

- Retirement of renewable energy certificates: Q14.4;
- Estimated avoided emissions from the use of goods and services: Q16.2; and
- Offset credits: Q21.5.

Biologically-sequestered carbon

Carbon dioxide emitted from biomass (defined by the GHG Protocol as a renewable energy source) is combusted should be reported separately from the scopes (see Q17). This is because the carbon dioxide would have been emitted when the plants – from which biomass is derived – decayed naturally at the end of their life. However, two other GHGs, nitrous oxide and methane, are commonly emitted when biomass is combusted. These would not be emitted during natural decay and any nitrous oxide or methane emissions from biomass/biofuel consumption should therefore be included in your emissions under the three scopes.

Question 10: Reporting Boundary (CDP2009 Q8)

10.1 Please indicate the category that describes the company, entities, or group for which Scope 1 and Scope 2 GHG emissions are reported.

- Companies over which financial control is exercised – per consolidated audited financial statements;
- Companies over which operational control is exercised;

- Companies in which an equity share is held;
- Other – please provide details.

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

10.3 Please complete the following table.

Source	Scope	Explain why the source is excluded

General Guidance

Your consolidation boundary represents the owned or controlled group, company, companies, businesses or organizations to which your response relates, determined by reference to your chosen “consolidation approach”.

Specific Guidance for Question 10.1: “Please indicate the category that describes the company, entities, or group for which Scope 1 and Scope 2 GHG emissions are reported.” Please note: the category you chose will also be used for reporting use of fuel and purchased energy.

The way in which companies are identified for inclusion within the reporting boundary is known as the “consolidation approach” because, unless stated otherwise, the information you provide in response to the CDP 2010 request should be presented as one “consolidated” result covering all of the companies, entities, businesses, etc. within your reporting boundary.

When determining reporting boundaries, CDP recommends that you consult your legal or accounting advisors.

The consolidation approach you identify for your company in answer to Q10.1 should be used consistently to respond to all questions except in Q21.1 where you are asked to report on emission trading schemes in which you participate. In this case we request that in accordance with the GHG Protocol: “Although some emission trading schemes may apply solely to the operators of facilities, the financial position of facility owners is also affected indirectly by the operation of the scheme. This question therefore applies to both owners and operators of facilities covered by trading schemes. Even if your company does not wholly own facilities, please give the total number of emissions and allowances.”

For more detailed guidance on determining reporting boundaries and particularly where joint ventures or complex operational structures are concerned, please refer to Chapter 3 of the GHG Protocol.

In brief, under the **control approach**, you would measure the GHG emissions from operations over which you have financial or operational control. The following text is adapted from the GHG Protocol:

- An organization has **financial control** over an operation if it has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities. Generally an organization has financial control over an operation for GHG accounting purposes if the operation is treated as a group company or subsidiary for the purposes of financial consolidation; and
- An organization has **operational control** over an operation if it or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

You can also report emissions based on your economic share. The following text is adapted from the GHG Protocol:

- Under the **equity share** approach, a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects the economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation. Typically, the share of economic risks and rewards in an operation is aligned with the company’s percentage ownership of that operation, and equity share will normally be the same as the ownership percentage. Where this is not the case, the economic substance of the relationship the company has with the operation always overrides the legal ownership form to ensure the equity share reflects the percentage of economic interest. The principle of economic substance taking precedence over legal form is consistent with international financial reporting standards.

As financial control can be quite difficult to establish, the following table has been provided to clarify how emissions should be reported in certain situations. The table is taken from page 19, Chapter 3 of the GHG Protocol, Revised Edition.

Accounting Category	Financial Accounting Definition	Accounting for GHG emissions according the GHG Protocol Corporate Standard	
		Based on Equity Share	Based on Financial Control
Group companies/ subsidiaries	The parent company has the ability to direct the financial and operating policies of the company with a view to gaining economic benefits from its activities. Normally, this category also includes incorporated and non-incorporated joint ventures and partnerships over which the parents company has financial control.	Equity share of GHG emissions	100% of GHG emissions
Associated/	The parent company has significant influence over	Equity share of	0% of emissions

affiliated companies	the operating and financial policies of the company, but does not have financial control. Normally, this category also includes incorporated and non-incorporated joint ventures and partnerships over which the parent company has significant influence, but not financial control. Financial accounting applies the equity share method to associate/ affiliated companies, which recognizes the parent company's share of the associate's profits and net assets.	GHG emissions	
Non-incorporated joint ventures/ partnerships/ operations where partners have joint financial control	Joint ventures/partnerships/operations are proportionally consolidated, i.e., each partner accounts for their proportionate interest of the joint venture's income, expenses, assets and liabilities.	Equity share of GHG emissions	Equity share of GHG emissions
Fixed asset investments	The parent company has neither significant influence nor financial control. This category also includes incorporated and non-incorporated joint ventures and partnerships over which the parent company has neither significant influence nor financial control. Financial accounting applies the cost/dividend method to fixed asset investments. This implies that only dividends received are recognized as income and the investment is carried at cost.	0%	0%
Franchises	Franchises are separate legal entities. In most cases, the franchiser will not have equity rights or control over the franchise. Therefore franchises should not be included in consolidation of GHG emissions data. However, if the franchiser does have equity right or operational/financial control, then the same rules for consolidation under the equity or control approaches apply.	Equity share of GHG emissions	100% of GHG emissions

Specific Guidance for Leased Assets

In the case of leasing arrangements, please see the GHG Appendix: [Categorizing GHG Emissions from Leased Assets](#). According to the GHG Protocol, the document should be used to determine:

- Whether emissions that would normally be categorized as Scope 1 in a non-leasing situation should be categorized as Scope 1 or Scope 3 in a leasing situation; and
- Whether emissions that would normally be categorized as Scope 2 in a non-leasing situation should be categorized as Scope 2 or Scope 3 in a leasing situation.

You will be asked to respond to Q10.1 by selecting a value including:

- Companies over which financial control is exercised – per consolidated audited financial statements;
- Companies over which operational control is exercised;
- Companies in which an equity share is held; and
- Other – please provide details

Specific Guidance for Question 10.2 and 10.3: “Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions within this boundary which are not included in your disclosure?”

*There are cases where portions of a company's Scope 1 and Scope 2 emissions may not be included within **its/their** reports.*

Excluded sources may be in a particular country or represent a number of very small facilities making it difficult to gather data. Alternatively it may be that you are reporting data only for carbon dioxide emissions rather than all the gases covered by the GHG Protocol.

General reasons for exclusions can include the following:

- Incomplete information for the period in question;
- Structural changes to the organization including:
 - Mergers,
 - Acquisitions,
 - Divestments;
- Outsourcing and/or insourcing of activities; and
- Unreliable information.

You are encouraged to review the above list when identifying which sources, including but not limited to facilities, specific GHGs, activities, and geographies, may be excluded from you consolidation boundary.

The GHG Protocol comments on the reporting of exclusions and highlights that “any acknowledgement should be made in the report each year in order to enhance transparency; otherwise new users of the report in the two or three years after the change may make incorrect assumptions about the performance of the company.”

You will be asked to respond to Q10.2 by selecting either “Yes” or “No”. If you select “Yes” in answer to Q10.2, you will be asked to complete a table, in answer to Q10.3. Within this table, the first column asks you to define the source that had been excluded from your emissions calculations. The second column asks you to select which scope this exclusion applies to. Finally, in the third column you are asked to explain why the data has been excluded. You can enter multiple rows, providing information on all excluded sources.

If you select “No” in answer to Q10.2 please proceed to Q11.1.

Question 11: Methodology (CDP2009 Q9)

11.1 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 and/or describe the procedure you have used.

11.2 Please also provide the names of and links to any calculation tools used.

11.3 Please give the global warming potentials you have applied and their origin.

Gas	Reference	GWP

11.4 Please give the emission factors you have applied and their origin.

Fuel/material	Emission factor		Reference
	Number	Unit	

General Guidance

Knowing a company’s methodology, calculation tools and global warming potentials provides the reader/reviewer with contextual information regarding how emissions have been calculated. The inclusion of this information is imperative for companies to be transparent in their emissions reporting.

Specific Guidance for Question 11.1: “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 and/or describe the procedure you have used.”

There are a variety of standards available which you may use to aid in the collection and reporting of GHG data. CDP encourages companies to review the GHG Protocol, where national standards are not specified. The following is a list of some of the more recognized protocols in use:

- Australian NGER: National Greenhouse and Energy Reporting Act ([Link to Homepage](#));
- Defra ([Link to Guidance](#));
- IPIECA’s Petroleum Industry Guidelines for reporting GHG emissions, 2003 ([Link to Homepage](#));
- ISO 14064-1 ([Link to Protocol](#));
- The Climate Registry ([Link to Homepage](#));
- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard ([Link to Homepage](#)); and
- Energy Information Administration 1605B ([Link to Guidelines](#)).

Please review the ORS for an expanded list of protocols.

You will be asked to respond to Q11.1 by selecting multiple values, including the ones listed above. Companies are asked to provide the name of the published standard(s) they use (if applicable) in 11.1A and explain how they apply it/them to their company in answer to 11.1B. If a published standard is not listed, please select the “Other” option and provide the name of the standard and a URL link. If a standard is not listed, please select the “Other” option and provide the name of the standard and a URL link. If you use a standard developed internally, please give details via the “Other” option. You can enter multiple rows, providing information on all the standards that you use that have not been listed. Companies not using a published standard should describe the procedure used in 11.1B

Specific Guidance for Question 11.2: “Please also provide the names of and links to any calculation tools used.”

Calculation tools automate the calculation of GHG emissions. Increasingly, companies are turning to service providers to calculate emissions. In the ORS, you will be provided with a list of some calculation products on the market, however not every tool will be listed and you are encouraged to specify new tools. CDP recognizes that hiring a service provider may not be suitable for a smaller company or one just beginning to measure its emissions and encourages companies to utilize the tools most appropriate to their business.

You will be asked to respond to Q11.2 by selecting multiple values. If you have not used a calculation tool, please select “Calculation tool not used”. If a calculation tool is not listed, please select the “Other” option and provide the name of tool and a URL link to it. If you use an in-house calculation tool, please give details via the “Other” option. You can enter multiple rows, providing information on all tools that have been utilized.

Specific Guidance for Question 11.3: “Please give the global warming potentials you have applied and their origin.”

The GHG Protocol defines a global warming potential (GWP) as “a factor describing the radiative forcing impact (degree

of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO₂.” By using GWPs, GHG emissions from multiple gases can be standardized to a carbon dioxide equivalent (CO₂-e).

For example, in the Intergovernmental Panel on Climate Change Second Assessment Report (SAR) the impact on the atmosphere of one unit of methane over a 100-year time span is 21 times greater than one unit of CO₂. Hence, methane’s global warming potential (GWP) over a 100-year period is 21. Carbon dioxide has a GWP of 1 in all the IPCC reports as it is used as a standard against which the GWP of other GHGs are measured.

Estimates of GWPs have changed over time as scientific understanding has developed. However, for the sake of consistency, the parties to the United Nations Framework Convention on Climate Change are continuing to use the GWPs in the Second Assessment Report (SAR) from the IPCC. As the GWPs from the SAR are used as the basis for international negotiations under the Kyoto Protocol, CDP also recommends that they be used for disclosing GHG emissions in response to the CDP information request.

For those gases not assigned a GWP in the SAR, please use the latest GWPs given in the Fourth Assessment Report. In every case, disclose the source of the GWPs you are using.

The [Fourth Assessment Report \(AR4\)](#) gives the latest GWP values as well as GWPs from the SAR. ~~Also see Appendix C, which provides for a full listing of GWP sources from the SAR, TAR and AR4, has been removed from this document for updating. Please see the following web-link for the updated version:~~
www.cdproject.net/en-US/Respond/Pages/CDP2010-Guidance-Index.aspx

GWPs are expressed over a number of different time frames within the IPCC Assessment Reports. If completing an inventory for the first time, please use the factors for the 100-year time span. If emissions have previously been calculated over a different time span, please include this information in answer to Q11.3.

If you have used a calculation tool and do not know which GWPs have been applied to your data, consult the tool documentation or reference sources.

You will be asked to complete a table in response to Q11.3. In the first column you will be presented with a drop down menu containing a list of internationally recognized greenhouse gases. Please select the gas relevant to your company emissions calculations. The second column will allow you to choose which reference applies to the GWP you will disclose in answer to column three. You can enter multiple rows, providing all of the GWPs applied in your emissions calculations.

Specific Guidance for Question 11.4: “Please give the emission factors you have applied and their origin.”

As noted on page 44 of the GHG Protocol, “direct measurement of GHG emissions by monitoring concentration and flow rate is not common.” Normally, direct measurement takes place only in facilities with continuous emissions monitoring systems, such as power plants. Instead of direct measurement, many companies calculate GHG emissions by applying documented emission factors to activity data (e.g. tonnes of coal consumed or cubic meters of natural gas burnt).

Emission factors are sometimes referred to as conversion factors. Activity data (e.g. cubic meters of natural gas) is multiplied by an emission factor to estimate the GHG emissions from the combustion of that gas.

Identifying the most appropriate and accurate emission factors to use is one of the most challenging issues in GHG accounting. Emission factors vary with the precise nature of the material involved. For example, an emission factor will vary with the type of coal combusted and the type of technology used to burn the coal. The GHG Protocol encourages you to calculate your own emission factors based on the specific materials and processes you use. However, where this is not possible, the calculation tools supplied on the [GHG Protocol website](#) do provide default values that can be used. Emission factors may also be incorporated in the calculation tools that you use.

You will be asked to complete a table in response to Q11.4. In the first column you will be presented with a drop down menu containing a list of fuels and materials. Please select the fuels/materials relevant to your company. If an emission source that you require is not listed, please select “Other” and enter it in the text box that appears. If you are entering an emission factor that is specific to a particular country/region as is usually the case with purchased electricity, please select “Other” in the drop-down list in column 1 and in the text entry field enter the source followed by the relevant country/region in brackets e.g. “Electricity (United Kingdom)”.

In the second column you should insert the source emission factor ~~and~~. In the third column you should provide the relevant units. If the units you require are not listed, please select “Other” and enter units in the text entry field. D disclose where this factor was sourced from in column ~~three~~four. You can enter multiple rows, providing all emissions factors applied in your emissions calculations for Scope 1 and Scope 2-

If a fuel/material is not listed, please select the “Other” option and provide the name of fuel/ material.

Question 12: Scope 1 Direct GHG Emissions (CDP2009 Q10)

12.1 Please give your total gross global Scope 1 GHG emissions in metric tonnes of CO₂-e.

12.2 Please break down your total gross global Scope 1 emissions in metric tonnes CO₂-e by country/region. (¿12.3)

12.3 Please explain why not. (Relevance field)

Where it will facilitate a better understanding of your business, please also break down your total gross global Scope 1 emissions by business division and/or facility. (Only data for the current reporting year requested.)

12.4 Business division (only for the current reporting year requested).

12.5 Facility (only for the current reporting year requested).

12.6 Please break down your total gross global Scope 1 emissions by GHG type (only data for the current reporting year requested). (¿12.7)

12.7 Please explain why not. (Relevance field)

GHG type	Scope 1 emissions (metric tonnes)	Scope 1 emissions (metric tonnes CO ₂ -e)

Fuel Consumption

12.8 Please use the table to give the total amount of fuel in MWh that your organization has consumed during the reporting year. (¿12.9)

12.9 Please explain why not. (Relevance field)

12.10 Please complete the table by breaking down the total figure by fuel type. (¿12.11)

Fuels	MWh
Total	
Individual	

12.11 Please explain why not. (Relevance field)

Data Accuracy: (CDP2009 Q 19)

12.12 Please estimate the level of uncertainty of the total gross global Scope 1 figure that you have supplied in answer to question 12.1 and specify the sources of uncertainty in your data gathering, handling, and calculations.

	Scope 1
Uncertainty range	
Main sources of uncertainty in your data	
Expand on the main sources of uncertainty in your data	

Electric utilities should report emissions by country/region using the tables in the electric utility module which also asks for emissions to be broken down by fuel and energy source. References to these tables will be scored.

Oil and gas sector companies should report group emissions by value chain in answer to table O&G1.1 and O&G1.2.

General Guidance

Scope 1 Direct GHG emissions: Direct GHG emissions occur from sources that are owned or controlled by the reporting organization. For example:

- **Combustion facilities:** Boilers, furnaces, turbines, heaters, incinerators, engines, flares etc;
- **Combustion of fuels in transportation:** Cars, buses, planes, ships, barges, trains, etc;
- **Emissions from chemical or physical processes:** In cement manufacturing, catalytic cracking in petrochemical processing, aluminum smelting, etc; and
- **Fugitive emissions resulting from intentional or unintentional releases:** Equipment leaks from joints, seals, packing and gaskets; methane emissions from coal mines and venting; hydrofluorocarbon emissions during the use of refrigeration and air conditioning equipment; and methane leakage from gas transport.

If you do not have data for the entirety of your reporting year, you have the following options:

1. Extrapolate your data to cover the entire reporting year. This potential source of inaccuracy can be logged in answer to question 12.12; or
2. Leave the question blank.

Specific Guidance for Question 12.1: "Please give your total gross global Scope 1 GHG emissions in metric tonnes of CO₂-e."

Gross emissions are requested so that users of the information can account for the GHG emissions from sources owned or controlled by your organization, before any reductions for offsets are made. This transparency is meant to provide users with the most accurate portrayal of the emissions created within your company boundary.

Carbon dioxide emitted from the combustion of biomass/biofuel should not be included in your response to Q12 but should be reported in answer to Q17.

Scope 1 emissions should be reported in metric tonnes of CO₂-e.

Danish Energy Providers

If you are included within the Danish energy saving directive and you sell your certified energy savings, you may report a reduced Scope 1 figure to the CDP.

For Companies Involved in Carbon Sequestration

The Scope 1 figure entered in answer to Q12.1 should be the gross emissions, with no account taken of the sequestration activity. This applies whether the CO₂ remains within the consolidation boundary or has been transferred outside it.

If the sequestration has led to the origination of offset credits, these can be reported in answer to Q21.5.

For Companies that Captured & Stored and Transferred CO₂

If a company generated CO₂ within its consolidation boundary and captures the gas, it should report the generated gas within its Scope 1 figure.

If the CO₂ is transferred outside the reporting boundary, the organization may document the quantities of CO₂ that have been transferred and the relevant organization and/or facility to which the gas was transferred within the Further Information text box on the Scope 1 page (this will not be scored).

If desired this portion of transferred CO₂ can be subtracted from the company's direct (Scope 1) emissions, although it should be reported elsewhere: under Scope 3 or under Further Information (of Scope 1) depending upon whether the CO₂ is eventually emitted and the nature of the emission. Some of the potential uses of transferred CO₂ are:

- Carbonated beverages
- Dry ice
- Fire extinguishing agent
- Refrigerant
- Laboratory gas
- Grain infestation treatment
- Solvents
- As a constituent of a by-product fuel that is exported (also known as inherent CO₂)
- As a feedback to other chemical or industrial processes
- Enhanced Oil Recovery (See below)

Companies should document the quantities of CO₂ transferred outside of its organizational boundaries and the relevant organization and/or facility to which the gas was transferred.

Transfer in - Transfer out

There may be cases in which an organization transfers in CO₂ (or more generally GHG), incorporates that CO₂ into a product, and then transfers the product out of its organization. Examples of this include some carbonated beverages and fire extinguisher products, for which the transferred-in CO₂ may have been purchased from a third party. Neither the transfer in nor the transfer out of the CO₂ should be included within the Scope 1 figure of the reporting organization. However, if the process of introducing CO₂ into the product results in some of the transferred-in CO₂ being lost to the atmosphere (i.e. as fugitive emissions) then that CO₂ lost to the atmosphere from within the boundary of the reporting organization should be included within the Scope 1 figure. The transfers in and out of CO₂ across the boundary of the reporting organization should be documented in the "Further Information" text box on the Scope 1 page. It should be noted that the transfer in– transfer out process is different to the situation where companies generate and transfer out, in which CO₂ is generated within the boundary of the reporting organization and subsequently transferred out.

Enhanced Oil Recovery (EOR)

An organization that has captured CO₂ from the combustion of fossil fuels may subsequently transmit that CO₂ in a process of geological sequestration. The transmission of the CO₂ may be within the boundary of the organization or outside the boundary of the organization. Geological sequestration is often associated with Enhanced Oil Recovery (EOR), in which gas is injected into an emptying oil well in order to recover residual oil reserves and CO₂ is either captured underground in the empty or emptying oil well, which is capped, or flushed out of the well as it may be dissolved in the recovered oil-water mixture.

There are various uncertainties associated with geological sequestration and these are to varying degrees the subject of ongoing research initiatives and investigations. Firstly there are uncertainties about how much of the CO₂ may actually be sequestered and what level of permanence may be attached to the carbon capture. Secondly there are life-cycle issues in terms of how much CO₂ is emitted in surface facilities and transportation processes, energy use through the EOR process, losses from the storage system, leakage through abandoned wells and diffusion mechanisms through nearby active wells. In cases in which the respondent asserts that the geological sequestration is permanent, information should be provided to show how such permanence is assured.

~~Given the uncertainties, CO₂ transferred and geologically sequestered through EOR processes either within or across the organizational boundary should be included within the gross Scope 1 figure. The gross Scope 1 figure should not be reduced to give a net figure.~~

If a company uses CO₂ for enhanced oil recovery (EOR) in oil wells within its consolidation boundary, then the emissions that occur from this process should be logged under Scope 1.

A company may consider that some of the CO₂ remains sequestered within the oil well. However, due to the uncertainty over the permanence of this sequestration, the mass of gas should still be logged under Scope 1.

A company that transfers CO₂ outside its consolidation boundary for use in EOR can report the emissions that occur under Scope 3, if (some other) organization participating in the EOR activity reports it as a direct emission under Scope 1. It may consider that some CO₂ may remain sequestered within the oil well. However, due to uncertainty over the permanence of the sequestration, the mass of gas should still be logged under Scope 3.

You will be asked to respond to Q12.1 by entering a total figure into the number field below the question. Please use the gross figure in answer to Q16: Emissions Intensity.

Specific Guidance for Question 12.2: “Please break down your total gross global Scope 1 emissions in metric tonnes CO₂-e by country/region.”

We ask companies to break down their emissions in a way that offers the most useful data to readers. Usually this will be at the level of country as this is a common source of legislation regarding GHGs. Even emissions that fall within international schemes such as the EU emissions trading schemes should be attributed to countries as investors tend to prefer data presented in this way. However, where states (or other sub-national bodies) have the right to introduce emissions-related legislation, companies operating in these states (or other sub-national bodies) may consider that breaking down emissions to a sub-national level is more informative. Either approach is acceptable.

If you are based in only one country and a sub-national breakdown is not relevant, you may select that the question is not relevant and explain that you only operate in one country, naming the country. You will be asked to respond to Q12.3 by filling in a text box.

Please do not answer that the question is “Not Relevant” if you do not have data to answer the question or it is unavailable. The question may still be relevant, regardless of the status of data collection.

You will be asked to complete a table in response to Q12.2. On the introductory page of the ORS the following instructions were included: *“Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response.”* Countries selected on the introductory page will have been carried forward to this and other tables that request data on a country basis. See column 1. If you did not enter a country for which you intend to supply data, please return to the introduction and add the country. You should then enter Scope 1 emissions figures in the second column to complete the table. Please use the “Other” option to enter names of regions.

For Electric Utilities

Companies that include electric utilities within their consolidation boundary should provide data for all companies within their consolidation boundary in answer to this question and data on emissions specifically from their electricity-related division, activities or assets in answer to questions in the Electric Utilities module.

-Companies that are solely electric utilities should report emissions by country/region using the tables in the Electric Utilities module. In that case, please direct readers to this data by selecting “Other” from the country drop-down menu and enter “See answers to the Electric Utilities module”.

Specific Guidance for Question 12.4: “Business division (only for the current reporting year requested).”

It may also be appropriate for you to provide GHG emissions by business division. This figure can give an indication of the relative GHG performance of your company’s divisions. When reported over time, your company and the information users will be able to review improvements or declines in division performance.

You will be asked to complete a table in response to Q12.4. In the first column you are encouraged to name specific business divisions. Please include the corresponding Scope 1 figure in column two. You can enter multiple rows, providing information on all business divisions.

Specific Guidance for Question 12.5: “Facility (only for the current reporting year requested).”

The GHG Protocol stationary combustion tool document states that a “facility includes all buildings, equipment, structures and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person or entity (or by any person or entity which controls, is controlled by or is under common control, with such person or entity).”

Facilities may also be referred to as installations. More than one business activity may take place at a facility and a facility may include more than one combustion unit, such as a boiler.

Reporting at this level can provide a useful indicator for making comparisons between facilities. In some cases, individual facilities may come within the scope of particular legislation, requiring baselining and subsequent reduction of GHG emissions through improvements in energy efficiency. This is particularly the case for industrial plants. Therefore providing facility-level emission figures may give data-users insight into your organization’s current/potential exposure to regulation in this area.

You will be asked to complete a table in response to Q12.5. In the first column you are encouraged to name specific facilities. Please include the corresponding Scope 1 figure in column two. You can enter multiple rows, providing information on all facilities.

Specific Guidance for Question 12.6: “Please break down your total gross global Scope 1 emissions by GHG type (only data for the current reporting year requested).”

There are various types of greenhouse gases, but the Kyoto Protocol focuses on six internationally recognized GHGs comprised of the following:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs) family of gases;
- Perfluorocarbons (PFCs) family of gases; and
- Sulphur hexafluoride (SF₆).

The GHG Protocol requires data given in metric tonnes of each gas emitted and in metric tonnes of CO₂-e. Emissions of GHGs within a “family” of gases should be summed.

Breaking down emissions by GHG type would involve providing data for more than one gas or gas type. Therefore this question may not be relevant to your company if the only GHG you produce in significant quantities is CO₂. However, this is different from only having CO₂ data available. In this case, the question may still be relevant to your company even if you are not able to break emissions down into GHG types because you only have data for one gas. Please do not answer that the question is “Not Relevant” if you do not have data to answer the question/ it is unavailable. The question may still be relevant, regardless of the status of data collection.

You will be asked to complete a table in response to Q12.6. In the first column you will be able to select each of the 6 gasses recognized as greenhouse gases under the Kyoto Protocol from a drop down menu. In the second column, please disclose the emissions for each corresponding gas as relevant to your company. In the third column, please disclose your emissions in metric tonnes CO₂-e (equivalent). These numbers should have been calculated using and the GWP_s provided in answer to Q11.3.

Specific Guidance for Question 12.8: “Please use the table to give the total amount of fuel in MWh that your organization has consumed during the reporting year.”

This question asks for information about the amount of fuel your organization has consumed.

If your organization produces fuel, then you will likely use some of this fuel to meet your own needs. This question pertains to purchased and self-produced fuels that your organization has used. Please add the figures to generate a total figure for consumed fuel.

Fuel can be measured in terms of:

- Energy content: kilojoules (KJ), British thermal units (Btu), or therms;
- Volume: m³ or liters; and
- Mass: metric tonnes or short tonnes

The CDP 2010 information request requires energy and fuel inputs to be standardized to megawatt hours (MWh), which is commonly used for measuring electricity consumption. Guidance on the conversion of fuel imports to MWh is included in Appendix D.

If you do not have exact consumption data, you may alternatively estimate your company’s consumption by reviewing fuel purchasing orders.

Please do not answer that the question is “Not Relevant” if you do not have data to answer the question or it is unavailable. The question may still be relevant, regardless of the status of data collection.

You will be asked to respond to Q12.8 by entering a total figure into the number field below the question.

Specific Guidance for Question 12.10: “Please complete the table by breaking down the total figure by fuel type.”

Please do not answer that the question is “Not Relevant” if you do not have data to answer the question or it is unavailable. The question may still be relevant, regardless of the status of data collection.

You will be asked to complete a table in response to Q12.10. In the first column you will be presented with a drop down menu containing a list of fuels. Please select the fuels relevant to your company. In the second column you should disclose the MWh used by your company during the reporting period.

If a fuel is not listed, please select the “Other” option and provide the name of fuel. Additionally, all fuels listed by CDP in the ORS have been included in Appendix B of this document. This list comprises those fuels given in the GHG Protocol Stationary Combustion Tool and other fuels common to mobile combustion. Definitions accompany all fuels.

Specific Guidance for Question 12.12: “Please estimate the level of uncertainty of the total gross global Scope 1 figure that you have supplied in answer to question 12.1 and specify the sources of uncertainty in your data gathering, handling, and calculations.”

Please describe the main sources of uncertainty encountered in the preparation of information for your response to the CDP 2010 information request. Uncertainty can arise from data gaps, assumptions, metering/measurement constraints, published emissions factors, data management, etc.

Within your response to CDP you are likely to encounter three possible types of uncertainty when calculating your emissions figures:

1. Uncertainty surrounding the calculation of global warming potentials (GWPs);
2. Uncertainty surrounding the calculation of emissions factors; and
3. Uncertainty in your activity data or direct measurement of emissions.

As you cannot control the uncertainty surrounding the calculation of GWPs or emissions factors, CDP asks that you focus your uncertainty assessments on your activity data.

As an example, measuring equipment will always be limited in how accurately it can measure. Additionally the ways in which gas sampling and techniques for statistical treatments of data are deployed may affect GHG estimates. These limitations may be known and could potentially have a significant bearing on the accuracy of your organization's GHG calculations.

You will be asked to complete a table in response to Q12.12. In the first column you will be presented with a drop down menu containing a list of uncertainty ranges. Please select the range that applies to the level of uncertainty in your emissions calculations. The second column provides you with a list of sources of uncertainty that can be selected. Finally, in the third column you should expand on the identified sources of uncertainty and how they are specific to your company.

Question 13: Scope 2 Indirect GHG Emissions (CDP2009 Q11)

13.1 Please give your total gross global Scope 2 GHG emissions in metric tonnes of CO₂-e.

13.2 Please break down your total gross global Scope 2 emissions in metric tonnes CO₂-e by country/region. **(13.3)**

13.3 Please explain why not. (Relevance field)

Where it will facilitate a better understanding of your business, please also break down your total gross global Scope 2 emissions by business division and/or facility. (Only data for the current reporting year requested.)

13.4 Business division

13.5 Facility

Purchased Energy

13.6 How much electricity, heat, steam, and cooling in MWh has your organization purchased for its own consumption during the reporting year? **(13.7)**

13.7 Please explain why not. (Relevance field)

Energy Type	MWh
Electricity	
Heat	
Steam	
Cooling	

Data Accuracy: (CDP2009 Q19)

13.8 Please estimate the level of uncertainty of the total gross global Scope 2 figure that you have supplied in answer to question 13.1 and specify the sources of uncertainty in your data gathering, handling and calculations.

	Scope 2
Uncertainty range	
Main sources of uncertainty in your data	
Expand on the main sources of uncertainty in your data	

General Guidance

Important note about emission factors where zero or low carbon electricity is purchased:

The emissions factors you should use for calculating Scope 2 emissions depends upon whether the electricity you purchase is counted in the grid average emissions factor or not – see below. You can find this out from your supplier.

Electricity that IS counted in calculating the grid average emissions factor:

Where electricity is sourced from the grid and that electricity has been counted in calculating the grid average emissions factor, Scope 2 emissions must be calculated using the grid average emissions factor, even if your company purchases electricity under a zero or low carbon electricity tariff.

Electricity that is NOT counted in calculating the grid average emissions factor:

Where zero or low carbon electricity is sourced from the grid or otherwise transmitted to the company and that electricity is not counted in calculating the grid average, the emissions factor specific to that method of generation can be used, provided that any certificates quantifying GHG-related environmental benefits claimed for the electricity are not sold or passed on separately from the electricity purchased. If certificates quantifying the GHG-related environmental benefits

claimed for the electricity are sold or passed on separately from the electricity purchased, then you must report using the grid average emissions factor.

Indirect GHG emissions mostly occur from the generation of purchased electricity (but can also include heat, steam and cooling) consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

Non-energy-intensive companies are likely to have more significant Scope 2 figures than Scope 1 figures. The GHG Protocol highlights that “accounting for Scope 2 emissions allows companies to assess the risks and opportunities associated with changing electricity and GHG emissions cost.”

Emissions estimates are acceptable, as long as there is transparency with regards to the estimation approach and the data used for the analysis is adequate to support the objectives of the inventory.

Specific Guidance for Question 13.1: “Please give your total gross global Scope 2 GHG emissions in metric tonnes of CO₂-e.”

Please use the grid average emission factor to calculate and report emissions associated with electricity purchased from the grid, except in the specific circumstances detailed in the criteria above. The grid average factor represents the relative contributions that different types of electrical generation make to electricity available from the grid and their associated emission rates.

Use the grid average emission factor even if your company purchases electricity via a tariff designed to support zero or low carbon electricity generation, often called a “green” tariff, unless the circumstances given in the criteria above apply.

Danish Energy Providers

If you are included within the Danish energy saving directive and you sell your certified energy savings, you may still report a reduced Scope 2 figure to the CDP.

What is zero or low carbon electricity?

Certain methods of generating electricity do not emit GHGs or emit relatively low amounts of GHGs compared with other forms of electricity generation (although GHGs are emitted during other phases of their lifecycle, such as in the manufacture, installation and/or maintenance of the generator). Examples of zero or low carbon electricity include generation by wind, water, solar energy and geothermal heat. For the purpose of the CDP2010 information request, these methods are referred to as zero or low carbon methods of generation.

Why does CDP ask purchasers of “green” tariff electricity use the grid average emission factor?

Electricity from a zero or low carbon generator that is supplied to the grid is usually taken into account in the calculation of the average emission factor for electricity available from the grid. This means that the benefit of the zero or low carbon electricity is distributed between all purchasers of electricity from the grid and consequently may not be claimed only by those that purchase electricity under a “green” tariff without the benefits being double-counted.

However, as with the purchase of renewable energy certificates, CDP recognizes that if you are buying via a “green” tariff you are taking steps to secure the future of zero and low carbon generation methods. Pending agreement of an internationally accepted procedure for accounting for these purchases, CDP asks that companies detail their purchases via alternative tariffs in answer to Q14: Contractual Arrangements Supporting Particular Types of Electricity Generation, provided that Scope 2 emissions calculated by reference to the grid average emission factor are reported in answer to Q13.1.

Further information about the effect of certificates such as Renewable Energy Certificates (RECs) on the calculation of Scope 2 emissions

Renewable Energy Certificates and similar documents certify that energy (normally electricity) has been produced using renewable or very low carbon methods. These certificates may be sold separately from the electricity associated with the certificates. Individuals and organizations that buy these certificates may do so on the understanding that their purchase contributes towards the reduction of emissions from fossil fuel energy generators. Therefore, purchasers sometimes consider certificates to be a form of offset that justifies reducing their reported Scope 2 GHG emissions figures. For the purposes of preparing your CDP response, any document certifying that energy has been produced by renewable or low carbon methods cannot be treated as an offset.

Offsets represent emission reductions that would not have been made in the absence of a particular project and the opportunity to sell offsets must have been a deciding factor in the project going ahead. Two other criteria have to be met by offsets: it must be possible to quantify the emission reductions caused by the offset purchase and it must be possible to attribute them to a particular owner.

Renewable energy certificates are not required to meet the same criteria as emission offsets. It is very difficult to conclusively link investments of zero or low carbon generation capacity to the opportunity to sell renewable energy certificates within the voluntary green power market. Furthermore, it is difficult to attribute ownership of emission reductions where those reductions occur at a power station owned by a third party, unconnected to the seller of the renewable energy certificate.

This section only outlines some of the difficulties associated with treating renewable energy certificates as offsets. For a full discussion, please follow the link below to several papers discussing the debate in greater depth.

- Gillenwater, M., [Redefining RECs \(Part 1\): Untangling Attributes and Offsets](#)
- E-Track Project, [A European Tracking System for Electricity](#)

Until an international agreement on how to address these complexities is reached, renewable energy certificates should not be treated as offsets and/or netted off against Scope 2 totals for the purposes of completing the CDP 2010 information request.

Taking all these issues into account, we therefore ask you to use the grid average emission factor to calculate your Scope 2 emissions from electricity purchased from the grid for the purposes of completing Q13 of the CDP 2010 information request, unless both of the following criteria are satisfied:

1. The electricity has not been counted in calculating the grid average emission factor. This is likely in circumstances where the electricity is transmitted directly from the generator to the user via an exclusive link; and
2. Any certificates quantifying GHG-related environmental benefits claimed for the electricity are not sold or passed on separately from the electricity purchased.

CDP will treat the gross Scope 2 emissions figure reported in response to Q13.1 as the organization's Scope 2 emissions figure even when a "contractual Scope 2" emissions figure is provided in response to Q14. Please use the gross Scope 2 emissions figure reported in response to Q13.1 as the basis for answering subsequent questions that refer to Scope 2 emissions, including Q18: Emissions Intensity.

Readers and responders who would like to see the approach taken by others on this issue can refer to the following:

- The Climate Registry: See page 101 of its [General Reporting Protocol](#);
- The Carbon Trust Standard: See Section 3.3.5 of the [Methodology](#); and
- Publicly Available Specification 2050 (Specification for the assessment of the life cycle greenhouse gas emissions of goods and services): See 7.9.3 of [PAS 2050:2008](#).

You will be asked to respond to Q13.1 by entering a total figure into the number field below the question.

Specific Guidance for Question 13.2: "Please break down your total gross global Scope 2 emissions in metric tonnes CO₂-e by country/region."

We ask companies to break down their emissions in a way that offers the most useful data to readers. Usually this will be at the level of country as this is a common source of legislation on GHGs. However, where states (or other sub-national bodies) have the right to introduce emissions-related legislation, companies operating in these states (or other sub-national bodies) may consider that breaking down emissions to a sub-national level is more informative. Either approach is acceptable.

If you are based in only one country and a sub-national breakdown is not relevant, you may select that the question is not relevant and explain that you only operate in one country, naming the country. You will be asked to respond to Q13.3 by filling in a text box.

Please do not answer that the question is "Not Relevant" if you do not have data to answer the question or it is unavailable. The question may still be relevant, regardless of the status of data collection.

You will be asked to complete a table in response to Q13.2. On the introductory page of the ORS the following instructions were included: *"Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response."* Countries selected on the introductory page will have been carried forwards to this and other tables that request data on a by country basis. See column 1. If you did not enter a country for which you intend to supply data, please return to the introduction and add the country. Please use the "Other" option to enter names of regions.

Specific Guidance for Question 13.4: "Business division."

It may also be appropriate for you to provide GHG emissions by business division. This figure can give an indication of the relative GHG performance of your company's divisions. When reported over time, your company and the information users will be able to review improvements or declines in division performance.

You will be asked to complete a table in response to Q13.4. In the first column you are encouraged to name specific business divisions. Please include the corresponding Scope 2 figure in column two. You can enter multiple rows, providing information on all business divisions.

Specific Guidance for Question 13.5: "Facility."

Reporting at this level can provide a useful indicator for making comparisons between facilities. In some cases, individual facilities may come within the scope of particular legislation, requiring baselining and subsequent reduction of GHG emissions through improvements in energy efficiency. This is particularly the case for industrial plants. Therefore providing facility-level emission figures may give data-users insight into your organization's current/potential exposure to regulation in this area.

Facilities may also be referred to as installations. More than one business activity may take place at a facility.

You will be asked to complete a table in response to Q13.5. In the first column you are encouraged to name specific facilities. Please include the corresponding Scope 2 figure in column two. You can enter multiple rows, providing information on all facilities.

Specific Guidance for Question 13.6: “How much electricity, heat, steam, and cooling in MWh has your organization purchased for its own consumption during the reporting year?”

Not all of the energy types requested - electricity, heat, steam and cooling - may be relevant to your company. Please provide data on the energy types that are relevant.

Electricity

If you do not have your data on purchased electricity in MWh, it can readily be converted from kWh or GWh into MWh.

- To convert from kWh to MWh, divide the figure by 1,000.
- To convert from GWh to MWh, multiply the figure by 1,000.

Heat and steam

Heat and steam may be bought in British thermal units (Btu), joules (J), and therms, which can be converted to MWh using a calculation tool such as www.onlineconversion.com. Heat is also sometimes bought in kWh, making conversion to MWh straightforward.

Steam may also be bought in units of pounds. Conversion is more difficult as the energy content of the steam varies with temperature and pressure. We would refer organizations to [The Climate Registry's General Reporting Protocol](#). Chapter 15, section 15.2, step 1 explains how to calculate the energy content of steam.

Cooling

This is frequently bought in refrigeration-ton hours. 1 ton-hour=12,000 Btu=0.003516 MWh.

Please do not answer that the question is “Not Relevant” if you do not have data to answer the question or it is unavailable. The question may still be relevant, regardless of the status of data collection. Only select 13.7 if none of the energy types - electricity, heat, steam and cooling - are relevant to your company.

You will be asked to complete a table in response to Q13.6. In the first column you will be able to select electricity, heat, steam and cooling from a drop down menu. In the second column, please disclose the MWh for the selected energy type.

Specific Guidance for Question 13.8: “Please estimate the level of uncertainty of the total gross global Scope 2 figure that you have supplied in answer to question 13.1 and specify the sources of uncertainty in your data gathering, handling and calculations.”

Please describe the main sources of uncertainty encountered in the preparation of information for your response to the CDP 2010 information request. Uncertainty can arise from data gaps, assumptions, metering/measurement constraints, published emissions factors, data management, etc.

Within your response to CDP, you are likely to encounter three possible types of uncertainty when calculating your emissions figures:

1. Uncertainty surrounding the calculation of global warming potentials (GWPs);
2. Uncertainty surrounding the calculation of emissions factors; and
3. Uncertainty in your activity data.

As you cannot control the uncertainty surrounding the calculation of GWPs or emissions factors, CDP asks that you focus your uncertainty assessments on your activity data.

When calculating Scope 2 emissions there is less uncertainty in measuring the activity data; the uncertainty arises with the application of emission factors. As this is the case, “uncertainty” is more a problem of accuracy. Data gaps and assumptions will play a large role in calculating your emissions uncertainty.

You will be asked to complete a table in response to Q13.8. In the first column you will be presented with a drop down menu containing a list of uncertainty ranges. Please select the range that applies to the level of uncertainty in your emissions calculations. The second column provides you with a list of sources of uncertainty that can be selected. Finally, in the third column you should expand on the identified sources of uncertainty and how they are specific to your company.

Question 14: Contractual Arrangements Supporting Particular Types of Electricity Generation (CDP2009 Q12)

14.1 Do you consider that the grid average factors used to report Scope 2 emissions in Question 13 reflect the contractual arrangement you have with electricity suppliers?

14.2 You may report a total contractual Scope 2 figure in response to this question. Please provide your total global contractual Scope 2 GHG emissions figure in metric tonnes CO₂-e.

14.3 Explain the origin of the alternative figure including information about the emission factors used and the tariffs.

14.4 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?

If so,

14.5 Please provide details including the number and type of certificates.

Type of certificate	Number of certificates	Comments

General Guidance

In the first instance, please review the guidance for Q13.1, explaining why CDP has asked you to calculate your Scope 2 electricity emissions according to grid average emissions factors (unless certain criteria are met). CDP recognizes, however, that procedures for accurately accounting for electricity-related Scope 2 emissions are still evolving. Therefore, we invite companies that consider grid average emission factors do not accurately represent their Scope 2 electricity emissions to calculate a contractual figure and explain the basis of that figure in answer to Q14.

Specific Guidance for Question 14.2: “You may report a total contractual Scope 2 figure in response to this question. Please provide your total global contractual Scope 2 GHG emissions figure in metric tonnes CO₂-e.”

This represents the total Scope 2 emissions that companies have calculated, based on the arrangements with their energy supplier(s).

You will be asked to respond to Q14.2 by entering a total figure into the number field below the question.

Specific Guidance for Question 14.3: “Explain the origin of the alternative figure including information about the emission factors used and the tariffs.”

In answering this question, you should describe the tariffs via which electricity is purchased or explain the circumstances if the electricity is not bought via tariffs. You should also describe the process for calculating the alternative figure provided in answer to Q14.2, giving the origin of the emission factors and their numerical values. For example:

- Is your supplier obliged by regulation to report the emission factor of the electricity sold to you? If not, how did you obtain the emission factors you have used? Did you review company energy statements and contracts with energy suppliers?
- If you have not “retired” any renewable energy purchases, how have you claimed a reduced figure (e.g. specify if the supplier has retired CERs, EUAs or other offsets)?

You will be asked to respond to Q14.3 by filling in a text box.

Specific Guidance for Question 14.4 and 14.5: “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?”

In Question 14.4 you are asked if you have retired (or surrendered) any RECs. In retiring a REC, you are ensuring each REC may be issued and claimed only once. This is to guarantee that the “environmental benefit” is not counted multiple times by purchasers re-selling the REC through a different mechanism.

In the ORS you will be provided with a list of renewable energy certificates you could have retired or had retired on your behalf. The list is as follows:

- Renewable Energy Certificates
- Renewable Energy Guarantees of Origin (RE-GO)
- Renewable Obligation Certificates (UK)
- CHP Guarantees of Origin (CHP-GO)
- Levy Exemption Certificates for Renewable Energy (UK)
- European Energy Certificate Scheme

This list is not exhaustive and you will have the option to identify other renewable energy certificates/guarantees you may have purchased and retired under different schemes. You might want to specify in the comment field which registry has been used to retire the RECs.

You will be asked to respond to Q14.4 by selecting either “Yes” or “No”. If you select “Yes” in answer to Q14.4, a table will be presented for you to enter information regarding the types of renewable energy certificates you have retired. In the first column you will be presented with a drop down menu containing a list of renewable energy certificates (examples above). Please select the type of certificate you have retired. In the second column you should disclose the number of certificates retired and provide any further explanation in the text box in the third column.

Question 15: Scope 3 Other Indirect Emissions (CDP2009 Q13)

15.1 Please provide data on sources of Scope 3 emissions that are relevant to your organization. (15.2)

15.2 Please explain why not. (Relevance field)

Sources of Scope 3 emissions	Emissions (in metric tonnes of CO ₂ -e)	Methodology	If you cannot provide a figure for a relevant source of Scope 3 emissions, please describe the emissions.

Auto manufacturers, please refer to the module for your sector before completing question 15.1.

General Guidance

Scope 3, like Scope 2, is a category of indirect emissions that arise as a consequence of an organization’s activities, but from GHG sources that are owned or controlled by others. Scope 2 covers emissions that an organization indirectly

causes to be emitted through its import – usually by purchase – of electricity, heat, cooling and steam for its own consumption. Scope 3 covers all other indirect emissions from sources that are not owned or controlled by a company but which occur as a result of its activities.

This question asks you to provide data on sources of Scope 3 emissions that are relevant to your company. A draft standard on accounting and reporting Scope 3 emissions is being developed by the WRI and WBCSD, the same partnership that produced the GHG Protocol Corporate Standard. The draft, which can be found on the GHG Protocol homepage, gives guidance on how to decide if a source of Scope 3 emissions is relevant.

Specific Guidance for Question 15.1: “Please provide data on sources of Scope 3 emissions that are relevant to your organization.”

This question is comprised of a table that you are asked to complete. The first column has a drop-down menu of Scope 3 emission categories. This list is based on the following chart, which is taken from the draft [“Scope 3 Accounting and Reporting Standard” \(January 2010 version\)](#). ~~The web address given earlier has a draft dated November 2009 which is available for companies to download. The table shown below is taken from a more recent version (dated January 2010), which was produced for the next stage of the development process: road testing of the draft standard by companies. However, the November 2009 version will still assist companies in understanding the categories and other issues related to Scope 3 accounting.~~

Please note that “Purchased Goods and Services - Direct Supplier Emissions” and “Purchased Goods and Services - Cradle-to-Gate Emissions” encompasses emissions that are not included in subsequent categories. There is also overlap between these first two categories. Category 1 includes the Scope 1 and Scope 2 emissions of direct suppliers (tier 1), whereas Category 2 includes the full cradle-to-gate emissions of purchased products. So there is double counting between the two categories since Category 2 includes direct supplier emissions. However, the methods used to calculate Category 1 and Category 2 may well be quite different. Category 1 would be primary¹ supplier GHG data collected through surveys, whereas Category 2 in many cases may be based on secondary² data for a given purchased product (mass of GHG emissions per unit of product). So the GHG emissions collected from specific direct suppliers would go in Category 1, while estimated cradle-to-gate emissions from purchased products goes in Category 2.

¹ Primary data is defined as direct emissions measurements or activity data collected from specific sources within a company's operations or its supply chain.

²Secondary data is defined as data that are not collected from specific sources within a company's operations or its supply chain. Secondary data include industry-average data, data from literature studies, and data from published databases.

	Category	Scope 1 Emissions of...	Source Description
Upstream Scope 3 Emissions from Purchased Products	1. Purchased Goods and Services – Direct Supplier Emissions *	Direct Suppliers – Tier 1	<ul style="list-style-type: none"> • Scope 1 and 2 emissions of a reporting company's direct (tier 1) suppliers, including outsourced activities, (e.g., contract manufacturing, data centers, outsourced services, etc.)
	2. Purchased Goods and Services – Cradle-to-Gate Emissions*	Upstream Suppliers – Tier 1,2,3,4...	<ul style="list-style-type: none"> • Extraction and production of inputs (i.e. purchased or acquired goods, services, materials, or fuels) associated with suppliers further upstream (tier 2,3,4, etc.) • Manufacturing/ construction of tier 1,2,3,4...suppliers' capital equipment • Generation of electricity, steam, heating, and cooling that is consumed by tier 1,2,3,4...suppliers • Disposal/ treatment of waste generated in the production of inputs (i.e., purchased or acquired goods, services, materials or fuels) associated with tiers 1, 2, 3, 4...suppliers • Transportation and distribution of inputs associated with suppliers further upstream (tier 2,3,4, etc.) •

	3. Energy-Related Activities Not Included in Scope 2	Suppliers – e.g. electric utility, fuel producer	<ul style="list-style-type: none"> Extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating and cooling (either purchased or own generated by the reporting company) Generation of electricity, steam, heating, and cooling that is consumed in a T&D system (reported by end user) Purchase of electricity, steam, heating and cooling that is sold to an end user (reported by utility company)
	4. Capital Equipment	Capital equipment suppliers	<ul style="list-style-type: none"> Manufacturing/ construction of capital equipment owned or controlled by the reporting company
	5. Transportation & Distribution	Transportation/ logistics suppliers	<ul style="list-style-type: none"> External transportation and distribution of inputs (i.e., purchased or acquired goods, services, materials or fuels), including intermediate (inter-facility) transportation & distribution, warehousing & storage, associated with direct transportation/ logistics suppliers Transportation of waste generated in operations
	6. Business Travel	Transportation suppliers e.g. airline	<ul style="list-style-type: none"> Employee business travel
	7. Waste Generated in Operations	Waste management suppliers	<ul style="list-style-type: none"> Disposal/ treatment of waste generated in operations
	8. Franchises	Franchisor	<ul style="list-style-type: none"> Operations of franchisor (reported by franchisee)
	9. Leased Assets	Lessor	<ul style="list-style-type: none"> Manufacturing/ construction and operation of leased assets not included in lessee's Scope 1 (reported by lessee)
	10. Investments	Company Receiving Investment	<ul style="list-style-type: none"> GHG emissions associated with investments, including fixed asset investments and equity investments not included in Scope 1
Downstream Scope 3 Emissions from Sold Products	11. Franchises	Franchisee	<ul style="list-style-type: none"> Manufacturing/ construction and operation of franchise not included in franchisor's Scope 1 (reported by franchisor)
	12. Leased Assets	Lessee	<ul style="list-style-type: none"> Manufacturing/ construction and operation of leased assets not included in lessor's Scope 1 (reported by lessor)
	13. Transportation & Distribution	Transportation company, retailer	<ul style="list-style-type: none"> Transportation and distribution of sold products, including warehousing and retail
	14. Use of Sold Products	Consumer	<ul style="list-style-type: none"> Use of sold goods and services
	15. Waste	Waste management company	<ul style="list-style-type: none"> Disposal of sold products at the end of their life
Other Scope 3 Emissions	16. Employee Commuting	Employees	<ul style="list-style-type: none"> Employees commuting to and from work Employees teleworking

*Not otherwise included in categories 3-10

Please quantify Scope 3 emissions in metric tonnes CO₂-e in column 2. Numerical answers are preferred. However, where it is not possible to provide this information please describe the emissions in column 4, reporting any other measure that reflects the quantity of emissions, such as the number of business miles (or km) travelled by your employees, or - a better option - the scale of the emissions relative to Scope 1 and Scope 2.

If you do not have data for the entirety of the reporting year you have the following options:

1. Extrapolate your data to cover the entire reporting year. This potential source of inaccuracy can be logged in answer to the question on methodology in column 3 of the table; or
2. Leave the question blank.

When describing the methodology used to calculate Scope 3 emissions, please also state whether any GHG sources are excluded from your calculations and the assumptions that you have made.

Guidance on emissions from leasing can be found in the GHG Protocol appendix: "[Categorizing GHG Emissions from Leased Assets](#)". This will help you determine whether the emissions should be accounted for under Scope 3 or under a different scope.

Please do not answer that the question is "Not Relevant" if you do not have data to answer the question/ it is unavailable. The question may still be relevant, regardless of the status of data collection. This option should only be selected if no sources of Scope 3 emissions are relevant.

Specific Guidance for Question 15.2: "Please explain why not?"

Scope 3 covers a very broad range of emissions. For some companies, Scope 3 categories represent the largest source of emissions with which their company is linked or they represent their biggest opportunity for reducing emissions. Therefore please explain the process which your company has undergone to eliminate Scope 3 as a relevant source of emissions. Please cover the sources that your company has considered and why it has concluded that they are not relevant.

For Auto and Auto Component Manufacturers

You may wish to utilize the data provided in answer to the auto supplement to calculate a figure for emissions from the use of sold products in answer to Q15.1. You may also wish to cross-reference information on methodology given in the auto module.

For Electric Utility Companies

Electric utilities are directed to the section "Other Electricity-Related Indirect Emissions" on page 28 of the GHG Protocol for guidance on deciding which emissions should be reported under Scope 3.

Question 16: Emissions Avoided through use of Goods and Services (CDP2009 Q14)

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

16.2 If so, please provide details including the anticipated timescales over which the emissions are avoided, in which sector of the economy they might help to avoid emissions and their potential to avoid emissions.

General Guidance

There are various circumstances in which a company might consider that the use of its goods or services by others has the potential to reduce GHG emissions. For example, an insulation company might consider that the installation of its insulation in another organization's premises might reduce the consumption of gas to heat the building, with the consequent reduction of GHG emissions from the property.

Specific Guidance for Question 16.2: "If so, please provide details including the anticipated timescales over which the emissions are avoided, in which sector of the economy they might help to avoid emissions and their potential to avoid emissions."

If your company provides goods or services that have the potential to reduce emissions that would otherwise be produced by a third party, please provide the following details:

- How the emissions are/ were avoided;
- The anticipated timescale over which the emissions are/ were avoided;
- If you are considering generating CERs or ERUs within the framework of CDM or JI (UNFCCC); and
- The methodology, assumptions, emission factors and global warming potentials used for your estimations.

Even if you are not considering or are not eligible to generate emissions reductions under the CDM or JI, you might want to present an estimate of avoided emissions. In this case you should briefly present your baseline assumptions, boundaries (geographic, GHGs, etc.) and the period considered.

You will be asked to respond to Q16.1 by selecting either "Yes" or "No". If you select "Yes" in answer to Q16.1, a text box will be presented for you to enter information regarding how the use of your goods and/or services enable GHG emissions to be avoided by a third party in answer to Q16.2.

If you select "No" in answer to Q16.1, you should proceed to question 17.1.

Question 17: Carbon Dioxide Emissions from Biologically Sequestered Carbon (CDP2009 Q15)

17.1 Please provide your total global carbon dioxide emissions in metric tonnes CO₂ from the combustion of biologically sequestered carbon i.e. carbon dioxide emissions from burning biomass/biofuels. (**17.2**)

17.2 Please explain why not. (Relevance field)

General Guidance

Biologically sequestered carbon is carbon that resides in a carbon pool. For example, through photosynthesis plants convert carbon dioxide in the atmosphere into plant material. The carbon becomes part of the plant and is sequestered in the plant. The GHG Protocol (Appendix B, page 88) describes carbon residing in carbon pools as:

- "Above ground biomass (e.g., vegetation) in forests, farmland, and other terrestrial environments;

- Below ground biomass (e.g., roots); and
- Biomass-based products (e.g., wood products) both while in use and when stored in a landfill.”

The way in which emissions from biologically sequestered carbon are reported depends upon whether the emissions arise from combustion and on the type of greenhouse gas produced.

Specific Guidance for Question 17.1: “Please provide your total global carbon dioxide emissions in metric tonnes CO₂ from the combustion of biologically sequestered carbon i.e. carbon dioxide emissions from burning biomass/biofuels.”

Carbon dioxide emissions from the combustion of biologically sequestered carbon

Please report the emissions in response to Q17.1 and ensure that the emissions are not reported under Scope 1, 2 and 3. The GHG Protocol states that carbon dioxide *from the combustion of biologically sequestered carbon* must be reported separately from the three scopes. This is because the carbon dioxide would be emitted anyway when biomass decays naturally.

Carbon dioxide emissions other than from the combustion of biologically sequestered carbon

Please include in emissions reported under Scope 1, 2 and 3. Carbon dioxide produced from biologically-sequestered carbon by means other than combustion (for example, industrial fermentation) should be reported within the scopes.

Other GHGs emitted from the combustion of biologically sequestered carbon

Please include in emissions reported under Scope 1, 2 and 3. Carbon dioxide is not necessarily the only GHG emitted during the combustion of biomass. For example, during the combustion of biomass/biofuel, nitrous oxide and methane are emitted. These gases would not be emitted during the natural process of decay and so are counted and reported in the scopes.

Please do not answer that the question is “Not Relevant” if you do not have data to answer the question or it is unavailable. The question may still be relevant, regardless of the status of data collection.

You will be asked to respond to Q17.1 by entering total figures into the number field below the question.

Question 18: Emissions Intensity (CDP2009 Q16)

18.1 Please describe a financial and an activity-related intensity measurement for the reporting year for your gross combined Scope 1 and 2 emissions.

Type of emissions intensity measurement	Units	The resulting figure for Scope 1 and Scope 2 emissions	Please explain if not relevant. Alternatively provide any contextual details that you consider relevant to understand the units or figures you have provided.
Financial			
Activity-related			

Oil and gas sector companies are also asked to report activity-related intensity metrics in answer to table O&G1.3.

General Guidance

Whereas “total” emissions refers to the actual amount of GHGs produced by an organization, emissions intensity refers to the ratio of GHGs produced to a financial measure (e.g. turnover or profit), or to a measure of activity (e.g. per metric tonne or unit of output). Therefore:

$$\text{GHG Intensity} = \frac{\text{GHG Emissions}}{\text{Output (physical or economic)}}$$

According to the GHG Protocol, “a physical intensity ratio is suitable when aggregating or comparing across businesses that have similar products. An economic intensity ratio is suitable when aggregating or comparing across businesses that produce different products. A declining intensity ratio reflects a positive performance improvement.”

Specific Guidance for Question 18.1: “Please describe a financial and an activity-related intensity measurement for the reporting year for your gross combined Scope 1 and 2 emissions.” *Note: please use your Scope 2 [from 13.1 grid-average emissions figure when reporting via your combined Scope 1 and Scope 2 emissions.](#)*

[For companies answering the SME questionnaire in the Supply Chain and Public Procurement programs only: It is suggested that you use revenue as your financial intensity metric.](#)

Financial emissions intensity measurement

Examples of financial emissions intensity measurements can include GHG emissions per US dollar (or any currency) of profit, turnover or EBITDA. EBITDA stands for Earnings before Interest, Tax, Depreciation and Amortization. It is a measure of a company’s profitability that excludes the potentially distorting effect of financial and accounting decisions (on depreciation, tax, interest, etc), which do not directly affect the profitability of a company’s operations. This is also referred to as gross operating profit.

CDP recommends, in alignment with the Climate Disclosure Standard Board (CDSB), that a financial intensity figure be reported, as a minimum, with reference to Revenue. “Revenue” means the gross inflow of economic benefits (cash, receivables, other assets) arising from the ordinary operating activities of an organization (such as sales of goods, sales

of services, interest, royalties and dividends). This definition is based on International Accounting Standard 18. Revenue might be described in some jurisdictions as “turnover” or “sales”. The intensity figure should be calculated by reference to the reporting period and the group of entities within the consolidation boundary identified in answer to Q10.1.

Where you feel you should disclose a different financial emission intensity measure in addition to the figure calculated against Revenue, you are encouraged to do so. ~~Within the ORS you will be provided with a list of intensity metrics/ values including but not limited to the following:~~

- Metric tonnes of CO₂-e per thousand US dollars of profit
- Metric tonnes of CO₂-e per thousand Sterling of EBITDA

Activity-related emissions intensity measurement

Examples of activity-related intensity measurements include GHG emissions per tonne of output or unit of production (e.g. per square centimeter of semiconductor wafer produced). Metrics used by service sector organizations include GHG emissions per job completed.

Please use the figures given in response to Q12.1 for Scope 1 emissions and 13.1 for Scope 2 emissions as the basis for your calculations. Do not use the contractual Scope 2 figure given in response to 14.1.

You should identify and report on at least one activity-related intensity measure. Within the ORS you will be provided with a list of intensity metrics/ values including but not limited to the following:

- Metric tonnes of CO₂-e per unit of service provided
- Metric tonnes of CO₂-e per hour worked
- Metric tonnes of CO₂-e per full time employee

Where the values included within the ORS do not apply, you will be able to specify other values.

You will be asked to complete a table in response to Q18.1. Please view the pictures below for information regarding how to enter your intensity metrics into the ORS.

Financial intensity metric:

If your financial intensity metric is 1000 metric tonnes of CO₂-e per one million Australian Dollars revenue, please complete the table like this:

Emissions - Other 2

18.1 Please describe a financial and an activity-related intensity measurement for the reporting year for your gross combined Scope 1 and Scope 2 emissions. Please give at least one financial intensity metric and at least one activity-related metric. Please use the Scope 2 figure that you gave in response to question 13.1 in calculating your emission intensity figures. Please do not use the figure that you gave in response to ques

18.1a Please describe a financial intensity measurement for the reporting year for your gross combined Scope 1 and Scope 2 emissions.

Figure for Scope 1 and Scope 2 emissions	GHG units	Multiple of currency unit	Currency unit	Financial intensity metrics	Please explain if not relevant. Alternatively provide any contextual details that you consider relevant to understand the units or figures you have provided.
	Please select...	Please select...	Please select...	Please select...	

Add Row

If you are entering a financial intensity metric that is not in thousands or millions of currency units, please select “1” in the “Multiple of currency unit”.

Activity-related intensity metric:

If your activity-related intensity metric is, for example, 3.5 metric tonnes of CO2-e per full-time employee, please complete the table like this:

3.5 metric tonnes of CO2-e per full-time employee

18.1b Please describe an activity-related intensity measurement for the reporting year for your gross combined Scope 1 and Scope 2 emissions.
Oil and gas sector companies are also asked to report activity-related intensity metrics in answer to table O&G1.3.

Figure for Scope 1 and Scope 2 emissions	GHG units	Activity-related metrics	Please explain if not relevant. Alternatively provide any contextual details that you consider relevant to understand the units or figures you have provided.
<input type="text"/>	Please select..	Please select..	

Add Row

Please give at least one financial intensity metric and at least one activity-related metric.

For Oil and Gas Sector Companies

For those responding to the oil and gas sector module, emissions intensity is requested in answer to O&G1.3. The GHG Protocol suggests the following metrics as potential intensity indicators:

- Integrated oil and gas
 - Per metric tonne of output, broken down for:
 - Exploration and production
 - Refining
 - Petrochemicals

Question 19: **Emissions History Consistency of Emissions Reported Over Time** (CDP2009 Q17)

19.1 Do the absolute emissions (Scope 1 and Scope 2) for the reporting year vary significantly compared to the previous year?

19.2 Please explain why they have varied and why the variation is significant.

General Guidance

This question asks whether emissions reported for CDP 2010 vary significantly compared to previous years. Companies are encouraged to track their emissions over time in order to establish GHG targets, manage risks and opportunities, address the needs of investors and publicly report GHG data.

Specific Guidance for Question 19.2: "Please explain why they have varied and why the variation is significant."

Significance can only be determined within the context of your specific business and can depend on the regulatory regimes in which you operate. A numerically small variation may be significant if it brings you within the scope of a regulatory requirement. You should use your judgment to evaluate the significance of emission variations over time.

When evaluating a potential significance threshold, please keep in mind that figures based on that threshold may materially affect the decisions of the user of the information.

The reasons for variations in emissions can include, but are not limited to mergers, divestments, acquisitions, outsourcing and insourcing of emitting activities, major energy efficiency or process improvements, reduced/increased company activity and alterations to processes for collecting data and calculating emissions.

You will be asked to respond to Q19.1 by selecting a value indicating whether your absolute emissions vary compared to previous years. If you select "Yes", that your emissions vary significantly, you will be prompted to explain the variation and why the figure is significant in answer to Q19.2.

For Electric Utility Companies

Variations in emissions may be attributable to changes in capacity, plant outages and extreme weather events.

Question 20: External Verification/Assurance (CDP2009 Q18)

20.1 Please complete the following table indicating the percentage of reported emissions that has been verified/ assured and attaching the relevant statement.

	Scope 1	Scope 2	Scope 3
Percentage of reported emissions that have been externally verified/ assured			
Include the verification assurance statement(s)			

Specific Guidance for Question 20.1: “Please complete the following table indicating the percentage of reported emissions that has been verified/ assured and attaching the relevant statement.”

CDP understands that you may seek verification for reasons other than reporting to CDP and that confidential information may be included within your detailed verification statement. In the event that this is the case, it is sufficient to include a statement from your verifier stating that your emissions have been assured to a certain level. Your verifier should be able to provide you with the appropriate verification statement, clearly stating the emission scopes to which the figures correspond.

You will be asked to complete a table, ~~where appropriate,~~ in answer to Q20.1. The three columns presented indicate Scope 1, Scope 2 and Scope 3. ~~Where your company has undertaken verification on emissions, p~~ Please indicate the percentage of emissions verified for the relevant scopes. The Scope 2 figure that we seek verification information on is the one provided in answer to Q13.1, not a contractual Scope 2 figure. CDP asks that you include the verification statements by attaching the documents within the “Further Attachment” field. Please indicate which scopes you have attached statements for in answer to Q20.1B.

Question 21: Emissions Trading and Offsetting (CDP2009 Q21 & 22)

21.1 Do you participate in any emission trading schemes?

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

Although some emission trading schemes may apply solely to the operators of facilities, the financial position of facility owners is also affected indirectly by the operation of the scheme. This question therefore applies to both owners and operators of facilities covered by trading schemes. Even if your company does not wholly own facilities, please give the total number or emissions and allowances.

Scheme name	Time period		Allowances allocated	Allowanced purchased	Verified emissions		Details of ownership
	Start date	End date			Number	Units	

Electric utilities should report allowances and emissions using the tables in the Electric Utilities module.

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

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

21.5 Please complete the following table.

Credit origination/credit purchase	Project identification	Project documentation URL	Verified to which standard?	Number of credits (metric tonnes CO ₂ -e)	Credits retired?	Purpose e.g. compliance

General Guidance

As regulation passes into law, companies will increasingly be brought into mandatory emissions trading schemes such as the EU ETS, Tokyo Cap-and-Trade and the Regional Greenhouse Gas Initiative (RGGI). Those wishing to reduce their environmental impact may also participate in voluntary emissions trading schemes such as the Chicago Climate Exchange (CCX) and Japan Voluntary Emissions Trading Scheme. Schemes like CCX are generally voluntary to join and reductions/trading become requirements in order to remain compliant. One of the ways companies remain compliant is through the origination and/or purchase of carbon credits.

Please take note of the instructions above, highlighting that some emission trading schemes may apply solely to the operators of facilities, but the financial position of the facility owner will also be affected indirectly by the operation of the scheme. Thus this question is applicable to both owners and operators of facilities covered by trading schemes. Even if your company does not wholly own facilities, please give the total number of emissions and allowances.

Specific Guidance for Question 21.2: “Please complete the following table for each of the emission trading schemes in which you participate?”

If you are non-compliant in any scheme, you should report this information in the “Further information” field.

You will be asked to respond to Q21.1 by selecting either “Yes”, “We don’t currently, but anticipate participating in emissions trading within the next two years” or “No, we don’t participate nor do we currently anticipate participating in emissions trading scheme within the next two years.” If you select “Yes” in answer to Q21.1, you will be prompted to complete a table in response to Q21.2.

In the first column of the table, you will be asked to select the scheme you are participating in. Scheme names will be included within a drop down list. If the scheme you are participating in is not listed, please select “Other” and provide the name of the scheme. The second column asks for the year in which you are supplying data. Please note that you can add multiple rows, including separate information for each year and each scheme. The third column asks you to disclose the amount of allowances allocated to you by the trading scheme, while the fourth column seeks information on whether your company has had to purchase any allowances to remain compliant. The fifth column asks for details regarding the verification of the plant's emissions. In accordance, the sixth column asks whether those emissions are disclosed in “Metric tonnes CO₂” or “Metric tonnes CO₂-e”. Finally, the seventh column seeks details of ownership and whether you are responding for facilities you own, operate or both. As noted above:

Although some emission trading schemes may apply solely to the operators of facilities, the financial position of facility owners is also affected indirectly by the operation of the scheme. This question therefore applies to both owners and operators of facilities covered by trading schemes. Even if your company does not wholly own facilities, please give the total number of emissions and allowances.

Specific Guidance for Question 21.3: “What is your strategy for complying with the schemes in which you participate or anticipate participating?”

You should identify your compliance strategy in answer to Q21.3. Some of the options for compliance include efficiency upgrades, purchase of allowances and the purchase of carbon credits. Depending on how long your company has participated in trading schemes, efficiency upgrades may not provide the amount of reductions necessary to comply with regulations. If that is the case your company may consider including this information. You are also encouraged to detail your company's long-term compliance strategy.

You may also want to identify whether all of the business must be compliant or whether trading schemes only apply to certain portions of the business.

You will be asked to respond to Q21.3 by filling in a text box.

Specific Guidance for Question 21.4: “Has your company originated any project-based carbon credits or purchased any within the reporting period.”

CDP will divide the credit owners into two basic and distinct groups: credit originators and credit purchasers. If you are the company to which the credits are originally issued (e.g. you are one of the participating entities of a Clean Development Mechanism (CDM) project and you are entitled to a share of the credits issued by the CDM registry) then you should report as a credit originator. Otherwise, if you have bought the credits from another company, you will be considered a credit purchaser.

You will be asked to respond to Q21.4 by selecting either “Yes” or “No”. If you select “Yes” in answer to Q21.4, you will be asked to complete a table, in answer to Q21.5.

In the first column of the table, you will be asked to disclose whether you are responsible for the origination of the credit or you are purchasing the credit. Credits can be originated by a variety of projects and for several markets, which configures several project-based carbon credit types. Examples of project-based carbon credits include:

- Certified Emission Reductions (CERs) generated by activities under the Clean Development Mechanism (CDM);
- Emission Reduction Units (ERUs) generated by activities under the Joint Implementation mechanism; and
- Voluntary Emission Reductions (VERs) generated by activities that reduce emissions, but do not result in the creation of compliance-grade carbon units.

In the second column, “Project identification”, CDP requires you to identify the project name. In the third column include the link to the project documentation (e.g. the specific link to the project documentation within the CDM-UNFCCC website) **wherever possible**.

In the fourth column you will need to identify the standard to which your projects are validated. The type of credit invested in will often necessitate a certain verification process. Validation and verification standards include but are not limited to:

- CDM;
- JI;
- Gold Standard;
- VCS: Voluntary Carbon Standard offsets must be real, additional, measurable, permanent, independently verified and unique. The Standard was initiated by the Climate Group, the International Emissions Trading Association and the World Economic Forum in late 2005;
- VER+: TÜV SÜD standard designed for project developers who have projects that cannot be implemented under CDM yet who want to use very similar procedures as the CDM;
- CCX: The Chicago Climate Exchange is North America's only cap and trade system for all six greenhouse gases, with global affiliates and projects worldwide;
- CAR: The Climate Action Reserve is the successor organization to the California Climate Action Registry. The Reserve has now filled the role of being the parent organization working to ensure environmental benefit, integrity and progressive movement in greenhouse gas (GHG) emissions reductions and policies, and the California Climate Action Registry is a program under its umbrella; and

- CCB Standards: The Climate, Community and Biodiversity Alliance (CCBA) has developed voluntary standards to help design and identify land management projects that simultaneously minimize climate change, support sustainable development and conserve biodiversity.

The fifth column is where you can disclose the number of credits generated. The number of credits reported should be the credits that were successfully validated and originated for the reporting period, identified on the Introduction page of the CDP information request. If you are a credit originator, or you are investing in credits to resell them, the question concerning the retirement of the credits is not relevant and you should choose that value in the drop down list. You should report the number of credits you have originated/purchased in the reporting period, independently of if you have already sold them and they have been retired or not. Please use the values consistently. If necessary you can provide some explanation in the "Further Information" field.

Finally, in the seventh column, please indicate whether these credits were purchased to meet compliance needs or on a voluntary basis.

For Electric Utility Companies

~~Electric utilities and groups that include electric utilities may wish to cross refer to EU5 and EU6 when answering Q21.3 as EU5 and EU6 also ask about credits.~~

Companies that include electric utilities and other types of activities/assets within their consolidation boundary should provide data for all companies within their consolidation boundary in answering Q21.2 and provide emissions trading data specific to their electricity-related division, activities or assets in answer to questions EU5 and EU6. EU5 and EU6 should be completed with reference to the organizational boundary that was selected in answer to Q10.1.

Companies that are solely electric utilities should complete EU5 and EU6 with reference to the organizational boundary that they selected in answer to Q10.1. In Q21.2, they can direct readers to this information ~~de this~~ by selecting "Other" in the emissions trading scheme drop-down menu and entering text that directs the reader to EU5 and/or EU6. Q21.2 asks for emissions trading data for facilities that are operated by the reporting company and for facilities which are owned by the reporting company (either wholly or partly). If in answering EU5/EU6 you provide data on facilities that you operate, please use Q21.2 to provide data for facilities that you own. Conversely, if in answering EU5/EU6 you provide data on facilities that you own, please use Q21.2 to provide data for facilities that you operate.

COMMUNICATIONS

Question 22: Communications (CDP2009 Q27)

22.1 Have you published information about your company's response to climate change/GHG emissions in other places than your CDP response?

22.2 In your Annual Reports or other mainstream filing? Please attach your latest publication(s).

22.3 Through voluntary communications such as CSR reports? Please attach your latest publication(s).

General Guidance

External communications are an integral part of informing the public about a company's response to climate change. In addition to the voluntary response to CDP, this question seeks to provide readers with more sources of information. Additionally, information included in annual reports and CSR reports often provides a wider breadth of information regarding a company's socially responsible activities.

Specific Guidance for Question 22.2: "In your Annual Reports or other mainstream filing? Please attach your latest publication(s)."

Other mainstream filings might include the 10-K return.

You will be asked to respond to Q22.2 by selecting either "Yes" or "No". You will then be able to attach your most recent publication.

Specific Guidance for Question 22.3: "Through voluntary communications such as CSR reports? Please attach your latest publication(s)."

Examples of voluntary communications include reports for the Global Reporting Initiative, UN Global Compact Communication on Progress (Caring for Climate), US EPA Climate Leaders Program and The Climate Registry.

You will be asked to respond to Q22.3 by selecting either "Yes" or "No". You will then be able to attach your most recent publication.

ELECTRIC UTILITIES SECTOR MODULE GUIDANCE

This guidance is designed to assist electric utility companies and groups that include electric utilities to answer the questions in the electric utilities sector module of the CDP 2010 information request issued on 1 February 2010.

The questions in the electric utilities sector module are based on a reporting framework devised by the Institutional Investors Group on Climate Change (IIGCC), Ceres, and the Australia/New Zealand Investor Group on Climate Change (IGCC). CDP acknowledges the input of these organizations to this guidance.

CDP has adopted the definition of “electric utilities” used in the IIGCC, Ceres and Australian/ New Zealand IGCC electric utilities framework as being “companies that are engaged in the generation, transmission and distribution of electricity”.

Interaction of electric utilities sector module and the CDP 2010 information request

There are a few cases in which questions in the CDP 2010 information request and the supplementary questions for electric utilities overlap. The approach that should be taken to these questions depends upon whether your business is wholly ~~or partially~~ engaged in the generation, transmission and distribution of electricity OR partly engaged in those and other activities (described here as having “mixed activities”).

In the limited cases where requests for information from electric utilities are duplicated, please follow the instructions in the CDP 2010 information request and the guidance document.

Mixed activity groups that include both electric utilities and other businesses should answer questions 1–22 of CDP 2010 for all businesses within their reporting boundary. Included should be GHG emissions from all activities, along with information specific to electric utility activities in answer to the supplementary module. Answers to the questions in the Electric Utilities sector module should relate specifically to the electricity-related division, activity or assets of the company. The exception to this is CHP, where heat is co-generated with electricity. In this case, GHG emissions should be given for both heat and electricity together.

Shading of cells in the tables – all questions (PDF version of information request only)

In all tables, the grey cells indicate the latest reporting period. The black cell in EU5 is blanked off and is not for data entry.

Electric utilities sector module PDF

A PDF of the module was published on the CDP website in November 2009. The module contains questions, set out in the PDF in the following order:

EU1 Capacity in MW by country and energy source

EU2 Production in GWh by country and energy source

EU3 Emissions in metric tonnes CO₂-e by country and fuel type

EU4 Emissions intensity in metric tonnes CO₂-e/MWh by country and fuel type

EU5 Emissions allowances – for companies participating in the EU ETS

EU6 Emissions allowances – for companies participating in other emission trading schemes

Electric utilities sector module in the ORS

Reporting Years

The structure of the online response system differs so that you are first asked to enter information for the reporting period. Historic data for the year ending in 2002 to the year ending in 2009 and forecasted data up to and including the year ending in 2014 is requested.

Global Totals

The following page is called Global Totals. It requests global totals on a year by year basis for capacity, production, absolute emissions and emissions intensity. Please report on capacity that falls within the reporting boundary that you selected in response to Q10.1. Based on that capacity report on production, absolute emissions and emissions intensity. Please answer only for the electricity-related division, activity or assets of your business. The exception to this would be CHP where heat is co-generated with electricity. In this case, GHG emissions should be given for both heat and electricity together.

You are invited to detail planned capacity and forecasted production and emissions/emissions intensities. Projections should account for:

1. New generation equipment;
2. Plans for fuel switching at existing plant; and
3. Closure of existing plants.

Please total the figures for all the countries for which you will be providing information. We ask that you provide information on a country if emissions from that country account for more than 5% of total company emissions.

Please note that we are requesting emissions from combustion only.

Energy & Fuel Selection

On this page, companies are asked to report capacity, production, absolute emissions and emissions intensity by country and by fuel/energy source. We ask that you provide information on a country if emissions from that country account for more than 5% of total company emissions.

If an energy source/fuel is not listed, please select "Other". These are divided into "Other - combustible" and "Other - non-combustible". Combustibles are fuels that are burned to generate electricity. There is the option to define two additional energy/fuel sources in each category.

Information should be included in the CCGT (Combined Cycle Gas Turbine), OCGT (Open Cycle Gas Turbine) and CHP (Combined Heat and Power) tables for emissions from all fuels combusted using these technologies. For example, if an electrical generation company combusts gas in a CCGT plant, these figures should be logged under CCGT rather than gas. Emissions from gas that is not combusted in CCGT, OCGT or CHP plants should be logged under gas.

These tables reflect the fact that biomass may be co-fired with other fuels. Please provide aggregate data for the solid biomass that you co-combust with the fuel sources for which you provide data separately.

Please note that:

"Waste to energy" includes tire-derived fuels and other refuse derived fuels. When reporting emissions in this category, only report the emissions from the non-biomass fraction. The biomass fraction should be reported under "biomass".

Hydro is an abbreviation of hydro-electric. It does not include pumped storage which CDP regards as a form of managing or storing energy rather than primary generation.

Tidal is distinct from wave generation of electricity. If you are generating electricity via wave technology, please report this using the "Other energy source – non-combustible" option.

EU ETS

Please select the European Union 27 countries for which you will be reporting data. If selecting multiple countries you will need to allow time for each table to load before selecting a new reporting country. Please leave blank the input field for the column headed "Phase 1 (2005-2007)" and the row "Total allowances purchased through national auctions" as auctioning was not introduced until Phase 2. Again we ask that you provide information on a country if emissions from that country account for more than 5% of total company emissions.

Other trading schemes

A table should be provided for each trading scheme in which the company has significant participation (i.e. it covers operations that lead to more than 5% of total company emissions). If the table is not appropriate for a trading scheme in which you participate, please supply data in a more suitable format within the "Further Information" or attachment section at the end of the page. [If you do add an attachment, please just attach the pages that are relevant to this question to make it easier for data-users to find the information.](#) Please exclude voluntary offsets.

AUTO MANUFACTURERS AND AUTO COMPONENT MANUFACTURERS SECTOR MODULE GUIDANCE

This guidance is designed to assist auto and auto component manufacturers to answer the questions in the auto sector module of the CDP 2010 information request issued.

The questions in the auto sector module are based on a reporting framework devised by the Institutional Investors Group on Climate Change (IIGCC), Ceres, and the Australia/New Zealand Investor Group on Climate Change (IGCC). CDP acknowledges the input of these organizations to this guidance.

These questions in the Auto module apply to manufacturers of non-commercial vehicles and components for non-commercial vehicles. The scope encompasses all passenger cars, as well as light trucks and sport utility vehicles (SUVs) to the extent that they can be sold and used for individual passenger transport.

CDP suggests that companies use generally accepted nomenclatures of vehicle segmentation (see below). Companies should provide an explanation if:

- A different vehicle segmentation system is used;
- Data cannot be provided according to the proposed nomenclature;
- Data is unavailable; or
- Is commercially sensitive.

Reporting period

The structure of the online response system (ORS) differs from the PDF of the auto module which was published on the CDP website in November 2009. Within the ORS you are first asked to enter dates for the periods for which you will be providing data. Historic data for the year ending in 2002 to the year ending in 2009 and forecasted data up to and including the year ending in 2014 is requested.

These dates represent the periods for which you will be supplying data in subsequent tables. So if in a later table you are supplying data for year 2008, you should supply data for the period ending in 2008 as defined on this page.

Questions are divided into three parts:

AU1 asks for actual and estimated sales of gas/petrol vehicles, diesel vehicles and alternatively powered vehicles. This applies to auto manufacturers only.

AU2 covers the CO₂ emissions from vehicles you have sold and anticipate selling. This applies to auto manufacturers only.

AU3 asks about the use of clean and new technologies in the vehicles you sell and/or equipment you supply. This applies to both auto manufacturers and auto component manufacturers.

Data for AU1 and AU2 is requested by country/region and in some cases by vehicle category or segment.

Definitions of vehicle segments are given below. Manufacturers selling to the US market may wish to use an alternative table format for supplying forecasted information to reflect the revised vehicle categories introduced in the rule Corporate Average Fuel Economy for Model Year 2011 for Passenger Cars & Light Trucks. If this is the case, please attach a table.

[Please just attach the pages that are relevant to the questions to make it easier for data-users to find the information.](#)

Definitions of vehicle segments

US segmentation

PASSENGER CARS

Class	Passenger & Cargo Volume (Cu. Ft.)
Two-Seaters	Any (cars designed to seat only two adults)
Sedans	
Minicompact	< 85
Subcompact	85 – 99
Compact	100 – 109
Mid-Size	110 – 119
Large	120 or more
Station Wagons	
Small	<130
Mid-Size	130 – 159
Large	160 or more

LIGHT TRUCKS

Class	Gross Vehicle Weight Rating (GVWR)
Pickup Trucks	Through Model Year 2007 Beginning Model Year 2008

Small	< 4,500 pounds	< 6,000 pounds
Standard	4,500 - 8,500 pounds	6,000 - 8,500 pounds
Vans		
Passenger	< 8,500 pounds	
Cargo	< 8,500 pounds	
Minivans	< 8,500 pounds	
Sport Utility Vehicles (SUVs)	< 8,500 pounds	
Special Purpose Vehicles	< 8,500 pounds	

European segmentation

The categories are derived from the ACEA/AAA nomenclature:

- Segment A-B: Small Cars
- Segment C (or M1): Lower Medium
- Segment D (or M2): Upper Medium
- Segment E-F: Executives

Japanese segmentation

Sales of passenger cars should be segmented on the basis of the Japanese Automotive Manufacturers Association (JAMA) nomenclature.

Conversion factors

The conversion factors used for converting fuel economy into carbon dioxide emissions per unit are detailed in the table below.

Fuel Used	Units	Kg CO ₂ per unit
Gas / Petrol	Liters	2.3154
	Gallons	8.8741
Diesel	Liters	2.6304
	Gallons	10.153
Compressed Natural Gas	Kg	2.7278
Liquid Petroleum Gas	Liters	1.4975
	Gallons	5.8082

Sources: UK Defra (2007), US Energy Information Administration – DOE (2008)

Companies using different conversion factors should list those factors and provide an explanation together with source references.

OIL AND GAS SECTOR MODULE GUIDANCE

This guidance is designed to assist oil and gas sector companies and groups that operate within the oil and gas industry, to answer the questions in the oil and gas sector module of the CDP 2010 information request.

The questions in the oil and gas sector module are based on a reporting framework devised by the Institutional Investors Group on Climate Change (IIGCC), Ceres, and the Australia/New Zealand Investor Group on Climate Change (IGCC). CDP acknowledges the input of these organizations to this guidance.

Interaction of oil and gas sector module and the CDP 2010 information request

In the limited cases where requests for information from the oil and gas sector are duplicated within the main request and the supplement, please follow the instructions in the CDP 2010 information request. Please also note instructions within the rating methodology document, highlighting which references will be scored.

Special instructions

Where these questions refer to “Emissions in use (combustion)”, they are referring to emissions generated in use by customers, beyond company boundaries.

Categories of hydrocarbons are based on IPIECA definitions.

Report all emissions on a gross emission volume basis (i.e. excluding the effect of carbon capture and storage offset programs).

Where you are asked to provide information for 2010, CDP asks that you forecast your figures/data.

Oil and gas sector module PDF

O&G1.1 Group greenhouse gas (GHG) emissions by value chain stage

O&G1.2 GHG emissions from the flaring of gas

O&G1.3 Production, reserves and assumed carbon intensity of production by hydrocarbon type

O&G2.1 Value of net asset exposure to extreme weather events

O&G3.1 Does your company have a strategy for the development of non-fossil fuel products?

O&G3.2 Financial contribution of renewable and clean energy technologies

Oil and gas sector module in the ORS

Overview of GHG emissions and intensities

Please provide CDP with detailed and consistent information on direct and indirect GHG emissions across your entire value chain, including:

- Historic, current, and forecasted GHG emissions from operations, separated by stage of industry value chain, (O&G1.1 and O&G1.2);
- Production history and forecasts for each type of hydrocarbon (O&G1.3A);
- Carbon intensity estimates for each stage of the value chain (O&G1.3B);
- Proven reserves (in BOE) for 2009. When specifying your proven reserves by hydrocarbon type in answer to O&G1.3C, please provide the specific date for 2009.

Adaptation to physical effects of climate change

To allow more detailed assessment of the impact changes in the physical environment will have on companies' current and future operations, companies should provide information on these. In particular, companies should provide:

- Value of assets and quantity of proven reserves located in areas exposed to extreme weather events, (e.g. hurricanes and tropical storms in the Gulf of Mexico). When specifying your proven reserves by country in answer to O&G2.1, please provide the specific date for 2009.

Investment strategy

Companies should provide transparency into their approaches to strategic adaptation to the changing pressures climate change will have on their industry. In particular, companies should provide:

- Whether your company has a strategy for the development of non-fossil fuel products; and
- Value of assets contributed to renewable and clean energy technologies.

APPENDIX A - Glossary of terms

This glossary defines terms that may be unfamiliar to those responding to the Carbon Disclosure Project for the first time. Definitions have been sourced from the GHG Protocol, CDP staff and the IPCC Assessment Reports.

Activity-related intensity measurement

This measurement expresses the GHG impact per unit of physical activity. Examples include GHG emissions per tonne of output or unit of production e.g. per square centimeter of semiconductor wafer produced or per finished product produced. Metrics used by service sector organizations include GHG emissions per job completed.

Accuracy

Relative measure of the exactness of an emission or removal estimate.

Avoided emissions

Estimate of emissions that would have been released if a particular action or intervention had not taken place. For example, the use of insulation in premises might reduce the consumption of gas to heat the building with the consequential reduction of GHG emissions from the property. In this case, the quantification of estimated avoided emissions should be based on assumptions about the extent to which emissions are reduced through the use of insulation. In order to determine the level of emissions avoided through the use of certain goods or services, it is necessary first to establish what the level of emissions would have been had the goods or services not been used. This level is known as a baseline level. The avoided emissions are quantified by reference to the difference between the baseline level and level of GHG emissions achieved through the use of the goods or services.

Biologically sequestered carbon

Biologically sequestered carbon is carbon that resides in a carbon pool. For example, through photosynthesis, plants convert carbon dioxide in the atmosphere into plant material. The carbon becomes part of the plant and is sequestered within it. The GHG Protocol (Appendix B, page 88) describes the carbon as residing in carbon pools. These pools include:

- “Above ground biomass (e.g., vegetation) in forests, farmland, and other terrestrial environments;
- Below ground biomass (e.g., roots); and
- Biomass-based products (e.g., wood products) both while in use and when stored in a landfill.”

Calculation tools

Tools that automate the calculation of GHG emissions, either through use of an Excel sheet or an automated calculator.

Carbon sequestration

The collection and long-term storage of carbon dioxide.

Certified Emissions Reductions (CERs)

A unit of emission reduction generated by a CDM project. CERs are tradable commodities that can be used by Annex 1 countries to meet their commitments under the Kyoto Protocol.

Consolidation approach

The identification of companies, businesses, organizations etc. for inclusion within the reporting boundary (see definition of reporting boundary below) of the responding organization is known as the “consolidation approach”. The way in which you report information for the companies that are included within the reporting boundary is known as the “consolidation approach” because, unless stated otherwise, the information you provide in response to CDP 2010 questionnaire should be presented as one “consolidated” result covering all of the companies, entities, businesses etc within your reporting boundary. The GHG Protocol states that two distinct approaches may be used to consolidate GHG emissions; the equity share and the control approaches. Control can be defined in either financial (financial control) or operational (operational control) terms. Specific guidance for Q10 addresses the consolidation approach in more depth.

Contractual Scope 2

The procedures for accounting for GHG emissions associated with electricity sourced from the grid are still evolving. Unless certain conditions are met, Scope 2 emissions must be calculated using grid average emission factors. However organizations may also report a figure in addition to this based on emission factors that they consider to reflect the tariffs they use and/or the contractual arrangements they have made.

Conversion to MWh

Fuel can be measured in terms of its:

- Energy content e.g. in kilojoules (kJ), British thermal units (Btu), or therms;
- Volume e.g. in m³ or liters; and
- Mass e.g. in metric tonnes or short tons.

The CDP 2010 questionnaire requires energy and fuel inputs to be standardized to the units commonly used for measuring electricity consumption (MWh). Please see the guidance for Q12.8 for information on conversion to MWh.

Electric utilities

CDP has adopted the definition of “electric utilities” used in the IGCC, Ceres and Australian/ New Zealand IGCC electric utilities framework as being “companies that are engaged in the generation, transmission and distribution of electricity”.

Equity share

Equity share is one of the approaches that can be used to consolidate and report GHG emissions. Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation. Typically, the share of economic risks and rewards in an operation is aligned with the company’s percentage ownership of that operation, and equity share will normally be the same as the ownership percentage. Where this is not the case, the economic substance of the relationship the company has with the operation always overrides the legal ownership form to ensure that equity share reflects the percentage of economic interest. The principle of economic substance taking precedence over legal form is consistent with international financial reporting standards.

Emission factor

An emission factor is a unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., grams of CO₂ emitted per liter of fossil fuel consumed). Emission factors allow GHG emissions to be estimated from a unit of available activity data. Emissions factors are sometimes referred to as emission conversion factors

Emission intensity

The ratio of GHGs produced to a financial measure, e.g. turnover or profit, or to a measure of activity, e.g. per metric tonne or unit of output. This differs from “total emissions” which refers to the actual amount of GHGs produced by an organization. Therefore:

$$\text{GHG Intensity} = \frac{\text{GHG Emissions}}{\text{Output (physical or economic)}}$$

Emission Reduction Unit (ERU)

A unit of emission reduction generated by a Joint Implementation (JI) project. ERUs are tradable commodities which can be used by Annex 1 countries to help them meet their commitment under the Kyoto Protocol.

Energy

Energy includes electricity, heat, steam and cooling. Cooling is included in this list because when cooling services are purchased using a district system, the compressor system that produces the cooling may be driven by either electricity or fossil fuel combustion.

Energy type

Energy types are defined for the purposes of the CDP 2010 information request as electricity, heat, steam and cooling. Cooling is included because when cooling services are purchased using a district system, the compressor system that produces the cooling may be driven by either electricity or fossil fuel combustion.

Financial control

An organization has financial control over an operation where it has the ability to direct the financial and operating policies of that operation with a view to gaining economic benefits from its activities. Generally an organization has financial control over an operation for GHG accounting purposes if the operation is treated as a group company or subsidiary for the purposes of financial consolidation.

Financial emissions intensity measurement

This measurement expresses the GHG impact per unit of financial value. Examples of these metrics would be GHG emissions per dollar of profit, turnover or EBITDA. EBITDA stands for Earnings Before Interest, Tax, Depreciation and Amortization. It is a measure of a company’s profitability that excludes the potentially distorting effect of financial and accounting decisions (on depreciation, tax, interest etc), which do not directly affect the profitability of a company’s operations. This is sometimes known as gross operating profit.

Fuel type

Fuel types include: natural gas; types of coal or coal-derived fuels, such as anthracite, coking coal, coal tar; types of biomass and biofuel; crude oil and crude oil-derived substances, such as residual fuel oil, motor gasoline (petrol), and diesel.

Fugitive emissions

Intentional and unintentional releases such as equipment leaks from joint, seals, packing, gaskets, as well as fugitive emissions from coal piles, wastewater treatment, pits, cooling towers, gas processing facilities, etc.

GHG type

There are various types of greenhouse gases, but the CDP 2010 information request focuses on reporting of the six GHGs covered by the Kyoto Protocol:

- Carbon dioxide (CO₂);
- Methane (CH₄);

- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs) family of gases;
- Perfluorocarbons (PFCs) family of gases; and
- Sulphur hexafluoride (SF₆).

Global warming potential (GWP)

The GHG Protocol defines a global warming potential (GWP) as “A factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO₂.” By using GWPs, GHG emissions can be standardized to a carbon dioxide equivalent (CO₂-e).

GWPs allow the effect of different GHGs to be expressed using carbon dioxide as a reference. For example, the impact on the atmosphere of one unit of methane over a 100-year time span is 21 times greater than one unit of CO₂ (according to the IPCC’s second assessment report). Hence, methane’s global warming potential (GWP) over a 100-year period is 21.

Estimates of GWPs have changed over time as scientific understanding has developed. However, for the sake of consistency, the parties to the United Nations Framework Convention on Climate Change are continuing to use the GWPs from the Second Assessment Report (“SAR”) from the Intergovernmental Panel on Climate Change. As the GWPs from the SAR are used as the basis for international negotiations under the Kyoto Protocol, CDP also recommends that they be used for disclosing GHG emissions in response to the CDP information request.

For those gases not assigned a GWP in the Second Assessment Report, please use the latest GWPs given in the Fourth Assessment Report. Please explain the source of the GWPs you are using.

The [Fourth Assessment Report \(AR4\)](#) gives the latest GWP values as well as GWPs from the Second Assessment Report (SAR). Go to table 2.14, page 212, in Chapter 2 of Working Group 1’s report, available from the IPCC website.

GWPs are expressed over a number of different time frames. Please use the factors that give the GWP over a 100-year time span. For gases without a value in the SAR column, please use the 100-year value in the seventh column of table 2.14.

Grid average emissions factor

The grid average factor represents the relative contributions that different types of electrical generation make to electricity available from the grid and their associated emission rates.

Gross emissions

Gross means total emissions before any deductions or other adjustments are made to take account of GHG mitigation activities, offset credits, renewable energy certificates, avoided emissions from the use of goods and services and/or reductions attributable to the sequestration or transfer of GHGs.

Metric Tonne of CO₂

A metric tonne of carbon dioxide. Please note that a metric tonne is equivalent to 2,204.6lbs. The “long ton”, a term generally used in Britain, is equivalent to 2,240lbs and the “short ton” is generally used in the USA and is equivalent to 2,000 lbs.

Metric Tonnes of CO₂-e

Emissions under the “scopes” must be reported in metric tonnes of CO₂-e: CO₂-e stands for carbon dioxide equivalent.. A metric tonne of CO₂-e means one metric tonne of carbon dioxide or an amount of any of the other GHGs with an equivalent global warming potential.

Methodology/method

The set of instructions that enable a GHG calculation to be made and repeated in a consistent manner, irrespective of the person performing the calculation.

Mobile combustion

Mobile combustion: mobile units that combust (consume) fuels e.g. transport vehicles or mobile equipment such as cranes and tractors.

Operational control

Operational control is one of the control approaches that can be used to consolidate and report GHG emissions. A company has operational control of another company if it, or one of its subsidiaries, has the full authority to introduce and implement its operating policies at the company.

Other opportunities

Other opportunities are those associated with climate change apart from opportunities arising from regulatory action or physical changes. Other opportunities may include, but are not limited to, actual or potential demand for new or modified goods and services and enhanced reputation.

Other risks

Other risks are those associated with climate change apart from risks arising from regulatory action or physical changes. Other risks may include, but are not limited to, changes in consumer attitude and demand and reputational risk.

Physical opportunities

Physical opportunities associated with climate change may arise from subtle changes, such as a longer growing season, or from larger, sudden events.

Information about physical changes associated with climate change can be found on the website of the [Intergovernmental Panel on Climate Change](#). See the synthesis document of the Fourth Assessment Report (AR4) and, for more detail, follow the link from the homepage to Working Group II's report "[Impacts, Adaptation and Vulnerability](#)".

Physical risks

Physical risks associated with climate change can arise from:

- Small changes in temperature and precipitation;
- Shifts in species distribution;
- Drought;
- Floods;
- Increased storm and hurricane activity;
- Rising sea levels; and
- Higher incidence of disease.

More information about physical risks associated with climate change can be found on the website of the [Intergovernmental Panel on Climate Change](#). See the synthesis document of the Fourth Assessment Report (AR4) and, for more detail, follow the link from the homepage to Working Group II's report "[Impacts, Adaptation and Vulnerability](#)".

Process

Generally the term "process" implies the means, framework or policy by which a company identifies risks and/or opportunities. This process is likely to differ from company to company and may consist of one or more of the following:

- An in-house system of risk management applied throughout the company to identify operational risks and opportunities (including those associated with climate change);
- A process dedicated solely to the identification of risks and opportunities associated solely with climate change; and
- A process that forms part of the company's overall approach to governance and/or compliance.

Process emissions

Emissions from physical or chemical processes such as CO₂ from the calcinations step in cement manufacturing, CO₂ from catalytic cracking in petrochemical processing, PFC emissions from aluminium smelting, etc.

Protocol

A record of an agreement, especially one reached through international negotiations. For the purposes of the CDP 2010 information request, it means an agreed system for accounting for GHG emissions e.g. the GHG Protocol.

"Q"

Questions are often cross-referenced in the guidance document as Q3.4. Where there is simply an uppercase Q, please note this is directing the reader to a specific question.

Regulatory opportunities/requirements

Regulatory opportunities generally arise from current and expected national or international governmental policy on climate change. This may include, but is not restricted to, the introduction of emissions trading programs, availability of technology incentives and imposition of process or product standards.

Regulatory risks

Regulatory risks generally arise from current and/or expected national and/or global government policy on climate change including, but not limited to, the imposition of emissions limits, energy efficiency standards, and so on.

Regulatory risks may arise from the effect of known or expected:

- International, national, regional or state regulation of emissions;
- Carbon taxation;
- Mandatory trading programs;
- Process or product standards; and
- Mandatory energy efficiency standards.

Relevance field

Refers to the "¿" symbol found throughout the information request, asking companies to respond with information as to why the question is not relevant.

Reporting boundary

Your reporting boundary represents the owned and/or controlled group, company, companies, businesses or organizations to which your response relates, determined by reference to your chosen "consolidation approach". References in the CDP 2010 information request to "your organization" or "your company" are to the group, company, companies, businesses or organizations within your reporting boundary. Whenever the information request or the guidance refers to "your reporting boundary" it means the reporting boundary you identify in answer to Q10.1.

The way in which you identify companies that are included within the reporting boundary is known as the “consolidation approach” because, unless stated otherwise, the information you provide in response to CDP 2010 information request should be presented as one “consolidated” result covering all of the companies, entities, businesses etc within your reporting boundary.

Reporting year

The latest 12-month period for which emissions data is reported. Any start or end date may be selected for your reporting year as long as it encompasses a full 12 months. However, the end date for the CDP 2010 reporting year must fall within the calendar year 2009.

Renewable energy

CDP follows the definition of renewable energy given in the GHG Protocol: “Energy taken from sources that are inexhaustible, e.g. wind, water, solar, geothermal energy and biofuels.”

Self-produced fuel

These are fuels produced by assets or activities within your reporting boundary (selected in answer to Q10.1) that are combusted for energy generation. This is common in the oil and gas sector, e.g. refinery fuel gas, associated gas, etc.

Scope 1 GHG emissions

These are direct emissions from GHG sources owned or controlled by the reporting organization.

Scope 2 GHG emissions

These emissions do not physically occur from within the organization’s reporting boundary and are therefore “indirect” emissions. Scope 2 emissions are caused by the organization’s consumption of electricity, heat, cooling or steam brought into its reporting boundary. This category is often called “purchased electricity” because it represents the most common source of Scope 2 emissions.

Scope 3 GHG emissions

An organization’s indirect emissions other than those covered in Scope 2. They are from sources that are not owned or controlled by an organization, but which occur as a result of its activities.

Significance

Significance can only be determined within the context of a specific business. It will depend on the sectors and regulatory regimes in which the business operates. For example, a numerically small variation may be significant if it brings an organization within the scope of regulatory requirement. Except where otherwise stated, we therefore ask companies to use their judgment to evaluate significance.

Significance Threshold

A qualitative or quantitative criterion used to define a significant structural change. It is the responsibility of the company/verifier to determine the “significance threshold” for considering base year emissions recalculation. In most cases the “significance threshold” depends on the use of the information, the characteristics of the company, and the features of structural changes.

Standard

A recognized authority. In the context of the CDP information request, a standard refers to a widely-accepted GHG accounting methodology such as the GHG Protocol Corporate Standard or ISO 14064-1.

Stationary combustion

Fixed units for on-site combustion of fuels e.g. boilers, turbines, ovens, incinerators, dryers, etc.

Transferred emissions

Any amount of GHG emissions (e.g. of carbon dioxide) that are captured and physically transferred within the boundary of the reporting company to a system outside that boundary.

Uncertainty

1. Statistical definition: A parameter associated with the result of a measurement that characterizes the dispersion of the values that could be reasonably attributed to the measured quantity (e.g., the sample variance or coefficient of variation).
2. Inventory definition: A general and imprecise term which refers to the lack of certainty in emissions-related data resulting from any causal factor, such as the application of non-representative factors or methods, incomplete data on sources and sinks, lack of transparency etc. Reported uncertainty information typically specifies a quantitative estimate of the likely or perceived difference between a reported value and a qualitative description of the likely causes of the difference.

Value chain

This is the chain of organizations producing and/or distributing services or goods with the aim of creating value to the end user.

Verified Emissions Reductions (VER)

A VER is a unit of greenhouse gas emission reduction that has been verified by an independent auditor, but has not yet met the requirements for verification, certification and issuance of CERs (in the case of CDM) or ERUs (in the case of JI) under Kyoto Protocol.

Zero or low carbon electricity

Certain methods of generating electricity do not emit GHGs or emit relatively low amounts of GHGs compared with other forms of electricity generation (although GHGs are emitted during other phases of their lifecycle, such as in the manufacture, installation and/or maintenance of the generator). Examples of zero or low carbon electricity include nuclear generation and electricity generated by wind, water, solar and geothermal heat. For the purpose of the CDP 2010 information request, these methods are referred to as zero or low carbon methods of generation.

APPENDIX B – Fuel Definitions

All fuels found in the Greenhouse Gas Protocol Stationary Combustion Tool, Version 4.0 have been defined below. CDP has also included other fuels used primarily in mobile combustion, to present companies with a more complete list of possible fuels used in company operations.

SOLID FOSSIL FUELS:

Anthracite

Anthracite is a high rank coal used for industrial and residential applications. It has generally less than 10% volatile matter and a high carbon content (about 90% fixed carbon). Its gross calorific value is greater than 23,865 kJ/kg (5,700 kcal/kg) on an ash-free but moist basis.

Asphalt

A dark brown-to-black cement-like material obtained by petroleum processing and containing bitumens as the predominant component; used primarily for road construction. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts.

Bitumen

Solid, semi-solid or viscous hydrocarbon with a colloidal structure, being brown to black in color, obtained as a residue in the distillation of crude oil, vacuum distillation of oil residues from atmospheric distillation. Bitumen is often referred to as asphalt and is primarily used for surfacing of roads and for roofing material. This category includes fluidized and cut back bitumen. See tar sand.

Bituminous coal

A dense coal, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make coke.

Brown coal

Brown coal (lignite) is a non-agglomerating coal with a gross calorific value of less than 17,435 kJ/kg (4,165 kcal/kg), and greater than 31 percent volatile matter on a dry mineral matter free basis.

Brown coal briquettes (BKB)

Brown coal briquettes (BKB) are composition fuels manufactured from lignite/brown coal, produced by briquetting under high pressure. These figures include dried lignite fines and dust.

Coke breeze

See coke oven coke.

Coke oven coke

Coke oven coke is the solid product obtained from the carbonization of coal, principally coking coal, at high temperature. It is low in moisture content and volatile matter. Also included are semi-coke, a solid product obtained from the carbonization of coal at a low temperature, lignite coke, semi-coke made from lignite/brown coal, coke breeze and foundry coke. Coke oven coke is also known as metallurgical coke.

Coking coal

Coking coal refers to bituminous coal with a quality that allows the production of a coke suitable to support a blast furnace charge. Its gross calorific value is greater than 23,865 kJ/kg (5,700 kcal/kg) on an ash-free but moist basis.

Gas coke

See coke oven coke.

Lignite

Lignite (brown coal) as a non-aggregating coal with a gross calorific value of less than 17,435 kJ/kg (4,165 kcal/kg), and greater than 31% volatile matter on a dry mineral matter free basis.

Lignite coke

Often referred to as brown coal, or Rosebud coal, is a soft brown fuel with characteristics that put it somewhere between coal and peat. It is considered the lowest rank of coal. Lignite is brownish-black in color and has a carbon content of around 25-35%, a high inherent moisture content and an ash content ranging from 6% to 19% compared with 6% to 12% for bituminous coal.

Metallurgical coke

See coke oven coke.

Municipal waste (Non-biomass fraction)

Non-biomass fraction of municipal waste includes waste produced by households, industry, hospitals and the tertiary sector which are incinerated at specific installation and are used for energy purposes. Only the fraction of the fuel that is non-biodegradable should be included here.

Patent fuel

Patent fuel is a composition fuel manufactured from hard coal fines with the addition of a binding agent. The amount of patent fuel produced may, therefore, be slightly higher than the actual amount of coal consumed in the transformation process.

Peat

Combustible soft, porous or compressed, fossil sedimentary deposit of plant origin with high water content (up to 90% in the raw state), easily cut, of light to dark brown color. Peat consists of partially decomposed plant debris. It is considered an early stage in the development of coal. Peat is distinguished from lignite by the presence of free cellulose and a high moisture content (exceeding 70%).

Petroleum coke

A black solid residue, obtained mainly by cracking and carbonizing of residue feedstocks, tar and pitched in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95%) and has a low ash content. It is used as a feedstock in coke ovens for the steel industry, for heating purposes, for electrode manufacture and for production of chemicals. The two most important qualities are "green coke" and "calcinated coke". This category also includes "catalyst coke" deposited on the catalyst during refining processes: this coke is not recoverable and is usually burned as refinery fuel.

Refuse-derived fuel (RDF)

A fuel produced by shredding municipal solid waste (MSW). Noncombustible materials such as glass and metals are generally removed prior to making RDF. The residual material is sold as-is or compressed into pellets, bricks or logs. RDF processing facilities are typically located near a source of MSW, while the RDF combustion facility can be located elsewhere.

Semi-coke

See coke oven coke.

Sub bituminous coal

Non-agglomerating coals with a gross calorific value between 17,435 kJ/kg (4,165 kcal/kg) and 23,865 kJ/kg (5,700 kcal/kg) containing more than 31% volatile matter on a dry mineral matter free basis.

Sulphite lyes (Black liquor)

Sulphite lyes is an alkaline spent liquor from the digesters in the production of sulphate or soda pulp during the manufacture of paper where the energy content derives from the lignin removed from the wood pulp. This fuel in its concentrated form is usually 65-70% solid.

Waxes

A solid or semi-solid material derived from petroleum distillates or residues by such treatments as chilling, precipitating with a solvent or de-oiling. It is a light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax, whether crude scale or fully refined.

LIQUID FOSSIL FUELS:

Aviation gasoline

Aviation gasoline is motor spirit prepared especially for aviation piston engines, with an octane number suited to the engine, a freezing point of -60°C and a distillation range usually within the limits of 30°C and 180°C.

Crude oil

Crude oil is a mineral oil consisting of a mixture of hydrocarbons of natural origin, being yellow to black in color, of variable density and viscosity. It also includes lease condensate (separator liquids), which are recovered from gaseous hydrocarbons in lease separating facilities.

Distillate fuel oil

A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes fuels and fuel oils.

1. No. 1 Distillate: A light petroleum distillate that can be used as either a diesel fuel or a fuel oil.
2. No. 2 Distillate: A petroleum distillate that can be used as either a diesel fuel or a fuel oil.
3. No. 4 A distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks.

Gas/ Diesel oil

Gas/diesel oil includes heavy gas oils. Gas oils are obtained from the lowest fraction from atmospheric distillation of crude oil, while heavy gas oils are obtained by vacuum redistillation of the residual from atmospheric distillation. Gas/diesel oil distills between 180°C and 380°C. Several grades are available depending on uses: diesel oil for diesel

compression ignition (cars, trucks, marine, etc.), light heating oil for industrial and commercial uses and other gas oil including heavy gas oils which distil between 380°C and 540°C and are used as petrochemical feedstocks.

Jet gasoline

This includes all light hydrocarbon oils for use in aviation turbine power units. They distil between 100°C and 250°C. It is obtained by blending kerosenes and gasoline or naphthas in such a way that the aromatic content does not exceed 25% in volume, and the vapor pressure is between 13.7 kPa and 20.6 kPa. Additives can be included to improve stability and combustibility.

Jet kerosene

This is medium distillate used for aviation turbine power units. It has the same distillation characteristics and flash point as kerosene (between 150°C and 300°C but not generally above 250°C). In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA).

Lubricants

Lubricants are hydrocarbons produced from distillate or residue; they are mainly used to reduce friction between bearing surfaces. This category includes all finished grades of lubricating oil, from spindle oil to cylinder oil, and those used in greases, including motor oils and all grades of lubricating oil base stocks.

Motor gasoline

This is light hydrocarbon oil for use in internal combustion engines such as motor vehicles, excluding aircraft. Motor gasoline is distilled between 35°C and 215°C and is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenated and octane enhancers, including lead compounds such as TEL (Tetraethyl lead) and TML (Tetramethyl lead).

Naphtha

Naphtha is a feedstock destined either for the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerization within the refinery. Naphtha comprises material in the 30°C and 210°C distillation range or part of this range.

Natural gas liquids

NGLs are the liquid or liquefied hydrocarbons produced in the manufacture, purification and stabilization of natural gas. These are those portions of natural gas which are recovered as liquids in separators, field facilities or gas processing plants. NGLs include but are not limited to ethane, propane, butane, pentane, natural gasoline and condensate. They may also include small quantities of non-hydrocarbons.

Oil shale and tar sands

Oil shale is an inorganic, non-porous rock containing various amounts of solid organic material that yields hydrocarbons, along with a variety of solid products, when subjected to pyrolysis (a treatment that consists of heating the rock at high temperature). Tar sands refers to sand (or porous carbonate rocks) that are naturally mixed with a viscous form of heavy crude oil sometimes referred to as bitumen. Due to its high viscosity this oil cannot be recovered through conventional recovery methods.

Orimulsion

A tar-like substance that occurs naturally in Venezuela. It can be burned directly or refined into light petroleum products.

Pitch

Any various thick, dark, sticky substances obtained from the distillation residue of coal tar, wood tar or petroleum and used for waterproofing, roofing, caulking, and paving.

Refinery feedstocks

A refinery feedstock is a product or a combination of products derived from crude oil and destined for further processing other than blending in the refining industry. It is transformed into one or more components and/or finished products. This definition covers those finished products imported for refinery intake and those returned from the petrochemical industry to the refining industry.

Residual fuel oil

This heading defines oils that make up the distillation residue. It comprises all residual fuel oils, including those obtained by blending. Its kinematic viscosity is above 0.1cm² at 80°C. The flash point is always above 50°C and the density is always more than 0.90kg/l.

Shale oil

A mineral oil extracted from oil shale.

Tar

A dark, oily, viscous material, consisting mainly of hydrocarbons, produced by the destructive distillation of organic substances such as wood, coal or peat.

Turpentine

A thin volatile essential oil, obtained by steam distillation or other means from the wood or exudates of certain pine trees and used as a paint thinner, solvent and medicinally as a liniment.

Vegetable oils

Lipid materials derived from plants. Although many different parts of plants may yield oil, in commercial practice oil is extracted primarily from seeds. Oils are composed of triglycerides and used in lubricants, paints, cosmetics, pharmaceuticals and other industrial processes.

Waste oils

Petroleum-based materials that are worthless for any purpose other than fuel use.

Waste plastics

Common plastics broken down into a synthetic fuel. Common processes involved liquefaction, pyrolysis and the catalytic breakdown of plastics.

Waste tire derived fuels

Processed tires typically used in very high heat operations like cement, power generation and steel manufacturing. The tire burns completely at 650°C, producing principally carbon dioxide and water. Tire derived fuels have a net calorific value of between 26 and 34GJ per tone, which is similar to that of common fuel sources such as coal.

White spirit/SBP

White spirit and SBP are refined distillate intermediates with a distillation in the naphtha/kerosene range. They are subdivided as: i) Industrial Spirit (SBP): Light oils distilling between 30°C and 200°C, with a temperature difference between 5% volume and 90% volume distillation points, including losses, of not more than 60°C. In other words, SBP is a light oil of narrower cut than motor spirit. There are 7 or 8 grades of industrial spirit, depending on the position of the cut in the distillation range defined above. ii) White Spirit: Industrial spirit with a flash point above 30°. The distillation range of white spirit is 135°C to 200°C.

GASEOUS FOSSIL FUELS

Blast furnace gas

Blast furnace gas is produced during the combustion of coke in blast furnaces in the iron and steel industry. It is recovered and used as a fuel partly within the plant and partly in the other steel industry processes or in power stations equipped to burn it.

Butane

A normally gaseous straight-chain or branch-chain hydrocarbon extracted from natural gas or refinery gas streams.

Coke oven gas

Coke oven gas is obtained as a by-product of the manufacture of coke oven coke for the production of iron and steel.

Ethane

Ethane is a naturally gaseous straight-chain hydrocarbon (C₂H₆). It is a colorless paraffinic gas which is extracted from natural gas and refinery gas streams.

Gas works gas

Gas works gas covers all types of gases produced in public utility or private plants, whose main purpose is manufacture, transport and distribution of gas. It includes gas produced by carbonization (including gas produced by coke ovens and transferred to gas works gas), by total gasification with or without enrichment with oil products (LPG, residual fuel oil, etc), and by reforming and simple mixing of gases and/or air. It excludes blended natural gas, which is usually distributed through the natural gas grid.

Kerosene

A petroleum distillate that has a maximum distillation temperature of 401 degrees Fahrenheit (205 degrees Celsius) at the 10% recovery point, a final boiling point of 572 degrees Fahrenheit (300 degrees Celsius) and a minimum flash point of 100 degrees Fahrenheit. Comprises refined petroleum distillate intermediate in volatility between gasoline and gas/diesel oil. Used in space heaters, cookstoves, and water-heaters and suitable for use as an illuminant when burned in wick lamps.

Liquefied petroleum gases (LPG)

These are the light hydrocarbons fraction of the paraffin series, derived from refinery processes, crude oil stabilization plants and natural gas processing plants comprising propane (C₃H₈) and butane (C₄H₁₀) or a combination of the two. They are normally liquefied under pressure for transportation and storage.

Liquefied natural gas (LNG)

Natural gas cooled to approximately -160°C (-256°F) under atmospheric pressure condenses to its liquid form called LNG. LNG is odorless, colorless, non-corrosive and non-toxic.

Methane

A hydrocarbon that is a greenhouse gas with a global warming potential recently estimated at 21. Methane is produced through anaerobic (without oxygen) decomposition of waste landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production and incomplete fossil fuel combustion.

Natural gas

Natural gas should include: (1) Blended natural gas (sometimes also referred to as Town Gas or City Gas), a high calorific value obtained as a blend of natural gas with other gases; (2) City Gas, a high calorific value gas obtained as a blend of natural gas with other gases derived from other primary products, and usually distributed through the natural gas grid (e.g. coal seam methane); (3) Substitute natural gas, a high calorific value gas, manufactured by chemical conversion of a hydrocarbon fossil fuel, where the main raw materials are: natural gas, coal, oil and oil shale.

Oxygen steel furnace gas

Oxygen steel furnace gas is obtained as a by-product of the production of steel in an oxygen furnace and is recovered on leaving the furnace. The gas is also known as a converter gas, LD gas or BOS gas.

Propane

A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -43.67°F (-42.04°C). It is extracted from natural gas or refinery gas streams.

Refinery gas

Refinery gas is defined as non-condensable gas obtained during distillation of crude oil or treatment of oil products (e.g. cracking) in refineries. It consists mainly of hydrogen, methane, ethane and olefins. It also includes gases which are returned from the petrochemical industry.

Sludge gas

Sludge gas is derived from the anaerobic fermentation of biomass and solid wastes from sewage and animal slurries and combusted to produce heat and/or power.

Town gas or city gas

Natural gas should include blended natural gas (sometimes also referred to as Town Gas or City Gas), a high calorific value gas obtained as a blend of natural gas with other gases derived from other primary products, and usually distributed through the natural gas grid (e.g. coal seam methane). Blended natural gas should include substitute natural gas, a high calorific value gas, manufactured by chemical conversion of a fossil fuel, where the main raw materials are: natural gas, coal, oil and oil shale.

BIOMASS

Biodiesels

Biodiesels should only contain that part of the fuel that relates to the quantities of biofuel and not to the total volume of liquids into which the biofuels are blended. This category includes biodiesel (a methyl-ester produced from vegetable or animal oil, of diesel quality), biodimethylether (dimethylether produced from biomass), fischer tropsh (fischer tropsh produced from biomass), cold pressed bio oil (oil produced from oil seed through mechanical processing only) and all other liquid biofuels which are added to, blended with or used straight as transport diesel.

Biogas

A gas composed principally of methane (50-60%) and carbon dioxide produced by anaerobic digestion of biomass, comprising.

- Landfill gas, formed by the digestion of landfill wastes;
- Sewage sludge gas, produced from the anaerobic fermentation of sewage sludge;
- Other biogas, such as biogas produced from the anaerobic fermentation of animal slurries and of wastes in abattoirs, breweries and other agro-food industries

Biogasoline

Biogasoline should only contain that part of the fuel that relates to the quantities of biofuel and not to the total volume of liquids into which biofuels are blended. This category includes bioethanol (ethanol produced from biomass and/or the biodegradable fraction of waste), biomethanol (methanol produced from biomass and/or the biodegradable fraction of waste), bioETBE (ethyl-tertio-butyl-ether produced on the basis of bioethanol: the percentage by volume of bioETBE that is calculate as biofuel is 47%) and bioMTBE (methyl-tertio-butyl-ether produced on the basis of biomethanol: the percentage by volume or bioMTBE that is calculated as biofuel is 36%).

Charcoal

Charcoal combusted as energy covers the solid residue of the destructive distillation and pyrolysis of wood and other vegetal material.

Landfill gas

Landfill gas is derived from the anaerobic fermentation of biomass and solid wastes in landfills and may be combusted to produce heat and/or power.

Municipal wastes (Biomass fraction)

Biomass fraction of municipal waste includes waste produced by households, industry, hospitals and the tertiary sector which are incinerated at specific installations and used for energy purposes. Only the fraction of the fuel that is biodegradable should be included here.

Wood or Wood waste

Wood and wood waste combusted directly for energy. This category also includes wood for charcoal production but not the actual production of charcoal (this would be double counting since charcoal is a secondary product).

APPENDIX C – Internationally Recognized Global Warming Potentials (GWP), IPCC

[Appendix C has been removed for updating that will take place in due course. Please see the following web-link for the updated version: www.cdproject.net/en-US/Respond/Pages/CDP2010-Guidance-Index.aspx](http://www.cdproject.net/en-US/Respond/Pages/CDP2010-Guidance-Index.aspx)

APPENDIX D - Conversion of fuel data to MWh

Questions 12.8 and 13.6 of the CDP 2010 information request ask for “energy and fuel inputs” to be reported according to standardized units commonly used for measuring electricity consumption, i.e.: MWh.

“Energy and fuel inputs” means the energy content of:

- Fuels before combustion in operations/assets within your reporting boundary; and
- The amount of purchased energy inputs which include electricity, heat, steam and cooling for use by those operations/assets.

Information about how to convert purchased energy inputs (electricity, heat, steam and cooling) to MWh is provided in the guidance for Q13.6. Cooling is included in this list because when cooling services are purchased using a district system, the compressor system that produces the cooling may be driven by either electricity or fossil fuel combustion.

This appendix provides guidance on how to convert fuel data to MWh.

Fuel can be measured in terms of:

- Energy content e.g. in kilojoules (kJ), British thermal units (Btu) or therms;
- Volume e.g. in m³ or liters; and
- Mass e.g. in metric tonnes or short tons.

The way in which fuel data may be converted to MWh depends upon whether information about fuel is expressed in terms of energy content, volume or mass and guidance on conversion for each measurement is set out below.

For fuel inputs, we ask for the energy content of fuels prior to combustion.

Please include in your calculations the energy content of any biomass and self-produced fuels that you use for stationary combustion. Self-produced fuels are fuels produced by assets or activities within your reporting boundary that are combusted for energy generation. This is common in the oil and gas sector, e.g. refinery fuel gas, associated gas, etc.

If you have your fuel data in energy units

If you have your fuel data in an energy unit, you can convert it to MWh using a conversion tool such as: www.onlineconversion.com. Additionally, there is a conversion table listed in Appendix E in this guidance document.

If your fuel data is in units of volume or mass and you know the energy content of your fuel

1. If your fuel consumption is measured by volume or mass you need to obtain the energy content of the fuel in corresponding units, e.g. kJ/liter, kJ/m³, kJ/metric tonne. This is usually called the calorific value or heating value. It may be obtained from your fuel supplier or you may have your own values generated by your own tests.
2. Multiply the fuel volume or mass by the calorific value (or heating value) in the appropriate units i.e. if the fuel data is in metric tonnes, then the calorific value must be expressed in energy units per metric tonnes. This gives you the energy content of the fuel used.
3. Take the resulting figure and convert it to MWh using a [conversion tool](#).

If your fuel data is in unit⁶ of volume or mass and you do not know the energy content of the fuel

If you cannot obtain a calorific value (or heating value) specific to the fuel you purchase, default heating values may be used. Default heating values are reproduced from the GHG Protocol's stationary combustion Excel spreadsheet 3.1(1). Please note: These default values are meant only to provide guidance for users who are developing their own values. Users are encouraged to develop their own values based on the actual characteristics of the fuel being combusted. The GHG Protocol has produced a new tool version 4.0. Its simpler and clearer user interface means that some reference data such as the figures below are no longer visible.

Table 1

Fuel Type		Higher Heating Values (HHV) / Gross Calorific Values (GCV) units TJ/Gg	Lower Heating Values (LHV) / Net Calorific Values (NCV) units TJ/Gg
Crude oil & derived substances	Crude oil	44.53	42.3
	Orimulsion	28.95	27.5
	Natural Gas Liquids	46.53	44.2
	Motor Gasoline	46.63	44.3
	Aviation Gasoline	46.63	44.3

	Jet Gasoline	46.63	44.3
	Jet Kerosene	46.42	44.1
	Other Kerosene	46.11	43.8
	Shale oil	40.11	38.1
	Gas/Diesel oil	45.26	43
	Residual Fuel oil	42.53	40.4
	Liquefied Petroleum Gases	49.79	47.3
	Ethane	48.84	46.4
	Naphtha	46.84	44.5
	Bitumen	42.32	40.2
	Lubricants	42.32	40.2
	Petroleum coke	34.21	32.5
	Refinery feedstocks	45.26	43
	Refinery Gas	55.00	49.5
	Paraffin waxes	42.32	40.2
	White Spirit & SBP	42.32	40.2
	Other petroleum products	42.32	40.2
Coal & derived substances	Anthracite	28.11	26.7
	Coking coal	29.68	28.2
	Other bituminous coal	27.16	25.8
	Sub-bituminous coal	19.89	18.9
	Lignite	12.53	11.9
	Oil shale and tar sands	9.37	8.9
	Brown coal briquettes	21.79	20.7
	Patent fuel	21.79	20.7
	Coke oven coke & lignite coke	29.68	28.2
	Gas coke	29.68	28.2
	Coal tar	29.47	28
	Gas works gas	43.00	38.7
	Coke oven gas	43.00	38.7
	Blast furnace gas	2.74	2.47
Oxygen steel furnace gas	7.84	7.06	
Natural gas	Natural Gas	53.33	48
Non-biomass waste fuels	Municipal wastes (non-biomass fraction)	10.53	10
	Industrial wastes	NA	NA
	Waste oils	42.32	40.2
Peat	Peat ^a	10.27	9.76
Biomass fuels	Wood/Wood waste	16.42	15.6
	Sulphite lyes (Black liquor)	12.42	11.8
	Other primary solid biomass fuels	12.21	11.6
	Charcoal	31.05	29.5
	Biogasoline	28.42	27
	Biodiesels	28.42	27
	Other liquid biofuels	28.84	27.4
	Landfill gas ^b	56.00	50.4
	Sludge gas ^b	56.00	50.4
	Other biogas	56.00	50.4
	Municipal wastes (biomass fraction)	12.21	11.6

Source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories. The IPCC values were originally on a NCV (LHV) basis and have been converted to a GCV (HHV) basis. They have been published by the World Resources Institute/World Business Council for Sustainable Development in their stationary combustion calculation tool version 3.1(1)

*Value can be significantly affected by moisture content of fuel

**Value can be significantly affected by fraction of air, CO₂, and moisture in gas.

Please note that the heating values in Table 1 are given in units of TJ/Gg, where the prefixes T and G stand for “tera” and “giga” and correspond respectively to multiplication factors of 10^{12} and 10^9 . When using the tabulated values for heating values, please ensure that your fuel use figures are in the correct units.

If your fuel measurements are in units of mass

1. If your figures are already in metric units of mass, convert them to Gg or Giga grams. The [online converter](#) has a webpage that can be used to [convert between different metric units](#). The website can also be used to convert to Gg if your figures are in other units of mass e.g. short tons and pounds.
2. Select the appropriate default calorific value (or heating value) from Table 1 above and multiply it by your mass figure in Gg. The resulting figure will be in TJ.
3. Convert to MWh using the [online converter](#).

If your fuel measurements are in units of volume

1. If your fuels are gases or liquids and are in units of volume, convert to units of mass. To do this, organizations will need to know the density of the fuel. Organizations are encouraged to develop their own values based on the actual characteristics of the fuel being combusted. However, if you do not have density data specific to your fuel, you could use default density values from Table 2 below which was sourced from the GHG Protocol stationary combustion spreadsheet version 3.1(1). Multiply the units of volume by the appropriate density values from Table 2 below to convert them to units of mass. Check that you are using the appropriate conversion factors i.e. if your data is in cubic feet do not use the conversion factor for cubic meters; use the conversion factor for cubic feet.
2. Convert the data into Gg or Giga grams. The [online converter](#) has a webpage that can be used to [convert between different metric units](#). The conversion calculator can also be used to convert to Gg if your figures are in other units of mass e.g. short tons and pounds.
3. Select the appropriate default calorific value (or heating value) from Table 1 above and multiply it by your mass figure in Gg. The resulting figure will be in TJ.
4. Convert to MWh using the [online converter](#).

Table 2

Fuel Type	Gaseous (kg/m ³) ^{a,b}		Liquid (kg/L) ^b		Gaseous (lb/ft ³) ^{a,b}		Liquid (lb/gal) ^b	
	Range	Typical	Range	Typical	Range	Typical	Range	Typical
Coal-based fuels								
Anthracite coal								
Bituminous coal								
Sub-bituminous coal								
Lignite coal								
Coal coke								
Patent fuel								
BKB								
Natural gas-based fuels^c								
Natural gas	0.6-0.9	0.7			0.037-0.055	0.043		
Natural gas (dry)	0.6-0.9	0.7			0.037-0.056	0.043		
Methane	-	0.67			-	0.042		
Ethane	-	1.3			-	0.079		
Propane	-	1.9			-	0.12		
Butane	-	2.5			-	0.16		
Isobutane	-	2.5			-	0.16		
n-Butane	-	2.5			-	0.16		
Natural gas liquids (LNG)			0.42-0.54	0.47			3.5-4.5	3.9
Petroleum-based fuels								
Crude oil			0.7-0.9	0.8			5.8-7.5	6.7
Motor gasoline / petrol			0.73-0.76	0.74			6.1-6.3	6.2
Aviation gasoline			0.7-0.72	0.71			5.8-6.0	5.9
Distillate Oil			0.82-0.95	0.84			6.8-7.9	7.0
Distillate fuel oil No.1			0.82-0.85	0.84			6.8-7.1	7.0
Distillate fuel oil No.2			0.82-0.85	0.85			6.8-7.1	7.1
Distillate fuel oil No.4			0.91-0.95	0.93			7.6-7.9	7.8
Residual Oil			0.93-1.03	0.94			7.8-8.6	7.8
Residual fuel oil No.5			0.93-0.95	0.94			7.8-7.9	7.8
Residual fuel oil No.6			0.89-1.01	0.94			7.4-8.5	7.8
Jet kerosene			0.76-0.83	0.79			6.3-6.9	6.6
Kerosene (other)			0.79-0.82	0.80			6.6-6.8	6.7
Petroleum Coke								
LPG			0.53-0.55	0.54			4.5-4.6	4.5

Naphtha		0.75-0.82	0.77			6.3-6.8	6.4
Asphalt / bitumen							
Pitch							
Lubricants		0.8-1.1	1.0			6.7-9.2	8.3
Waxes							
Shale oil (liquid)		0.96-1.00	1.0			8.0-8.3	8.3
Oil shale							
Other Fuels							
Peat							
Waste plastics							
Tar							
Waste tire derived fuels							
Biomass							
Wood (dry)							
Wood (wet)							
Fuelwood (approx. 20% moisture)							
Black liquor							
Landfill gas	0.67-1.2	0.9		0.042-0.075	0.056		
Waste water treatment biogas	0.67-1.2	0.9		0.042-0.076	0.056		
Biodiesel		0.96-1.00	0.85			6.9-7.2	7.0
Turpentine		-	0.87			-	7.2
Vegetable oils		0.96-1.00	0.90			7.4-7.5	7.5

Source: World Resources Institute/World Business Council for Sustainable Development stationary combustion calculation tool version 3.3(1)

^a. Density values are highly sensitive to changes in temperature and pressure. Values indicated are based on room temperature and standard atmospheric pressure.

^b. Dry unless otherwise noted.

^c. At room temperature and standard atmospheric pressure.

Reference:

Typical values are based on a compilation of commonly accepted sources such as US DOE/EIA, national inventory reports to the UNFCCC and other sources.

APPENDIX E - Units of Measure Conversions

To Convert from:	To:	Multiply by:
Kilograms (kg)	Pounds(lbs)	2.20462
Pounds(lbs)	Kilograms (kg)	0.45359
Pounds(lbs)	Metric tons	4.53592×10^{-4}
Short tons	Pounds(lbs)	2,000
Short tons	Metric tons	0.90718
Metric tons	Short tons	1.10231
Metric tons	Kilograms (kg)	1,000
Cubic meters (m ³)	Cubic feet (ft ³)	35.31467
Gallons (liquid, US)	Liters (l)	3.78541
Liters (l)	Gallons (liquid, US)	0.26417
Barrels of Liquid Fuel (bbl)	Cubic meters (m ³)	0.15891
Cubic meters (m ³)	Barrels of Liquid Fuel (bbl)	6.289
Barrels of Liquid Fuel (bbl)	Gallons (liquid, US)	42
Gallons (liquid, US)	Barrels of Liquid Fuel (bbl)	0.023810
Gallons (liquid, US)	Cubic meters (m ³)	0.0037854
Liters (l)	Cubic meters (m ³)	0.001
Feet (ft)	Meters (m)	0.3048
Meters (m)	Feet (ft)	3.28084
Miles (mi)	Kilometers (km)	1.60934
Kilometers (km)	Miles (mi)	0.62137
Square feet (ft ²)	Acres	2.29568×10^{-5}
Square meters (m ²)	Acres	2.47105×10^{-4}
Square miles (mi ²)	Square Kilometers (km ²)	2.58999
Degrees Celsius (°C)	Degrees Fahrenheit (°F)	$(^{\circ}\text{C}) = (5/9) \times (^{\circ}\text{F} - 32)$
Degrees Fahrenheit (°F)	Degrees Celsius (°C)	$(^{\circ}\text{F}) = (9/5) \times ^{\circ}\text{C} + 32$
Degrees Celsius (°C)	Kelvin (K)	$\text{K} = ^{\circ}\text{C} + 273.15$
Kelvin (K)	Degrees Rankine (°R)	1.8
Joules	Btu	9.47817×10^{-4}
Btu	MMBtu	1×10^{-6}
Pascals (Ps)	Inches of Mercury (inHg)	2.95334×10^{-4}
Inches of Mercury (inHg)	Pounds per square inch (psi)	0.49110
Pounds per square inch (psi)	Inches of Mercury (inHg)	2.03625

Online tools can also aid in the conversion of different units and measures. Such tools can be found at:

- www.onlineconversion.com/
- www.theonlineconverter.co.uk/
- www.convert-me.com/

APPENDIX F - Global Industry Classification Standards (GICS)

The Global Industry Classification Standard ~~aims to enable easier investment research and asset management for financial professionals through the creation of standard industry definitions.~~ The GICS structure consists of 10 sectors, 24 industry groups, 68 industries and 154 sub-industries. Developed by MSCI and Standard & Poor's (S&P), the structure aims to be universal, accurate, flexible and evolving. GICS is used by CDP in two ways. The system is used by CDP's report-writers to analyze trends within sectors in terms of their responses to the CDP information request. It is also used within the Online Response System to trigger the presentation of sector-specific modules. The following are definitions of the Parent ~~40~~ sectors CDP utilizes in its reports. These can also be found via the following [link](#).

Energy Sector: The GICS Energy Sector comprises companies whose businesses are dominated by either of the following activities: The construction or provision of oil rigs, drilling equipment and other energy related service and equipment, including seismic data collection. Companies engaged in the exploration, production, marketing, refining and/or transportation of oil and gas products.

Materials Sector: The GICS Materials Sector encompasses a wide range of commodity-related manufacturing industries. Included in this sector are companies that manufacture chemicals, construction materials, glass, paper, forest products and related packaging products and metals, minerals and mining companies, including producers of steel.

Industrials Sector: The GICS Industrials Sector includes companies whose businesses are dominated by one of the following activities: The manufacture and distribution of capital goods, including aerospace & defense, construction, engineering & building products, electrical equipment and industrial machinery. The provision of commercial services and supplies, including printing, employment, environmental and office services. The provision of transportation services, including airlines, couriers, marine, road & rail and transportation infrastructure.

Consumer Discretionary Sector: The GICS Consumer Discretionary Sector encompasses those industries that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automotive, household durable goods, textiles & apparel and leisure equipment. The services segment includes hotels, restaurants and other leisure facilities, media production and services and consumer retailing.

Consumer Staples Sector: The GICS Consumer Staples Sector comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of non-durable household goods and personal products. It also includes food & drug retailing companies as well as hypermarkets and consumer super-centers.

Health Care Sector: The GICS Health Care Sector encompasses two main industry groups. The first includes companies who manufacture health care equipment and supplies or provide health care related services, including distributors of health care products, providers of basic health-care services and owners and operators of health care facilities and organizations. The second regroups companies primarily involved in the research, development, production and marketing of pharmaceuticals and biotechnology products.

Financials Sector: The GICS Financial Sector contains companies involved in activities such as banking, mortgage finance, consumer finance, specialized finance, investment banking and brokerage, asset management and custody, corporate lending, insurance, financial investment and real estate, including REITs.

Information Technology Sector: The GICS Information Technology Sector covers the following general areas: First, Technology Software & Services, including companies that primarily develop software in various fields such as the Internet, applications, systems, database management and/or home entertainment and companies that provide information technology consulting and services as well as data processing and outsourced services; second, Technology Hardware & Equipment, including manufacturers and distributors of communications equipment, computers & peripherals, electronic equipment and related instruments, and third, Semiconductors and Semiconductor Equipment Manufacturers.

Telecommunications Services Sector: The GICS Telecommunications Services Sector contains companies that provide communications services primarily through a fixed-line, cellular, wireless, high bandwidth and/or fiber optic cable network.

Utilities Sector: The GICS Utilities Sector encompasses those companies considered electric, gas or water utilities or companies that operate as independent producers and/or distributors of power. This sector includes both nuclear and non-nuclear facilities.

The table below provides a detailed breakdown of the Parent Sectors companies will be included in, in many of the CDP reports.

Parent Sectors	Industry Groups	Industry	Sub-Industries
Energy	Energy	Energy Equipment & Services	Oil & Gas Drilling
			Oil & Gas Equipment & Services
		Oil, Gas & Consumable Fuels	Integrated Oil & Gas

Parent Sectors	Industry Groups	Industry	Sub-Industries
			Oil & Gas Exploration & Production
			Oil & Gas Refining & Marketing
			Oil & Gas Storage & Transportation
			Coal & Consumable Fuels
Materials	Materials	Chemicals	Commodity Chemicals
			Diversified Chemicals
			Fertilizers & Agricultural Chemicals
			Industrial Gases
			Specialty Chemicals
		Construction Materials	Construction Materials
		Containers & Packaging	Metals & Glass Containers
			Paper Packaging
		Metals & Mining	Aluminum
			Diversified Metals & Mining
			Gold
			Precious Metals & Minerals
			Steel
		Paper & Forest Products	Forest Products
			Paper Products
Industrials	Capital Goods	Aerospace & Defense	Aerospace & Defense
		Building Products	Building Products
		Construction & Engineering	Construction & Engineering
		Electrical Equipment	Electrical Components & Equipment
			Heavy Electrical Equipment
		Industrial Conglomerates	Industrial Conglomerates
		Machinery	Construction & Farm Machinery & Heavy Trucks
			Industrial Machinery
		Trading Companies & Distributors	Trading Companies & Distributors
	Commercial & Professional Services	Commercial Services & Supplies	Commercial Printing
			Environment & Facilities Services
			Office Services & Supplies
			Diversified Support Services
			Security & Alarm Services
		Professional Services	Human Resource & Employment Services
			Research & Consulting Services
	Transportation	Air Freight & Logistics	Airfreight & Logistics
		Airlines	Airlines
		Marine	Marine
		Roads & Rail	Railroads
			Trucking
		Transportation Infrastructure	Airport Services
			Highways & Railtracks
			Marine Ports & Services
Consumer Discretionary	Automobiles & Components	Auto Components	Auto Parts & Equipment
			Tires & Rubber
		Automobiles	Automobile Manufacturers
			Motorcycle Manufacturers
	Consumer Durables & Apparel	Household Durables	Consumer Electronics
			Home Furnishings
			Homebuilding
			Household Appliances
			Housewares & Specialities
		Leisure Equipment & Products	Leisure Products
			Photographic Products

Parent Sectors	Industry Groups	Industry	Sub-Industries
		Textiles, Apparel & Luxury Goods	Apparel, Accessories & Luxury Goods
			Footwear
			Textiles
	Consumer Services	Hotels Restaurants & Leisure	Casinos & Gaming
			Hotels, Resorts & Cruise Lines
			Leisure Facilities
			Restaurants
		Diversified Consumer Services	Education Services
			Specialized Consumer Services
	Media	Media	Advertising
			Broadcasting
			Cable & Satellite
			Movies & Entertainment
			Publishing
	Retailing	Distributors	Distributors
		Internet & Catalogue Retails	Catalogue Retail
			Internet Retail
		Multiline Retail	Department Stores
			General Merchandise Stores
		Specialty Retail	Apparel Retail
			Computer & Electronics Retail
			Home Improvement Retail
			Specialty Stores
			Automotive Retail
			Home furnishing Retail
Consumer Staples	Food & Staples Retailing	Food & Staples Retailing	Drug Retail
			Food Distributors
			Food Retail
			Hypermarkets & Super Centers
	Food Beverage & Tobacco	Beverages	Brewers
			Distillers & Vintners
			Soft Drinks
		Food Products	Agricultural Products
			Packaged Foods & Meats
		Tobacco	Tobacco
	Household & Personal Products	Household Products	Household Products
		Personal Products	Personal Products
Health Care	Healthcare Equipment & Services	Healthcare Equipment & Supplies	Healthcare Equipment
			Healthcare Supplies
		Health Care Providers & Services	Health Care Distributors
			Health Care Services
			Health Care Facilities
			Managed Health Care
		Health Care Technology	Health Care Technology
	Pharmaceuticals, Biotechnology & Life Sciences	Biotechnology	Biotechnology
		Pharmaceuticals	Pharmaceuticals
		Life Sciences Tools & Services	Life Sciences Tools & Services
Financials	Banks	Commercial Banks	Diversified Banks
			Regional Banks
		Thriffs & Mortgage Finance	Thriffs & Mortgage Finance
	Diversified Financials	Diversified Financial Services	Other Diversified Financial Services
			Multi-Sector Holdings
			Specialized Finance
		Consumer Finance	Consumer Finance
		Capital Markets	Asset Management & Custody Banks
			Investment Banking & Brokerage

			Diversified Capital Markets
	Insurance	Insurance	Insurance Brokers
Parent Sectors	Industry Groups	Industry	Sub-Industries
			Life & Health Insurance
			Multi-line Insurance
			Property & Casualty Insurance
	Real Estate	Real Estate Investment Trusts (REITs)	Diversified REITs
			Industrial REITs
			Mortgage REITs
			Office REITs
			Residential REITs
			Retail REITs
			Specialized REITs
		Real estate Management & Development	Diversified Real Estate Activities
			Real Estate Operating Companies
			Real Estate Development
			Real Estate Services
Information Technology	Software & Services	Internet Software & Services	Internet Software & Services
		IT Services	IT Consulting & Other Services
			Data Processing & Outsourced Services
		Software	Application Software
			Systems Software
			Home Entertainment Software
	Technology Hardware & Equipment	Communications Equipment	Communications Equipment
		Computers & Peripherals	Computer Hardware
			Computer Storage & Peripherals
		Electronic Equipment, Instruments & Components	Electronic Equipment & Instruments
			Electronic Components
			Electronic Manufacturing Services
			Technology Distributors
		Office Electronics	Office Electronics
	Semiconductors & Semiconductor Equipment	Semiconductors & Semiconductor Equipment	Semiconductor Equipment
			Semiconductors
Telecommunications	Telecommunication Service	Diversified Telecommunication Services	Alternative Carriers
			Integrated Telecommunications Services
		Wireless Telecommunication Services	Wireless Telecommunication Services
Utilities	Utilities	Electric Utilities	Electric Utilities
		Gas Utilities	Gas Utilities
		Multi-Utilities	Multi-Utilities
		Water Utilities	Water Utilities
		Independent Power Producers & Energy Traders	Independent Power Producers & Energy Traders

APPENDIX G – Alignment with the Defra “Guidance on how to measure and report your greenhouse gas emissions”, United Kingdom

CDP will provide a reporting template according to Defra guidelines, allowing companies to re-use their submitted data for compliance purposes. Currently there are differences between CDP and Defra reporting, primarily where Defra requests information not included in the CDP request. CDP and Defra are working together to streamline their reporting requirements for UK companies.