# Investor CDP 2011 Information Request
# Anadarko Petroleum Corporation

## Module: Introduction

### Page: Introduction

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

Anadarko Petroleum Corporation is pleased to respond to the Investor CDP 2011 Information Request thereby continuing its tradition of reporting to and supporting the CDP since 2005. CDP has previously recognized Anadarko for its high-quality and comprehensive disclosure in the Carbon Disclosure Leadership Index (CDLI), and Anadarko strives for continued recognition for its disclosure and performance.

Anadarko's mission is to deliver a competitive and sustainable rate of return to shareholders by developing, acquiring and exploring for oil and natural gas resources vital to the world's health and welfare. Anadarko continues to grow: as of year-end 2010, it reported an approximate seven percent increase in sales volumes from 2009 to 2010, a record 235 million BOE. Associated with this increase in growth is a continued commitment to enhance and disclose environmental performance and mitigate environmental risks.

**0.2**
**Reporting Year**
**Please state the start and end date of the year for which you are reporting data.**
**The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.**
**We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.**
**Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).**

| Enter Periods that will be disclosed |
|---|
| Thu 01 Jan 2009 - Thu 31 Dec 2009 |

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

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

| Select country |
|---|
| United States of America |

**0.4**
**Currency selection**

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

USD($)

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

**0.6**

**Modules**

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

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

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

## Module: Management

### Page: 1. Governance

**1.1**

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

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

**1.1a**

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

The Climate Change Committee has direct oversight over matters pertaining to carbon management at Anadarko. This Committee consists of an interdisciplinary mix of general managers, directors, internal legal counsel, VPs, and SVPs that actively assess, organize, and implement actions regarding carbon risks and opportunities. This Committee meets at least quarterly and reports annually to the Board of Directors' Nominating and Corporate Governance Committee. Climate Change Committee goals include recommending climate change actions, overseeing implementation and change to the GHG Management Plan, developing emission reduction protocols and conducting GHG inventory efforts, and identification of carbon-related opportunity.

**1.2**

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

Yes

**1.2a**

**Please complete the table**

| Who is entitled to benefit from these incentives? | The type of incentives | Incentivised performance indicator |
|---|---|---|
| Corporate executive team | Recognition (non-monetary) | Anadarko's involvement in multiple voluntary emission reduction activities and committment to transparent carbon-related disclosure has earned it multiple accolades which are directly handed to its executive management and CEO. This recognition is typically shared with and communicated to both internal and external stakeholders via the CEO and executive committee. |
| All employees | Monetary reward | When business units implement smart and efficient activities that reduce GHG emissions at Anadarko's operations, financial benefits arise from increased productivity, which can positively impact employees' compenstation. Additionally, those assets involved in enhanced oil recovery (EOR) projects that sequester CO2 see direct commerical benefit from their operational emission reductions; Anadarko actively markets the emission reductions they create, thereby fostering an additional revenue stream for the company. |

### Page: 2. Strategy

**2.1**

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

Integrated into multi-disciplinary company wide risk management processes

**2.1a**
**Please provide further details (see guidance)**

i. Anadarko has developed a comprehensive GHG Management Plan that documents procedures for assessing various carbon-related risks and opportunities that complements Anadarko's Enterprise Risk Management team and culture of efficient risk identification and mitigation. The scope of risks assessed includes both regulatory and legislative activities as well as market and commodity-based mechanisms. Proactive voluntary engagement in various programs and intiatives is also considered, particularly in light of carbon-related opportunities. All of the risks and opportunities assessed have financial and stakeholder reputation implications for Anadarko. Physical risks are not explicitly addressed in the GHG Management Plan, as weather-related risks are already a core component of Anadarko risk management culture in the Enterprise Risk Management activities, particularly for its offshore operations.

ii. At the company/corporate level, Anadarko has an internal process for identifying and evaluating climate change-related actions at the state, regional, federal, and global levels. Anadarko's involement in multiple climate change-related workgroups affiliated with major industry groups including the American Petroleum Institute (API), the American Exploration and Production Council (AXPC), the Gas Processors Association (GPA) and others is a crucial first step in monitoring and tracking emerging issues. Risks and opportunities are evaluated by focused internal teams via issues analysis, strategic internal engagement, and financial modeling to understand potential business impacts. Action plans are developed to either mitigate risks or take advantage of opportunities, which are prioritized depending on the level of risk/opportunity.

iii. Depending on the issue evaluated and the action plan developed, actions may be required at the asset level. Some risk mitigation may require shifts in how operations are performed; in these cases individual asset levels will assess how best to work with the action plan and evaluate associated risks on a case-by-case basis as some risks will affect some assets more or less than others. Asset level based assessment is conducted in coordination with corporate teams to ensure consistency and efficiency across Anadarko.

iv. Risks and opportunities are monitored and assessed on a continual basis. Anadarko has employees dedicated specifically to these tasks. There is no start-stop to identifying potential carbon-related risks to Anadarko's business or seeking out new ways to benefit from climate change because this process is intrinsically tied to our Enterprise Risk Management process.

v. The primary criteria for determining prioritization for action around climate change risks and opportunities are the following (in order of importance): 1) regulatory/legislative compliance, 2) economic costs, 3) potential reputational/stakeholder benefit, 4) time required, and 5) resources required.

vi. Results regarding risks and opportunities associated with climate change are reported to the Enterprise Risk Management Committee (ERMC). Depending on the magnitude of the risks or opportunities being assessed and acted upon, results may also be reported directly to Operations VPs.

**2.2**
**Is climate change integrated into your business strategy?**

Yes

**2.2a**
**Please describe the process and outcomes (see guidance)**

i. Key components of Anadarko's business strategy are to operate efficiently, safely, and in an environmentally and socially sustainable fashion. Inherent in these key components is the efficiency of natural gas production and the reduction of GHG emissions. Anadarko is consistently looking for ways to reduce fugitive and vented methane (CH4) emissions common to oil and gas operations. Furthermore, a major component of Anadarko's business strategy is to enhance the production of low-carbon natural gas.

ii. A major driver to incorporating climate change-related actions into the business strategy is the promotion of and increased production of natural gas as a market commodity and alternative to carbon-intensive coal. Furthermore, it is in Anadarko's best interest to operate efficiently and consistently find ways to reduce emissions so as not to risk its license to operate.

iii. Climate change has only affected the long-term strategy.

iv. Important components of the long-term strategy to operate efficiently and reduce emissions include the implementation of green completions during natural gas drilling. These activities separate saleable gas from flowback during well completions and result in significantly reduced vented CH4 emissions before production sales lines can be set up. Anadarko is very involved in testing and using these technologies where appropriate. Further components of this strategy include strategic involvment in evaluating, mitigating, and communcating the carbon footprint of natural gas production. These activities also include assessing currently published research regarding the carbon footprint of natural gas for its accuracy and relationship to Anadarko's operations.

v. Anadarko's involvement in these activities presents competitive advantages primarily in terms of more natural gas production brought to sales. Anadarko also has a competitive advantage in having learned and adapted to new emission-reducing technologies so that when laws and regulations are promulgated and finalized that require their use, Anadarko is strategically positioned to continue business as usual. These technologies also result in safer work environments. In regards to Anadarko's research on the carbon footprint of natural gas, having accurate, peer-reviewed, and publicly-available numbers can only provide benefit to Anadarko for communicating to buyers, competitors, and stakeholders the high standard with which it operates and its concerted efforts to reduce CH4 emissions.

vi. No business decision has been made that is influenced by the climate change driven aspects of Anadarko's business strategy.

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

Yes

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

i.i. Anadarko engages with policy makers through internal advocacy efforts and through industry organizations including America's Natural Gas Alliance (ANGA), API, AXPC, and GPA, among others.

i.ii. The topics of engagement that Anadarko is involved in include CCS technologies and its affiliation with enhanced oil recovery (EOR) production techniques, the emerging regulations to report and reduce GHG emissions, and the public perception of natural gas production.

i.iii. Anadarko participates continuously in engagement via regular participation in various workgroups involved in crafting responses to and commenting on the topics listed above. Anadarko also periodically engages by conducting internal research studies to collect and assess data, ultimately providing it in the public domain.

ii.i. With regard to the CCS technologies and deployment, Anadarko supports the recognition of EOR as a credible CCS method and is actively engaged in protocol development to develop consistent frameworks for quantifying and monitoring emission reductions from CCS sites. As to the emerging policies regulating GHGs, keeping in mind the necessity for credible data to support Anadarko's operations to produce low-carbon natural gas, Anadarko is engaged in commenting on these proposals so that the burden associated with implementing new regulations is minimized, yet still maximizes data quality. Anadarko supports research highlighting the minimal carbon footprint of natural gas production, is working to mitigate its own carbon footprint, and is involved in commenting on data regarding these activities.

## Page: 3. Targets and Initiatives

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

No

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

i. Due to the growing nature of its business, Anadarko has not implemented a hard emission reduction target.

ii. Anadarko does not expect its emissions to change significantly over the next five years. Anadarko has been calculating annual

GHG emissions since 2004 and shows fairly consistent numbers from year to year.

**3.2**

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

Yes

**3.2a**

**Please provide details (see guidance)**

i. Because Anadarko is a producer of natural gas, a lower carbon fuel than other fossil fuels like coal, the purchase and use of natural gas can help consumers lower their carbon footprint. An example of this benefit is the purchase of natural gas by a utility company that is switching from coal to natural gas-fired power plants. The direct emissions of this company will decrease due to the use of natural gas produced by Anadarko.

ii. For a 1000 MW power plant, the annual CO2 emissions associated with burning coal, #4 fuel oil, and natural gas are as follows:
Coal: 2,971,066 metric tons
#4 Fuel Oil: 2,397,178 metric tons
Natural gas: 1,763,510 metric tons
Therefore switching to natural gas from coal results in an annual 41 percent decrease in emissions (1,207,556 metric tons CO2), and switching to natural gas from #4 fuel oil results in an annual 26 percent decrease in emissions (633,668 metric tons CO2).

iii. This estimation uses methods outlined in the API Compendium of GHG Emissions Estimation Methodologies for the Oil and Gas Industry (2004) and associated LHV emission factors for electric utility coal (0.0994 metric tons CO2/10^6 Btu), #4 fuel oil (0.0802 metric tons CO2/10^6 Btu), and pipeline natural gas (0.0590 metric tons CO2/10^6 Btu) as referenced in Table 4-3.

iv. Anadarko has considered generating CERs or ERUs within the framework of CDM or JI (UNFCCC) for projects being developed in Ghana and China. The evaluation of these projects is ongoing.

**3.3**

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

Yes

**3.3a**

**Please provide details in the table below**

| Activity type | Description of activity | Annual monetary savings (unit currency) | Investment required (unit currency) | Payback period |
|---|---|---|---|---|
| Fugitive emissions reductions | Voluntary replacement of older piping and comprehensive leak detection surveys to reduce the potential for leaks and repair identified leaks. Identified 112 Mscf/day of Scope 1 emission leaks in one operational area that were repaired. The lifetime of this initiative is ongoing. | | | 1-3 years |
| Process emissions reductions | Voluntarily added 133 plunger lifts in two areas to reduce Scope 1 vented emissions during liquids unloading events. Voluntary installation of continuously burning flare to replace Scope 1 vented emissions at wellsites. Voluntary green completions conducted to reduce Scope 1 emissions that would otherwise be vented during traditional completion operations. Voluntary suction and recycling systems involved on dehydrators and compressors to reduce and avoid venting emissions. All of these activities took place in the reporting year and the lifetime of these initiatives is ongoing. | | | 1-3 years |
| Low carbon | Voluntary replacement of gas-fired pneumatic pumps with solar- | | | |

| | | | | |
|---|---|---|---|---|
| energy purchase | powered pumps to reduce Scope 1 emissions. This intiative is complete for the reporting year and additional projects may continue in future years. | | | <1 year |
| Energy efficiency: processes | Voluntary replacement of two old compressors with new energy-efficient equipment, providing Scope 1 emissions savings. This replacement is complete and additional opportunities for replacement may be identified in the future. | | | 1-3 years |
| Energy efficiency: building services | Voluntary installation of energy efficient A/C units saving 25% in fuel consumption and Scope 2 emissions. Voluntary replacing regular light bulbs with energy efficient light bulbs when needed to reduce Scope 2 emissions. This replacement is complete and additional opportunities for replacement may be identified in the future. | | | 1-3 years |
| Transportation: fleet | With improved field automation, management by exception of assets has become a practice in many areas, thus greatly reducing the amount of miles driven, saving 28 metric tons CO2 (Scope 1 emissions) in one area. This is a voluntary initiative that is now complete in many areas and additional opportunities for optimization may be identified for additional assets in the future. | | | 1-3 years |

**3.3b**

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

| Method | Comment |
|---|---|
| Compliance with regulatory requirements/standards | Emerging regulations and the potential for regulation of GHG emissions causes Anadarko to take advantage of technological improvements and advancements as well as best practices that mitigate emissions. |
| Financial optimization calculations | Within Anadarko's internal market modeling, assessments are performed around the cost-benefit analysis of repairing and replacing lesser efficient equipment. These calculations typically show significant economic as well as environmental benefits to emission reduction activities. |

## Page: 4. Communication

**4.1**

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

| Publication | Page/Section Reference | Identify the attachment |
|---|---|---|
| In other regulatory filings (complete) | 22, 25 | 2009 10-K Annual Report.pdf |
| In voluntary communications (complete) | Entire document | Climate Change Website.doc |
| In annual reports (complete) | 19, 22 | apc2009.pdf |
| In voluntary communications (complete) | Entire document | ClimateChangeCmtCharter.pdf |
| In voluntary communications (complete) | Entire document | GHG_Management_Plan_exec._summary.pdf |

**Further Information**

The website will be updated to reflect 2009 GHG Inventory values in coordination with submitting this report to the CDP.

**Attachments**

https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/2009 10-K Annual Report.pdf
https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/Climate Change Website.doc
https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/ClimateChangeCmtCharter.pdf
https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/apc2009.pdf

https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/GHG_Managment_Plan_exec_summary.pdf

## Module: Risks and Opportunities

### Page: 5. Climate Change Risks

**5.1**

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

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

**5.1a**

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

| ID | Risk driver | Description | Potential impact | Timeframe | Direct/ Indirect | Likelihood | Magnitude of impact |
|---|---|---|---|---|---|---|---|
| Reg 1 | International agreements | Anadarko has international operations in developing non-Annex I countries party to the Kyoto Protocol. Usually these countries limit their involvement in climate change regulation to hosting emission reduction projects, but they may choose at any time to implement internal or international agreements regarding emission limits and operational controls, which present inherent risk to Anadarko's operations in these countries. | Increased operational cost | Unknown | Direct | Unknown | High |
| Reg 2 | Air pollution limits | Any limits on GHG emissions present considerable risk to Anadarko's operations and how operations are conducted. These limits may require that Anadarko purchase new equipment to decrease emissions and/or implement new processes to reduce routine emission releases to the atmosphere. | Increased operational cost | 1-5 years | Direct | Very likely | High |
| Reg 3 | Carbon taxes | Depending where a carbon tax is implemented, one can present significant direct costs to Anadarko. If a carbon tax is implemented at the utility level, the tax does not present immediate risk to Anadarko. If the tax is imposed at the upstream level, however, in regards to carbon content of the oil and gas that Anadarko produces, this type of mandate can present significant risk to Anadarko's business as well as consumers further down the supply chain. | Increased operational cost | Unknown | Direct | About as likely as not | Medium-high |
| Reg 4 | Cap and trade | Much like air pollution limits, cap and trade schemes present considerable potential risk to Anadarko's operations and how operations are conducted. These limits may require that Anadarko | Increased operational | Unknown | Direct | About as likely as | High |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | schemes | purchase new equipment to decrease emissions and/or implement new processes to reduce routine emission releases to the atmosphere. | cost | | | not | |
| Reg 5 | Emission reporting obligations | Mandatory emissions reporting presents significant risk to Anadarko in regards to managing and reporting GHG emissions input data and calculations required for reporting. These requirements present a cost to operations necessary for collecting data, whether through internal or contracted resources, and developing the required systems for compliance. | Increased operational cost | Current | Direct | Virtually certain | High |
| Reg 6 | Uncertainty surrounding new regulation | Uncertainty regarding GHG emissions regulations and legislative activity presents risk to Anadarko in regards to the preparatory risk management and policy analysis required to prepare for such laws and rules. This uncertainty presents risk in that Anadarko may prepare for rules and laws which may increase or decrease in stringency, providing inefficiency to the risk management process. | Increased operational cost | Current | Direct | Virtually certain | Medium |

**5.1b**

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

Reg 1. i. International agreements present unique financial implications, in regards both to capital equipment costs as well as resource and labor costs. Many international agreements may require capital equipment upgrades or replacement. Additional cost implications are in regards to the resources required, both in terms of labor as well as management systems, to efficiently manage data required for compliance with applicable laws and regulations as well as provide associated reports and documentation to officials. For cap and trade programs, additional cost may be associated with the purchase of allowances for compliance or investment in emission reduction projects in developing countries. Lastly, costs are also associated with noncompliance in the form of fines or litigation in some cases.

Reg 1. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process includes assessing the business implications of various regulatory risks and modeling financial implications using detailed cost estimates of various components of compliance.

Reg 1. iii. Actual costs of compliance depends on the regulation or law in question as well as the timing of compliance. Costs associated with this risk are unknown at this time until further details are discerned in finalized policies.

Reg 2. i. Air pollution agreements present unique financial implications, in regards both to capital equipment costs as well as resource and labor costs. Many of these policies may require capital equipment upgrades or replacement. Additional cost implications are in regards to the resources required, both in terms of labor as well as management systems, to efficiently manage data required for compliance with applicable laws and regulations as well as provide associated reports and documentation to officials. Lastly, costs are also associated with noncompliance in the form of fines or litigation in some cases.

Reg 2. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process includes assessing the business implications of various regulatory risks and modeling financial implications using detailed cost estimates of various components of compliance. Emission reduction mandates in their emerging form, particularly under the PSD program, are also being managed and mitigated via API technical workgroups.

Reg 2. iii. Actual cost of compliance depends on the regulation or law in question as well as the timing of compliance. Costs associated with this risk are unknown at this time until further details are discerned in finalized policies.

Reg 3. i. Carbon taxes present unique financial implications, in regards to the carbon intensity of the fuel that Anadarko produces. If a tax was imposed on the upstream oil and gas industry, Anadarko would likely pay higher costs for its oil production than for its natural gas production.

Reg 3. ii. The potential for carbon tax risk is managed by internal teams via Anadarko's internal risk management process. This process includes assessing the business implications of various regulatory risks and modeling financial implications using detailed cost estimates of various components paying a carbon tax.

Reg 3. iii. Actual costs of a carbon tax imposed on an oil and gas producer depend on the regulation or law in question. Costs

associated with this risk are unknown at this time until further details are discerned in finalized policies.

Reg 4. i. Cap and trade schemes present unique financial implications, in regards both to capital equipment costs as well as resource and labor costs. Many of these international agreements may require capital equipment upgrades or replacement. Additional cost implications are in regards to the resources required, both in terms of labor as well as management systems, to efficiently manage data required for compliance with applicable laws and regulations as well as provide associated reports and documentation to officials. For cap and trade programs, additional cost may be associated with the purchase of allowances for compliance or investment in emission reduction projects in developing countries. Lastly, costs are also associated with noncompliance in the form of fines or litigation in some cases.

Reg 4. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process includes assessing the business implications of various regulatory risks and modeling financial implications using detailed cost estimates of various components of compliance.

Reg 4. iii. Actual costs of compliance depends on the regulation or law in question as well as the timing of compliance. Costs associated with this risk are unknown at this time until further details are discerned in finalized policies.

Reg 5. i. Emission reporting obligations, particularly the U.S. Environmental Protection Agency (EPA) Mandatory Reporting Rule of GHGs present unique financial implications, in regards both to capital equipment costs as well as resource and labor costs. Many of these reporting rules may require capital equipment for necessary monitoring data collection. Additional cost implications are in regards to the resources required, both in terms of labor as well as management systems, to efficiently manage data required for compliance with applicable laws and regulations as well as provide associated reports and documentation to officials. Lastly, costs are also associated with noncompliance in the form of fines or litigation in some cases.

Reg 5. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process includes assessing the business implications of various regulatory risks and modeling financial implications using detailed cost estimates of various components of compliance. Risk is also being managed via continued involvement in various workshops and dedicated technical workgroups to understanding the implications of these rules.

Reg 5. iii. Actual cost of compliance depends on the regulation or law in question as well as the timing of compliance. Anadarko’s costs of complying with the U.S. EPA Mandatory Reporting Rule are estimated at $12.5 million over the first year of reporting to Subpart W.

Reg 6. i. Uncertainty regarding regulation presents cost to Anadarko in terms of the resources and labor taken to assess regulations and laws that may or may not ever be implemented and many of which will certainly undergo significant revisions and amendment.

Reg 6. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process includes assessing the business implications of various regulatory risks and modeling financial implications using detailed cost estimates of various components of compliance.

Reg 6. iii. Actual costs of regulatory uncertainty range depending on the type of regulations in question.

**5.1c**

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

| ID | Risk driver | Description | Potential impact | Timeframe | Direct/ Indirect | Likelihood | Magnitude of impact |
|---|---|---|---|---|---|---|---|
| Phys1 | Tropical cyclones | Hurricanes and cyclones impacting Anadarko's offshore operations can present risk due to required shut-ins of production to prepare for and literally weather these storms. | Reduction/disruption in production capacity | Current | Direct | Likely | High |
| Phys2 | Uncertainty of physical risks | Anadarko routinely experiences challenges to its onshore operations as a result of inclement weather, which may impact its facilities and equipment as well as third-party infrastructure. | Reduction/disruption in production capacity | Unknown | Direct | Unknown | Unknown |

**5.1d**

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

Phys1. i. Significant financial implications are associated with the risk of hurricanes and cyclones impacting offshore operations.

In particular, when storms of this nature cross operational paths, proven procedures are in place to ensure the safety of all employees and contractors involved at the site. In extreme circumstances, production may need to be halted. If significant damage occurs due to these storms, production may be further delayed until all appropriate repairs and safety checks have been implemented, resulting in significant losses to daily revenues. Furthermore, depending on the extent of structural damage caused by major storms, costs associated with repair of offshore production infrastructure may be significant. Additional costs may be accrued in the form of higher insurance costs to operating offshore.

Phys1. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. The risks associated with extreme weather events at offshore locations is actively assessed and modeled at Anadarko. These procedures are executed when possible weather events become more likely from storm tracking information from NOAA and other sources.

Phys1. iii. Actual costs of weather-related production halts or delays depends on the time which production is taken offline as well as any additional capital costs associated with repairing the facility and getting it back online.

Phys2. i. Uncertainty in the physical risks associated with shifting climate patterns is potentially manifested in production delays and shut-ins due to weather-related issues. An example of this potential risk and its financial implications might be extreme cold and snow issues in Anadarko's Rockies operations. If the weather is cold enough, piping could be a risk, requiring that facility be shut-in and blown-down in order to avoid potential safety hazards.

Phys2. ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. There is currently no formal process in place to manage risk associated with uncertainty in physical impacts.

Phys2. iii. There are currently no costs associated with the uncertainty of physical risks to Anadarko.

**5.1e**

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

| ID | Risk driver | Description | Potential impact | Timeframe | Direct/ Indirect | Likelihood | Magnitude of impact |
|---|---|---|---|---|---|---|---|
| Oth1 | Changing consumer behaviour | While unlikely in the forseeable future, if consumer preferences were to shift away from the use of fossil fuels, the demand for petroleum products may decline, thereby causing a decrease in revenues from Anadarko's crude oil production. | Reduced demand for goods/services | Unknown | Indirect (Supply chain) | Unknown | Unknown |

**5.1f**

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

i. Financial implications of changing consumer behavior include decreased revenues from the production of crude oil.

ii. Anadarko's portfolio was designed to be balanced in regards to product mix, including large volumes of natural gas, and diverse in terms of geography. Anadarko anticipates that natural gas demand may increase as consumer preferences shift away from more carbon-intensive fuels, particularly as end users seek greater energy security, recoil from volatile oil prices, and refining demand lowers.

iii. Costs associated with shifting consumer attitudes have not been quantified as Anadarko considers itself well-balanced given its existing production portfolio and expects cost implications to be minimal.

## Page: 6. Climate Change Opportunities

**6.1**

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

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

**6.1a**

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

| ID | Opportunity driver | Description | Potential impact | Timeframe | Direct/Indirect | Likelihood | Magnitude of impact |
|---|---|---|---|---|---|---|---|
| ROpp1 | International agreements | Anadarko could have opportunity in regards to its overseas operations that are in non-Annex II countries party to the Kyoto Protocols. These countries typically host emission reduction projects, and Anadarko's operations could potentially be applicable to a variety of approved methodologies under the Clean Development Mechanism (CDM) of the Kyoto Protocol to generate these certified emission reduction (CER) credits. | New products/business services | Current | Direct | More likely than not | Low-medium |
| ROpp2 | Cap and trade schemes | Similar to international agreements, Anadarko has opportunities in cap and trade programs to develop emission reduction projects and potentially earn carbon credits that may be banked for investment or sold in a cap and trade market. These projects therefore present a unique revenue stream additional to Anadarko's primary business focus. | New products/business services | Current | Direct | Very likely | Low-medium |
| ROpp3 | Voluntary | Voluntary agreements provide opportunities for Anadarko to report and disclose action on climate change. These actions are positive for Anadarko in that they allow the company to show factual and current operational data | Wider social | Current | Direct | Very likely | Medium |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | agreements | regarding GHG emissions. Participation in voluntary agreements also highlights Anadarko's commitment to climate change and transparent disclosure. | benefits | | | | |

**6.1b**

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

ROpp1. i. International agreements present financial implications associated with the generation and potential sale of carbon credits, particularly CERs under the CDM of the Kyoto Protocol. While the credits vary in price depending on market indicators, a rough estimate of $20/CER is appropriate. For a project that reduces 100,000 tonnes of CO2e annually, the project developer could expect up to generate up to $20 million in CERs over the crediting period (10 years) of the project.

ROpp1.ii Anadarko conducts feasibility assessments to evaluate emission reduction opportunities and their associated carbon market value per international agreements. These studies typically assess the cost-benefit of such activities and any significant barriers to implementation. These studies are helpful in understanding the likelihood of successfully developing a project.

ROpp1.iii Costs associated with conducting these projects depend on the capital infrastructure required as well as the logistical and administrative costs of developing, validating, and verifying a project per international agreement rules.

ROpp2. i. Cap and trade schemes also present financial implications associated with the generation and potential sale of carbon credits. These credits may be generated in a variety of programs, none of which are currently active, but rather in development for 2012 implementation, such as the WCI and California's AB32 cap and trade program. Anadarko has generated carbon credits for emission reductions from CO2 sequestration associated with enhanced oil recovery (EOR) at two assets, Salt Creek and Monell, that could potentially be used in a cap and trade market. Further economic opportunity is presented by these projects as they effectively reduce the carbon intensity of the crude oil produced at these locations. Therefore fuel producers concerned with compliance with low carbon fuel standards may find advantage in sourcing crude from fields using EOR, thereby putting Anadarko at a competitive advantage.

ROpp2.ii Anadarko has been managing this opportunity by developing protocols for calculating the emissions reductions that take place at both the Salt Creek and Monell EOR fields. These emission reductions have been previously verified and credits have been registered by the American Carbon Registry (ACR), of which Anadarko is a founding member.

ROpp2.iii There is some administrative cost to verifying emission reduction credits. Furthermore, there are capital costs to ensure that the appropriate monitoring equipment is in place to provide accurate metering and compositional data required for calculations. Costs are also associated with purchasing CO2 for injection at both EOR project sites.

ROpp3. i. Financial implications associated with voluntary agreements may include increased shareholder investment as investors become comfortable with the positive environmentally proactive actions taken by Anadarko.

ROpp3.ii Anadarko is involved in a variety of voluntary agreements, including those with ACR and The Climate Registry (TCR), both of which Anadarko is a founding member. Anadarko also is actively involved in the EPA Natural Gas STAR program and API Climate Action Challenge. Anadarko enjoys its involvement in these voluntary agreements as an avenue for disclosing and reporting its GHG emissions as well as emission reductions to the greater public. Anadarko also enjoys commenting and providing feedback on ways to make these programs more robust by suggesting improvements to reporting guidelines and providing participation on workgroups.

ROpp3.iii There are minimal costs of involvement in voluntary agreements. Some nominal costs are associated with those programs requiring membership, such as TCR and ACR, which Anadarko participates in.

**6.1e**

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

| ID | Opportunity driver | Description | Potential impact | Timeframe | Direct/ Indirect | Likelihood | Magnitude of impact |
|---|---|---|---|---|---|---|---|
| | Changing consumer behaviour | As a provider of low-carbon natural gas, Anadarko is positioned to provide a lower carbon footprint to consumers, thereby creating competitive advantage. | Increased demand for existing products/services | Unknown | Direct | Likely | Medium-high |

**6.1f**

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

i. As a producer of low-carbon natural gas, Anadarko expects that demand for natural gas will increase in a carbon-constrained economy. Therefore, natural gas consumption will increase and provide additional revenue to Anadarko, particularly if demand increases so much that natural gas prices go up as well.

ii. Anadarko is currently monitoring demand for natural gas and continues to invest in research and expanded production of natural gas. Anadarko's business strategy focuses on positioning itself as a major supplier of natural gas well into the future.

iii. Currently there are no specific costs associated with actions around increased research into and production of natural gas. Activities underway now are considered business as usual.

**6.1h**

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

No opportunities for Anadarko have been identified in regards to opportunties driven by physical climate parameters. There is a lack of data on how physical climate impacts may positively impact the oil and natural gas production and processing industry, resulting in no consideration of opportunities at this time. Moderate seasonal weather patterns and events represent business as usual for Anadarko's operations and do not provide enhanced business opportunities.

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

### Page: 7. Emissions Methodology

**7.1**

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

| Base year | Scope 1 Base year emissions (metric tonnes CO2e) | Scope 2 Base year emissions (metric tonnes CO2e) |
|---|---|---|
| Sun 01 Jan 2006 - Sun 31 Dec 2006 | 6542382 | 332757 |

**7.2**

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

| Please select the published methodologies that you use |
|---|
| The Climate Registry: General Reporting Protocol |
| The Climate Registry: Oil & Gas Protocol |
| IPIECA's Petroleum Industry Guidelines for reporting GHG emissions, 2003 |
| The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) |
| Other |

**7.2a**

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

Anadarko has also used the 2004 API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry, which is integrated into the calculation tool (SANGEA) that Anadarko employs to calculate GHG emissions.

**7.3**

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

| Gas | Reference |
|---|---|
| CO2 | IPCC Second Assessment Report (SAR - 100 year) |
| | |

| | |
|---|---|
| CH4 | IPCC Second Assessment Report (SAR - 100 year) |
| N20 | IPCC Second Assessment Report (SAR - 100 year) |
| HFCs | IPCC Second Assessment Report (SAR - 100 year) |

**7.4**

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

| Fuel/Material/Energy | Emission Factor | Unit | Reference |
|---|---|---|---|
| Natural gas | 53.46 | Other: kg CO2/mmBtu | 2004 API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry |
| Distillate fuel oil No 2 | 73.15 | Other: kg CO2/mmBtu | 2004 API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry |
| Motor gasoline | 70.88 | Other: kg CO2/mmBtu | 2004 API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry |

## Page: 8. Emissions Data - (1 Jan 2009 - 31 Dec 2009)

**8.1**

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

Operational control

**8.2a**

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

7872285

**8.3a**

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

898589

**8.4**

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

No

**8.5**

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

| Scope | Uncertainty Range | Main sources of uncertainty | Please expand on the uncertainty in your data |
|---|---|---|---|
| Scope 1 | More than 20% but less than or equal to 30% | Data Gaps<br>Assumptions<br>Extrapolation<br>Metering/ Measurement Constraints<br>Published Emissions Factors<br>Data Management | Because of the significant complexity of Anadarko's operations, multiple sources of uncertainty exist. Field operations are dynamic and coordination/communication between assets and EHS teams is essential. Therefore data gaps may exist, regarding emission sources that personnel developing the GHG emissions inventory may not be aware of. Furthermore, assumptions may be made where flow data may be missing and extrapolations are sometimes made using representative data for a number of emissions events in a particular area. Improper calibration of instruments and monitoring data may also lead to uncertainty, and finally, human error in GHG emissions data management can provide further uncertainty. Lastly, Anadarko also recognizes that emission factors, although from appropriate industry-standard resources, have uncertainty characterized by the dispersion of the respective measurement values used to derive them initially. |

| | | | |
|---|---|---|---|
| Scope 2 | More than 10% but less than or equal to 20% | Data Gaps Data Management | In regards to Scope 2 emissions, for which Anadarko collects and tracks electricity consumption data, uncertainty is inherent in primarily data gaps and data management. Although improvements to the system for collecting and storing electricity data have been made to achieve the highest level of accuracy possible, some uncertainty still remains. |

**8.6**

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

Verification or assurance complete

**8.6a**

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

More than 0% but less than or equal to 20%

**8.6b**

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

| Type of verification or assurance | Relevant standard | Relevant statement attached |
|---|---|---|
| Verification | Other: The Climate Registry General Reporting Protocol V. 1.1 | SCS 2009 TCR Transitional Verification Report for Anadarko Petroleum Corporation.pdf |

**8.7**

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

Verification or assurance complete

**8.7a**

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

More than 0% but less than or equal to 20%

**8.7b**

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

| Type of verification or assurance | Relevant standard | Relevant statement attached |
|---|---|---|
| Verification | Other: The Climate Registry General Reporting Protocol V. 1.1 | SCS 2009 TCR Transitional Verification Report for Anadarko Petroleum Corporation.pdf |

**8.8**

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

No

**Attachments**

https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2009-31Dec2009)/SCS 2009 TCR Transitional Verification Report for Anadarko Petroleum Corporation.pdf

## Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2009 - 31 Dec 2009)

**9.1**

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

No

**9.2**

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

By business division
By GHG type
By activity

**9.2a**

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

| Business Division | Scope 1 metric tonnes CO2e |
|---|---|
| E&P | 3612927 |
| Midstream | 4259020 |
| Corporate Business Services | 338 |

**9.2c**

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

| GHG type | Scope 1 metric tonnes CO2e |
|---|---|
| CO2 | 5126049 |
| CH4 | 2718861 |
| N20 | 26115 |
| HFCs | 1260 |

**9.2d**

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

| Activity | Scope 1 metric tonnes CO2e |
|---|---|
| Stationary Combustion | 4321053 |
| Mobile Combustion | 27755 |
| Fugitive | 1264952 |
| Process | 2258526 |

## Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2009 - 31 Dec 2009)

**10.1**

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

No

**10.2**

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

By business division

**10.2a**

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

| Business division | Scope 2 metric tonnes CO2e |
|---|---|
| Midstream | 307308 |
| E&P | 571919 |
| Office | 19363 |

## Page: 11. Emissions Scope 2 Contractual

**11.1**

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

Yes

**11.2**

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

No

## Page: 12. Energy

**12.1**

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

More than 0% but less than or equal to 5%

**12.2**

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

| Energy type | MWh |
|---|---|
| Fuel | |
| Electricity | 611813 |
| Heat | |
| Steam | |
| Cooling | |

**12.3**

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

| Fuels | MWh |
|---|---|

## Page: 13. Emissions Performance

**13.1**

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

Increased

**13.1a**

**Please complete the table**

| Reason | Emissions value (percentage) | Direction of change | Comment |
|---|---|---|---|
| Other: Continued Growth | 12 | Increase | Anadarko's emissions have increased due to business as usual continued growth across the organization. |

**13.2**

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

| Intensity | Metric | Metric | % change from | Direction of change | Explanation |
|---|---|---|---|---|---|

| figure | numerator | denominator | previous year | from previous year | |
|---|---|---|---|---|---|
| 0.00097235 | metric tonnes CO2e | unit total revenue | 75 | Increase | Anadarko's revenue intensity has increased as the total emissions increased due to business as usual continued growth across the organization and as revenues decreased due to a worldwide recession. |

**13.3**

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

| Intensity figure | Metric numerator | Metric denominator | % change from previous year | Direction of change from previous year | Explanation |
|---|---|---|---|---|---|
| 2035 | metric tonnes CO2e | FTE Employee | 12 | Increase | Anadarko's emissions have increased due to business as usual continued growth across the organization. The FTE at Anadarko was the same in 2009 and 2008 so the increase in GHG emissions from 2008 to 2009 is the same as the growth in FTE GHG intensity. |

**13.4**

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

| Intensity figure | Metric numerator | Metric denominator | % change from previous year | Direction of change from previous year | Explanation |
|---|---|---|---|---|---|
| 19.2 | metric tonnes CO2e | Other: MBOE produced | 16 | Increase | This metric is specific to the E&P component of Anadarko's operations. Anadarko's emissions have increased due to business as usual continued growth across the organization. |
| 21.15 | | Other: MBOE throughput | 15 | Increase | This metric is specific to the midstream component of Anadarko's operations. Anadarko's emissions have increased due to business as usual continued growth across the organization. |

## Page: 14. Emissions Trading

**14.1**

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

No, but we anticipate doing so in the next two years

**14.1b**

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

Anadarko will participate for the first time in the EU ETS in 2010 for its aviation fleet. The required information associated with its fleet will be provided and verified per EU ETS requirements to ensure Anadarko's compliance. Anadarko's strategy is to comply with the EU ETS as required.

**14.2**

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

Yes

**14.2a**

**Please complete the following table**

| Credit origination or credit purchase | Project type | Project identification | Verified to which standard | Number of credits (metric tonnes of CO2e) | Number of credits (metric tonnes CO2e): Risk adjusted volume | Credits retired | Purpose e.g. compliance |
|---|---|---|---|---|---|---|---|
| Credit Origination | CO2 usage | Salt Creek | Not Yet Verified | 2148624 | | Not relevant | Voluntary Offsetting |
| Credit Origination | CO2 usage | Monell | Not Yet Verified | 382527 | | Not relevant | Voluntary Offsetting |

## Page: 15. Scope 3 Emissions

**15.1**

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

| Sources of Scope 3 emissions | metric tonnes CO2e | Methodology | If you cannot provide a figure for emissions, please describe them |
|---|---|---|---|
| Processing of sold products | | | The processing of produced crude oil and natural gas at refineries and gas processing facilities results in GHG emissions to the atmosphere. These Scope 3 emissions are relevant only to Anadarko's E&P activities, and not to its midstream processing operations. |
| Transportation and distribution | | | The transportation and distribution of produced crude oil and natural gas result in fugitive emissions as well as combustion emissions due to the burning of fuel to move products. |
| Use of sold products | | | The ultimate combustion of produced end products, whether it be fuel in cars or natural gas for heating, results in GHG emissions to the atmosphere. |
| Other: Contractor emissions | | | Anadarko uses many contractors for various activities related to its operations, particularly for drilling and testing of wells. The fuel burned during these contracted activities are Scope 3 GHG emissions. |

**15.2**

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

No emissions data provided

**15.3**

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

We don't have any emissions data

# Module: Oil & Gas

## Page: Oil & Gas 0

**OG0.1**

**Please enter the dates for the periods for which you will be providing data. We ask for historic data for the year ending in 2005 to the year ending in 2010 and a forecast for the year ending in 2011**

| Year ending | Date range |
|---|---|
| 2006 | Sun 01 Jan 2006 - Sun 31 Dec 2006 |
| 2007 | Mon 01 Jan 2007 - Mon 31 Dec 2007 |
| 2008 | Tue 01 Jan 2008 - Wed 31 Dec 2008 |
| 2009 | Thu 01 Jan 2009 - Thu 31 Dec 2009 |

## Page: Oil & Gas - Production & reserves by hydrocarbon type

**OG1.1**

**Please provide values for annual production of each of the hydrocarbon types (in units of BOE) for the years given in the following table. The values required are aggregate values for the reporting organization. The values for 2011 are forward-looking estimates**

| Product | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|

**OG1.2**

**Please provide values for proved reserves of each of the hydrocarbon types (in units of BOE) for 2010. The values required are aggregate values for the reporting organization**

| Product | Proved reserves (BOE), 2010 | Date of assessment |
|---|---|---|

**Further Information**

All of this information may be found in the 2009 Annual Report attached herein.

**Attachments**

https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/OG1Productionreservesbyhydrocarbontype/apc2009.pdf

## Page: Oil & Gas - Emissions by segment in the O&G value chain

**OG2.1**

**Please indicate the consolidation basis (financial control, operational control, equity share, Climate Change Reporting Framework Part 1) used to report the Scope 1 and Scope 2 emissions by segment in the O&G value chain. Further information can be provided in the text box in OG2.2**

| Segment | Consolidation basis for reporting Scope 1 emissions | Consolidation basis for reporting Scope 2 emissions |
|---|---|---|
| Exploration, production & gas processing | Operational Control | Operational Control |

**OG2.2**

**Please provide clarification for cases in which different consolidation bases have been used and about the level/focus of disclosure. For example, a reporting organization whose business is solely in storage, transportation and distribution (STD) may use the text box to explain why only the STD row has been completed**

**OG2.3**

**Please provide masses of gross Scope 1 GHG emissions in units of metric tonnes CO2e for the organization's owned/controlled operations by value chain segment. The values required for 2011 are forward-looking estimates**

| Segment | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|
| Exploration, production & gas processing | | 6542382 | 6306956 | 7220385 | 7872284 | | |

**OG2.4**

**Please provide masses of gross Scope 2 GHG emissions in units of metric tonnes CO2e for the organization's owned/controlled operations by value chain segment. The values required for 2011 are forward-looking estimates**

| Segment | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|
| Exploration, production & gas processing | | 332757 | 463596 | 608452 | 898588 | | |

## Page: Oil & Gas - Scope 1 emissions by emissions category

**OG3.1**

**Please confirm the consolidation bases (financial control, operational control, equity share, Climate Change Reporting Framework Part 1) used to report Scope 1 emissions by emissions category**

| Segment | Consolidation basis for reporting Scope 1 emissions by emissions category |
|---|---|
| Exploration, production & gas processing | Operational Control |

**OG3.2**

**Please provide clarification for cases in which different consolidation bases have been used to report by emissions categories (combustion, flaring, process emissions, vented emissions, fugitive emissions) in the various segments**

**OG3.3**

**Please provide masses of gross Scope 1 GHG emissions released to atmosphere in units of metric tonnes CO2e for the whole organization broken down by emissions categories: combustion, flaring, process emissions, vented emissions, fugitive emissions. The values required for 2011 are forward-looking estimates**

| Category | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|
| Combustion | | | | | | | |
| Flaring | | | | | | | |
| Process emissions | | | | | | | |
| Vented emissions | | | | | | | |
| Fugitive emissions | | | | | | | |

**Further Information**

Please note 2009 data located in Sections 8 through 10.

## Page: Oil & Gas - Transfers & sequestration of CO2 emissions

**OG4.1**

**Please indicate the consolidation basis (financial control, operational control, equity share, Climate Change Reporting Framework Part 1) used to report transfers and sequestration of CO2 emissions**

| Activity | Consolidation basis |
|---|---|
| Transfers | |
| Sequestration of CO2 emissions | Operational Control |

**OG4.2**

**Please provide clarification for cases in which different consolidation bases have been used (e.g. for a given activity, capture, injection or storage pathway)**

**OG4.3**

**Using the units of metric tonnes of CO2, please provide gross masses of CO2 transferred in and out of the reporting organization (as defined by the consolidation basis). Please note that questions of ownership of the CO2 are addressed in OG4.5**

| Transfer direction | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| CO2 transferred in | | | | | | |
| CO2 transferred out | | | | | | |

**OG4.4**

**Please provide clarification on whether any oil reservoirs and/or sequestration system (geological or oceanic) have been included within the boundary of the reporting organization. Provide details, including degrees to which reservoirs are shared with other entities**

Anadarko operates two CCS EOR projects at Salt Creek and Monell. These facilities are operated by Anadarko and have been included within the reporting boundaries outlined in this report. These reservoirs are not shared with other entities.

**OG4.5**

**Please explain who (e.g. the reporting organization) owns the transferred emissions and what potential liabilities are attached. In the case of sequestered emissions, please clarify whether the reporting organization or one or more third parties owns the sequestered emissions and who has potential liability for them**

Anadarko is the sole owner of sequestered emissions.

**OG4.6**

**Please provide masses in metric tonnes of gross CO2 captured for purposes of carbon capture and sequestration (CCS) during the reporting year according to capture pathway. For each pathway, please provide a breakdown of the percentage of the gross captured CO2 that was transferred into the reporting organization and the percentage that was transferred out of the organization (to be captured)**

| Capture pathway in CCS | Captured CO2 (metric tonnes CO2) | Percentage transferred in | Percentage transferred out |
|---|---|---|---|
| Separation of CO2 from industrial process gas streams | | | |

**OG4.7**

**Please provide masses in metric tonnes of gross CO2 injected and stored for purposes of CCS during the reporting year according to injection and storage pathway**

| Injection and storage pathway | Injected CO2 (metric tonnes CO2) | Percentage of injected CO2 intended for long-term (>100 year) storage | Year in which injection began | Cumulative CO2 injected and stored (metric tonnes CO2) |
|---|---|---|---|---|
| CO2 used for enhanced oil recovery (EOR) or enhanced gas recovery (EGR) | 2531151 | | | |

**OG4.8**

**Please provide details of risk management performed by the reporting organization and/or third party in relation to its CCS activities. This should cover pre-operational evaluation of the storage (e.g. site characterisation), operational monitoring, closure monitoring, remediation for CO2 leakage, and results of third party verification**

Anadarko has developed two monitoring protocols documenting how to quantify emission reductions achieved at both the Salt Creek and Monell CCS EOR sites. Additionally, Anadarko has developed robust monitoring systems at both sites and continues to monitor the active operations for any leakage. The emission reductions achieved at both Salt Creek and Monell are annually quantified and submitted to a third party for verification and registry under the ACR.

## Page: Oil & Gas - Sales and emissions intensity of production

**OG5.1**

**Please provide values for annual sales of the hydrocarbon types (in units of BOE) for the years given in the following table. The values required are aggregate values for the reporting organization. The values for 2011 are forward-looking estimates**

| Product | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|
| Natural gas (excluding LNG) | | | | | | | |
| Liquefied natural gas (LNG) | | | | | | | |
| Light & medium oils | | | | | | | |
| Heavy oil | | | | | | | |
| Extraheavy oil | | | | | | | |
| Nonconventional oils (e.g. oil sands & bitumen) | | | | | | | |

**OG5.2**

**Please provide estimated emissions intensities associated with each hydrocarbon type based on the current production and operations**

| | Emissions intensity: exploration, | Emissions intensity: storage, | Emissions intensity: |
|---|---|---|---|

| Year ending | Hydrocarbon type | production & gas processing (metric tonnes CO2e per thousand BOE) | transportation & distribution (metric tonnes CO2e per thousand BOE) | refining (metric tonnes CO2e per thousand BOE) |
|---|---|---|---|---|

**OG5.3**

**Please clarify how each of the emissions intensities has been derived and supply information on the methodology used where this differs from information already given in answer to the methodology questions in the main information request**

**Further Information**

All information requested herein may be found in the attached 2009 Annual Report.

**Attachments**

https://www.cdproject.net/Sites/2011/45/745/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/OG5Salesandemissionsintensityofproduction/apc2009.pdf

## Page: Oil & Gas - Strategy for development of non-fossil fuel products

**OG6.1**

**Does your organization have a strategy for the development of renewable and clean energy technologies?**

# Module: Sign Off

## Page: Sign Off

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

Bobby Reeves, SVP, Gen Counsel, & CAO

**CDP**