Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

NRG Energy, Inc., or NRG or the Company, is an energy company built on dynamic retail brands with diverse generation assets. NRG brings the power of energy to consumers by producing, selling and delivering electricity and related products and services in major competitive power markets in the U.S. in a manner that delivers value to all of NRG's stakeholders. NRG is perfecting the integrated model by balancing retail load with generation supply within its deregulated markets, while evolving to a customer-driven business. The Company sells energy, services, and innovative, sustainable products and services directly to retail customers under the names "NRG" and "Reliant" and other brand names owned by NRG supported by approximately 23,000(a) MW of generation as of December 31, 2018. NRG was incorporated as a Delaware corporation on May 29, 1992. Certain matters discussed in this survey are forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995, that are subject to risks and uncertainties. Please see statement below about forward-looking statements.

SAFE HARBOR: In addition to historical information, the information presented in this report includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Exchange Act. These statements involve estimates, expectations, projections, goals, assumptions, known and unknown risks and uncertainties and can typically be identified by terminology such as “may,” “should,” “could,” “objective,” “projection,” “forecast,” “goal,” “guidance,” “outlook,” “expect,” “intend,” “seek,” “plan,” “think,” “anticipate,” “estimate,” “predict,” “target,” “potential” or “continue” or the negative of these terms or other comparable terminology. Such forward-looking statements include, but are not limited to, statements about the Company’s future revenues, income, indebtedness, capital structure, plans, expectations, objectives, projected financial performance and/or business results and other future events, and views of economic and market conditions.

Although NRG believes that its expectations are reasonable, it can give no assurance that these expectations will prove to be correct, and actual results may vary materially. Factors that could cause actual results to differ materially from those contemplated herein include, among others, general economic conditions, hazards customary in the power industry, weather conditions, competition in wholesale power markets, the volatility of energy and fuel prices, failure of customers to perform under contracts, changes in the wholesale power markets, changes in government regulations, the condition of capital markets generally, our ability to access capital markets, cyberterrorism and inadequate cybersecurity, unanticipated outages at our generation facilities, adverse results in current and future litigation, failure to identify, execute or successfully implement acquisitions, repowerings or asset sales, our ability to

implement value enhancing improvements to plant operations and companywide processes, our ability to implement and execute on our publicly announced transformation plan, including any cost savings and margin enhancement, our ability to achieve our net debt targets, our ability to proceed with projects under development or the inability to complete the construction of such projects on schedule or within budget, the inability to maintain or create successful partnering relationships, our ability to operate our businesses efficiently, our ability to retain retail customers, our ability to realize value through our commercial operations strategy, the ability to successfully integrate businesses of acquired companies, our ability to realize anticipated benefits of transactions (including expected cost savings and other synergies) or the risk that anticipated benefits may take longer to realize than expected, and our ability to execute our Capital Allocation Plan.

NRG undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. The foregoing review of factors that could cause NRG's actual results to differ materially from those contemplated in the forward-looking statements included in this report should be considered in connection with information regarding risks and uncertainties that may affect NRG's future results included in NRG's filings with the Securities and Exchange Commission at www.sec.gov.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Row 1	January 1, 2018	December 31, 2018	No

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Australia
Turkey
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Equity share

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation

Other divisions

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	NRG's President and CEO has overall responsibility for the company's climate change-related issues and management. NRG's vision is to create a sustainable energy future, therefore these issues are being managed by the President and CEO. The CEO reviews all sustainability strategy, goals and targets, which are then reviewed and approved by the Company's Governance and Nominating Committee and the Board of Directors. Since 2016, NRG's Board of Director's Governance and Nominating Committee officially oversees corporate sustainability. The rationale for formalizing board oversight of climate-related issues is because the board is ultimately responsible for all potential financial risks to the company. The Committee reviews and the full Board approves NRG's strategies to manage its environmental, economic and social impacts, including, but not limited to, NRG's environmental, climate change and sustainability policies and programs.
Board-level committee	Since 2016, NRG's Board of Director's Governance and Nominating Committee officially oversees corporate sustainability.

	The rationale for formalizing board oversight of climate-related issues is because the board is ultimately responsible for all potential financial risks to the company. The Committee reviews NRG's strategies and efforts to manage its environmental, economic and social impacts, including, but not limited to, NRG's environmental, climate change and sustainability policies and programs. Committee composition can be found at: http://investors.nrg.com/phoenix.zhtml?c=121544&p=irol-govcommcomp.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing	Since 2016, our board's Governance and Nominating (G&N) Committee officially oversees corporate sustainability. The Committee reviews NRG's strategies and efforts to manage its environmental, economic and social impacts, including, but not limited to, NRG's environmental, climate change and sustainability policies and programs. As of 2018, Sustainability became an annual agenda item at the full Board meeting an dis reviewed separately by the G&N Committee, in addition to be part of general review of projects and transactions. The Board has responsibility for overall risk oversight of NRG which includes understanding the material risks of the business and what steps management is taking or should be taking to manage those risks, as well as understanding and determining the appropriate risk appetite for the company. To define NRG's risk appetite, the Board reviews and approves the annual business plan, budget and long-term plan, strategic initiatives, acquisitions and divestitures, and capital allocation plan. Climate-related issues are considered to the extent they are material. For example, the Board may incorporates climate-related issues into relevant strategic decisions, particularly those related to physical generating assets and customer preferences. Learn more about committee composition at http://investors.nrg.com/phoenix.zhtml?c=121544&p=irol-govcommcomp.

	progress against goals and targets for addressing climate-related issues	The head of Sustainability presents key strategic priorities to the full Board during scheduled meetings throughout the fiscal year. For example, NRG's science-based targets are monitored and proposals to make significant changes to the goals are presented to the Board for approval.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify SVP, Corporate Affairs and Chief Compliance Officer	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The head of Sustainability reports to the SVP, Corporate Affairs and Chief Compliance Officer, who then reports to the Chief Executive Officer. The position of head of Sustainability was formalized in 2013 as the strategic importance of sustainability was recognized and the need for that to be integrated across the business.

The head of Sustainability leads all implementation and is responsible for the development of NRG's climate change policy positions and coordination between policy and commercial initiatives. This includes drafting and publishing NRG's Climate Change Principles and engaging with investors on integrating ESG factors into reporting practices as well as advising on business-to-business renewable energy solution proposals. The head of Sustainability is responsible for executing on NRG's certified science-based targets to reduce absolute emissions 50% by 2030 and 90% by 2050 and monitoring megatrends in the power sector and relating that information to business units.

Climate-related issues are monitored on an ongoing basis through conversations with NRG's risk, regulatory affairs, legal, retail and operations departments.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?

Other, please specify

All Plant Operations employees, including the Management Group

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

Compensation of NRG's power plant personnel is, in part, based on environmental key performance indicator (EKPI) scores. Factors that affect the EKPI are performance, environmental reporting and the econrg projects that can reduce GHGs in the community or plant. The EKPI score take into account the accuracy of continuous emissions monitoring systems (CEMS) and whether a plant has complied with regulatory requirements such as the EPA's Mandatory Greenhouse Gas Reporting Rule (40 CFR Part 98).

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Behavior change related indicator

Comment

Since 2014, NRG has used a social media app called 'InspireMe' which fosters healthy competition to encourage low-carbon and sustainable living. Employees that achieved the most points in a certain time period were awarded prizes such as cash 'points' to the NRG store.

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

The performance and incentive compensation of the head of Sustainability and sustainability team members are based on attainment of sustainability goals, including NRG's climate goals to reduce absolute emissions.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	2	Time horizons are subject to change.
Medium-term	2	5	Time horizons are subject to change.
Long-term	5	10	Time horizons are subject to change.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	NRG evaluates risks such as: regulatory, commercial, financial, and physical risks and opportunities associated with climate change and the different impacts on NRG's wholesale and retail businesses. Risks are further discussed in Item 1A in the 2018 NRG 10-K. NRG calculates annual greenhouse gas emission inventories. Monitoring of risks and opportunities occurs on an ongoing

			basis by NRG's Financial Risk Management Committee. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. NRG's executive team communicates risks and mitigation efforts to NRG's board of directors quarterly. Externally, NRG reports material risks to investors and stakeholders through quarterly earnings calls, quarterly SEC filings, the CDP questionnaires and annual sustainability reporting.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Company level:
NRG evaluates risks such as: regulatory, commercial, financial, reputational, transitional and physical risks associated with climate change and the different impacts on NRG's wholesale and retail businesses. Risks are further discussed in Item 1A in the 2018 NRG 10-K. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. NRG 's Sustainability, Operations and Environmental teams calculate annual greenhouse gas emission inventories which are verified by a third-party. Monitoring of risks and opportunities occurs on an ongoing basis by NRG's executive team. Further, the CEO may communicate risks and mitigation efforts to NRG's board of directors quarterly. The SVP and General Counsel, heads of Government Affairs and Regulatory Affairs team are responsible for assessing regulatory risks and opportunities at federal, regional and local agencies. The materiality threshold for risks is when revenue may be impacted, the range of which depends on the business unit and project. Externally, NRG reports material risks to investors and stakeholders through quarterly earnings calls, quarterly SEC filings, the CDP questionnaires and annual sustainability reporting.

Asset level:
For our wholesale generation assets, Asset Management and other relevant groups are responsible for identifying risks and opportunities and directly report these risks to the CEO. Commercial Operations and Risk groups help by conducting sensitivity analyses to assess exposure from weather and other risks. Climate change risks to retail subsidiaries are assessed by the respective subsidiary Heads of Business. Risks are monitored by the management teams of our retail subsidiaries and managed by NRG's Financial Risk Management Committee.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Current regulation is always considered in assessments by the Financial Risk Management Committee. Monitoring of current regulatory risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. The SVP and General Counsel, heads of Environment, Government Affairs and Regulatory Affairs Teams are responsible for assessing regulatory risks and opportunities at federal, regional and local agencies. Policies at the national, regional and state levels to regulate GHG emissions, as well as mitigate climate change, could adversely impact NRG's results of operations, financial condition and cash flows. NRG operates generating units in Connecticut, Delaware, Maryland, and New York that are subject to the Regional Greenhouse Gas Initiative, RGGI, which is a regional cap and trade system. Intangible assets include RGGI emission credits which NRG began purchasing in 2009. These emission allowances are held-for-use and are amortized to cost of operations, with RGGI credits amortized based on units of production. California has a CO2 cap and trade program for electric generating units greater than 25 MW. The impact on NRG depends on the cost of the allowances and the ability to pass these costs through to customers. Current regulation is included in risk assessments because it may impact revenue in areas such as the Northeast U.S. where NRG has power generating operations.
Emerging regulation	Relevant, always included	Emerging regulation is always considered in assessments by the Financial Risk Management Committee. Monitoring of potential regulatory risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. The SVP and General Counsel, Heads of Environment, Government Affairs and Regulatory Affairs team are responsible for assessing regulatory risks and opportunities at federal, regional and local agencies. GHG regulation could increase the cost of electricity generated by fossil fuels, and such increases could reduce demand for the power NRG generates and markets. Additionally, government regulations providing incentives for renewable

		generation could change at any time and such changes may adversely impact NRG's business, revenues, margins, results of operations and cash flows. For example, On September 29, 2017, the Department of Energy issued a proposed rulemaking titled the "Grid Resiliency Pricing Rule." The rulemaking proposed that FERC take action to reform the ISO/RTO markets to value certain reliability and resiliency attributes of electric generation resources. On October 23, 2017, NRG filed comments encouraging FERC to act expeditiously to modernize energy and capacity markets in a manner compatible with robust competitive markets. Emerging regulation is included in risk assessments because it may impact revenue in geographies with power markets (i.e CAISO, ERCOT, ISO-NE, NYISO, PJM) where NRG has operations.
Technology	Relevant, always included	Technology is always considered in assessments by the Financial Risk Management Committee. Monitoring of technology risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. Changes in technology may impair the value of NRG's power plants and the attractiveness of its retail products. Research and development activities are ongoing to provide alternative and more efficient technologies to produce power, including wind, photovoltaic (solar) cells, energy storage, and improvements in traditional technologies and equipment, such as more efficient gas turbines. Advances in these or other technologies could reduce the costs of power production to a level below what NRG has currently forecasted, which could adversely affect its cash flows, results of operations or competitive position. Technology, including distributed technology or changes in retail rate structures, may also have a material impact on NRG's ability to retain retail customers. Additionally, NRG may potentially be affected by emerging technologies that may over time affect change in capacity markets and the energy industry overall with the inclusion of distributed generation and clean technology. Some emerging technologies like distributed renewable energy technologies, broad consumer adoption of electric vehicles and energy storage devices could affect the price of energy. These emerging technologies may affect the financial viability of utility counterparties and could have significant impacts on wholesale market prices, which could ultimately have a material adverse effect on NRG's financial condition, results of operations and

		cash flows. Cybersecurity is also a risk for the operation of NRG's businesses. A cyber-attack could cause NRG to incur significant losses of revenues or other substantial liabilities. Technology is included in risk assessments because these emerging technologies may affect the financial viability of utility counterparties and could have significant impacts on wholesale market prices, which could ultimately have a material adverse effect on NRG's financial condition, results of operations and cash flows.
Legal	Relevant, always included	Legal issues are always considered in assessments by the Financial Risk Management Committee. Monitoring of legal risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. NRG is subject to environmental laws that impose extensive and increasingly stringent requirements on NRG's ongoing operations, as well as potentially substantial liabilities arising out of environmental contamination. These environmental requirements and liabilities could adversely impact NRG's results of operations, financial condition and cash flows. NRG is subject to the environmental laws of foreign and U.S., federal, state and local authorities. NRG must comply with numerous environmental laws and obtain numerous governmental permits and approvals to build and operate NRG's plants. Federal and state environmental laws generally have become more stringent over time, although this trend has slowed. Should NRG fail to comply with any environmental requirements that apply to its operations, NRG could be subject to administrative, civil and/or criminal liability and fines, and regulatory agencies could take other actions seeking to curtail NRG's operations. In addition, when new requirements take effect or when existing environmental requirements are revised, reinterpreted or subject to changing enforcement policies, NRG's business, results of operations, financial condition and cash flows could be adversely affected. Therefore, legal risks are always included in risk assessments. For example, in 2012, the EPA enacted standards (the MATS rule) to control emissions of HAPs from coal and oil-fired electric generating units. The rule established limits for mercury, non-mercury metals, certain organics and acid gases, which had to be met beginning in April 2015. On April 27, 2017, the D.C. Circuit granted the EPA's request to

		postpone the oral argument and hold the case in abeyance while the EPA reconsidered the rule. While NRG cannot predict the final outcome of this rulemaking, NRG believes that because it has already invested in pollution controls and cleaner technologies, the fleet is well-positioned to comply with the MATS rule.
Market	Relevant, always included	Market risks are always considered in assessments by the Financial Risk Management Committee. Monitoring of market risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. NRG's CRO reports to the CFO and monitors commercial risks to domestic revenues from commodity and electric power availability or pricing, carbon and emission trading, and renewable energy credits. The EVP of Retail and EVP of Business Solutions identify commercial opportunities and risks to all of NRG's retail businesses. Climate change is producing changes in weather and other environmental conditions, including temperature and precipitation levels, and thus may affect consumer demand for electricity. Additionally, demand for NRG's energy-related services could be impacted by consumers' preferences or market factors favoring energy efficiency, low-carbon power sources or reduced electricity usage. For example, in August 2017 Hurricane Harvey made landfall on the Texas coast where NRG has significant retail and generation operations. During the third quarter of 2017, NRG's Retail business was impacted by Hurricane Harvey by approximately $20 million in part due regional power outages and disruptions in transmission and distribution. Market risks are always included in risk assessments because it may impact revenue.
Reputation	Relevant, always included	Reputational issues are always considered in assessments by the Financial Risk Management Committee. Monitoring of reputational risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. Power generation involves hazardous activities, including acquiring, transporting and unloading fuel, operating large pieces of rotating equipment and delivering electricity to transmission and distribution systems. In addition to natural risks such as earthquake, flood, lightning,

		hurricane and wind, other hazards, such as fire, explosion, structural collapse and machinery failure are inherent risks in the NRG's operations. These and other hazards can cause significant personal injury or loss of life, severe damage to and destruction of property, plant and equipment, contamination of, or damage to, the environment and suspension of operations. The occurrence of any one of these events may result in NRG being named as a defendant in lawsuits asserting claims for substantial damages, including for environmental cleanup costs, personal injury and property damage and fines and/or penalties. This may adversely affect the reputation of NRG. For example, during the August 2017 Hurricane Harvey event, NRG successfully mitigated any reputational risks by providing customer relief to our retail customers including ceasing disconnects and providing payment extensions. Reputational risks are always included in risk assessments because it may impact revenue.
Acute physical	Relevant, always included	Acute physical risks are always considered in assessments by the Financial Risk Management Committee. Monitoring of acute physical risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. Climate change is producing changes in weather and other environmental conditions, including temperature and precipitation levels, and thus may affect consumer demand for electricity. In addition, the potential physical effects of climate change, such as increased frequency and severity of storms, floods and other climatic events, could disrupt NRG's operations and supply chain, and cause them to incur significant costs in preparing for or responding to these effects. These or other meteorological changes could lead to increased operating costs, capital expenses or power purchase costs. NRG's commercial and residential customers may also experience the potential physical impacts of climate change and may incur significant costs in preparing for or responding to these efforts, including increasing the mix and resiliency of their energy solutions and supply. For example, during August 2017 Hurricane Harvey impacted NRG's Texas retail and Gulf Coast operations. For retail, lower gross margin related to the impact of the hurricane was driven by a reduction in load and the unfavorable impact of selling back excess supply along with $7 million of customer relief. (See NRG 2017 10-K pg. 73)

		Long- and short-term power prices may also fluctuate substantially due to other factors outside of NRG's control, including weather conditions, including extreme weather conditions and seasonal fluctuations, including the effects of climate change. Such factors and the associated fluctuations in power prices have affected the NRG's wholesale power operating results in the past and will continue to do so in the future. Acute physical risks are always included in risk assessments because they may impact revenue.
Chronic physical	Relevant, always included	Chronic physical risks are always considered in assessments by the Financial Risk Management Committee. Monitoring of chronic physical risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. Climate change is producing changes in weather and other environmental conditions, including temperature and precipitation levels. For example, climate change could affect the availability of a secure and economical supply of water in some locations, which is essential for the continued operation of NRG's generation plants. Water risk is monitored by the risk owners (individual plant operators) and reported to NRG management upon changes with a significance threshold of 20% in water consumption and withdrawal levels. If it is determined that a water supply risk exists that could impact projected generation levels at any plant within the subsequent two-year time frame, risk mitigation efforts are identified and economically evaluated for implementation. Chronic physical risks are always included in risk assessments because they may impact revenue.
Upstream	Relevant, always included	Upstream issues are always considered in assessments by the Financial Risk Management Committee. Monitoring of upstream risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. NRG's costs, results of operations, financial condition and cash flows could be adversely impacted by disruption of its upstream fuel supplies. NRG relies on natural gas, coal, oil and enriched uranium to fuel its power generation facilities. Delivery of these fuels to the facilities is dependent upon the continuing financial viability of contractual counterparties as well as upon the infrastructure (including rail lines, rail cars, barge facilities, roadways, riverways and natural gas pipelines) available to serve each generation facility. As a result, NRG is subject to

		the risks of disruptions or curtailments in the production of power at its generation facilities if no fuel is available at any price or if a counterparty fails to perform or if there is a disruption in the fuel delivery infrastructure. For example, water risk regarding the impact for barge delivery is evaluated on a daily basis, with contingency plans developed as needed. Also, NRG is a founding member of the Natural Gas Supply Collaborative, which seeks to create sustainable natural gas sourcing standards for the natural gas supply industry. For more information please see: https://www.mjbradley.com/content/natural-gas-supply-collaborative-0 Upstream risks are always included in risk assessments because they may impact revenue.
Downstream	Relevant, always included	Downstream issues are always considered in assessments by the Financial Risk Management Committee. Monitoring of downstream risks occurs on an ongoing basis. The frequency of reporting varies depending on the materiality and type of risk. Internally, the Financial Risk Management Committee meets quarterly to review existing risks and approve mitigation initiatives. NRG relies on power transmission facilities that it does not own or control and that are subject to various transmission constraints. If these facilities fail to provide NRG with adequate transmission capacity, NRG may be restricted in its ability to deliver wholesale electric power to its customers and may either incur additional costs or forego revenues. For example, disruptions in transmission due to extreme weather events and natural disasters such as fires may adversely affect distribution. A case like this occurred in August of 2017 during Hurricane Harvey when electricity distribution was interrupted for a time to approximately 300,000 Texas grid customers. Downstream risks are always included in risk assessments because they may impact revenue.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Company level: The SVP and General Counsel, heads of Environment, Government Affairs and Regulatory Affairs team are responsible for assessing and managing regulatory risks and opportunities at federal, regional and local agencies. NRG's President and CEO reports to the Board of Directors on any material risks. NRG's SVP, Operations and SVP Environmental are responsible for identifying and managing environmental risks to operations. NRG's CRO reports

to the CFO and monitors commercial risks to domestic revenues from commodity and electric power availability or pricing, carbon and emission trading, and renewable energy credits. The EVP, Retail and EVP of Business Solutions identify commercial opportunities and risks to all of NRG's retail businesses. The Financial Risk Management Committee manages reputational risk for affirmative marketing of our clean energy solutions.

The Enterprise Risk Management process enables management to manage uncertainty to enhance or preserve enterprise value and facilitates the functional group's management of risk. NRG's strategy addresses long and short term risks and opportunities and aims to reduce the company's own GHG risks and those of its customers. For example, some of the business platforms to achieve this vision include adding clean energy solutions for our residential and business customers, which will save money, increase reliability and resiliency, and improve their own carbon footprints. We also have modernized our generation fleet in a manner that reduces CO2 emissions by repowering or retiring older, uneconomic power plants.

Asset level: For our wholesale generation assets, Asset Management, Operations and Development groups are responsible for identifying risks and opportunities and directly report these risks to the CEO. Commercial Operations and Risk groups help by conducting sensitivity analyses to assess exposure from weather and other risks. Climate change risks to retail subsidiaries are assessed by the respective subsidiary presidents. Risks are monitored by the management teams of our retail subsidiaries and managed by the NRG's Financial Risk Management Committee.

An example of managing transition risks related to climate change is evidenced by NRG's policy and regulatory engagement. NRG's fleet of utility-scale power plants is heavily regulated by federal regulators. For example, most of NRG's power plants sell their output into regional electricity markets under rules set by the Federal Energy Regulatory Commission (FERC). While some regional energy markets address sustainability needs by putting a price on carbon (such as AB 32 in California or the Regional Greenhouse Gas Initiative (RGGI) in the Eastern United States), many struggle to price environmental externalities into the wholesale price of electricity. That is one of the reasons why NRG is engaged with stakeholders in reviewing innovative market designs that price carbon or allow for the procurement of low-carbon power, as part of a competitive process. Senior NRG executives have presented and testified on key issues related to transitional risks such as the Department of Energy (DOE) Grid Reliability and Resilience Proposal. More information can be found online at https://www.nrg.com/energy-policy.html.

An example of managing physical risks related to climate change can be seen by NRG's actions during the August 2017 weather event of Hurricane Harvey. In part because of the lessons learned and improvements made after Hurricanes Allison and Ike, NRG was well prepared in its operations and the business continuity plan well executed. The team at W.A. Parish – when faced with wet coal and flood conditions – successfully transitioned units 5 and 6 from coal to gas, and in real time, to keep the system running and power generation uninterrupted. The San Jacinto team was locked in at their facility for four full days – including a brief shelter-in-place event when a neighboring facility sprung a small ammonia leak. The team

kept required steam flowing to a customer – a DuPont facility located next door – for as long as they needed it to keep their own operations running.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

As a member of a highly regulated industry NRG is directly affected by environmental regulations on power generating assets. This includes risks driven by laws, taxation, or disclosure standards, whether focused directly on GHGs or on other issues that affect GHG emissions. NRG operates generating units in Connecticut, Delaware, Maryland and New York that are subject to RGGI, which is a regional cap and trade system. The same holds true for the California Cap and Trade scheme. In 2013, each of these RGGI states finalized a rule that reduced and will continue to reduce the number of allowances,. These new rules could impact NRG's results of operations, financial condition and cash flows.

GHG regulation could increase the cost of electricity generated by fossil fuels, and such increases could reduce demand for the power NRG generates and markets.

Additionally, government regulations providing incentives for renewable generation could change at any time and such changes may adversely impact NRG's business,

revenues, margins, results of operations and cash flows.

For example, in 2018 NRG paid approximately $50,000 to have its emissions and water inventories voluntarily assured according to accounting standards. This cost could potentially increase as emissions calculations become more complex and stakeholder demand for verification increases. Additionally, as NRG's power generating assets diversify (distributed generation, co-generation, wind, solar, etc.) there will be additional calculation protocol training needed for emissions managers.

Time horizon

Short-term

Likelihood

Very unlikely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

1,840,000,000

Explanation of financial impact figure

The potential financial impact is meant to be illustrative. In this scenario there would be a price of carbon for each ton of emitted carbon for operations in the United States. The potential financial impact figure is based on the social price of $40/ton for carbon and NRG's 2018 emissions. $40*46,000,000 = $1,840,000,000. However NRG believes that this scenario is highly unlikely given the current administration in the U.S.

Management method

The SVP and General Counsel, heads of Environment and Regulatory Affairs team are responsible for assessing regulatory risks at federal, regional and local agencies. NRG's President and CEO reports to the Board of Directors on any material risks. NRG's Head of Operations and SVP Environmental are responsible for identifying and mitigating environmental risks to operations.

An example of managing transition risks related to climate change is evidenced by NRG's policy and regulatory engagement. In 2017, senior NRG executives presented and testified on key issues related to transition risks such as the Department of Energy (DOE) Grid Reliability and Resilience Proposal. Most of NRG’s power plants sell their output into regional electricity markets under rules set by the Federal Energy Regulatory

Commission (FERC). While some regional energy markets address sustainability needs by putting a price on carbon (such as AB 32 in California or the Regional Greenhouse Gas Initiative (RGGI) in the Eastern United States), many don't price environmental externalities into the wholesale price of electricity.

The cost of management is not an additional cost as it is integrated into operational costs. For example, NRG 's environmental, regulatory and governmental affairs groups monitor emerging legislation and bring any potential material issues to management. It is part of doing business and embedded in decision-making processes.

Cost of management

0

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

Extreme weather events can impact NRG’s retail electricity providers by causing volatility in energy markets and prolonged customer outages, which lead to lost revenue and increase the likelihood of late bill payments that can impact cash flow.

For example, in late August 2017, Hurricane Harvey made landfall on the Texas coast. During the third quarter of 2017, NRG’s Retail business was impacted by Hurricane Harvey by approximately $20 million in part by disruptions in transmission and distribution. At the peak, approximately 300,000 customers were without power.

In addition, during August 2017, NRG's Cottonwood generating station was damaged when the Sabine River Authority opened the floodgates of the Toledo Bend reservoir, which resulted in downstream flooding of the Sabine River. The generating station was returned to service during the fourth quarter of 2017.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

20,000,000

Explanation of financial impact figure

Financial impact is meant to be illustrative. For example, in late August 2017, Hurricane Harvey made landfall on the Texas coast. During the third quarter of 2017, NRG's Retail business was impacted by Hurricane Harvey by approximately $20 million in part by disruptions in transmission and distribution. At the peak, approximately 300,000 customers were without power.

Management method

The EVP, Retail and EVP, Business Solutions identify commercial opportunities and risks to all of NRG's retail businesses and overseeing the business continuity plan for their departments. NRG's President and CEO reports to the Board of Directors on any material risks. NRG's EVP Operations and SVP Environmental are responsible for identifying and mitigating environmental risks to operations. The Financial Risk Management Committee manages reputational risks to NRG's brand. The Enterprise Risk Management process enables management to manage uncertainty to enhance or preserve enterprise value and facilitates the functional group's management of risk.

For example, during August 2017, NRG's Cottonwood generating station was damaged when the Sabine River Authority opened the floodgates of the Toledo Bend reservoir, which resulted in downstream flooding of the Sabine River. NRG's business continuity plan ensured that essential employees remain at their stations to manage the plant through the weather event. Plant personnel worked on the issues until the generating station was returned to service during the fourth quarter of 2017. A retaining wall was also built near the plant to protect against future flooding.

The cost of management is integrated into operational costs, not an additional cost. NRG does not build out new groups to manage extreme weather events. It is part of doing business.

Cost of management

0

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Other

Type of financial impact

Increased capital costs (e.g., damage to facilities)

Company- specific description

In August, Harvey, a category 4 hurricane, devastated the eastern coast of Texas and southern Louisiana where NRG has significant physical operations and thousands of employees. Even though our business continuity plan was deployed well in advance of the storm, the scale and scope of Harvey demanded real-time improvising and inspired our employees to step up and demonstrate exemplary leadership. Some employees were deployed out of town altogether to ensure that payroll and other employee support services were not interrupted by the storm's impact.

The team at W.A. Parish – when faced with wet coal and flood conditions – successfully transitioned units 5 and 6 from coal to gas, and in real time, to keep the system running and power generation uninterrupted. Our San Jacinto team was locked in at their facility for four full days – including a brief shelter-in-place event when a neighboring facility sprung a small ammonia leak. The team kept required steam flowing to a customer for as long as they needed it to keep their own operations running. Our team at Cedar Bayou was also in place for four full days– remaining in reserve and ready throughout the historic storm. Team members protected the facility and the site.

In addition, during August 2017, NRG's Cottonwood generating station was damaged when the Sabine River Authority opened the floodgates of the Toledo Bend reservoir, which resulted in downstream flooding of the Sabine River. The generating station was returned to service during the fourth quarter of 2017.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

20,000,000

Explanation of financial impact figure

Potential financial impact is meant to be illustrative. During August 2017, during Hurricane Harvey, NRG's Cottonwood generating station was damaged when the Sabine River Authority opened the floodgates of the Toledo Bend reservoir, which resulted in downstream flooding of the Sabine River. The generating station was returned to service during the fourth quarter of 2017. NRG estimates the impact of the Cottonwood damage and Hurricane Harvey on Gulf Coast Generation to be approximately $20 million in part due to outages.

Management method

Corporate level: The Financial Risk Management Committee manages reputational risks to NRG's brand and the head of Marketing manages reputational risk for affirmative marketing of our clean energy solutions. The ERM process enables management to manage uncertainty to enhance or preserve enterprise value and facilitates the functional group's management of risk.

Asset level: For our wholesale generation assets, the Asset Management group is responsible for identifying risks and opportunities and directly report these risks to the CEO. Climate change risks to retail subsidiaries are assessed by the respective subsidiary presidents. Risks are monitored by the management teams of our retail subsidiaries and managed by the NRG's Financial Risk Management Committee.

For example, the team at W.A. Parish – when faced with wet coal and flood conditions in 2017 after Hurricane Harvey – successfully transitioned units 5 and 6 from coal to gas, and in real time, to keep the system running and power generation uninterrupted. Our San Jacinto team was locked in at their facility for four full days – including a brief shelter-in-place event when a neighboring facility sprung a small ammonia leak. The team kept required steam flowing to a customer for as long as they needed it to keep their own operations running.

The cost of management is integrated into operational costs, not an additional cost. It is part of doing business and embedded in decision-making processes.

Cost of management

0

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Other

Type of financial impact

Other, please specify

Increased demand for products/services

Company-specific description

Weather conditions in the regions of the U.S. in which NRG does business influence NRG's financial results. Weather conditions can affect the supply and demand for electricity and fuels. Weather may also impact the availability of the NRG's generating assets. Changes in energy supply and demand may impact the price of these energy commodities in both the spot and forward markets, which may affect NRG's results in any given period. Typically, demand for and the price of electricity is higher in the summer and the winter seasons, when temperatures are more extreme. The demand for and price of natural gas is also generally higher in the winter. However, all regions of the U.S. typically do not experience extreme weather conditions at the same time, thus NRG is typically not exposed to the effects of extreme weather in all parts of its business

at once.

To the extent that climate change contributes to the frequency and intensity of weather related events NRG could pick up load in markets where sources are down or offline due to inclement weather. NRG retail operations stand to benefit from any increase in load, for example, extremely hot summers in Texas, while NRG's wholesale operations could benefit from any increase in pricing associated with extreme temperatures.

Additionally, NRG's Retail group offers a range of products and services that are designed to provide emergency power to our customers when normal distribution is not available. Increasing storms and related electrical service disruptions could increase sales.

For residential and small businesses NRG offers a variety of portable power products. The NRG brand Goal Zero offers portable solar, portable batteries, outdoor lighting and chargers. NRG Street Charge is a solar charging station installed in public places for guests to charge their devices free of charge. NRG Go Portable Power allows users to rent an NRG Go Power Pack to keep their devices charged, and then when they are done charging, return the Power Pack to a conveniently located NRG Go Station or mail the pack in to an office.

For commercial and industrial customers, NRG offers demand-side management helping businesses reduce their energy usage during times of high demand and distributed energy resources for resiliency.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact of this opportunity cannot be calculated at this time.

Strategy to realize opportunity

NRG retail operations stand to benefit from any increase in load, while NRG's wholesale operations could benefit from any increase in pricing associated with extreme temperatures.

Also, for commercial and industrial customers, NRG offers demand-side management helping businesses reduce their energy usage during times of high demand and distributed energy resources for resiliency. For example, in 2017 NRG and Cummins announced a strategic partnership to deploy a resilient, cleaner and cost-effective distributed energy platform for commercial and industrial customers. This easy-to-implement solution provides customers an opportunity to transition to a smarter energy consumption model. The solution could potentially save customers up to 15 percent over their current energy costs, often at no enrollment expense. Beyond giving customers more control over their energy future, the platform is expected to significantly reduce environmental impact and grid stress. The platform architecture allows for more capacity to meet expanding market needs. Cummins and NRG will form a joint development team to pursue solution sales, and market and maintain energy assets to guarantee outcomes for end-use customers.

Cost to realize opportunity is embedded into Retail operations costs and not a separate function. When an extreme weather event happens, NRG's operations are already in a position to capitalize on this opportunity and support our customers.

Cost to realize opportunity

0

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other

Type of financial impact

Other, please specify

Increased demand for existing products

Company-specific description

Potential opportunities are legislation or policies that enhance investment in and development of new clean technologies, products and services, and customer demand for NRG's products and services.

NRG supports competitive changes to retail and wholesale markets that make it easier to drive sustainable outcomes and save money for consumers. Because oversight of the electric industry is split between federal and state regulators, the best solutions involve cooperation between both sets of regulators to craft regulations that drive market-based sustainable outcomes.

For example, all of our Retail businesses including Reliant, Green Mountain Energy, and NRG all offer zero-emission or low-emission retail rate plans. All of our retail offerings are regulated by the appropriate State entity. However, those plans are only available to customers in parts of the country that allow retail choice, largely Texas, the mid-Atlantic states, and states in the Northeast. Action at the State level is necessary in other parts of the country to allow customers to choose their provider.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact is variable and forecasts contain proprietary information.

Strategy to realize opportunity

NRG engages with policy makers and industry groups to support competitive changes to retail and wholesale markets that make it easier to drive sustainable outcomes and save money for consumers. For example, in 2018 NRG's CEO published an Op-Ed about the need for more retail electricity competition. This article supports legislators, regulators, utilities, competitive retailers and consumer groups joining forces to implement competition for the benefit of consumers. Subsequently, NRG does not support bailouts or subsidies for uneconomic coal and nuclear plants. These issues are continuing to be

discussed in policy and regulatory environments.

To see regulatory filings, white papers, presentations and other materials NRG has prepared and submitted that set forth our positions on a variety of critical subjects driving our business and the industry please visit: https://www.nrg.com/energy-policy.html

Cost to realize opportunity is embedded into operational costs and not a separate function.

Cost to realize opportunity

0

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

Opportunities in the U.S. are emerging for clean technologies and market expansion. NRG retail business provides home energy and related services as well as personal power to consumers through various brands and channels across the U.S. These brands include Reliant, Green Mountain Energy and NRG offer renewable energy, carbon offset, and smart energy management products that help businesses and consumers reduce their carbon footprint. NRG's consumer product brand, Goal Zero includes portable solar panels, lightweight recharger kits and rechargeable lanterns. Retail customers make purchase decisions based on a variety of factors, including price, customer service, brand, product choices, bundles or value-added features. Customers purchase products through a variety of sales channels including direct sales, call centers, websites, brokers and brick-and-mortar stores.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact is variable and forecasts contain proprietary information.

Strategy to realize opportunity

Through its broad range of service offerings and value propositions, NRG's retail business is able to attract, retain, and increase the value of its customer relationships. NRG's retailers are recognized for exemplary customer service, innovative smart energy and technology product offerings and environmentally friendly solutions.

For example, in 2018 NRG contracted a 25 megawatt solar project for Sysco, to power their Texas operations and advance sustainability. Working together with Sysco, NRG is also helping meet the promise of the customer-choice market in Texas, with a truly distinctive, cost-effective solar energy plan – the kind sought by many commercial and industrial customers today. As part of the agreement, three solar garden sites are being constructed in the Houston and Dallas areas, which will support approximately 10 percent of Sysco's U.S. electricity usage. The environmental benefits of this program include reducing approximately 37,000 tons of CO2 emissions a year, which equates to taking more than 7,000 cars off the road. The solar garden sites total 25 megawatts of renewable energy generation and will support the majority of the Company's electricity load in Texas, including the Corporate Headquarters.

Cost to realize opportunity is embedded into operations costs and not a separate function.

Cost to realize opportunity

0

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	Extreme weather events can impact NRG's retail electricity providers by causing volatility in energy markets and prolonged customer outages, which lead to lost revenue and increase the likelihood of late bill payments that can impact cash flow. The magnitude of impact could range from high to low depending on the weather event. For example, in late August 2017, Hurricane Harvey made landfall on the Texas coast. The relative impact to NRG's operations was of medium magnitude. During the third quarter of 2017, NRG's Retail business was impacted by Hurricane Harvey by approximately $20 million partly because of disrupted downstream transmission and distribution.
Supply chain and/or value chain	Impacted	NRG's costs, results of operations, financial condition and cash flows could be adversely impacted by disruption of its upstream fuel supplies. NRG relies on natural gas, coal and oil to fuel a majority of its power generation facilities. Delivery of these fuels to the facilities is dependent upon the continuing financial viability of contractual counterparties as well as upon the infrastructure (including rail lines, rail cars, barge facilities, roadways, riverways and natural gas pipelines) available to serve each generation facility. As a result, NRG is subject to the risks of disruptions or curtailments in the production of power at its generation facilities if no fuel is available at any price or if a counterparty fails to perform or if there is a disruption in the fuel delivery infrastructure. For example, water risk regarding the impact for barge delivery is evaluated on a daily basis, with contingency plans developed as needed. NRG assets located along the Eastern or Gulf coast of the U.S. that rely on barge fuel delivery may be impacted if there is a disruption. Specifically, during extreme cold weather events on the ice creates safety hazards for unloading barges and sustained cold closes operations. When the ice melts the river rises and currents are too swift, further hampering deliveries. The magnitude of the impact could range from high to low depending on the geographical location. Also most plants maintain

		a fuel inventory of 15-20 days so operationmaynot be significantly impacted.
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	An example of where an adaptation activity at the asset level proved successful was demonstrated after August of 2017 during Hurricane Harvey in Texas. The team at W.A. Parish – when faced with wet coal and flood conditions – successfully transitioned units 5 and 6 from coal to gas, and in real time, to keep the system running and power generation uninterrupted. As a result, NRG reviewed the business continuity plan and found it to be satisfactory should extreme weather events occur in higher frequency. The magnitude of the impact could range from high to low depending on the geographical location. The relative impact of Harvey to NRG's adaptation and mitigation activities was of medium-low magnitude.
Investment in R&D	Impacted	Changes in technology may impair the value of NRG's power plants or retail products. Research and development activities are ongoing to provide alternative and more efficient technologies to produce power, including wind, photovoltaic (solar) cells, energy storage, and improvements in traditional technologies and equipment, such as more efficient gas turbines. Advances in these or other technologies could reduce the costs of power production to a level below what the NRG has currently forecasted, which could adversely affect its cash flows, results of operations or competitive position. NRG may also potentially be affected by emerging technologies that may over time affect change in capacity markets and the energy industry overall with the inclusion of distributed generation and clean technology. Some emerging technologies like distributed renewable energy technologies, broad consumer adoption of electric vehicles and energy storage devices could affect the price of energy. These emerging technologies may affect the financial viability of utility counterparties and could have significant impacts on wholesale market prices, which could ultimately have a material adverse effect on NRG's financial condition, results of operations and cash flows. The magnitude of the impact could range from high to low depending on the asset or project. For example, at the product level, Goal Zero, a wholly owned subsidiary of NRG, is a portable solar product business and regularly invests resources into developing new products. The ability to innovate and constantly create a better product is essential to staying competitive in the

		market. The amount of capital expended on R&D is considered proprietary.
Operations	Impacted	The magnitude of the impact could range from high to low depending on the geographical location. For example, during August 2017, NRG's Cottonwood generating station was damaged when the Sabine River Authority opened the floodgates of the Toledo Bend reservoir, which resulted in downstream flooding of the Sabine River. The generating station was returned to service during the fourth quarter of 2017. NRG estimates the impact of the Cottonwood damage and Hurricane Harvey on Gulf Coast Generation to be approximately $20 million. The relative impact to NRG's operations from Harvey was of medium magnitude.
Other, please specify		

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Revenues could decrease or increase depending on the climate-related risk or opportunity. The magnitude of the impact depends on the business unit or geographical asset. For example, an opportunity to increase revenue may be possible with favorable energy policy. Demand for NRG's energy-related services could be impacted by consumers' preferences or market factors favoring energy efficiency, low-carbon power sources or reduced electricity usage. Additionally, extreme physical events could be a risk and decrease revenue. For example, during August 2017, NRG's Cottonwood generating station was damaged when the Sabine River Authority opened the floodgates of the Toledo Bend reservoir, which resulted in downstream flooding of the Sabine River. The generating station was returned to service during the fourth quarter of 2017. NRG estimates the impact of the Cottonwood damage and Hurricane Harvey on Gulf Coast Generation to be approximately $20 million. NRG continues to dedicate resources to business continuity plans to ensure plants

		are able to run when needed and with the highest degree of safety.
Operating costs	Impacted	Operating costs could increase depending on the climate-related risks. The magnitude of the impact depends on the business unit or geographical asset. For example, increased environmental regulations affecting existing power plants could make running certain plants less economical.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	Capital expenditures for some supply chain activities may increase or decrease depending on the climate-related impact. The magnitude of the impact depends on the business unit or geographical asset. For example, NRG has planned almost $4 million for generation from renewable energy through 2023.
Acquisitions and divestments	Impacted for some suppliers, facilities, or product lines	Decisions around acquisitions and divestments may be affected by climate-related risks or opportunities depending on the market value of assets and customer demand for cleaner energy. The magnitude of the impact is variable depending on the business unit or geographical asset.
Access to capital	Impacted for some suppliers, facilities, or product lines	Access to capital may become easier or more difficult depending on risks and opportunities like climate-related financial disclosures. The magnitude of the impact is variable depending on the business unit or geographical asset.
Assets	Impacted	Assets may lose or gain value depending on policy and regulatory actions. The magnitude of the impact is variable depending on the specific asset. For example, increased environmental regulations affecting existing power plants could make running certain plants less economical.
Liabilities	Impacted	Liabilities may be impacted depending on the climate-related risk or opportunity. The magnitude of the impact depends on the business unit or geographical asset. For example, acute physical climate events like extreme weather may affect our power plants on the Gulf and East Coasts. Also increased climate regulation around fossil fuel emissions may make coal-fueled plants less economical in the medium to long-term.
Other		

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

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

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

NRG’s vision is to create a sustainable energy future by safely providing reliable, cleaner power that enhances peoples' lives and delivers value to our stakeholders . In 2016, NRG's Board of Directors' Governance and Nominating Committee officially began oversight of sustainability activities. Each component of our strategy is intended to create customer and shareholder value in an increasingly sustainable manner, with the goal of both decreasing emissions and reducing the risks associated with climate change. The Enterprise Risk Management process enables us to manage uncertainty and to enhance or preserve enterprise value. Enterprise Risk Management facilitates the functional group's management of risk, including climate change.

NRG’s strategy addresses long and short term risks and opportunities and aims to reduce the company’s own GHG risks and those of its customers. For example, some of the business platforms to achieve this vision include adding clean energy solutions for our residential and business customers, which will save money, increase reliability and resiliency, and improve their own carbon footprints. We are also focusing on modernizing our generation fleet in a manner that reduces CO2 emissions by repowering or repurposing older, less efficient power plants. We believe carbon is one of the biggest sources of risk in our portfolio. We already pay for carbon emissions under RGGI and AB32 and carbon taxes are a possibility in the long-term.

Other physical risks include sea level rise and extreme weather events which can affect the productivity of our power generating assets as well as customer demand.

NRG is one of more than 3500 organizations to sign the “We Are Still In” declaration which demonstrates commitment to following through on the promise of the Paris Agreement and America’s contribution to it. 'NRG’s Climate Change Principles' are published on NRG's sustainability webpage,--https://www.nrg.com/assets/documents/sustainability/2018-climate-change-principles.pdf.

In the long term, we believe that the American energy industry is going to be increasingly impacted by the long-term societal trend towards sustainable forms of energy that have low or no GHG emissions, at both the utility scale and smaller distributed energy resource level. To meet this trend, NRG has focused its growth strategy on customer-facing energy products and services including smart grid services, nationwide retail green electricity and unique retail sales channels involving loyalty and affinity programs; and facilitating or securing other forms of on-site clean power generation. In the short term, our strategy is designed to mitigate risks, including climate risks, where economically feasible. Providing customers with low carbon energy solutions helps in the challenge to mitigate climate change while reducing our commercial risk. In the long term, NRG has recognized the need to contribute to significant reductions in CO2 emissions through our strategy. NRG's short and long term strategies help mitigate potential climate change risks from GHG regulations while also positioning the company to capitalize on opportunities and a growing demand for clean energy solutions. NRG's long-term strategy also involves providing clean energy solutions for large and small retail customers’ energy needs, which will reduce their carbon footprints.

NRG's most substantive decision to date is the setting of our certified science-based targets that remain some of the industry's most aggressive. NRG remains committed to executing against our goals to reduce carbon emissions from a 2014 baseline by 50% by 2030 and 90% by 2050. This is aligned with the 2 degree celsius pathway put forth by the 2015 Paris Agreement.

Our short and long term strategies will help NRG profitably reduce its carbon intensity through customized retail solutions. Having the retail support to sell power in diverse energy markets gives NRG the competitive advantage in providing customers sustainable energy solutions. For example, NRG Business Solutions makes sustainability a reality for organizations by developing unique energy solutions based on each customer’s needs. These solutions include demand response, commodity sales, access to renewable energy, asset-backed distributed energy systems, energy efficiency measures and energy management services. For example, in 2017, Cisco’s sustainability vision has become a reality through NRG's offsite solar solution – helping the company meet its 2017 sustainability goals to reduce GHG emissions by 40% and to use renewable energy for at least 25% of its power needs each year. The offsite nature of the solution was uniquely suited for both financial and logistical considerations. It leveraged the renewable power produced by the Blythe II solar project, located 550 miles away, to meet 10% of Cisco’s electricity needs each year. The actual energy created by the facility powers the local grid while Cisco receives renewable energy credits (RECs) that go toward its sustainability goals.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

NRG has a certified science-based target (SBT) to reduce absolute emissions 50% by 2030 and 90% by 2050. NRG's current SBT is in line with a 2 degree C trajectory. Currently NRG has reduced emissions 37% from our 2014 baseline and we expect to meet our 2030 target ahead of schedule.

It is widely agreed among the scientific community that the only way to meet the goals of the Paris Agreement is to reduce the carbon output of existing thermal plants, in addition to investing in new carbon-free renewable generation, scaling battery storage, and enhancing the controllability of demand through digitization. In 2018, our Petra Nova carbon capture system at our W.A. Parish plant reached a milestone of 2 million tons of CO2 captured and sequestered underground. In 2017, our Joliet, Illinois plant was converted to run on gas instead of coal. As a result, the CO2 output of both plants was greatly reduced. On our pathway to decarbonization we see four levers available to us to reduce emissions:
1) Retiring uneconomic units. By retiring units, total emissions from those units go to zero and contribute to our GHG goal
2) Switching from coal to gas. By implementing this change, these plants will burn more than 50% cleaner.
3) Running existing plants less often. By running plants less frequently, total emissions will decrease.
4) Carbon capture and sequestration similar to our Petra Nova plant, which now captures more than 1 million tons a year on average.

To fully decarbonize, the electric power sector will have to undergo significant technology changes in order to shift to cleaner sources of energy. Competitive markets also need to be opened up across the United States in order to create a more effective market.

C3.1g

(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?

NRG is one of more than 240 organizations that publically committed to support the TCFD. NRG is proactively engaging with key stakeholders and preparing to develop internal guidelines on integrating the TCFD. We plan to build upon our robust voluntary reporting protocols, enterprise risk management process and shareholder engagement strategy. For example, In early 2017, NRG conducted an internal pilot of the draft TCFD recommendations on a single business unit. One of the goals of this exercise was to build internal subject matter

expertise and identify existing activities that support the TCFD recommendations. The learnings from this exercise informed our company-wide comprehensive analysis and the implications for disclosing on climate risk and opportunities. Currently, some climate-related factors are considered in our traditional enterprise risk management process, but not as a separate exercise. Additionally, a shadow price of carbon may be used in these analyses.

In 2018 NRG began a project focused on climate scenario analysis looking at four specific temperature scenarios: 1.5 degrees Celsius (C), 2 degrees C, 3 degrees C and 4 degrees C. These scenarios incorporated credible climate projections for emissions reductions and climate impacts. One of the objectives of this exercise was to create a shared perspective on key risks, opportunities and options to enhance resilience in the face of climate change. While aspects of this are already part of NRG's routine enterprise risk management process, this exercise allowed the potential for improved futures thinking capability of NRG and a more holistic understanding of emerging issues that will confront the business. These scenarios will continue to be analyzed throughout 2019 and insights developed will be incorporated into NRG's strategy and risk management processes.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

Targeted % reduction from base year

50

Base year

2014

Start year
2014

Base year emissions covered by target (metric tons CO2e)
72,000,000

Target year
2030

Is this a science-based target?
Yes, this target has been approved as science-based by the Science-Based Targets initiative

% of target achieved
73

Target status
Underway

Please explain
Progress to date has been made through coal to gas conversions, carbon capture and sequestration at our Petra Nova facility and decreased utilization due to market demand.

Target reference number
Abs 2

Scope
Scope 1+2 (location-based)

% emissions in Scope
100

Targeted % reduction from base year
90

Base year
2014

Start year
2014

Base year emissions covered by target (metric tons CO2e)
72,000,000

Target year
2050

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% of target achieved

40

Target status

Underway

Please explain

Progress to date has been made through coal to gas conversions, carbon capture and sequestration at our Petra Nova facility and decreased utilization due to market demand.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	2	1,020,000
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type

Low-carbon energy installation

Description of initiative

Carbon Capture & Storage

Estimated annual CO2e savings (metric tonnes CO2e)

1,020,000

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

300,000,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Petra Nova is the world's largest post-combustion carbon capture facility, located at our WA Parish Generating Station southwest of Houston. Since late 2016, the project has combined carbon capture with enhanced oil recovery (EOR) to increase domestic oil supply while decreasing the amount of CO2 released into the atmosphere. The Petra Nova project captures more than 90 percent of the CO2 from a 240-megawatt equivalent slipstream of flue gas. The project can capture more than 5,000 tons of CO2 per day, and in 2018, the system sequestered more than 1.05 million tons of CO2.

An 80-mile pipeline safely transports the captured CO2 through Fort Bend, Wharton and Jackson counties to the West Ranch oil field. Through EOR, oil production at West Ranch averages more than 5,000 barrels per day from around 300 barrels a day before we began EOR operation. The financial investment required represents just NRG's portion and not other partners. The financial investment Financing of Petra Nova includes equity contributions from both NRG and JX Nippon of approximately $300 million each. NRG's contribution includes investments already incurred during development of the project which will become assets of the joint venture. Annual monetary savings is not available. The values reported and payback period are illustrative and are subject to change. Please read more here: http://www.nrg.com/generation/projects/petra-nova/news/

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Employee engagement	InspireMEnrg is a web-based and mobile platform where NRG employees can take actions that reflect sustainable choices at work and at home. The program launched at the end of 2014 and continues to be a place where employees engage in topics ranging from water conservation to NRG-specific activities such as wellness programs available to employees. 21% of all employees participate in the program, with the vast majority taking action on a regular basis. Employees have taken over 15,000 actions including energy efficiency, waste management, personal awareness and emissions reduction – for example, unplugging chargers and appliances when not in use, recycling, taking the stairs instead of the elevator and cooking a meat-free meal.
Internal incentives/recognition programs	NRG offers incentives to employees to purchase products that reduce GHG emissions. For example, there is an employee monthly commuter stipend to incentivize using public transportation. Green Mountain Energy has a comprehensive employee engagement program designed to provide employees with options for understanding and taking action to reduce their environmental impact—at work and at home. Program offerings include discounts on renewable energy products, residential solar installations, carbon offsets, and outdoor recreation programs; an employee green team that organizes environmental events and updates internal environmental policies and practices; an incentive-based Green Commuter Program; an office farm food delivery program; and the ability to contribute to environmental non-profits and the Green Mountain EnergyTM Sun ClubTM through pay check deductions. Please visit the GME website for more detail: http://www.greenmountainenergy.com/our-story/sustainability/employee-sustainability-programs/ Additionally, NRG Employees receive a discount when purchasing portable solar products from Goal Zero. Through econrg, we promote ecological stewardship among our plant employees with initiatives aimed at improving environmental awareness and education.
Dedicated budget for low-carbon product R&D	Goal Zero, an NRG owned company, offers portable solar power products. Low-carbon product R&D is a key part of Goal Zero's business model. Since 2007, Goal Zero has developed and provided portable equipment to help people all over the world get the power they need.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Company-wide

Description of product/Group of products

NRG's retail products and services provide both retail and commercial & industrial customers with choices for cleaner electricity, systems to track and reduce use and smart energy management products.

For example, Our Green Mountain Energy (GME) brand is the nation's longest serving company dedicated to providing 100% renewable energy to businesses and residents. Primarily leveraging wind and solar sources, GME brings cleaner, greener energy to customers in Texas and 11 other states. In 2018, GME electricity plans enabled business customers to avoid 1.5 billion pounds of CO2 and residential customers to avoid 6.1 billion pounds.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Internal calculation of renewable MWh

% revenue from low carbon product(s) in the reporting year

1

Comment

The exact revenues from these low-carbon businesses are not available.

For example, Green Mountain is an office-based corporate entity. Because Green Mountain does not own any generation assets, the operational control approach was chosen for reporting emissions data from direct and indirect sources. We only count the avoided CO2 emissions attributable to "new" renewable energy facilities as defined by

the Center for Resource Solutions (CRS) as part of the Green-e Energy National Standard. CRS defines “new” facilities as those that began operation or were repowered within the past 15 years (e.g., 2000 for 2014 sales, 2001 for 2015 sales). The energy generated by these new facilities displaces the need for an equivalent amount of energy from fossil fuel-powered facilities, thereby avoiding the CO2 emissions that would have been created in the absence of the renewable energy generation.

Level of aggregation

Group of products

Description of product/Group of products

Goal Zero Corporation develops and offers portable solar power systems. The company provides batteries, power packs, and generators; solar panels; small and large solar kits; lanterns, flashlights, and more; speakers, cables, tripods, light cords and adapters, and inverters and trickle chargers; and apparel. Its products are used in power phones, head lamps, power tablets, laptops, cameras, refrigerators, TVs, and more. The company offers products online. It serves customers worldwide. The company was founded in 2009 and is based in Bluffdale, Utah. As of September 16, 2014, GOAL ZERO Corporation operates as a subsidiary of NRG Energy, Inc.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Internal classification

% revenue from low carbon product(s) in the reporting year

1

Comment

The exact revenues from these low-carbon product lines are not available.

C-EU4.6

(C-EU4.6) Describe your organization’s efforts to reduce methane emissions from your activities.

NRG engages with natural gas producers in its supply chain to reduce methane emissions. For example. to encourage responsible natural gas production, NRG joined with 8 companies that comprise 12% of the market for delivered gas in the U.S. as part of the Natural Gas Supply Collaborative (NGSC). After months of detailed work, the Collaborative issued a report in

October 2017 entitled “Environmental and Social Performance Indicators for Natural Gas Production” calling on natural gas producers to disclose information related to methane and air emissions, water, chemicals and community health and safety. NRG is an ongoing member of the NGSC.

Our strategy is to engage with suppliers on natural gas emissions. NRG does not own operations with significant methane emissions. However,natural gas is an increasingly important fuel to keep power affordable and to add flexible fast-start capacity that allows faster scaling of renewables on the grid.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2014

Base year end

December 31, 2014

Base year emissions (metric tons CO2e)

72,000,000

Comment

Emissions from domestic generation only

Scope 2 (location-based)

Base year start

January 1, 2014

Base year end

December 31, 2014

Base year emissions (metric tons CO2e)

254,000

Comment

Scope 2 (market-based)

Base year start

January 1, 2014

Base year end

December 31, 2014

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
US EPA Mandatory Greenhouse Gas Reporting Rule

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

49,711,181

Start date

January 1, 2018

End date

December 31, 2018

Comment

Rounded to nearest million. Includes 80% ownership of 180MW capacity natural gas plant in Turkey and 37.5 % of a 1613MW capacity coal plant in Australia. Excludes GenOn assets.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

189,000

Start date

January 1, 2018

End date

December 31, 2018

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Scope 1 mobile refrigerated emissions in US, Australia and Turkey and Scope 2 purchased electricity emissions in Australia and Turkey

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

The emissions from excluded sources are insignificant when compared to Scope 1 and 2 emissions from US domestic generation.

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, not yet calculated

Explanation

Emissions from good and services vary annually according to NRG's purchases. In 2017 NRG used a third-party to calculate the footprint based on spend data. This scope 3 was not calculated for 2018 because it was deemed to resource intensive and not as material as scope 1 emissions. We do not believe that the quality of this data is reliable and thus are not including it in inventory. However we are monitoring this issue if it becomes more relevant.

In 2017 NRG used a third-party technical firm to calculate the estimated carbon footprint for our supply chain. This third-party used spend data from NRG's full supply chain footprint, including those who provide raw materials and services. This third-party removed spend for taxes, payment refunds and similar items that do not relate directly to producing NRG's own market offerings and then eliminated the lowest 10% of expenditures to focus the analysis on the most significant vendors. The remaining spend and associated suppliers was evaluated using both public disclosures and modeled impacts—when public data were not available—to estimate the GHG emissions for each supplier and spend sector. The third-party applied its proprietary environmental economic input output (EEI-O) life cycle based model for quantifying environmental impacts. This technique utilizes extensive government census data for over 464 business sectors and the economic interactions between each sector. It also aligned its GHG calculations with the WRI/WBCSD Greenhouse Gas Protocol for Scope 3, category 1 (purchased goods and services).

Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions.

Capital goods

Evaluation status

Not relevant, explanation provided

Explanation

NRG defines capital goods as the purchase of equipment and machines. Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Explanation

NRG defines fuel and energy related activities as fuel transportation. Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Explanation

NRG defines upstream transportation and distribution as third party logistics. Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Explanation

NRG defines waste generated in operations as waste management and disposal companies. Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

13,000

Emissions calculation methodology

Business travel emissions include hotel stays, car rentals and air travel incurred by United States based company employees and booked through NRG's primary travel agent. Emissions are determined using the Carbonfund.org Foundation's transportation calculator. Data are obtained through Adelman, NRG's travel agent provider.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

800

Emissions calculation methodology

NRG has calculated employee commuting in the past and employee commuting Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions. In prior years, NRG has estimated GHG emissions from employee commuting based on internal surveys and dollars spent on public transportation through a company subsidized program. NRG has significantly fewer employees in 2018 than prior years so the number is even smaller.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

NRG defines upstream leased assets as rental properties. Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting

under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Explanation

NRG does not own any transmission nor distribution lines.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Explanation

NRG is an integrated power company. This category pertains mainly to financial institutions.

Use of sold products

Evaluation status

Not relevant, explanation provided

Explanation

NRG is an integrated power company. Our wholesale generation business scope 1 emissions are most relevant when it comes to climate action. However, though our retail businesses we are able to sell products that directly reduce our customers' scope 1+2 as well as increase our brand/reputation/social license to operate. As our business grows this category will become more relevant.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Explanation

NRG is an integrated power company. Our wholesale generation business scope 1 emissions are most relevant when it comes to climate action. However, though our retail businesses we are able to sell products that directly reduce our customers' scope 1+2 as well as increase our brand/reputation/social license to operate. As our business grows this category will become more material. NRG owns Goal Zero which sells portable solar products.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

NRG is an integrated power company. NRG has some rental properties that we sublet but these are not relevant to our primary business

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

NRG does not own franchises.

Investments

Evaluation status

Not relevant, explanation provided

Explanation

NRG defines investments as financial transactions. Scope 1 GHG emissions are most material for electricity generators to the extent that the US EPA requires reporting under 40 CFR Part 98. Though these sources are relevant to electricity production, the Scope 3 GHG emissions are not material compared to NRG's Scope 1 GHG emissions

Other (upstream)

Evaluation status

Not evaluated

Explanation

Other (downstream)

Evaluation status

Not evaluated

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0052

Metric numerator (Gross global combined Scope 1 and 2 emissions)

49,291,111

Metric denominator

unit total revenue

Metric denominator: Unit total

9,478,000,000

Scope 2 figure used

Location-based

% change from previous year

6

Direction of change

Decreased

Reason for change

The primary factor leading to the decreased emissions intensity include reductions in fleet wide annual net generation due to a continued market-driven shift towards increased generation from natural gas over coal and an increase in revenue. 2017 scope 1 global and scope 2 emissions were approximately 47 mmt CO2e. 2017 revenue was $9,074 million. 47,000,000/9,074,000,000=.00518. .00487/.00518-1*100=6% (Assets included based on equity ownership as of Dec. 31, 2018)

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference

CO2	49,102,111	Other, please specify (Mandatory GHG Reporting Tule, 40 CFR Par)
CH4	108,490	Other, please specify (Mandatory GHG Reporting Tule, 40 CFR Par)
N2O	200,580	Other, please specify (Mandatory GHG Reporting Tule, 40 CFR Par)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	0	0	
Combustion (Electric utilities)	49,102,111	4,780	0	49,411,080	
Combustion (Gas utilities)	0	0	0	0	
Combustion (Other)	0	0	0	0	
Emissions not elsewhere classified	0	0	0	0	

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
North America 1	45,772,416
Australia 2	3,242,975
Turkey 3	395,690

[1]Values have been rounded

[2]Values have been rounded

[3]Values have been rounded

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By activity

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Combustion	49,711,181

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility generation activities	49,711,181	

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
United States of America	188,950	0	0	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
NRG Wholesale	188,950	0

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	
Other emissions reduction activities	1,020,000	Decreased	2	Petra Nova carbon capture at our W.A. Parish plant. 2017 Scope 1&2=50,710,456 1,020,000/50,710,456*100=
Divestment				
Acquisitions				
Mergers				
Change in output	1,379,495	Decreased	2.7	2017 Scope 1&2=50,710,456 1,379,495/50,710,456*100=2.7
Change in methodology				
Change in				

boundary				
Change in physical operating conditions				
Unidentified				
Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

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

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	155,973,965	155,973,965
Consumption of purchased or acquired electricity		0	431,241	431,241
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		0	156,405,206	156,405,206

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

109,482,167

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

reference 2018 Operating Report for MWh calculation using fuel HHV, fuel use, caloric value and density

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

45,721,125

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

reference 2018 Operating Report for MWh calculation using fuel HHV, fuel use, caloric value and density

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

76,430

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

reference 2018 Operating Report for MWh calculation using fuel HHV, fuel use, caloric value and density

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

657,230

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

reference 2018 Operating Report for MWh calculation using fuel HHV, fuel use, caloric value and density

Fuels (excluding feedstocks)

Jet Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

37,012

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

reference 2018 Operating Report for MWh calculation using fuel HHV, fuel use, caloric value and density

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Coal

Emission factor

0.352

Unit

metric tons CO2e per MWh

Emission factor source

reference 2018 GHG voluntary reporting used for 10k CO2e values

Comment

Emissions factor calculated by taking CO2e in metric tons and divided by the total fuel consumed in section 8.2C

Fuel Oil Number 2

Emission factor

0.116

Unit

metric tons CO2e per MWh

Emission factor source

reference 2018 GHG voluntary reporting used for 10k CO2e values

Comment

Emissions factor calculated by taking CO2e in metric tons and divided by the total fuel consumed in section 8.2C

Fuel Oil Number 6

Emission factor

0.267

Unit

metric tons CO2e per MWh

Emission factor source

reference 2018 GHG voluntary reporting used for 10k CO2e values

Comment

Emissions factor calculated by taking CO2e in metric tons and divided by the total fuel consumed in section 8.2C

Jet Kerosene

Emission factor

0.372

Unit

metric tons CO2e per MWh

Emission factor source

reference 2018 GHG voluntary reporting used for 10k CO2e values

Comment

Emissions factor calculated by taking CO2e in metric tons and divided by the total fuel consumed in section 8.2C

Natural Gas

Emission factor

0.233

Unit

metric tons CO2e per MWh

Emission factor source

reference 2018 GHG voluntary reporting used for 10k CO2e values

Comment

Emissions factor calculated by taking CO2e in metric tons and divided by the total fuel consumed in section 8.2C

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	66,470,021	4,070,120	782,956	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-EU8.2e

(C-EU8.2e) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

8,841

Gross electricity generation (GWh)

37,957

Net electricity generation (GWh)

35,133

Absolute scope 1 emissions (metric tons CO2e)

38,553,342

Scope 1 emissions intensity (metric tons CO2e per GWh)

1,015.7

Comment

Nameplate capacity from NRG Capacity Rating Sheet, generation from Quarterly Generation file less Keystone and Conemaugh, CO2e from GHG Voluntary Reporting file. Nameplate capacity and generation differ from 10K because the 10K EXCLUDES the South Central assets while NRG emissions reporting INCLUDES the South Central assets since they were still owned by NRG at the end of 2018.

Scope 1 emissions intensity calculated by metric tons CO2e divided by Gross Generation

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

in 2018 fleet no longer burns lignite coal

Oil

Nameplate capacity (MW)

3,621

Gross electricity generation (GWh)

584.9

Net electricity generation (GWh)

537.7

Absolute scope 1 emissions (metric tons CO2e)

198,212

Scope 1 emissions intensity (metric tons CO2e per GWh)

338.9

Comment

Nameplate capacity from NRG Capacity Rating Sheet (used in 10K), generation from Quarterly Generation file less Keystone and Conemaugh, CO2e from GHG Voluntary Reporting file.

Scope 1 emissions intensity calculated by metric tons CO2e divided by Gross Generation

Gas

Nameplate capacity (MW)

10,515

Gross electricity generation (GWh)

17,693

Net electricity generation (GWh)

16,928

Absolute scope 1 emissions (metric tons CO2e)

10,659,526

Scope 1 emissions intensity (metric tons CO2e per GWh)

602.5

Comment

Nameplate capacity from NRG Capacity Rating Sheet, generation from Quarterly Generation file less Keystone and Conemaugh, CO2e from GHG Voluntary Reporting file. Nameplate capacity and generation differ from 10K because the 10K EXCLUDES the South Central assets while NRG emissions reporting INCLUDES the South Central assets since they were still owned by NRG at the end of 2018.

Scope 1 emissions intensity calculated by metric tons CO2e divided by Gross Generation

Biomass

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Nuclear

Nameplate capacity (MW)

1,126

Gross electricity generation (GWh)

9,453

Net electricity generation (GWh)

9,018

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Hydroelectric

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Wind

Nameplate capacity (MW)

75

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Wind capcity is from the Sherbino wind farm - we are equity owners and do not report on generation from this asset

Solar

Nameplate capacity (MW)

348

Gross electricity generation (GWh)

783

Net electricity generation (GWh)

783

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

nameplate capacity includes 26 MW from Guam Solar - this asset reported generation in 2018

Other renewable

Nameplate capacity (MW)

2

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

battery storage

Other non-renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Total

Nameplate capacity (MW)

24,528

Gross electricity generation (GWh)

66,470

Net electricity generation (GWh)

62,400

Absolute scope 1 emissions (metric tons CO2e)

49,411,080

Scope 1 emissions intensity (metric tons CO2e per GWh)

743.4

Comment

Scope 1 emissions intensity calculated by metric tons CO2e divided by Gross Generation

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

No

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Coal – hard	95,433,444	23	2023	
Gas	207,927,401	50	2023	
Oil	47,486,874	11	2023	
Nuclear	64,871,876	15	2023	excludes fuel
Other renewable	3,916,800	1	2023	

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Distributed generation	An integrated provider of supply and distributed energy resources, NRG's Business Solutions focuses on distributed products and services as businesses seek greater reliability, cleaner power or other benefits that they cannot obtain from the grid. These solutions include system power, distributed generation, solar and wind products, carbon management and specialty	0	0	2019

	services, backup generation, storage and distributed solar, demand response and energy efficiency and advisory services. For example, with NRG's asset-backed distributed energy solution, we combine the reliable, clean power provided by Cummins natural gas generators with the insights, analytics, tools, and expertise from NRG. This solution is designed to produce meaningful savings for participating customers, offering them a guaranteed outcome every month on energy expenditures with assets that can be engineered for specific generation needs. Customers will also receive access to our unique Active Management Platform (AMP) dashboard, which can be customized to fit energy concerns and goals. The AMP dashboard offers robust data analytics, including load projections, market summaries, and weather forecasts, that provide a holistic portrait of energy consumption, past and present, so customers can make informed energy decisions. Commercial customers that already have a Cummins generator on-site can still benefit, as they will also gain the power of NRG's customer support team and AMP, both of which can be utilized to set and meet			

	energy goals, as well as shed light on potential energy savings opportunities. NRG will own, operate, and maintain the generator—and this behind-the-meter asset will produce electricity to offset power consumption from the grid and contribute revenue through demand response market programs. With NRG's load modification that adjusts the usage profile for a lower commodity cost outcome, organizations are now able to supplement power from the grid, reap the financial benefits of surplus power, and hit sustainability goals as they monitor energy consumption. These companies can expect to see a 10-15% savings on energy costs, and as a result, organizations will be empowered to plan for the future, knowing that their energy expenditures have guaranteed outcomes and backed reliability.			

C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date

January 1, 2018

Investment end date

December 31, 2018

Investment area

R&D

Technology area

Carbon capture and storage/utilisation

Investment maturity

Applied research and development

Investment figure

0

Low-carbon investment percentage

0-20%

Please explain

NRG supports the COSIA Carbon X-PRIZE. The $20 million NRG COSIA Carbon XPRIZE is a global competition to develop breakthrough technologies that will convert CO emissions from power plants and industrial facilities into valuable products like building materials, alternative fuels and other every day items. The NRG COSIA Carbon XPRIZE inspires development of new and emerging CO conversion technologies to help solve climate change.

The Carbon XPRIZE is in the final round of competition, in which finalist teams are challenged to scale-up up their carbon conversion technologies under real world conditions at industrial test centers to compete for one of two grand prizes. Five teams will demonstrate their technologies at the Alberta Carbon Conversion Technology Centre in Calgary, and five will exhibit at the Wyoming Integrated Test Center in Gillette. Finalists are preparing to make the move to these test centers and are expected to begin demonstrating in the summer of 2019.

More info please visit: https://carbon.xprize.org/prizes/carbon

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope
Scope 1

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

F_864551_18_NRGEnergy_RR.pdf

Page/ section reference
Page 2

Relevant standard
Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)
100

Scope
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

F_864551_18_NRGEnergy_RR.pdf

Page/ section reference

2

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

F_864551_18_NRGEnergy_RR.pdf

Page/section reference

2

Relevant standard

Attestation standards established by AICPA (AT105)

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, we are waiting for more mature verification standards and/or processes

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

California CaT

RGGI

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

California CaT

% of Scope 1 emissions covered by the ETS

4

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

0

Allowances purchased

2,206,870

Verified emissions in metric tons CO2e

2,206,870

Details of ownership

Facilities we own and operate

Comment

Includes emissions from California assets owned as of Dec. 31, 2018 including Ivanpah, Long Beach, and Sunrise. Total US Scope 1 Emissions rounded to 46,000,000 metric tons CO2e.

RGGI

% of Scope 1 emissions covered by the ETS

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

0

Allowances purchased

1,296,350

Verified emissions in metric tons CO2e

1,296,350

Details of ownership

Facilities we own and operate

Comment

Total US scope 1 emissions rounded to 46,000,000 metric tons CO2e.

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

NRG operates generating units in Connecticut, Delaware, Maryland, and New York which are subject to RGGI, which is a regional cap and trade system for CO2. In 2013, each of these states finalized a rule that reduced and will continue to reduce the number of allowances through 2020. The nine RGGI states re-evaluated the program and published a model rule to further reduce the number of allowances. The revisions being currently contemplated could adversely impact NRG's results of operations, financial condition and cash flows. California has a CO2 cap and trade program for electric generating units greater than 25 MW. The impact on NRG depends on the cost of the allowances and the ability to pass these costs through to customers.

NRG's strategy involves complying through purchasing allowances. For example, in the California AB32 market we were not allocated any allowances so we purchased 2,206,270 to comply with the rule.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

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

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

25

% total procurement spend (direct and indirect)

90

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

NRG's supply chain consists of a wide range of procurement activities, including fuel purchases, operations and maintenance, renewables, capital projects and services. In 2017, we broadened our reporting efforts by becoming the first U.S. power producer to participate in the CDP Supply Chain Program. As part of this initiative, we encouraged more than 300 suppliers representing 90% of supply chain spend to disclose information about their climate change and water performance. In 2017 the suppliers weres elected based on those representing 90% of supply chain spend.

In 2018 we continued this engagement using the same filter of 90% of supply chain spend. We chose to use 90% of spend because that accounts for the majority of our suppliers and the most material environmental impacts.

Impact of engagement, including measures of success

Non-monetary incentives include opportunities for recognition in NRG communications and potential partnerships for collaboration to further reduce environmental impact. For example, NRG Business Solutions has renewable energy and low carbon services for commercial and industrial customers. Success is measured by tracking against our goal

to receive CDP GHG disclosure from 80% of our major suppliers by 2020. In 2018 we received GHG data from 39% of major suppliers.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

% Scope 3 emissions as reported in C6.5

10

Please explain the rationale for selecting this group of customers and scope of engagement

The percentage of customers engage varies by type of engagement. Due to the varying nature of the engagements within different NRG businesses, the percentage of scope 3 emissions are estimated.

NRG's customers for these engagements include large commercial and industrial customers or residential customers and small businesses. NRG Retail provides energy and related services to residential, industrial and commercial consumers through various brands and sales channels across the U.S. The scope of the engagements vary from the publication of white papers and blogs on the NRG website, to speaking at conferences and consulting services on energy management. These are ongoing engagements across multiple businesses directed at customers. For details visit: https://www.nrg.com/insights/sustainability.html

Residential and small commercial (Mass Market) consumers make purchase decisions based on a variety of factors, including price, customer service, brand, product choices and value-added features. These consumers purchase products through a variety of sales channels, including direct sales, call centers, websites, brokers and brick-and mortar stores. Through its broad range of service offerings and value propositions, Retail is able to attract, retain, and increase the value of its customer relationships. Retail's brands are recognized for exemplary customer service, innovative smart energy

and technology product offerings and environmentally friendly solutions.

Also included in Retail is NRG's Business Solutions group, which includes demand response, commodity sales, energy efficiency and energy management solutions. An integrated provider of supply and distributed energy resources, Business Solutions focuses on distributed products and services as businesses seek greater reliability, cleaner power or other benefits that they cannot obtain from the grid. These solutions include system power, distributed generation, solar and wind products, carbon management and specialty services, backup generation, storage and distributed solar, demand response and energy efficiency and advisory services. In providing on-site energy solutions, NRG often benefits from its ability to supply energy products from its wholesale generation portfolio to commercial and industrial retail customers.

Impact of engagement, including measures of success

The measurement of success and impact of engagement is variable and depends on the specific business transaction. NRG may track the number of downloads of a white paper or clicks on a certain blog. Anecdotal evidence of success campaigns include feedback received from business partners and asking new customers why they chose NRG for their energy solutions. Leads generated from speaking at a conference are also tracked.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Clean energy generation	Support	NRG has engaged by meeting directly with policymakers in Washington and indirectly through groups such as the American Council on Renewable Energy (ACORE), the Renewable Energy Markets Association the US Partnership for Renewable Energy Finance (USPREF), the Electric Power Supply Association, and various informal organizations. NRG collaborates where possible	NRG supports meaningful Congressional and regulatory actions to mitigate GHG emissions, and supports policies that foment the development and deployment of competitive low-carbon power generation technologies. To this end, NRG has actively engaged in EPA GHG rule development by working with other companies, the EPA and states to develop appropriate frameworks for use

		with major environmental groups on clean energy and climate solutions. (NRDC, EDF, TNC, NWF).	under section 111(d) of the Clean Air Act. Previously, NRG supported climate change legislation and incentives for clean energy solutions. NRG also engages with local and national environmental groups to seek feedback on new business initiatives and collaborate on ways to work together for the environment, such as through exclusive renewable energy product offerings for members.
Other, please specify GHG regulation	Support	NRG has engaged by meeting directly with policymakers in Washington and indirectly through groups such as the Electrification Coalition, which supports policies promoting electric vehicles, Resource for the Future, which conducts prominent economic studies on national climate policies; Princeton University Adglinger Center for Energy and the Environment, which develop solutions and inform policies through researches in engineering and economics. Green Mountain Energy continues to support the future of clean energy and the smart grid as a sponsor and active participant in the nationally acclaimed Pecan Street Project. Pecan Street Inc. is a research and development organization focused on developing and testing advanced technology, business model and customer behavior surrounding advanced energy management systems.	NRG believes in economically efficient and innovation-driving policies to support competitive clean energy generation. NRG is an active thought leader on policies aimed at supporting both utility-scale renewables and customer-facing, distributed energy technologies like rooftop solar. NRG recognizes the benefits afforded by policies like the investment tax credit, retail net energy metering.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Electric Power Supply Association (EPSA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

EPSA members support policies that give all suppliers an equal opportunity to compete and give all customers an equal opportunity to reap the benefits of competition. For more information, please go to http://www.epsa.org/about/.

How have you influenced, or are you attempting to influence their position?

NRG participates in meetings and conferences with trade groups and organizations similar to SEIA and EPGA to engage in dialogue on policy solutions.

Trade association

Solar Energy Industries Association (SEIA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The SEIA's mission is to ensure continued incentives for the deployment of solar technologies coupled with effective regulation of GHGs from existing power plants under Section 111(d) of the Clean Air Act. For more information please go to http://www.seia.org/

How have you influenced, or are you attempting to influence their position?

NRG participates in meetings and conferences with trade groups and organizations similar to SEIA and EPGA and engage in dialogue on policy solutions. NRG works through SEIA to generate support for government incentives, mandates and procurements that help grow the solar energy market.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) 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?

The development of all significant policy positions are coordinated through appropriate senior management. ensuring overall consistency with NRG's climate change management strategy. All NRG's policy positions that are published or disclosed go through a consistent review process involving NRG's Investor Relations, Legal, Marketing and Communication teams.

C12.4

(C12.4) Have you published information about your organization'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

In voluntary sustainability report

Status

Complete

Attach the document

2018-nrg-sustainability-report.pdf

Page/Section reference

All

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

2018-climate-change-principles.pdf

Page/Section reference

1

Content elements

Strategy

Comment

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Compliance Officer	Other C-Suite Officer

Submit your response

In which language are you submitting your response?

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	

Please confirm below