Water 2015 Information Request
Noble Energy, Inc.

Module: Introduction

Page: W0. Introduction

W0.1
Introduction

Please give a general description and introduction to your organization.

Noble Energy, Inc. (“Noble Energy” or “Company”) is a leading independent energy company engaged in worldwide oil and natural gas exploration and production. Founded by Lloyd Noble in 1932, Noble Energy, a Delaware corporation, has been publicly traded on the New York Stock Exchange (NYSE) since 1980 under the ticker symbol NBL. Noble Energy has five core operating areas: the Denver-Julesburg (DJ) Basin (onshore U.S.), the Marcellus Shale (onshore U.S.), the deepwater Gulf of Mexico (offshore U.S.), offshore West Africa, and offshore Eastern Mediterranean. Proved reserves are geographically balanced amongst the international and domestic operations, with 1,406 million barrels of oil equivalent (BOE) proved at the end of 2013. In 2013, sales volumes from continuing operations totaled 273 thousand BOE per day. Visit Noble Energy online at www.nobleenergyinc.com.

W0.2
Reporting year

Please state the start and end date of the year for which you are reporting data.

Period for which data is reported
Wed 01 Jan 2014 - Wed 31 Dec 2014

W0.3
Reporting boundary

Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported.

Companies, entities or groups over which operational control is exercised

W0.4
Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

Yes

W0.4a
Exclusions

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion
This year’s disclosure excludes certain U.S. operations in the states of Montana, New Mexico, Texas and Wyoming due to divestitures and/or negligible water use.	The excluded assets represent assets that were divested in 2014 or that represent less than 1% of total onshore water use and therefore are considered negligible.
This disclosure also excludes offshore new venture operations.	These offshore assets represent a negligible portion of total water use and therefore are excluded.

Further Information

Module: Current State

Page: W1. Context

W1.1
Please rate the importance (current and future) of water quality and water quantity to the success of your organization

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient			

amounts of good quality freshwater available for use	Important	Neutral	Direct: Noble Energy's onshore operations require sufficient amounts of good quality freshwater for drilling and hydraulic fracturing as well as across the company's value chain. The Company has taken measures to reduce our reliance on freshwater by using water more efficiently and by replacing freshwater with brackish or recycled water where possible. Noble Energy is also focused on reducing conflicts with other water users, such as agriculture and municipalities. Indirect: Currently, Noble Energy provides water to its key suppliers for indirect operations, reducing the importance of indirect use.
Sufficient amounts of recycled, brackish and/or produced water available for use	Neutral	Not very important	Direct: The Company's operations require a sufficient amount of water for drilling and hydraulic fracturing. Recycled, brackish and/or produced water may be used, but currently are not required to meet operational demands. Where possible, Noble Energy strategically uses brackish and/or produced water as a means to reduce long-term freshwater use. While the amount of recycled and produced water used is growing, it is not an essential resource. Recycled, brackish and/or produced water may be used across portions of the Company's value chain, but currently is not required to meet operational demands. Indirect: Currently Noble Energy provides 100 percent of the brackish water used by its suppliers for indirect operations. As a result, suppliers are not responsible for procuring brackish or produced water.

W1.2

For your total operations, please detail which of the following water aspects are regularly measured and monitored and provide an explanation as to why or why not

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	Noble Energy tracks the total amount of water withdrawn and consumed for operations.
Water withdrawals- volume by sources	76-100	Noble Energy tracks the total amount of water withdrawn for each business unit and records the volumes of water for several categories and uses.
Water discharges- total volumes	76-100	Noble Energy tracks the total amount of water discharged from operations.
Water discharges- volume by destination	76-100	Noble Energy tracks the discharge of water by destination, although this data is not compiled and reported.
Water discharges- volume by treatment method	76-100	Noble Energy tracks the treatment and disposal of wastes, including water.
Water discharge quality data-quality by standard effluent parameters	76-100	At locations where Noble Energy discharges water to surface water or groundwater, the quality of the discharge is monitored in accordance with federal, state, and local regulations and best management practices.
Water consumption- total volume	76-100	Noble Energy tracks the total amount of water withdrawn and consumed for operations.
Facilities providing fully-functioning WASH services for all workers	76-100	Noble Energy ensures that adequate water is available for potable uses, sanitation and hygiene for each of its business units.

W1.2a

Water withdrawals: for the reporting year, please provide total water withdrawal data by source, across your operations

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Fresh surface water	7109	Higher	Noble Energy expanded operations resulting in an increase in oil and natural gas production and therefore an increase in freshwater withdrawals.
Brackish surface water/seawater	39	This is our first year of measurement	
Rainwater	0	Not applicable	Noble Energy did not procure rainwater for use in its operations.
Groundwater - renewable	223	Lower	Noble Energy is working to reduce water withdrawals that may impact other users.
Groundwater - non-renewable	1397	Higher	Non-renewable groundwater is defined by Noble Energy as non-tributary groundwater that does not deplete surface water sources, and therefore its use does not have a direct adverse impact to other users.
Produced/process water	745	Higher	Noble Energy reused and recycled a greater quantity of wastewater in 2014, reducing freshwater consumption and waste disposal.
Municipal supply	76	Lower	Whenever possible, Noble Energy strives to avoid use of municipal supply as part of its attempt to reduce water withdrawals that may impact other users. The company was able to lower its use from this source in 2014.
Wastewater from another organization	0	Not applicable	Noble Energy did not procure wastewater from other organizations for use in its operations.
Total	9550	Higher	Noble Energy expanded operations resulting in an increase in oil and natural gas production and therefore increased its water withdrawals.

W1.2b

Water discharges: for the reporting year, please provide total water discharge data by destination, across your operations

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Fresh surface	0	Not applicable	

water			
Brackish surface water/seawater	1783	This is our first year of measurement	Primarily offshore
Groundwater	1323	This is our first year of measurement	Disposal wells
Municipal treatment plant	0	About the same	
Total	3106	Higher	Please note that Noble Energy reported brackish surface water/seawater for the first time in 2014, so this data is not a true comparison to 2013.

W1.2c
Water consumption: for the reporting year, please provide total water consumption data, across your operations

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
9550	Higher	This includes 745 megaliters of produced water that was reused or recycled. In addition, this number includes operations that were excluded from the 2013 report, so this data is not a true comparison to the previous year.

W1.3
Do you request your suppliers to report on their water use, risks and/or management?

No

W1.3b
Please choose the option that best explains why you do not request your suppliers to report on their water use, risks and/or management

Primary reason	Please explain
Other: Not applicable	Noble Energy's key suppliers are drilling and completions service companies. Noble Energy supplies water to these service companies for this work, so a review of their water use is not applicable. Noble Energy is focused on assessing the Company's own water risk. However, when Noble Energy buys water from a supplier, the Company evaluates those suppliers' water rights. Noble Energy may consider reviewing the water use of other suppliers in the future.

W1.4
Has your organization experienced any detrimental impacts related to water in the reporting period?

Yes

W1.4a
Please describe the detrimental impacts experienced by your organization related to water in the reporting year

Country	River basin	Impact indicator	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy
United States of America	Other: South Platte	Other: Limited disposal capacity	Higher operating costs	In the DJ Basin operating area, Noble Energy was impacted by limited underground injection capacity.	1-2 years	Underground injection capacity has decreased and as a result, spot prices for disposal costs have increased; however, Noble Energy has reduced financial impacts through contract negotiations.	Increased investment in new technology	Noble Energy's strategy is to reduce disposal via injection, increase recycling capacity and evaluate other technologies and vendors to meet the capacity need.

Further Information

Module: Risk Assessment

Page: W2. Procedures and Requirements

W2.1
Does your organization undertake a water-related risk assessment?

Water risks are assessed

W2.2
Please select the options that best describe your procedures with regard to assessing water risks

Risk			

assessment procedure	Coverage	Scale	Please explain
Comprehensive company-wide risk assessment	Direct operations and supply chain	All facilities and some suppliers	Noble Energy evaluates water-related risks throughout the lifespan of its operations. An initial assessment is conducted prior to exploration in a new region. As a region is developed, risk assessments are conducted regularly to help guide the development strategy. Assessments are also conducted on an as-needed basis to address changes in operations, site conditions and regulations. The Company's key suppliers are drilling and completions service companies who use water supplied by Noble Energy. Because of this, Noble Energy is focused on assessing the Company's own water risk.

W2.3

Please state how frequently you undertake water risk assessments, what geographical scale and how far into the future you consider risks for each assessment

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Business unit	>6 years	Noble Energy regularly evaluates water risk within each business unit to develop or improve a water management strategy that is specific to the business needs and water risks of that area.
Six-monthly or more frequently	Facility	1 to 3 years	Noble Energy evaluates water related risks for each development plan, well pad and facility to mitigate risk, and ensure an adequate water supply and water management options.
Sporadically not defined	Country	>6 years	Prior to exploration, Noble Energy evaluates water risks in the development area.

W2.4

Have you evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy?

Yes, evaluated over the next 10 years

W2.4a

Please explain how your organization evaluated the effects of water risks on the success (viability, constraints) of your organization's growth strategy?

Noble Energy conducts long-range planning to evaluate the effects of water quality and water quantity on the organization. When evaluating a new site, this involves evaluating legal issues and hydrological yield in terms of the reliability and proximity of other water users during exploration and production activities. The Company's macro-level analysis of water-related risks includes an information-gathering process, site surveys and sampling, environmental due diligence, participation in industry association work groups and stakeholder engagement where necessary. Geographic scales, such as the regional, watershed, and asset scales, are used to evaluate physical and economic water scarcity. A water management strategy is then developed to mitigate identified water-related risks.

Once a project is sanctioned, Noble Energy continually evaluates water risk to update its water management strategy. In 2014, Noble Energy identified a potential risk from limited recycling and disposal capacity available from centralized, third-party vendors. As a result, Noble Energy has reached out to other vendors to increase capacity and expand technological diversity. Noble Energy has also focused on transitioning from centralized water treatment systems to mobile water treatment systems to address localized needs and reduce trucking.

W2.5

Please state the methods used to assess water risks

Method	Please explain how these methods are used in your risk assessment
Internal company knowledge Life Cycle Assessment Regional government databases WRI water stress definition	Noble Energy uses the World Resources Institute (WRI) water stress definition to evaluate baseline water risk and to inform decision-making related to water risk. Noble Energy uses internal company knowledge to identify and evaluate water management options to reduce water risk. Noble Energy uses life cycle assessments to evaluate oil and natural gas development and water management throughout the lifetime of a project. Noble Energy uses regional government databases to assess water quality and availability.

W2.6

Which of the following contextual issues are always factored into your organization's water risk assessments?

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included	As appropriate, Noble Energy considers water quality and hydrological yield on a site-specific basis at facilities using internal company knowledge and regional government databases. Because Noble Energy supplies water for its key service providers, this issue is addressed for facilities and suppliers.
Current water regulatory frameworks and tariffs at a local level	Relevant, included	As appropriate, regulatory frameworks and tariffs must be considered at the local level at facilities to ensure compliance and an adequate water supply for Noble Energy activities. Because Noble Energy supplies water for its key service providers, this issue is addressed for facilities and suppliers.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included	For all appropriate facilities, Noble Energy considers current stakeholder conflicts (e.g. competing uses, water quality concerns, general anti-hydraulic fracturing sentiments, etc.) and how to avoid or mitigate these concerns. Because Noble Energy supplies water for its key service providers, this issue is addressed for facilities and suppliers.

Current implications of water on your key commodities/raw materials	Not relevant, explanation provided	Because Noble Energy supplies water for its key service providers, the company is not at risk due to water impacts on the key commodities which they depend on.
Current status of ecosystems and habitats at a local level	Relevant, included	As appropriate, Noble Energy considers the current status of ecosystems and habitats at a local level, through desktop and field surveys that use internal company knowledge and regional government databases.
Current river basin management plans	Relevant, included	As appropriate, Noble Energy considers river basin management plans in applicable areas and verifies operations fit within river basin plans by way of the facility's water management plan.
Current access to fully-functioning WASH services for all employees	Relevant, included	As appropriate, Noble Energy ensures that adequate water is available for potable uses, sanitation and hygiene for each of its business units.
Estimates of future changes in water availability at a local level	Relevant, included	Noble Energy estimates future changes in hydrological yield at a local level by monitoring firm yield assessments in a river basin and adjudicated changes in water rights as appropriate. Noble Energy assesses water availability, risk and stress using WRI's water stress definition, internal company knowledge and regional government databases. Facilities are assessed using a life cycle assessment to evaluate water risk throughout the life of the project.
Estimates of future potential regulatory changes at a local level	Relevant, included	Due to the current regulatory environment in areas where the Company operates, it is essential that Noble Energy estimate future potential regulatory changes and their impacts on operations as appropriate. Regulatory frameworks and tariffs must be considered at the local level to ensure future compliance and an adequate water supply for planned and proposed Noble Energy activities.
Estimates of future potential stakeholder conflicts at a local level	Relevant, included	For all appropriate facilities, Noble Energy considers the potential for stakeholder conflicts (e.g. competing uses, water quality concerns, general anti-hydraulic fracturing sentiments, etc.) and how to mitigate potential concerns.
Estimates of future implications of water on your key commodities/raw materials	Not relevant, explanation provided	Because Noble Energy provides water to its key service providers, the company is not at risk due to water impacts on the key commodities which they depend on.
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	As appropriate, Noble Energy considers future potential changes in the status of ecosystems and habitats at a local level through designation of endangered aquatic species habitat or other federal and local action that may influence base water flows and diversions.
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included	Noble Energy evaluates various hydrological yield scenarios at a local level, as appropriate. Noble Energy uses internal company knowledge and regional government databases to conduct lifecycle assessments.
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included	Due to the current regulatory environment in areas where the Company operates, it is essential that it estimates future potential regulatory changes and their impacts on operations at all facilities as appropriate. Regulatory frameworks and tariffs must be considered at the local level to ensure future compliance and an adequate water supply for planned and proposed Noble Energy activities.
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, included	For all appropriate facilities, Noble Energy considers the prospective nature of stakeholder conflicts (e.g. competing uses, water quality concerns, etc.) and how to mitigate potential concerns.
Scenario analysis of implications of water on your key commodities/raw materials	Not relevant, explanation provided	Because Noble Energy provides water for its key service providers, the company is not at risk due to water impacts on the key commodities which they depend on.
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, included	As appropriate, Noble Energy considers scenario analysis of potential changes in the status of ecosystems and habitats at a local level through designation of endangered aquatic species habitat or other federal action that may influence base water flows and diversions.
Other		

W2.7

Which of the following stakeholders are always factored into your organization's water risk assessments?

Stakeholder	Choose option	Please explain
Customers	Not relevant, explanation provided	As appropriate, Noble Energy's water risk assessments involve analyzing and managing water risks that would reduce the company's ability to supply oil and natural gas or that would impact the company's competitiveness.
Employees	Relevant, included	Noble Energy's water risk assessments include employee safety, as well as access to water for sanitation and health.
Investors	Relevant, included	As appropriate, Noble Energy's shareholder concerns are factored into the organization's Environmental, Health, Safety and Regulatory (EHSR) and business unit risk assessments.
Local communities	Relevant, included	As appropriate, Noble Energy considers local community concerns when assessing water risk and takes appropriate action to minimize impacts.
NGOs	Relevant, included for some facilities/suppliers	Noble Energy engages with NGOs, where appropriate, to address concerns related to planning and operations.
Other water users at a local level	Relevant, included	As appropriate, Noble Energy considers the proximity of their operations to other users and tries to reduce potential water resource conflicts with those users.
Regulators	Relevant, included	As appropriate, federal, state and local regulations are factored into Noble Energy water risk assessments for planning purposes and to ensure compliance with applicable laws and regulations.
River basin management authorities	Relevant, included for some facilities/suppliers	As appropriate, Noble Energy incorporates statutory special interest groups into water risk assessment when they are involved in initiatives that may impact Noble Energy planning and operations.
Statutory special interest groups at a	Relevant, included for some	As appropriate, Noble Energy incorporates statutory special interest groups into water risk assessment when they are involved in initiatives that may impact Noble Energy planning and operations.

local level	facilities/suppliers	
Suppliers	Relevant, included	Noble Energy provides water to key suppliers, such as drilling and completions service companies; therefore, Noble Energy suppliers are considered in water risk assessments, as appropriate.
Water utilities/suppliers at a local level	Relevant, included for some facilities/suppliers	As appropriate, the Company considers water suppliers at a local level where Noble Energy does not own/control its water supply.
Other		

Further Information

Module: Implications

Page: W3. Water Risks

W3.1
Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?

Yes, direct operations and supply chain

W3.2
Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk

Noble Energy considers a substantive change in our business as one that has the potential to adversely impact the operations or economics of development or one that could be detrimental to health, safety, environment or that could limit the Company's social license to operate. A substantive change may also positively impact operations by providing substantial cost savings, implementing new technology or providing efficiencies.

W3.2a
Please provide the number of facilities* per river basin exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure and the proportion of total operations this represents

Country	River basin	Number of facilites	Proportion of total operations exposed to risk within river basin (%)	Comment
United States of America	Other: South Platte River	1	31-40	This facility includes an entire business unit that covers a large geographical area and diverse operations. Given the size and diversity of the assets within this facility, it is unlikely that all of the assets within the facility would be affected by any one risk factor. Therefore, while each asset could be exposed to water risk, the risk would not be applicable to the facility as a whole.
United States of America	Other: Humboldt River	1	Less than 1%	This facility includes an entire business unit that covers a large geographical area and diverse operations. Given the size and diversity of the assets within this facility, it is unlikely that all of the assets within the facility would be affected by any one risk factor. Therefore, while each asset could be exposed to water risk, the risk would not be applicable to the facility as a whole.
United States of America	Other: Upper Ohio River	1	11-20	This facility includes an entire business unit that covers a large geographical area and diverse operations. Given the size and diversity of the assets within this facility, it is unlikely that all of the assets within the facility would be affected by any one risk factor. Therefore, while each asset could be exposed to water risk, the risk would not be applicable to the facility as a whole.

W3.2b
Please provide the proportion of financial value that could be affected at river basin level associated with the facilities listed in W3.2a

Country	River basin	Financial reporting metric	Proportion of chosen metric that could be affected within the river basin	Comment
United States of America	Other: South Platte	% global production capacity	31-40	Given the size and diversity of the operations in this river basin, it is unlikely that any single risk factor could affect all of the production capacity encompassed by the entire facility.
United States of America	Other: Humboldt River	% global production capacity	Less than 1%	This is an exploration area, so it is not currently a significant percentage of the Company's global capacity.
United States of America	Other: Upper Ohio	% global production capacity	11-20	Given the size and diversity of the operations in this river basin, it is unlikely that any single risk factor could affect all of the production capacity encompassed by the entire facility.

W3.2c
Please list the inherent water risks that could generate a substantive change in your business, operations, revenue or expenditure, the potential impact to your direct operations and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs

	United States of America	Other: All U.S.	Physical-Increased water stress	Higher operating costs	Portions of Noble Energy's operations are in areas of physical water scarcity. Should this continue, the Company could face possible restrictions on groundwater and surface water withdrawal leading to interruptions in its operations and increased operational costs related to sourcing water from additional suppliers.	4-6 years	Unknown	High	Other: Water stewardship	Not reported	Noble Energy is implementing innovative ways to increase water efficiency and decrease water use in its operations. For example, Noble Energy is researching and implementing treatment technologies that help capture, treat, reuse and recycle an increasing percentage of flowback and produced waters. This strategy typically has a higher cost than disposal alone; however, the cost is highly location-specific and not calculated for the company as a whole.
	United States of America	Other: All U.S.	Regulatory-Regulatory uncertainty Regulatory-Statutory water withdrawal limits/changes to water allocation	Higher operating costs	Noble Energy faces regulatory risks related to its operations. For example, in some areas where Noble Energy operates, there is an increasing trend for more regulatory oversight. Should such regulations be passed, the cost of meeting regulatory requirements may have an adverse impact on Noble Energy. This and additional uncertainty around water procurement and disposal-related regulation may cause delays in operations and increase the cost of doing business.	Unknown	Probable	Medium	Other: Regulatory monitoring and water stewardship	Not reported	To manage this risk, Noble Energy actively monitors current and proposed legislation that could affect its operations, including that which deals specifically with water. The Company also actively measures and monitors its own water usage, for example by measuring surface water levels, and tries to reduce usage wherever possible.
										Noble Energy continues to support the Colorado Center for Energy and Water

	United States of America	Other: All U.S.	Physical-Pollution of water source	Brand damage	Noble Energy faces risks should its operations experience unintentional releases or water contamination. In addition to environmental and health impacts, Noble Energy (and the industry as a whole) could suffer reputational damage should water contamination occur.	Current-up to 1 year	Unknown	High	Other: External stakeholder engagement	In 2014, Noble Energy donated an additional $250,000 to Colorado Water Watch, and implemented process safety management and other groundwater protection controls.	Sustainability's Colorado Water Watch (CWW) project by providing access to Noble Energy sites for the study, as well as by providing funding and technical support. This project launched the first real-time water monitoring project in the United States to increase transparency by allowing the public monitor changes in groundwater quality due to natural occurrences, oil and natural gas activity, or other human impacts. Since this project was launched, no impacts to groundwater at Noble Energy locations have been observed from oil and gas activity at the locations monitored by the program.
	United States of America	Other: Company-wide	Reputational-Changes in consumer behavior Reputational-Community opposition Reputational-Negative media coverage	Decrease in shareholder value	Reputational damage could impact Noble Energy's ability to do business in certain areas, decrease demand for its products and negatively impact share price. Public perception of the hydraulic fracturing process exposes Noble Energy to reputational risks. There are stakeholder concerns regarding hydraulic fracturing, which have been magnified by the increased scrutiny on oil and natural gas operations. The risk of unintentional	Current-up to 1 year	Unknown	Medium	Other: External stakeholder engagement	In 2014, Noble Energy donated an additional $250,000 to Colorado Water Watch and implemented process safety management and other groundwater protection controls.	Noble Energy continues to support the Colorado Center for Energy and Water Sustainability's Colorado Water Watch (CWW) project by providing access to Noble Energy sites for the study, as well as by providing funding and technical support. This project launched the first real-time water monitoring project in the United States to increase transparency by allowing the public monitor changes in groundwater quality due to natural occurrences, oil and natural gas activity, or other human impacts. Since

				releases and water contamination could also negatively impact reputation.						this project was launched, no impacts to groundwater at Noble Energy locations have been observed from oil and gas activity at the locations monitored by the program.
	United States of America	Other: Company-wide	Reputational-Changes in consumer behavior Reputational-Community opposition Reputational-Negative media coverage	Decrease in shareholder value	Reputational damage could impact Noble Energy's ability to do business in certain areas, decrease demand for its products and negatively impact share price.	Current-up to 1 year	Unknown	Medium	Other: External stakeholder engagement	Not reported	Public perception of the hydraulic fracturing process exposes Noble Energy to reputational risks. There are stakeholder concerns regarding hydraulic fracturing, which have been magnified by the increased scrutiny on oil and natural gas operations. The risk of unintentional releases and water contamination, as well as concerns among Coloradans about water scarcity, also could negatively impact reputation.
	United States of America	Other: Company-wide	Physical-Inadequate infrastructure	Higher operating costs	Inadequate infrastructure may require Noble Energy to truck water in for the production process, which will increase operational costs and expose the Company to additional safety risks such as accidents and/or unintentional releases.	Current-up to 1 year	Probable	Low-medium	Infrastructure investment	Not reported	When water must be trucked to the Company's facilities, it is costly and presents a range of potential safety and reputational issues. To mitigate these potential safety risks and reduce costs, Noble Energy is in the process of expanding its pipeline network to reduce reliance on trucks.
					Flooding in the Company's					In late 2013, total net production loss on average was approximately 2,000 barrels of oil equivalent per day due to September	Noble Energy takes steps to ensure proper storm water management. The Company has secondary containment areas set up to assist with

United States of America	Other: All U.S.	Physical-Flooding	Property damage	areas of operation has the potential to cause water contamination, leading to delays in its operations and increased maintenance costs.	Current-up to 1 year	Unknown	Medium	Other: Secondary containment and stormwater management	flooding in Colorado, which, at a cost of $80 per barrel, equates to $160,000 per day. Water contamination played a direct role in the loss of operations. This past example could be an indication of potential future impacts.	avoidance of contamination in its areas of operation. Noble Energy also conducts impact assessments of sites prior to drilling to determine if it is in a 100 year floodplain and, to the extent possible, avoids building in those areas.

W3.2d

Please list the inherent water risks that could generate a substantive change in your business operations, revenue or expenditure, the potential impact to your supply chain and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	Other: Upper Ohio	Physical-Increased water scarcity	Supply chain disruption	An increase in public concern and scrutiny over drinking water rights in the Marcellus operating area has led to potential water risks for Noble Energy.	Current-up to 1 year	Probable	Medium	Other: Noble Energy is evaluating alternative sources of water in the Marcellus operating area. Noble Energy complies with local legal requirements or the Company's own internal standards, whichever are more stringent.	Not reported	Noble Energy is imposing self-regulated control of water limits to protect water bodies and subsequently closely monitors water levels. This helps to minimize competing water use issues. Noble Energy is also working to increase water efficiency and is recycling and reusing water to the maximum extent practicable.
United States of America	Other: All U.S.	Regulatory-Regulation of discharge quality/volumes leading to higher compliance costs Other: Limited injection capacity	Higher operating costs	An increase in public concern and scrutiny over underground injection wells and an increase in development of shale plays in the U.S. has led to a decrease in the available capacity of disposal wells. This reduced capacity can lead to increased costs.	Current-up to 1 year	Highly probable	Medium	Increased investment in new technology	Not reported	Noble Energy is evaluating alternatives to disposal via underground injection, including increasing the reuse and recycling of wastes.

Further Information

Page: W4. Water Opportunities

W4.1
Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

Yes

W4.1a
Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Please explain
United States of America	Cost savings	Noble Energy is committed to an innovative procurement strategy designed to develop an independently owned and/or operated water supply. The company is focused on securing independent water supplies to lower costs, reduce uncertainty and solidify social license to operate.	1-3 years	Noble Energy is focused on securing independent water supplies to lower costs, reduce uncertainty and solidify social license to operate.
United States of America	Other: Stakeholder partnerships	Noble Energy has partnered with Colorado State University (CSU), regulatory agencies, and NGOs to develop a real-time water quality monitoring network. The company served as a founding member and continues to support Colorado State University's Colorado Water Watch Program, which is a real-time water quality monitoring system. The program is intended to provide access to information and increase public trust.	Current-up to 1 year	Noble Energy served as a founding member and continues to support CSU's Colorado Water Watch Program, which is a real-time water quality monitoring system. The program is intended to provide access to information and help build public trust. In 2014, Noble Energy contributed $250,000 to CSU for the Water Watch program and the website went live.
United States of America	Social licence to operate	Noble Energy is committed to increasing water recycling and reuse by implementing best management practices (BMPs) in the industry that include practicing environmental stewardship. The company is working to increase recycling capacity and is testing innovative technologies to lower the cost of reuse and recycling. Water recycling reduces freshwater consumption, decreases downhole disposal volumes, and reduces truck traffic, which provide benefits to neighboring communities.	1-3 years	Noble Energy is working to increase recycling capacity and is testing innovative technologies to lower the cost of reuse and recycling. Water recycling reduces freshwater consumption, decreases downhole disposal volumes, and reduces truck traffic, which provide benefits to neighboring communities.

Further Information

Module: Accounting

Page: W5. Facility Level Water Accounting (I)

W5.1
Water withdrawals: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain the change if substantive
Facility 1	United States of America	Other: South Platte	DJ Basin	4608	Higher	Development of this area increased compared to 2013, resulting in a greater demand for water.
Facility 2	United States of America	Other: Humboldt	Rockies - Nevada	37	Higher	Development of this area increased compared to 2013, resulting in a greater demand for water.
Facility 3	United States of America	Other: Upper Ohio	Marcellus	4161	Higher	Development of this area increased compared to 2013, resulting in a greater demand for water.

Further Information

Page: W5. Facility Level Water Accounting (II)

W5.1a
Water withdrawals: for the reporting year, please provide withdrawal data, in megaliters per year, for the water sources used for all facilities reported in W5.1

Facility reference	Fresh surface	Brackish surface	Rainwater	Groundwater	Groundwater (non-	Produced/process	Municipal	Wastewater from	Comment

number	water	water/seawater		(renewable)	renewable)	water	water	another organization	
Facility 1	3001	0	0	210	1397	266	0	0	
Facility 2	0	0	0	13.4	0	1.1	23.3	0	More than 40% of wastewater was reused in 2014.
Facility 3	4109	0	0	0	0	478	53	0	More than 99.5% of wastewater was reused in 2014.

W5.2
Water discharge: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain the change if substantive
Facility 1	1320	Higher	Development of this area increased compared to 2013, resulting in an increase in wastewater production.
Facility 2	1.6	Higher	Exploration of this area increased compared to 2013, resulting in an increase in wastewater production.
Facility 3	2	Higher	Development of this area increased compared to 2013, resulting in an increase in wastewater production.

W5.2a
Water discharge: for the reporting year, please provide water discharge data, in megaliters per year, by destination for all facilities reported in W5.2

Facility reference number	Fresh surface water	Municipal Treatment Plant	Seawater	Groundwater	Comment
Facility 1	0	0	0	1320	
Facility 2	0	0	0	1.6	
Facility 3	0	0	0	2	

W5.3
Water consumption: for the reporting year, please provide water consumption data for all facilities reported in W3.2a

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain the change if substantive
Facility 1	4874	Higher	Development of this area increased compared to 2013, resulting in a greater demand for water.
Facility 2	37.8	Higher	Exploration of this area increased compared to 2013, resulting in a greater demand for water.
Facility 3	4640	Higher	Development of this area increased compared to 2013, resulting in a greater demand for water.

W5.4
For all facilities reported in W3.2a what proportion of their water accounting data has been externally verified?

Water aspect	% verification	What standard and methodology was used?
Water withdrawals- total volumes	Not verified	
Water withdrawals- volume by sources	Not verified	
Water discharges- total volumes	Not verified	
Water discharges- volume by destination	Not verified	
Water discharges- volume by treatment method	Not verified	
Water discharge quality data- quality by standard effluent parameters	Not verified	
Water consumption- total volume	Not verified	

Further Information

Module: Response

Page: W6. Governance and Strategy

W6.1
Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?

Highest level of	Frequency of

direct responsibility for water issues	briefings on water issues	Comment
Senior Manager/Officer	Scheduled-quarterly	Business Unit Managers are briefed monthly on water related issues. The VP of Environmental, Health, Safety and Regulatory (EHSR) takes an active role in guiding water strategy. The Board of Directors is briefed quarterly and water is a standing agenda item.

W6.2
Is water management integrated into your business strategy?

Yes

W6.2a
Please choose the option(s) below that best explain how water has positively influenced your business strategy

Influence of water on business strategy	Please explain
Establishment of sustainability goals	Noble Energy applies proven water processes to treat flowback and produced water during operations to reduce the amount of fresh water it consumes. These water management efforts optimize water acquisitions and transportation costs; minimize the amount of residual wastewater; and contribute to reducing impacts on the environment and community. This effort has resulted in reducing freshwater consumption and waste disposal by almost 200 million gallons in 2014.
Water resource considerations are factored into location planning for new operations	Noble Energy identifies multi-year demand for drilling and production and considers environmental and community concerns when securing water resources. Noble Energy then develops water transport and storage infrastructure that are designed to meet the specific physical and operational circumstances in each area of operation, while trying to reduce negative impacts to other stakeholders.
Other: Provides opportunities for partnerships	Noble Energy actively seeks partnerships with universities, governmental agencies, non-governmental organizations and other stakeholders to benefit the environment, industry and communities as well as to increase awareness and education.

W6.2b
Please choose the option(s) below that best explains how water has negatively influenced your business strategy

Influence of water on business strategy	Please explain
Increased capital expenditure	Noble Energy has undertaken water infrastructure projects in the form of underground pipelines and gathering systems to transport water. While this has resulted in increased up-front costs, these projects provide long-term environmental benefits. This includes reducing truck traffic and noise in communities where the Company operates and decreases the likelihood of unintentional releases and traffic accidents. Additionally, these benefits provide cost savings as efficiencies improve.

W6.3
Does your organization have a water policy that sets out clear goals and guidelines for action?

Yes

W6.3a
Please select the content that best describes your water policy (tick all that apply)

Content	Please explain why this content is included
Publicly available Company-wide Performance standards for direct operations Commitment to customer education Incorporated within group environmental, sustainabiilty or EHS policy Acknowledges the human right to water, sanitation and hygiene Other: Best management practices	The Company has a robust water policy/strategy that includes many aspects. This includes following industry best practices for water management in the areas where the Company operates. Noble Energy's company-wide water goals are outlined in its annual Sustainability Report that is available to the public. The Company sets these corporate goals regarding reuse and recycling in direct operations in collaboration with the EHSR department. Noble Energy also has specific policies and procedures that apply to water management at select facilities. To increase customer engagement, Noble Energy seeks opportunities to partner with public stakeholders in water-related efforts and projects. And, Noble Energy acknowledges the human right to water, sanitation and hygiene.

W6.4

How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting period compare to the previous reporting period?

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes
20		The estimate in increases in spending on water infrastructure in Noble Energy's Marcellus business unit is related to the growth of onshore development and the additional infrastructure needed to implement Noble Energy's strategy for water management. Infrastructure spending in the DJ Basin was approximately the same in 2014 as it was in 2013. Water operating expenses are not tracked separately from other operations expenses.

Further Information

Page: W7. Compliance

W7.1
Was your organization subject to any penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting year?

Yes, not significant

W7.1a
Please describe the penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations and your plans for resolving them

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution
Marcellus Business Unit	Penalty	In 2014, a resolution was reached for an unintentional release that occurred in the previous year from an impoundment located in West Virginia. A second resolution was reached for an unintentional release that occurred in 2014 during a water transfer operation associated with a tank pad location.	2	75000	USD($)	In response to these incidents, Noble Energy updated its Best Management Practices, Standard Operating Procedures, and the Standards, Policies and Administrative Controls.

W7.1b
What proportion of your total facilities/operations are associated with the incidents listed in W7.1a

0.01%

W7.1c
Please indicate the total financial impacts of all incidents reported in W7.1a as a proportion of total operating expenditure (OPEX) for the reporting year. Please also provide a comparison of this proportion compared to the previous reporting year

Impact as % of OPEX	Comparison to last year

Further Information

7.1b- The unintentional releases affected only two sites within the Marcellus Business Unit, therefore, less than 0.01% of Noble Energy sites were affected.
7.1c- Water OPEX is not tracked separately from other operations OPEX.

Page: W8. Targets and Initiatives

W8.1
Do you have any company wide targets (quantitative) or goals (qualitative) related to water?

Yes, goals only

W8.1b
Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these

Goal	Motivation	Description of goal	Progress

Other: Recycling and reuse	Water stewardship	The Company strives to research and implement treatment technologies that help capture, treat, reuse and recycle an increasing percentage of our flowback and produced waters. This includes a one year goal of recycling and reusing more water in 2014 than was recycled in 2013. Each year Noble Energy evaluates the success of goals from the previous year and takes that into consideration when setting sustainability goals for the next year.	This goal was accomplished and Noble Energy is updating the goal for 2015.
Other: Efficiency	Cost savings	The Company is committed to increasing water efficiency through innovation and best management practices (BMPs). One of the ways in which Noble Energy increases water efficiency is through closed loop drilling in Colorado, Pennsylvania and West Virginia.	Noble Energy has identified cost savings by increasing efficiency, but is constantly looking for improvements and cost savings.

Further Information

Module: Linkages/Tradeoff

Page: W9. Managing trade-offs between water and other environmental issues

W9.1
Has your organization identified any linkages or trade-offs between water and other environmental issues in its value chain?

Yes

W9.1a
Please describe the linkages or trade-offs and the related management policy or action

Environmental issues	Linkage or trade-off	Policy or action
Land use	Linkage	Improvements in technology enable us to access oil and natural gas once thought inaccessible, to operate more efficiently and to reduce our impacts on land. Noble Energy uses integrated planning as a way to minimize our physical presence and impacts. Horizontal drilling allows us to extract oil and natural gas across a greater subsurface distance with a smaller surface disturbance. Also, multiple wells can be drilled from a single well pad, which reduces our surface footprint and leaves more land available for wildlife and agriculture. Use of horizontal drilling allows us to also reduce water consumption due to centralized facilities.
Air and noise pollution	Linkage	Noble Energy's implementation strategy allows for increased infrastructure such as pipelines due to consolidation of facilities. By piping water to and from facilities, Noble Energy reduces its reliance on trucks to haul water. Reducing the use of trucks also reduces air and noise pollution. Consolidation of facilities and pipelines also decreases water consumption.

Further Information

Module: Sign Off

Page: Sign Off

W10.1
Please provide the following information for the person that has signed off (approved) your CDP water response

Name	Job title	Corresponding job category
Abby Bazin	Senior Engineer, Global Water Strategy	Environment/Sustainability manager

W10.2
Addressing water risks effectively, in many instances, requires collective action. CDP would like to support you in finding potential partners that are also working to tackle water challenges in the river basins you report against. Please select if your organization would like CDP to transfer your publicly disclosed risk and impact drivers and response strategy data from questions W1.4a, W3.2b, W3.2c, W4.1a and W8.1b to the United Nations Global Compact Water Action Hub.

Yes

Further Information

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