



Investor CDP 2012 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

Fri 01 Jan 2010 - Fri 31 Dec 2010

0.3

Country list configuration

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

Select country

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 opportunities.

Additionally, an individual within the corporate EHS structure at Anadarko has direct responsibility for carbon management and provides periodic updates and progress reports to the Climate Change Committee.

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 commitment to transparent carbon-related disclosure has earned it multiple accolades directly attributed 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.
Business unit managers	Monetary reward	GHG management is increasingly becoming part of routine regulatory preparedness. Compliance with GHG rules is linked to performance and goals for business units.
Environment/sustainability managers	Monetary reward	GHG management is increasingly becoming part of routine regulatory preparedness. Compliance with GHG rules is linked to performance and goals for individual employees, particularly environmental and sustainability staff that design implementation programs for operations. Additionally, Anadarko has a position dedicated to carbon management; communication and strategy on these issues is linked to compensation for this position.

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' compensation. Additionally, those assets involved in enhanced oil recovery (EOR) projects that sequester CO2 see direct commercial benefit from their operational emission reductions. Additionally, as GHG management is increasingly becoming part of routine regulatory preparedness, compliance with GHG rules is linked to performance and goals for individual employees.
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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 initiatives 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.
- 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 involvement 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. In most cases, corporate teams will develop procedures and tools that may be deployed to applicable assets as needed to manage carbon risks and opportunities.
- 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. Anadarko is currently evaluating further ways to provide periodic dashboard reports to various stakeholders.
- 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 an industry leader in reduction of 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. This strategy is communicated from our CEO through all facets our organization, including but not limited to EHS, operations, marketing.

- 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. Inherent in this driver is increasing media attention to the benefits of natural gas' relatively lower carbon footprint, particularly for unconventional resources. Additionally, proposed and pending regulations of GHGs drive operational shifts and best practices. Anadarko considers proactive carbon management an integral part of our business strategy. Furthermore, it is always 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 until recently. Pending regulations impacting the oil and natural gas industry prompt us to develop short-term strategies to manage these risks and mitigate impacts to operations. These short-term strategies may include enhancements to how we manage data and operational/equipment modifications to reduce and better track GHG emission sources.
- 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 natural 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 feasible. Further components of this strategy include strategic involvement in evaluating, mitigating, and communicating 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 that require their use are promulgated and finalized, 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. On November 30, 2010, EPA finalized its GHG Reporting Program (GHGRP) requiring the oil and natural gas industry to calculate and report GHG emissions from specific sources. Immediately, Anadarko's operations management of the highest level approved funding for a comprehensive corporate program to evaluate the requirements and put together a consistent approach for compliance. This initiative will reach into many facets of Anadarko, including EHS, operations, supply chain management, and accounting. This rule will have significant implications on how equipment is procured, established, and managed within our organization.

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. We also engage indirectly with policy makers through involvement in technical working groups on studies funded by third parties that may inform policy and provide scientifically sound methodologies for emissions calculations and data.
- 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 improvement in the uncertainty of current emissions estimates for different facets 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 the new EPA GHGRP so that data regarding emissions from oil and gas production may be better understood in the public domain, but Anadarko also recognizes that the methodologies used to estimate emissions need refinement in order to present an accurate emissions profile. Anadarko continues to work with EPA to improve these methods. Anadarko supports research

improving the accuracy of data concerning the 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 expects a moderate increase in GHG emissions over the next five years due to development in new geographic areas both domestically and abroad. Anadarko has been calculating annual GHG emissions since 2004 and shows fairly consistent numbers from year to year with a generally increasing trend due to increased exploration and production.

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 CO₂/10⁶ Btu), #4 fuel oil (0.0802 metric tons CO₂/10⁶ Btu), and pipeline natural gas (0.0590 metric tons CO₂/10⁶ 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 identify the total number of projects at each stage of development, and for those in the implementation stages, estimated CO₂e savings

Stage of development	Number of projects	Total estimated annual CO ₂ e savings (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		

Implemented*	12	42600
Not to be implemented		

3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: processes	Voluntary replacement of four old compressors and engines with new electricity-driven equipment, eliminating Scope 1 emissions. This replacement is complete and additional opportunities for replacement may be identified in the future.	50	6500		1-3 years
Low carbon energy purchase	Voluntary replacement of gas-fired pneumatic pumps with solar-powered pumps to reduce Scope 1 emissions. This initiative is complete for the reporting year and additional projects may continue in future years.	40	4800		<1 year
Process emissions reductions	Voluntarily added 119 plunger lifts in two areas to reduce Scope 1 vented emissions during liquids unloading events. Voluntary green completions conducted to reduce Scope 1 emissions that would otherwise be vented during traditional completion operations. Voluntary use of foaming agents in two areas on hundreds of wells to reduce methane vented to atmosphere. Additionally, automation activities continued to avoid unnecessary blowdowns due to shutdowns, and temporary jumper lines have been installed to purge lines when operations must repair a leaking flange. All of these activities took place in the reporting year and the lifetime of these initiatives is ongoing.	42500	6000000		1-3 years

3.3c

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 more proactively fund technological improvements and advancements as well as best practices that mitigate emissions.
Employee engagement	If employees are effectively educated on the benefits of reducing GHG emissions, they are more likely to implement changes in equipment and processes during the design phase and during implementation of various projects.
Financial optimization calculations	Within Anadarko's internal market modeling efforts, 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 annual reports (complete)	4, 23, 37, 40	APC_2010_10K_Annual Report.pdf
In voluntary communications (complete)	Entire Document	Website 2010.pdf
In voluntary communications (complete)	Entire Document	Website2.pdf
In voluntary communications (complete)	Entire Document	ClimateChangeCmtCharter.pdf

Attachments

https://www.cdproject.net/Sites/2012/45/745/Investor_CDP_2012/Shared_Documents/Attachments/InvestorCDP2012/4.Communication/Website2.pdf
https://www.cdproject.net/Sites/2012/45/745/Investor_CDP_2012/Shared_Documents/Attachments/InvestorCDP2012/4.Communication/ClimateChangeCmtCharter.pdf
https://www.cdproject.net/Sites/2012/45/745/Investor_CDP_2012/Shared_Documents/Attachments/InvestorCDP2012/4.Communication/APC_2010_10K_AnnualReport.pdf
https://www.cdproject.net/Sites/2012/45/745/Investor_CDP_2012/Shared_Documents/Attachments/InvestorCDP2012/4.Communication/GHG_Management_Plan_exec_summary.pdf
https://www.cdproject.net/Sites/2012/45/745/Investor_CDP_2012/Shared_Documents/Attachments/InvestorCDP2012/4.Communication/Website_2010.pdf

Module: Risks and Opportunities**Page: 2012-Investor-Risks&Opps-ClimateChangeRisks****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
Reg1	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
Reg2	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. Furthermore, the GHG tailoring rule will significantly impact specific existing Anadarko facilities as well as specific newly constructed facilities that have the potential to emit over a certain threshold.	Increased capital cost	Current	Direct	Virtually certain	High

Reg3	Carbon taxes	Depending where a carbon tax is implemented, it 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
Reg4	Cap and trade schemes	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 purchase new equipment to decrease emissions and/or implement new processes to reduce routine emission releases to the atmosphere.	Increased operational cost	Unknown	Direct	About as likely as not	High
Reg5	Emission reporting obligations	EPA's GHGRP 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 and developing the required systems for compliance.	Increased operational cost	Current	Direct	Virtually certain	High
Reg6	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. Proposed regulations are often very different from finalized regulations, which subsequently go through extensive corrections and amendments. The ups and downs of the regulatory process (and usual stringency and impact of these regulations to industry) provide for a challenging environment to best mitigate new and pending potential risks. 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. Proposed regulations are often very different from finalized regulations, which subsequently go through extensive corrections and amendments. The ups and downs of the regulatory process (and usual stringency and impact of these	Increased operational cost	Current	Direct	Virtually certain	Medium

		regulations to industry) provide for a challenging environment to best mitigate new and pending potential risks.					
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5.1b

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

Reg1.i. International agreements present unique financial implications, in regards both to capital equipment costs as well as resource and labor costs. Capital equipment upgrades or replacement may be needed and resources are required, both for labor as well as management systems, to efficiently manage data required for compliance with applicable laws and regulations and provide associated reports and documentation to officials. For cap and trade programs, cost is associated with the purchase of allowances for compliance or investment in emission reduction projects in developing countries. Costs are also associated with noncompliance in the form of fines or potential litigation. Reg1.ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process assesses the business implications of various regulatory risks and models financial implications using detailed cost estimates of various components of compliance. This risk is built into the development process for new assets in international communities as well. Reg1.iii. Actual costs of compliance depend on the regulation or law in question and the timing of compliance. Costs associated with this risk are currently unknown until further details are discerned in finalized policies. Reg2.i. Air pollution agreements present unique financial implications, including both capital equipment costs for upgrades or replacement and resource and labor costs. To cope with EPA's GHG tailoring rule, Anadarko is making operational changes to new and existing facilities to reduce potential regulatory impacts, all at an operational cost and in some cases, reduced operational efficiency. Additional costs are resources required, both labor as well as management systems, to efficiently manage data required for compliance with applicable laws and regulations and provide associated reports and documentation to officials. Costs are also associated with noncompliance in the form of fines or potential litigation. Reg2.ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process assesses the business implications of various regulatory risks and models 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 managed and mitigated by Anadarko's regional EHS air teams and industry working groups. Reg2.iii. Actual costs of compliance depend on the regulation or law in question and compliance timing. Costs associated with the GHG tailoring rule are currently still being assessed as the regulation is in its infancy and the number of affected facilities at Anadarko is still being refined. Reg3.i. Carbon taxes present unique financial implications, in regards to the carbon intensity of the fuel that Anadarko produces. If a tax is imposed on the upstream oil and gas industry, Anadarko would likely pay higher costs for its oil production than for its natural gas production, due to the larger carbon content of coal. Reg3.ii. The potential for carbon tax risk is managed by internal teams via Anadarko's internal risk management process. This process assesses the business implications of various regulatory risks and models financial implications using detailed cost estimates of various components paying a carbon tax. Reg3.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 until further details are discerned in finalized policies with a specific carbon price. Reg4.i. Cap and trade schemes present unique financial implications, including both capital equipment costs for upgrades or replacement and resource and labor costs. Resource costs are required, both for labor and management systems, to efficiently manage data required for compliance with applicable laws and regulations and provide associated reports and documentation to officials. For cap and trade programs, additional cost include the purchase of allowances for compliance or investment in emission reduction projects in developing countries. Costs are also associated with noncompliance in the form of fines or potential litigation. Reg4.ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process assesses the business implications of various regulatory risks and models financial implications using detailed cost estimates of various components of compliance. Reg4.iii. Actual costs of compliance depend on the regulation or law in question and compliance timing. Costs associated with this risk are unknown until further details are discerned in finalized policies that impact Anadarko. Reg5.i. Emission reporting obligations, particularly the US EPA Greenhouse Gas Reporting Program (GHGRP) present unique financial implications, regarding both capital equipment costs for data monitoring and resource and labor costs. Resources costs are required, both for labor to collect necessary data and management systems, to efficiently manage, calculate, and report data required for compliance. Costs are also associated with noncompliance in the form of fines or potential litigation. Reg5.ii. Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process assesses the business implications of various regulatory risks and models financial implications using detailed cost estimates of various compliance components. Risk is managed via continued involvement in various forums and dedicated technical workgroups to understanding the rule implications. Risk associated with the GHGRP is further managed by a dedicated internal team analyzing and streamlining compliance activities across the country. Reg5.iii. Anadarko's costs of complying with the GHGRP are estimated at \$12.5 million over the first year of reporting under Subpart W, specific to onshore and offshore natural gas and oil production and natural gas processing. Reg6.i. Uncertainty regarding regulation presents cost to Anadarko for the resources and labor needed to assess regulations and laws that may or may not be implemented and many of which will undergo significant revision and amendment. Reg6.ii.

Regulatory risk is managed by internal teams via Anadarko's internal risk management process. This process assesses the business implications of various regulatory risks and models financial implications using detailed cost estimates of various components of compliance. Reg6.iii. Actual costs of regulatory uncertainty range depending on the type of regulation 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 typhoons)	Hurricanes and cyclones impacting Anadarko's offshore operations can present risk due to required shut-ins of production and evacuation of facilities to prepare for 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	Likely	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 in Anadarko's Rockies operations. As an example, should heaters fail in extreme cold, , subsequent piping failure could present a risk, requiring potential shut-ins and blowdowns 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	Description	Potential	Timeframe	Direct/ Likelihood	Magnitude
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driver			impact		Indirect	of impact	
Oth1	Reputation	The carbon footprint of natural gas production has recently come under attack as potentially being on par with that of coal. This issue, coupled with related public concerns, present reputational risk to Anadarko, a major producer of natural gas.	Wider social disadvantages	1-5 years	Direct	Unknown	Unknown
Oth2	Changing consumer behaviour	While unlikely in the foreseeable 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

Oth1. i. Anadarko is currently experiencing increased interest in our natural gas production best practices pertaining to water and emissions management. The public domain lacks robust and plentiful data regarding methane vented during natural gas production, and many newly published studies and media reports cite outdated, uncertain, and unrepresentative data sources. Financial implications include increased regulatory pressure and burden due to poor data and subsequent reputational concerns stemming from public outcry as well as funding necessary to manage reputational risk through various stakeholder engagement and education initiatives.

Oth1. ii. Anadarko is managing reputational risk in coordinated efforts between investor relations and EHS to provide improved data to the public. These efforts may include participation in studies partnering with NGOs, government, academic communities, and other industry groups to better inform information available to the public.

Oth1. iii. Costs associated with reputational risk have yet to be specifically quantified as options for risk mitigation are currently being explored.

Oth2. i. Financial implications of changing consumer behavior include decreased revenues from the production of crude oil.

Oth2. 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.

Oth2. 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: 2012-Investor-Risks&Opps-ClimateChangeOpp

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
		Anadarko could have					

ROpp1	International agreements	opportunity in regards to its overseas operations that are in non-Annex II countries party to the Kyoto Protocol. 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. Anadarko already has two emission reduction projects that may potentially qualify under a cap and trade scheme.	New products/business services	Current	Direct	About as likely as not	Low-medium
ROpp3	Emission reporting obligations	In reporting GHG emissions data under EPA's GHGRP, the government will have access to improved data surrounding oil and gas production than what is currently publicly available. Anadarko hopes that this availability of improved data from industry will improve knowledge and public perception of GHG emissions from the oil and natural gas	Wider social benefits	1-5 years	Direct	Likely	Medium

		industry.					
ROpp4	Voluntary agreements	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 regarding GHG emissions. Participation in voluntary agreements also highlights Anadarko's commitment to climate change and transparency.	Wider social benefits	Current	Direct	Very likely	Medium

6.1b

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

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 \$7/CER is appropriate. For a project that reduces 100,000 tonnes of CO₂e annually, the project developer could expect up to generate up to \$700,000 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 and may be accepted in the future within AB32. 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. Furthermore, Anadarko is participating in a project with the Pew Center on Climate Change in partnership with the North American Carbon Capture and Storage Association (NACCSA) to develop a robust methodology for quantifying emission reductions from CCS and provide a framework for establishing market-ready carbon commodities under various regulatory frameworks.

ROpp2.iii Verifying emission reduction credits requires some administrative cost. Furthermore, capital costs are needed to ensure the appropriate monitoring equipment exists 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. Emission reporting obligations may provide some reduced financial burden associated with providing credible data to the public regarding oil and natural gas production. Rather than providing additional GHG emissions values and disclosing Anadarko's GHG emissions inventory through a variety of voluntary mechanisms, required GHG emissions reporting under the EPA GHGRP provides for a centralized public database of GHG emissions data that may be easily reviewed by the public. The accessibility and usability of this site may decrease costs associated with public disclosure typically pursued via different avenues.

ROpp3.ii Anadarko is currently reviewing the ways it discloses emissions data to the public in light of required reporting to EPA under the GHGRP and intends to subsequently streamline this process, ensuring consistent use of calculation methods, and

avoided duplication of effort.

ROpp3.iii The financial opportunity associated with required emission reporting is currently undefined as Anadarko continues to assess ways of optimizing the use of EPA-reported data.

ROpp4. i. Financial implications associated with voluntary agreements may include increased shareholder investment as investors become comfortable with the positive and environmentally proactive actions taken by Anadarko.

ROpp4.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.

ROpp4.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 increase 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

Anadarko has not identified any opportunities 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 a lack of consideration of related 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 CO ₂ e)	Scope 2 Base year emissions (metric tonnes CO ₂ e)
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
IPIECA's Petroleum Industry Guidelines for reporting GHG emissions, 2003
The Climate Registry: General Reporting Protocol
The Climate Registry: Oil & Gas Protocol
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. In 2010, Anadarko has also begun using the EPA's GHGRP Subpart C methods for calculated GHG emissions for stationary combustion sources at applicable facilities. For the 2010 reporting year, our emissions inventory is only for a specific subset of facilities required to report to EPA under the GHGRP and using these methods.

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)
Other: N2O	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
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
Natural gas	53.46	Other: kg CO2/mmBtu	2004 API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry
Natural gas	53.02	Other: kg CO2/mmBtu	EPA's GHGRP Subpart C, 40 CFR Part 98

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

8.1

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

Operational control

8.2a

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

2371282

8.3a

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

8.4

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

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
GHG emissions from all international facilities and many onshore facilities.	Scope 1 and 2	Due to considerable burden associated with preparation to comply with EPA's GHGRP, Anadarko does not have a complete emissions inventory at this time for 2010. In 2010 emissions calculations were performed only for those facilities potentially applicable to report to EPA, and only for stationary combustion. Anadarko intends to provide a full 2010 emissions inventory at later date for the 2010 calendar year, as well as recalculate its baseline using EPA methods.

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 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
More than 5% but less than or equal to 10%	Data Gaps Metering/ Measurement Constraints Other: Published Emissions Factors	The requirements for calculating emissions under the EPA GHGRP are fairly stringent that require specific QA/QC checks and calibration requirements on fuel meters to bring uncertainty due to instrumentation no greater than five percent. Furthermore, in the case of missing data, EPA specifies missing data procedures that must be employed, that may introduce further uncertainty. In the values reported for 2010, no missing data procedures were used. Other sources of uncertainty include the emission factors published by EPA that must be used for the emission calculations. Anadarko recognizes that these factors are not always derived from the most accurate or current sources.			

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached
Limited assurance	The Climate Registry	Signed Verification Statement.pdf

8.7

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

No emissions data provided

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/2012/45/745/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/8.EmissionsData\(1Jan2010-31Dec2010\)/Signed Verification Statement.pdf](https://www.cdproject.net/Sites/2012/45/745/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/8.EmissionsData(1Jan2010-31Dec2010)/Signed%20Verification%20Statement.pdf)

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

9.1

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

Yes

9.1a

Please complete the table below

Country	Scope 1 metric tonnes CO ₂ e
Other: Rockies	1765063
Other: Southern	207749
Other: GOM	398470

9.2

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

By business division
By activity

9.2a

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

Business Division	Scope 1 metric tonnes CO ₂ e
E&P	477519
Midstream	1893763

9.2d

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

Activity	Scope 1 metric tonnes CO ₂ e
Stationary combustion	2371282

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

10.1

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

10.2

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

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?

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	1422188
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
Change in methodology		Increase	Anadarko noted an increase in emissions for specific regions and facilities based on the new calculation methods required by EPA. Anadarko intends to further explore these changes in coming years.
Other:			Anadarko's emissions have increased due to business as usual continued growth

Continued growth	Increase	across the organization.
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13.2

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
	metric tonnes CO ₂ e	unit total revenue			

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	Reason for Change
	metric tonnes CO ₂ e	FTE Employee			

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	Reason for Change
	metric tonnes CO ₂ e				

Page: 14. Emissions Trading

14.1

Do you participate in any emission trading schemes?

Yes

14.1a

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

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO ₂ e	Details of ownership
European Union ETS	Fri 01 Jan 2010 - Fri 31 Dec 2010	0	0	1494	Other: Operation of Anadarko's aviation fleet within the EU

14.1b

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

Anadarko participated for the first time in the EU ETS in 2010 for its aviation fleet. Anadarko's continued 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?

No

Page: 2012-Investor-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
Purchased goods & services			Anadarko uses many contractors for various activities related to its operations, particularly for drilling, completing, working over, and testing of wells. The fuel burned during these contracted activities are Scope 3 GHG emissions.
Upstream transportation & 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.
Waste generated in operations			The disposal of waste generated by oil and natural gas production requires energy consumption that contributes to Anadarko's total Scope 3 GHG emissions.
Business travel	1494	EU EUTS AEM07043.V.1	The travel required by business globally contributes to Anadarko's Scope 3 total GHG emissions, mostly through fleet vehicle fuel consumption and the use of airplane travel.
Downstream 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.
Processing of sold products	3209507	EPA GHGRP Subpart NN, 40 CFR Part 98	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.
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.

15.2

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

Verification or assurance complete

15.2a

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

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

15.2b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached
Reasonable assurance	Other: CIS5-UKAS, EA-6/01 and EA-6/03	Anadarko – TK final – 250311.pdf Anadarko – AE final – 240311.pdf

15.3

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

No, this is our first year of estimation

Attachments

[https://www.cdproject.net/Sites/2012/45/745/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/15.Scope3Emissions/Anadarko - AE final - 240311.pdf](https://www.cdproject.net/Sites/2012/45/745/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/15.Scope3Emissions/Anadarko%20-%20AE%20final%20-%20240311.pdf)

[https://www.cdproject.net/Sites/2012/45/745/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/15.Scope3Emissions/Anadarko - TK final - 250311.pdf](https://www.cdproject.net/Sites/2012/45/745/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/15.Scope3Emissions/Anadarko%20-%20TK%20final%20-%20250311.pdf)

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 2006 to the year ending in 2011 and a forecast for the year ending in 2012

Year ending	Date range

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 2012 are forward-looking estimates

Product	2006	2007	2008	2009	2010	2011	2012

OG1.2

Please provide values for proved reserves of each of the hydrocarbon types (in units of BOE) for 2011. The values required are aggregate values for the reporting organization

Product	Proved reserves (BOE), 2011	Date of assessment

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

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 2012 are forward-looking estimates

Segment	2006	2007	2008	2009	2010	2011	2012

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 2012 are forward-looking estimates

Segment	2006	2007	2008	2009	2010	2011	2012

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

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 2012 are forward-looking estimates

Category	2006	2007	2008	2009	2010	2011	2012
Combustion							
Flaring							
Process emissions							
Vented emissions							
Fugitive emissions							

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 CO ₂ emissions	

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	2006	2007	2008	2009	2010	2011
CO ₂ transferred in						
CO ₂ 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

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

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 CO ₂ (metric tonnes CO ₂)	Percentage transferred in	Percentage transferred out
------------------------	---	---------------------------	----------------------------

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 CO ₂ (metric tonnes CO ₂)	Percentage of injected CO ₂ intended for long-term (>100 year) storage	Year in which injection began	Cumulative CO ₂ injected and stored (metric tonnes CO ₂)
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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

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 2012 are forward-looking estimates

Product	2006	2007	2008	2009	2010	2011	2012
---------	------	------	------	------	------	------	------

OG5.2

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

Year ending	Hydrocarbon type	Emissions intensity: exploration, production & gas processing (metric tonnes CO ₂ e per thousand BOE)	Emissions intensity: storage, transportation & distribution (metric tonnes CO ₂ e per thousand BOE)	Emissions intensity: refining (metric tonnes CO ₂ e per thousand BOE)
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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

Page: Oil & Gas - Strategy for development of renewable and clean energy technologies

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