



Investor CDP 2013 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 2013 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 disclosures in the Carbon Disclosure Leadership Index (CDLI), and Anadarko strives for continued recognition for its transparency 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 2012, it reported sales-volume growth of approximately eight percent growth with record sales volumes for the year. Associated with this increase in growth is a continued commitment to enhance and publicly share its 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

Sat 01 Jan 2011 - Sat 31 Dec 2011

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(\$)

0.6 Modules As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets,

companies in the automobile or auto component manufacture sectors, companies in the oil and gas industry and companies in the information technology and telecommunications sectors 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 not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@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

Anadarko's 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 includes a member of Anadarko's Executive Committee and 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	Incentivized 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.
Other: 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.
		When business units implement smart and efficient activities that reduce GHG emissions at Anadarko's operations, financial benefits arise from increased

All employees	Monetary reward	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

- 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 engagement in various voluntary 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 both corporate and regional EHS 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 by the regional EHS teams 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. For example, in regards to GHG emissions management, regional EHS and operations teams receive monthly dashboard reports on key metrics that the field tracks for required and voluntary GHG reporting. This is one way to ensure constant communication and assessment of potential risks at their outset.
- 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

- 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 regularly participates in opportunities 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. This strategy is communicated from the top levels of our executive management through all facets of 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, 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. GHG regulations impacting the oil and natural gas industry prompt us to develop short-term strategies to immediately manage these risks, mitigate impacts to operations, and comply with all state and federal mandates. These short-term strategies include enhancements to how we manage data and operational/equipment modifications to reduce and better track GHG emission sources. In 2011, a short-term strategy was the deployment of a comprehensive equipment inventory to assess all potential sources of GHG emissions. Another short-term strategy is our partnership with the former Pew Center for Climate Change and other operators to develop a methodology for estimating GHG emission reductions from CCS projects. Given our enhanced oil recovery (EOR) projects that sequester CO₂, this was an especially important short-term strategy with long-term implications that we executed in 2011.
- iv. Important components of the long-term strategy to operate efficiently and reduce emissions include the implementation of green completions during natural gas drilling and the appropriate data management tools to track and monitor GHG emissions from these and other events. 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. An additional long-term strategy is the development of an internal GHG emissions calculation and reporting program that integrates data from key information systems around the company. This system will not only help Anadarko comply with federal regulations and understand what type of data we currently track, but also the environmental influences of our data, and major operational inefficiencies.
- 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. Finally, our strategies related to data management will provide a level of detail and data sophistication that will allow us not only to comply with regulations, but to achieve value and benefit operationally in a variety of ways, which may not be matched by our competitors.
- 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 reaches into many facets of Anadarko, including EHS, operations, supply chain management, and accounting. This rule has significant implications on how equipment is procured, established, and managed within our organization.

2.3

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

- Direct engagement
- Trade associations
- Funding research organizations

2.3a

On what issues have you been engaging directly?

Focus of legislation	Corporate Position	Details of engagement	Proposed solution
Mandatory carbon reporting	Support with major exceptions	Anadarko is participating in direct discussion with EPA on it's Greenhouse Gas Reporting Program for the Oil and Gas Sector.	

Other: EPA National Emissions Inventory	Support with major exceptions	Anadarko is participating in direct discussion with EPA on it's 2011 National Emissions Inventory, in particular, estimated GHG emissions from the Natural Gas Production sector	
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2.3b
Are you on the Board of any trade associations or provide funding beyond membership?

Yes

2.3c
Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to influence the position?
ANGA	Consistent		
API	Consistent		
AXPC	Consistent		
GPA	Consistent		
NACCSA	Consistent		

2.3d
Do you publically disclose a list of all the research organizations that you fund?

No

2.3e
Do you fund any research organizations to produce public work on climate change?

Yes

2.3f
Please describe the work and how it aligns with your own strategy on climate change

Anadarko worked with the former Pew Center on Climate Change to develop a publicly available methodology for estimating emission reductions from CCS. Additionally, Anadarko is funding a study conducted by the University of Texas in partnership with other operators and the Environmental Defense Fund to measure methane emissions at natural gas production sites. Both of these activities demonstrate Anadarko's commitment to furthering both the availability of tools and measured and verifiable data to understand GHG emissions from the oil and gas industry.

2.3h
What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

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, or by the operator of a fleet vehicle who is switching from a petrol-powered vehicle to a natural gas-powered vehicle. The direct emissions of this company or commuter 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 implementation phases)

Yes

3.3a

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

Stage of development	Number of projects	Total estimated annual CO ₂ e savings in metric tonnes CO ₂ e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	33	
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 CO ₂ e savings (metric tonnes)	Annual monetary savings (unit currency - as specified)	Investment required (unit currency - as specified)	Payback period
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		CO2e)	in Q0.4)	in Q0.4)	
Process emissions reductions	Voluntary installation of centralized liquid gathering of two, eight-well pads which recovers gas from the heater treater and recompresses it to sales directly reducing Scope 1 emissions. Opportunities to implement similar planning at other locations are ongoing and throughout the lifetime of our operations at this asset.	13500	110000	198000	1-3 years
Process emissions reductions	Voluntarily installed 50 eclipse adjustable burners to reduce Scope 1 emissions. Further installation will be implemented as the opportunity arises throughout the lifetime of this asset.	34000	332000	1900	<1 year
Process emissions reductions	Voluntary installment of desiccant dehydrators to replace glycol dehydrators, a source of Scope 1 emissions that will be implemented as feasible throughout the lifetime of this asset.	20000	167500	423700	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 and reduce our overall footprint.
Employee engagement	If employees are effectively educated on the benefits of reducing GHG emissions, including cost, 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 places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Attach the document
In mainstream financial reports (complete)	6,24,35	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Anadarko 2011 10-K.pdf
In voluntary communications (complete)	Entire Document	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Website 2010.pdf
In voluntary communications (complete)	Entire Document	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Website2.pdf
In voluntary communications (complete)	Entire Document	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/ClimateChangeCmtCharter.pdf
In voluntary communications (complete)	Entire Document	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/GHG_Management_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 the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation

Risks driven by changes in physical climate parameters

Risks driven by changes in other climate-related developments

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. Additionally, Anadarko has an aviation fleet subject to EU ETS aviation requirements for compliance with the Kyoto Protocol that subject us to some financial risk.	Inability to do business	1-5 years	Direct	Unknown	High
Reg2	Air pollution limits	Any limits on emissions can 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. Specifically, the GHG tailoring rule and the proposed NSPS for oil and gas facilities will significantly impact existing Anadarko facilities as well as 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 or consumer level, the tax does not present immediate risk to Anadarko. If the tax is imposed at the upstream production 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	Increased operational cost	1-5 years	Direct	About as likely as not	Medium-high

		business.					
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	1-5 years	Direct	About as likely as not	Medium-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. This year, we are conducting a comprehensive equipment inventory for compliance with this regulation, at significant cost to operations.	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 stringency and impact of these regulations to industry) provide for a challenging environment to mitigate new and pending potential risks.	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

Reg1.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. Of additional note is the potential loss of revenue due to a potential inability to operate should international agreements prohibit our technology from being implemented. Additional cost implications regard 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. Anadarko's aviation fleet is subject to compliance with the EU ETS, and may be required to pay further compliance fees in the future.

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. For Anadarko's aviation fleet, outside regulatory and consulting fees approximated \$4000 in 2011, not including an additional \$1000 for our calculated GHG emissions. Internally, around 100 hours were spent ensuring compliance with the EU-ETS.

Reg2.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. In order to cope with EPA's GHG tailoring rule, Anadarko is already 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. For the proposed NSPS, Anadarko is currently evaluating the cost implications of installing all low-bleed pneumatic devices and requiring flaring at every completion event. Additional cost implications regard 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.

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 and NSPS programs, are also managed and mitigated by Anadarko's regional EHS air teams.

Reg2.iii. Actual costs of compliance depend on the regulation or law in question and compliance timing. Costs associated with the GHG tailoring rule and the proposed oil and gas NSPS are currently being assessed as these regulations are in their infancy.

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. Given that natural gas production is currently abundant, there has been some shift in our portfolio to producing more cost-effective oil, which may be more heavily taxed in this situation.

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 U.S. Environmental Protection Agency (EPA) Greenhouse Gas Reporting Program (GHGRP) present unique financial implications, in regards both to capital equipment costs as well as resource and labor costs. This reporting rule requires capital equipment for necessary monitoring data collection. Additional cost implications include required resources, both in terms of labor to collect necessary data as well as management systems, to efficiently manage, calculate, and report data required for compliance. Lastly, costs are also associated with noncompliance in the form of fines or litigation in some cases.

Reg5.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. The risk associated with the GHGRP is further managed by a dedicated compliance implementation team working to analyze and streamline compliance activities across the

country.

Reg5.iii. In 2011, approximately \$700,000 was spent to begin compliance preparation for the GHGRP, including documentation and reporting and a comprehensive equipment inventory. These costs have been compared with EPA's estimated costs of compliance with the GHGRP, which have been shown to be significantly underestimated.

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 and its potential impact to Anadarko.

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	The uncertainty of physical risks makes predictions about how operations will be impacted, particularly in our Rocky Mountain operations, very difficult. For example, without a better understanding of how permafrost in Alaska may be impacted by climate change, we are not always able to sufficiently prepare for potentially negative impacts to operations that may prohibit exploration and production activities.	Reduction/disruption in production capacity	Current	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. When storms of this nature cross operational paths, costly procedures and resources are immediately deployed to ensure the safety of all employees and contractors involved at the site. In extreme circumstances, production may need to be halted, resulting in a loss of revenue. 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 further revenue losses. 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 cyclones are event specific, dependent on the resources necessary for preparation, the impact to production, and any potential damage to infrastructure in the storm's aftermath.

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 may occur, requiring potential shut-ins and blowdowns in order to avoid potential safety hazards. This scenario would cause a subsequent loss of production and revenue.

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	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	Likely	Medium-high
Oth2	Changing consumer behaviour	While unlikely in the foreseeable future, if consumer preferences were to shift away from the use of fossil fuels to mitigate climate change, 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, estimated, and unrepresentative data sources. This data influences the national GHG emissions inventory published by EPA annually as well as a plethora of academic studies that quote this data. This poorly compiled and used data may unfavorably portray Anadarko, and the oil and gas industry as a whole to the public domain and stakeholders. 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's 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. Anadarko is currently finalizing participation in a study with other industry operators and the Environmental Defense Fund to fund a study conducted by the University of Texas to measure methane emissions from natural gas production activities. We are hopeful the results of this study will reduce much of the uncertainty and poor use of data in the public domain regarding GHG emissions from the oil and gas sector.

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 potential decreased revenues from the production of crude oil as consumers become concerned with higher carbon fuels and drive markets toward embracing lower carbon products and fuels.

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: 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 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	About as likely as 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	New products/business services	1-5 years	Direct	About as likely as not	Low-medium

		already has two emission reduction projects that may potentially qualify under a cap and trade scheme.					
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 industry.	Wider social benefits	Current	Direct	Very likely	Low-medium
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	More likely than not	Low-medium

6.1b

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity and (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 \$4/CER is appropriate. For a project that reduces 100,000 tonnes of CO₂e annually, the project developer could expect up to generate up to \$400,000 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, such as 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, both for the validation of methodologies and the verification of emission reductions achieved. 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. Having this data publicly accessible will also contribute to reducing the social cost of investors and stakeholders concerned with our carbon footprint.

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. Anadarko participates 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 comments and provides 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
OOpp1	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 and increased revenues.	Increased demand for existing products/services	Unknown	Direct	Likely	Medium-high
OOpp2	Reputation	Current debate surrounds the GHG emission implications of natural gas production, which has resulted in much criticism of the oil and gas industry both domestically and abroad. Anadarko has an opportunity to engage this discussion with robust and verifiable data that can not only better inform this debate	Wider social benefits	Current	Direct	Very likely	Medium

	but also lend credibility to and bolster Anadarko's reputation as a transparent and responsible operator.						
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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

OOpp1i. 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.

OOpp1ii. 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.

OOpp1iii. 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.

OOpp2i. As a producer of natural gas, Anadarko stays abreast of all data and study regarding GHG emissions from production operations. The EPA has released estimates of emissions from the natural gas industry that use outdated and misinformed data. This same data has gone to be reported and quoted in media outlets and used further in academic studies. Some of these studies call into question the GHG emission benefits of natural gas over coal, and the environmental impacts of hydraulic fracturing of wells. Anadarko is often asked questions about these studies and operational impacts when exploring new areas, both domestically and abroad. Anadarko has an opportunity to engage directly in this debate by providing actual measured data to inform both regulatory bodies and the public about GHG emissions from natural gas production, rather than just relying on estimates. This proactive approach to managing the debate and transparency of operational practices represents an opportunity to bolster Anadarko's reputation, which may translate to improved license to operate and subsequent reduced operational costs by getting business done faster than would be done otherwise.

OOpp2ii. Anadarko is engaging with the Environmental Defense Fund and several other operators to fund a groundbreaking study conducted by the University of Texas to measure methane emissions from natural gas production. Additionally, Anadarko is actively participating in efforts through API to provide improved data to EPA.

OOpp2iii. Anadarko is contributing funds directly to the University of Texas to fund a study to quantify methane emissions from natural gas production. Additionally, Anadarko pays membership fees to industry organizations to participate in conversations with regulators about how to improve the data regarding GHG emissions from the oil and gas sector.

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 little 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 CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Sat 01 Jan 2011 - Sat 31 Dec 2011	5056818	535843

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
 US EPA Mandatory Greenhouse Gas Reporting Rule

7.2a

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

7.3

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

Gas	Reference
CO2	IPCC Second Assessment Report (SAR - 100 year)
CH4	IPCC Second Assessment Report (SAR - 100 year)
N2O	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
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Page: 8. Emissions Data - (1 Jan 2011 - 31 Dec 2011)

8.1

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

Operational control

8.2

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

5056818

8.3

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

535843

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 small onshore facilities are exempt from reporting to EPA.	Scope 1 and 2	Anadarko has decided to streamline its GHG calculation and reporting with EPA GHGRP requirements. Reporting in compliance with the EPA GHGRP is resource intensive and additional voluntary reporting is challenging. Anadarko has plans to calculate GHG emissions for international facilities and small domestic facilities not applicable to report to EPA in the future.

8.5

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

Scope 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 20% but less than or equal to 30%	Data Gaps Assumptions Extrapolation	Several onshore facilities are not applicable to report to EPA because they fall below EPA's reporting threshold or are not included within the physical boundaries of reporting defined by EPA. Additionally, in the 2011 year, significant estimates relying on assumptions and extrapolations were used to calculate reported emissions. Conservative estimates of these gaps are roughly 10 percent of the total emissions currently reported. Another 20 percent roughly represents international operations that are not calculated or reported at this time.	More than 10% but less than or equal to 20%	Data Gaps	Electricity data is not available for international operations at this time.

8.6

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

Third party 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	Attach the document
Limited assurance	The Climate Registry's general verification protocol	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-8.6b-C3-RelevantStatement/Anadarko TCR EY2011 Verification Report Final 02 Jan'13.pdf

8.7

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

No third party verification or assurance

8.8

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

No

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)

9.1

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

Yes

9.1a

Please complete the table below

Country/Region	Scope 1 metric tonnes CO2e
United States of America	5056818

9.2

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

By business division

9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)
Rockies	3003085
Southern and Appalachia	1450824
Gulf of Mexico	602909

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)

10.1

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

Yes

10.1a

Please complete the table below

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling (MWh)
United States of America	535843	1382612	

10.2

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

Page: 11. Energy

11.1

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

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

11.2

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

Energy type	MWh
Fuel	
Electricity	1382612
Heat	
Steam	
Cooling	

11.3

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

Fuels	MWh
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11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comments
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Page: 12. Emissions Performance

12.1

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

Increased

12.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities			
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary	113	Increase	Because in 2011 the EPA GHGRP required reporting of GHG emissions from oil and gas facilities, emissions were calculated for many more facilities and operations than they were in 2011, thus leading to an increase in GHG emissions from 2010.
Change in physical operating conditions			
Unidentified			
Other			

12.2

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			

12.3

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	Metric	Metric	% change from	Direction of change from	Reason for
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figure	numerator	denominator	previous year	previous year	change
	metric tonnes CO2e	FTE employee			

12.4

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
12	metric tonnes CO2e	Other: 1000 Barrel of Oil (MBOE)			

Page: 13. Emissions Trading

13.1

Do you participate in any emissions trading schemes?

Yes

13.1a

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

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Sat 01 Jan 2011 - Sat 31 Dec 2011			1768	Other: Operation of Anadarko's aviation fleet within the EU.

13.1b

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.

13.2

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

No

Page: 14. Scope 3 Emissions

14.1

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

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Relevant, not yet calculated				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.

Capital goods					
Fuel-and-energy-related activities (not included in Scope 1 or 2)					
Upstream transportation and distribution	Relevant, not yet calculated				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	Relevant, not yet calculated				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	Relevant, calculated	1768	EU EUTS AEM07043.V.2 as required by EU ETS Directive Annex 1. Emissions are calculated using the amount of fuel consumption (561 t), and an emission factor of 3.150 t CO2/t fuel for jet kerosene (jet A).	100%	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.
Employee commuting					
Upstream leased assets					
Investments					
Downstream transportation and distribution	Relevant, not yet calculated				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	Relevant, not yet calculated				The processing of produced crude oil and natural gas at refineries and gas processing facilities results in GHG emissions to the atmosphere.
Use of sold products	Relevant, not yet calculated				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.
End of life treatment of sold products					
Downstream leased assets					
Franchises					
Other (upstream)					

Other (downstream)					
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14.2
Please indicate the verification/assurance status that applies to your Scope 3 emissions

Third party verification or assurance complete

14.2a
Please indicate the proportion of your Scope 3 emissions that are verified/assured

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

14.2b
Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Attach the document
Reasonable assurance	ISO14064-3	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-14.2b-C3-RelevantStatementAttached/2011 AEM REPORT.pdf
Reasonable assurance	Other: CIS5-UKAS, EA-6/01 and EA-6/03; ISO/IEC Guide 65; ISO 14065:2007; IAF MD 6:2009	https://www.cdproject.net/sites/2013/45/745/Investor CDP 2013/Shared Documents/Attachments/Investor-14.2b-C3-RelevantStatementAttached/2011 AEM REPORT.pdf

14.3
Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

14.3a
Please complete the table

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Change in output	18	Increase	More international flights were conducted in 2011 than in 2010, perhaps due to an increase in business abroad.

14.4
Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers

14.4a
Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

Anadarko regularly works with suppliers to procure low-GHG emitting equipment and technology to reduce emissions and ensure compliance with all applicable regulations. This engagement takes place via industry groups, workshops and trainings, and face to face direct interaction. Prioritization of engagement depends on the location for which equipment is being procured, regulations that may be applicable there, and cost. Success is measured by showing reductions in GHG emissions and maintaining compliance with all applicable regulations.

14.4b
To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
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14.4c

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

How you make use of the data	Please give details
------------------------------	---------------------

Module: Oil & Gas

Page: OG0 Reference information

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 2007 to the year ending in 2012 and a forecast for the year ending in 2013. The years given as column headings in subsequent tables correspond to the year ending dates selected below

Year ending	Date range
-------------	------------

OG0.2

Please give the gas types included in "All nonconventional gas"

Hydrocarbon group	Gas types in this group
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OG0.3

Please give the oil types included in "All conventional oil"

Hydrocarbon group	Oil types in this group
-------------------	-------------------------

OG0.4

Please give the oil types included in "All nonconventional oil"

Hydrocarbon group	Oil types in this group
-------------------	-------------------------

Page: OG1 Production & reserves by hydrocarbon type

OG1.1

Is your company involved with oil & gas production or reserves?

Page: OG2 Emissions by segment in the O&G value chain

OG2.1

Please indicate the consolidation basis (financial control, operational control, equity share) 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
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OG2.2

Please provide clarification for cases in which different consolidation bases have been used and 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 2013 are forward-looking estimates

Segment	2007	2008	2009	2010	2011	2012	2013 single estimate	2013 low estimate	2013 high estimate
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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 2013 are forward-looking estimates

Segment	2007	2008	2009	2010	2011	2012	2013 single estimate	2013 low estimate	2013 high estimate
---------	------	------	------	------	------	------	----------------------	-------------------	--------------------

Page: OG3 Scope 1 emissions by emissions category

OG3.1

Please confirm the consolidation basis (financial control, operational control, equity share) 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 2013 are forward-looking estimates

Category	2007	2008	2009	2010	2011	2012	2013 single estimate	2013 low estimate	2013 high estimate
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Page: OG4 Transfers & sequestration of CO₂ emissions

OG4.1

Is your company involved in the transfer or sequestration of CO₂?

Page: OG5 Sales and emissions intensity of production by hydrocarbon type

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 2013 are forward-looking estimates

Product	2007	2008	2009	2010	2011	2012	2013 single estimate	2013 low estimate	2013 high estimate
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OG5.2

Please provide estimated emissions intensities for the exploration, production and gas processing associated with different hydrocarbon types 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)
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OG5.3

Please provide estimated emissions intensities for a) storage, transportation and distribution and b) refining associated with different hydrocarbon types based on current operations

Year ending	Hydrocarbon type	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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OG5.4

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: OG6 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?

Page: OG7 Methane from the natural gas value chain - approach & quantification

OG7.1
Please indicate the consolidation basis (financial control, operational control, equity share) used to prepare data to answer the questions in OG7 and OG8

Segment	Consolidation basis
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OG7.1a
Please provide clarification for cases in which different consolidation bases have been used

OG7.2
Does your company have written operating procedures and/or policies covering the reduction of methane leakage and venting?

OG7.3
Has your company set quantitative or qualitative goals for reducing methane leakage and venting?

OG7.4
Has your company published a policy position on the regulation of methane emissions?

OG7.5
Does the company inventory and quantify the methane emissions associated with your operations?

Page: OG8 Methane from the natural gas value chain - control measures

OG8.1
Are reduced emission completions relevant to your operations?

OG8.2
Is liquids unloading (de-watering) of natural gas wells relevant to your operations?

OG8.3
Does the company have a program for identifying and replacing or retrofitting high-bleed rate pneumatic controllers powered by natural gas (i.e. controllers that vent more than 6 standard cubic feet per hour)?

OG8.4
Are natural gas compressors relevant to your operations?

OG8.5
Is associated gas relevant to your company?

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 - Executive Vice President, General Counsel, and CAO

CDP