

C0. Introduction

C0.1

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

Dominion Energy, Inc. (Dominion Energy) is one of the nation's largest producers and transporters of energy, with a portfolio of approximately 26,000 megawatts of generation; 66,600 miles of natural gas transmission, gathering, storage and distribution pipelines; and 64,500 miles of electric transmission and distribution lines. As of December 2017, Dominion Energy operates one of the nation's largest natural gas storage systems with approximately one trillion cubic feet of storage capacity, and serves nearly six million utility and retail energy accounts. Dominion Energy remains focused on managing its carbon footprint and ongoing efforts to provide safe, reliable, affordable and clean energy to customers. Solar energy generation is a key component of Dominion Energy's clean energy growth. Since 2013, we've helped bring 1,200-megawatts (MW) of large-scale solar into operation in nine states, enough energy to power about 300,000 homes at peak solar output. In 2017, the company brought online 466 megawatts of solar generating capacity, a total investment of more than \$900 million and is now the nation's sixth-largest utility owner-operator of solar power. Dominion Energy has partial ownership of two wind power facilities and is working to grow wind generation capacity with the Virginia Offshore Wind Project. The two existing facilities can generate 565 megawatts of electricity to power up to 156,000 homes. The Company employs traditional hydropower at two locations in Virginia and two locations in North Carolina. Additionally, the Bath County Pumped Storage Station is the largest of its kind in the world, capable of powering 750,000 households - more than the Hoover Dam. Dominion Energy takes pride in its environmental stewardship and has donated nearly \$32 million to a wide variety of environmental projects across its footprint.

The terms "Dominion Energy," "Company," "we," "our" and "us" are used throughout this report and, depending on the context of their use, may represent any one of the following: the legal entity, Dominion Energy, Inc., one or more of Dominion Energy, Inc.'s subsidiaries or operating segments, or the entirety of Dominion Energy, Inc. and its consolidated subsidiaries. The information contained in this report is for general information purposes only. While Dominion Energy, Inc. used best efforts to produce accurate and timely information as of the date of submission to the CDP, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information contained in this report for any purpose. Information is being provided as of the date requested and we undertake no obligation to correct or update any information provided herein or to reflect developments after such information has been provided. GHG emissions information is not necessarily indicative of future GHG emissions information, and does not guarantee future GHG emissions information. Responses to certain questions requiring the calculation of BOE (barrels of oil equivalent) have not been provided given Dominion Energy's asset mix consisting primarily of regulated gas and electric infrastructure assets, as opposed to gas and oil reserves and associated producing assets for which the BOE measurement is generally applied. This report requests information about certain specific risks relating to the operation of our business. Other risks relating to Dominion Energy are detailed from time to time in our most recent Securities and Exchange Commission filings including the quarterly reports on Form 10-Q and annual reports on Form 10-K.

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	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2017	December 31 2017	Yes	3 years
Row 2	January 1 2016	December 31 2016	<Not Applicable>	<Not Applicable>
Row 3	January 1 2015	December 31 2015	<Not Applicable>	<Not Applicable>
Row 4	January 1 2014	December 31 2014	<Not Applicable>	<Not Applicable>

C0.3

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

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
Transmission
Distribution

Other divisions

Gas storage, transmission and distribution
Smart grids / demand response
Battery storage
Gas extraction and production

C-OG0.7

(C-OG0.7) Which part of the oil and gas value chain and other areas does your organization operate in?

Row 1

Oil and gas value chain

Upstream
Downstream

Other divisions

Grid electricity supply from gas
Grid electricity supply from coal
Grid electricity supply from renewables

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) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	Dominion Energy's (DE) Board of Directors and its committees (the Board) oversee DE's environmental performance and sustainability initiatives, along with long-term growth strategy which addresses the interests of shareholders, customers, employees, suppliers and the communities we serve. While the Board oversees risk policies and implementation of risk-related procedures, management is charged with daily assessing and managing risk. The Board receives and discusses reports regularly from management, including the CEO, CRO, Chief Information Officer, and our Business Unit CEOs, who are involved daily in our risk assessment and risk management process and DE's Chief Environmental Officer. These reports pertain to topics that are pertinent to the company's operations, including environmental (compliance, recent regulatory and legislative developments, and projects), safety, human resources, customers, security, social and economic issues, financial performance and long-term strategy.
Board/Executive board	Dominion Energy's (DE) Board of Directors and its committees (the Board) oversee DE's environmental performance and sustainability initiatives, along with long-term growth strategy which addresses the interests of shareholders, customers, employees, suppliers and the communities we serve. While the Board oversees risk policies and implementation of risk-related procedures, management is charged with daily assessing and managing risk. The Board receives and discusses reports regularly from management, including the CEO, CRO, Chief Information Officer, and our Business Unit CEOs, who are involved daily in our risk assessment and risk management process and DE's Chief Environmental Officer. These reports pertain to topics that are pertinent to the company's operations, including environmental (compliance, recent regulatory and legislative developments, and projects), safety, human resources, customers, security, social and economic issues, financial performance and long-term strategy.
Director on board	Dominion Energy's (DE) Board of Directors and its committees (the Board) oversee DE's environmental performance and sustainability initiatives, along with long-term growth strategy which addresses the interests of shareholders, customers, employees, suppliers and the communities we serve. While the Board oversees risk policies and implementation of risk-related procedures, management is charged with daily assessing and managing risk. The Board receives and discusses reports regularly from management, including the CEO, CRO, Chief Information Officer, and our Business Unit CEOs, who are involved daily in our risk assessment and risk management process and DE's Chief Environmental Officer. These reports pertain to topics that are pertinent to the company's operations, including environmental (compliance, recent regulatory and legislative developments, and projects), safety, human resources, customers, security, social and economic issues, financial performance and long-term strategy.
Chief Executive Officer (CEO)	Dominion Energy's (DE) Board of Directors and its committees (the Board) oversee DE's environmental performance and sustainability initiatives, along with long-term growth strategy which addresses the interests of shareholders, customers, employees, suppliers and the communities we serve. While the Board oversees risk policies and implementation of risk-related procedures, management is charged with daily assessing and managing risk. The Board receives and discusses reports regularly from management, including the CEO, CRO, Chief Information Officer, and our Business Unit CEOs, who are involved daily in our risk assessment and risk management process and DE's Chief Environmental Officer. These reports pertain to topics that are pertinent to the company's operations, including environmental (compliance, recent regulatory and legislative developments, and projects), safety, human resources, customers, security, social and economic issues, financial performance and long-term strategy.

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 – some meetings	Reviewing and guiding strategy Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	The Board oversees the Company’s corporate responsibility and sustainability initiatives, recognizing that community engagement and ethical and sustainable operations benefit all of our constituencies and are key to preserving the Company’s value and credibility. Our sustainability strategy focuses on four key areas: • Customers and community; • Environmental stewardship; • Our culture; and • Our business for the future. As part of our Company’s overall strategic planning overseen by the Board, we have developed a well-formed environmental strategy. Execution of this strategy is evident in our investments in clean, innovative energy infrastructure and environmental leadership. We have increased the scope of our sustainability disclosures and have published an enhanced Sustainability and Corporate Responsibility Report and a Methane Report which contain methane emissions leakage rates. We also plan to publish a climate report in late 2018, which will include a two degree scenario analysis.

C1.2

(C1.2) Below board-level, provide the highest-level management 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
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify (Chief Environmental Officer & Senior VP) <i>Full title: Chief Environmental Officer and Senior Vice President – Sustainability</i>	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify (Chief Admin & Compliance Officer)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify (Senior VP - Corporate Affairs)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify (Vice President and General Counsel)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify (each Business Group Unit CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than 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.

We have several officers with responsibilities for climate-related issues, including (i) our CEO, (ii) Chief Environmental Officer and Senior Vice President – Sustainability, who reports to the Chief Administrative & Compliance Officer; (iii) Chief Administrative & Compliance Officer, who reports directly to the CEO; (iv) Senior Vice President – Corporate Affairs, who reports directly to the CEO; (v) Chief Risk Officer, who reports directly to the Chief Financial Officer; and (vi) Vice President and General Counsel and each Business Unit Chief Executive Officer, who report directly to the CEO. Also, every officer at Dominion Energy is responsible for compliance with environmental laws and regulations, including any climate-related requirements, for their areas of responsibility. While the Board and its committees oversee risk policies and implementation of risk-related procedures, company management is charged with managing risk. The Company has robust internal processes and an effective internal control environment that facilitates the identification and management of risks and regular communication with the Board. The Board and its committees receive and discuss reports regularly from members of management, including the Chief Risk Officer, Chief Information Officer, Chief Environmental Officer, and our Business Unit CEOs who are involved in our risk assessment and risk management functions on a daily basis. These reports and updates pertain to topics that are pertinent to Dominion Energy's operations, including safety, environmental (including climate), human resources, employees, customers, security (including cyber) and social and economic issues, financial performance, and long-term strategy.

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.

Who is entitled to benefit from these incentives?

Chief Sustainability Officer (CSO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO₂e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO₂ emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO₂ intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

Who is entitled to benefit from these incentives?

Chief Sustainability Officer (CSO)

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO₂e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO₂ emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO₂ intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

Who is entitled to benefit from these incentives?

Chief Sustainability Officer (CSO)

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (development of enhanced corporate EMS)

Comment

Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO₂e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO₂ emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO₂ intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

Who is entitled to benefit from these incentives?

Other C-Suite Officer

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (development of enhanced corporate EMS)

Comment

Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental

summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO2e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO2 emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO2 intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

Who is entitled to benefit from these incentives?

Environmental, health, and safety manager

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (development of enhanced corporate EMS)

Comment

Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO2e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO2 emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO2 intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Other, please specify (development of enhanced corporate EMS)

Comment

Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO2e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO2 emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO2 intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

Who is entitled to benefit from these incentives?

Other, please specify (specific employees)

Types of incentives

Recognition (non-monetary)

Activity incentivized

Other, please specify (Dominion Energy IDEAS)

Comment

The Dominion Energy IDEAS program (short for Innovation, Development and Solutions) and Chairmen's Excellence award are examples of ways DE encourages our employees to channel their creativity toward the development of innovative products and services geared towards areas such as safety, customer service, and environmental excellence. For example, In 2017, a Chairmen's Excellence finalist included a team responsible for the development of the Environmental Compliance Matrix, which listed out all environmental compliance requirements (which include compliance with air emission standards) and the compliance methodologies that are in place for such requirements. These matrices are now being implemented for all Dominion Energy facilities.

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	1	5	The Dominion Energy 2018 Integrated Resource Plan (IRP) includes a Short-Term Action Plan (STAP) that discusses the Company's specific actions currently underway to support the 2018 IRP over the next five years (2019-2023). The Company maintains that the STAP represents the short-term path forward that will best meet the energy and capacity needs of its customers at the lowest reasonable cost over the next five years, with due quantification, consideration, and analysis of future risks and uncertainties facing the industry, the company, and its customers. The Dominion Energy Utah IRP discusses forecasts of gas demand, sales, and costs over the next five years. Additionally, the Dominion Energy Utah IRP discusses its drilling plans for the five year period from 2018 through 2022. This includes discussion of the total net wells and annual capital costs, which are dependent on market prices. The Dominion Energy Utah IRP also addresses energy efficiency programs. Dominion Energy, Dominion Energy Midstream and Dominion Energy Gas use a five-year planning period for their five-year investment plans. For the period from 2018 through 2022, this investment plan includes capital expenditures to upgrade existing or add new infrastructure to their natural gas businesses to meet growing energy needs within its service territory and maintain reliability. Demand for natural gas is expected to continue to grow as initiatives to transition to gas from more carbon-intensive fuels are implemented. This plan includes Dominion Energy's portion of spending for the Atlantic Coast Pipeline Project.
Medium-term	5	15	The Dominion Energy 2018 Integrated Resource Plan (IRP) uses a shorter 15-year period of 2019 through 2033 (the "Planning Period") to evaluate Alternative Plans. Major common elements of the Alternative Plans within the planning period of 2019 through 2033 include solar generation, wind generation projects, nuclear license extensions, natural gas generation, demand-side management programs, and potential retirements of fossil fuels and biomass generation facilities. A 10-year period is used in the Dominion Energy Utah IRP to forecast customer and gas demand. The Dominion Energy Utah IRP discusses sales demand forecasts through the year 2027, as well as gathering, transportation and storage contracts with DE Questar Pipeline and others through the year 2027. The Dominion Energy Utah IRP also discusses economic forecasts through the year 2024. Cove Point has historically operated as an LNG import facility under various long-term import contracts. Since 2010, Dominion Energy has renegotiated certain existing LNG import contracts in a manner that will result in a significant reduction in pipeline and storage capacity utilization and associated anticipated revenues during the period from 2017 through 2028, as they relate to LNG import. Dominion Energy commenced commercial operation in April 2018 of the LNG liquefaction and export facility, also located at the Cove Point LNG terminal, exports will drive increased pipeline and storage utilization and revenues.
Long-term	15	25	The Dominion Energy 2018 Integrated Resource Plan (IRP) uses a 25-year study period to evaluate Alternative Plans through the year 2043. The IRP evaluates the Company's options (Alternative Plans) representing plausible future paths for meeting the electric needs of customers. The plans reflect a transition to a lower emissions rate future for the Company, with renewable sources playing an increasingly important role in the Company's generation fleet serving customers in Virginia and North Carolina. All of the Alternative Plans presented in the 2018 IRP call for the potential development of 4,720 megawatts (MW) of additional solar capacity by 2033. By 2043, four of the Alternative Plans would expand the Dominion Energy Virginia solar fleet by 7,200 MW. The Dominion Energy Form 10-K for 2017 discusses company financial information including long-term debt for all business segments, as well as long-term matters such as asset lives. Long-term matters involving Dominion Energy nuclear plants are also discussed, including nuclear licenses and decommissioning trust funds. Most major utility assets are considered long-term assets with depreciable lives often in excess of 25 years as set by governing authorities, including state and federal commissions that set utility rates.

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	Dominion Energy's Board of Directors and its committees (the Board) have oversight of the Company's environmental performance and sustainability initiatives, along with long-term growth strategy which addresses the interests of shareholders, customers, employees, suppliers and the communities we serve. While the Board oversees risk policies and implementation of risk-related procedures, management is charged with assessing and managing risk (including climate) on a daily basis. The Board receives and discusses environmental compliance and reports regularly from management, including the Chief Risk Officer, Chief Information Officer, each Business Group Unit's Chief Executive Officer and Chief Environmental Officer. These reports pertain to topics that are pertinent to the company's operations, including environmental, safety, employees, customers, security (including cyber), financial performance and long-term strategy.

C2.2b

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

The Company conducts a comprehensive enterprise-wide risk assessment as well as business unit specific risk assessments. The risks assessed include, but are not limited to, financial, operating, compliance, environmental (including climate), legal, regulatory, strategic, and reputation risks as well as emerging risks. Business units identify specific risks and issues that may impact existing operations and Dominion Energy's growth strategy. Our Chief Risk Officer is responsible for implementation of a continuous enterprise-wide approach to risk identification, analysis, monitoring, and communication. This approach includes enterprise-wide dialogue on risk through ongoing management discussions including an annual planning risk assessment. This risk assessment process is designed to serve as a planning tool for each business unit and is designed to integrate risks into the annual budget and planning cycle. During this process, the Chief Risk Officer and the leaders of each group in the Company consider the group's strategy, threats and opportunities related to that strategy, and all risks to meeting the strategy.

Dominion Energy participates in the corporate risk management process which culminates in the issuance of the Corporate Strategic Risk Management, an internal annual enterprise risk assessment report by our Corporate Strategic Risk Management team. Dominion Energy also participates in business unit risk management processes that result in Strategic Risk Management Assessment reports for the respective business units. The enterprise wide and business unit analyses are led by the Corporate Strategic Risk Management team and involve representatives from all Business Groups. The major risk areas evaluated in the annual assessment include, but are not limited to:

- Strategic
- Operational
- Financial
- Compliance and Regulatory

Environmental-related risk (including climate) is one of the many sub-areas of each of the major risk areas above. Once specific risks are identified under each major category above, the impacts and likelihood of each risk is evaluated by vote in a session lead by the Corporate Strategic Risk Management team with the Business Group senior leadership (or their designees). This voting session and accompanying dialogue is used to assess participant consensus by the Corporate Strategic Risk Management team to develop a draft annual enterprise risk assessment report which also contains the "risk response" (how the risk is being or is proposed to be managed) for each risk identified. Once comments are collected by the Corporate Strategic Risk Management team, a final report is issued and implemented.

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	Dominion Energy not only meets or exceeds current environmental (including climate related) regulations, but also participates in various voluntary environmental related initiatives. These current and voluntary regulations are considered in project planning as well as when assessing strategic, operational, and compliance risk areas. The Grid Transformation and Security Act set Virginia's energy policy on a course for a massive expansion in new wind and solar energy -- 3,000 megawatts of which Dominion Energy is committed to having in operation or under development by the beginning of 2022. The projects will be a combination of assets developed and procured by the company.
Emerging regulation	Relevant, always included	Dominion Energy helped develop and support significant legislation which was ultimately signed in to law in 2018 named the "Grid Transformation and Security Act". The legislation declares 5500 MW of solar and wind energy in the public interest including specific carve out for offshore wind and rooftop solar. It also includes more than one billion dollars of future energy efficiency filings and shareholder funded programs to provide bill payment assistance and free weatherization to low income customers. As a result of the legislation Dominion Energy, has since publicly committed to having 3000 MW of renewable energy operational or under development in Virginia within the next 4 years. The legislation called for significant amounts of renewable energy and as a result in the six weeks since the legislation became law, the company has filed with the SCC approval over 200 MW of solar as well as an off-shore wind pilot program, the first of its kind in the industry. Although Dominion Energy is making a 300 million dollar investment in the program, it is not seeking a rate increase from customers to do so. The project is unique for a number of reasons including the fact that it is 27 miles off of the Atlantic coast of Virginia, making it the first off shore wind installation in US federal waters and it is also the first off shore wind project proposed by a utility. Dominion's 2018 Integrated Resource Plan (IRP) evaluates regulatory compliance with greenhouse gas regulation over a period of 25 years (2019 through 2043, using 2018 as the base year). Future regulatory requirements, and timing of requirements implementation, are not always known. The IRP, 10-K, 10-Q and Dominion Energy risk assessments consider future direction of regulations and provide a reasonable proxy or forecast of future regulations and compliance implementation strategies.

	Relevance & inclusion	Please explain
Technology	Relevant, always included	Dominion Energy considers best available technology. Smart meters and other grid transformation investments will help integrate new technologies like private solar and electric vehicle charging stations into the grid. Investments in intelligent grid devices, smart meters, and automated control systems will enable a "self-healing" grid which will speed the restoration process by quickly identifying and isolating outages. New construction and material standards will improve grid resiliency and reduce outages caused by weather and other events. Additional measures will be taken to protect the grid against the growing threat of both physical and cyber-attacks. These measures include hardening substations serving critical facilities and the deployment of new intelligent devices and control systems which help detect and recover from events more quickly. Other efforts include placing more vulnerable and outage-prone distribution lines underground. The latest expansion of the company's Strategic Underground Program (SUP) is now under review by the SCC. Dominion Energy was recently recognized by the Southeastern Electric Exchange (SEE) for an innovative project that addressed voltage control and reliability on its transmission system. The President and CEO of Dominion Energy is a Principal of the American Energy Innovation Council (AEIC), whose mission is to reestablish America's energy technology leadership through robust, public investments in the development of world-changing energy technologies. With support from AEIC, leading executives from business and industry have delivered a letter to congressional appropriators stressing the importance of investments in energy research and development at the Department of Energy to the nation's future. Emphasizing the economic opportunity presented by the development of the next generation of energy technologies, the executives underscored the importance of public investments as vital complements to private sector efforts, highlighting the competitive advantages provided to energy intensive domestic business like manufacturing by breakthrough energy technologies that can drive down energy costs. The Dominion Energy IDEAS are ways DE encourages our employees to channel their creativity toward the development of innovative products and services geared towards areas such as safety and environmental excellence.
Legal	Relevant, always included	Legal risks are evaluated primarily as they relate to current and emerging regulations. Current environmental regulations are considered in project planning as well as when assessing strategic, operational, and compliance risk areas. Dominion's 2018 Integrated Resource Plan (IRP) evaluates regulatory compliance with greenhouse gas regulation over a period of 25 years (2019 through 2043, using 2018 as the base year). Future regulatory requirements, and timing of requirements implementation, are not always known. The IRP, 10-K, 10-Q and Dominion Energy risk assessments consider future direction of regulations and provide a reasonable proxy or forecast of future regulations and compliance implementation strategies.
Market	Relevant, always included	Dominion Energy considers Energy markets and carbon trading markets in risk assessments.
Reputation	Relevant, always included	A key goal of Dominion Energy is to be a good corporate citizen including as it relates to climate.
Acute physical	Relevant, always included	Severe physical impacts from storms and weather are considered in risk assessments and mitigation measures. Distribution design standards meet or exceed National Electric Safety Code (NESC) requirements. Mitigation measures include routine inspection and maintenance plans, vegetation management, various programs such as strategic undergrounding designed to help ensure system reliability and resilience, and potential flooding mitigation and management. Our Emergency Response team adheres to the National Incident Management System (NIMS) Incident Command System (ICS) structure, and we have an integrated Power Delivery Crisis Response Plan to ensure success regardless of the threat. We continually review and revise response processes by conducting After Action Reviews (AAR) of all significant events. We use this information to reinforce positive activities and make and/or implement corrective action when gaps are identified. We also conduct annual training for all colleagues targeted to their storm critical roles to ensure our workforce is ready and trained to respond safely and efficiently.
Chronic physical	Relevant, always included	Severe physical impacts from storms and weather are considered in risk assessments and mitigation measures. Distribution design standards meet or exceed NESC requirements. Mitigation measures include routine inspection and maintenance plans, vegetation management, various programs such as strategic undergrounding designed to help ensure system reliability and resilience, and potential flooding mitigation and management. Our Emergency Response team adheres to the NIMS ICS structure, and we have an integrated Power Delivery Crisis Response Plan to ensure success regardless of the threat. We continually review and revise response processes by conducting After Action Reviews (AAR) of all significant events. We use this information to reinforce positive activities and make and/or implement corrective action when gaps are identified. We also conduct annual training for all colleagues targeted to their storm critical roles to ensure our workforce is ready and trained to respond safely and efficiently.
Upstream	Relevant, always included	These risks are evaluated if directly relevant to at risk supplies such as fuel source and location. One specific example involves our procurement of coal as a fuel for electric generation. Coal is an at risk fuel due to regulatory restrictions on emissions, economic conditions, and on our company's transition to more renewable and low carbon energy production. Another example involves state level requirements (North Carolina and Virginia) for renewable energy production, putting fossil fuel generation in these locations at further risks. The Virginia GTSA also sets goals and imposes mandates for renewable energy and energy efficiency. The act declares that development of 5,000 megawatts of utility owned or operated solar and wind generation in the commonwealth by July 2028 is in the public interest. The act also imposes significant energy efficiency and grid modernization mandates on the state's utilities, requiring Dominion Energy Virginia to propose \$870 million in such programs by July 2028 and also requiring the utility to submit plans for the transformation and modernization of its electric distribution system.
Downstream	Relevant, always included	Certain downstream risks for Dominion Energy include potential retirement of 2,785 megawatts of utility-owned generation powered by older, less efficient, higher-emitting coal, oil and steam boiler natural gas technology by 2021 or 2022 at six Virginia sites, according to Dominion Energy Virginia's 2018 IRP. The Company has announced that 1,209 MW of this capacity will be placed in cold reserve by December 2018. Continued expansion of renewable energy generation fleet, particularly units serving regulated electric utility customers in Virginia and North Carolina. Dominion Energy Virginia's 2018 IRP calls for development of 4,720 MW of solar photovoltaic (PV) generation by 2033 and as much as 7,200 MW of solar PV capacity by 2043. As stated in the cover letter to Dominion Energy Virginia's 2018 IRP, the company believes that regulation of power station carbon dioxide (CO2) emissions is virtually assured in the future, either through new federal initiatives or through measures adopted at the state level. For instance, the Virginia Department of Environmental Quality (DEQ) has issued a draft rule limiting power station CO2 emissions.

C2.2d

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

Dominion Energy's Chief Risk Officer generally provides quarterly updates to the Finance Risk and Oversight Committee (FROC) on the status of major risk areas including climate. These updates include a discussion of risk assessment, mitigation, analysis, monitoring and communication. The Chief Risk Officer serves as the facilitator of enterprise-wide dialogue on risk through various management discussions including an annual planning risk assessment. It is important to note that the ownership and management of risk remains with the senior management of the respective business unit or group.

This risk assessment process is designed to serve as a planning tool for each business unit or group and is designed to integrate into the annual budget and planning cycle. During this process, the Chief Risk Officer and the leaders of each group in the Company consider the group's strategy, threats and opportunities related to that strategy and all risks to meeting the objectives of that strategy. These risks include but are not limited to financial, operating, compliance, environmental (including climate), legal, regulatory, strategic and reputation risks as well as emerging risks. The risk assessment process defines the top existing and emerging risks within the group, promotes enterprise-wide dialogue concerning these risks, and facilitates an enterprise-wide understanding of the strategy, threats and opportunities in every area of the Company.

In the annual planning risk assessment, the teams discuss risks that are likely to occur. The discussion also focuses on aligning resources with the most important risks. To do so, all aspects of a risk are considered – strategic importance, financial impact and operational and compliance aspects. The results of these discussions are another input into our planning cycle.

Severe storms can cause major damage to utility electric transmission and distribution facilities. Pre-tax restoration costs after Hurricane Irene in August 2011 exceeded \$134 million. Pre-tax costs for restoration after Hurricane Isabel in September 2003 were even greater, reaching \$217 million. Extended outages can also cause significant damage to the economy in general through factors such as lost wages and sales, and physical damage to buildings and vehicles.

An appropriate team of internal experts assesses impacts in terms of risks and opportunities to our individual assets. The risks or opportunities are assessed in terms of potential impacts including, but not limited to, impacts on safety, reliability, community, natural resources, capital expenditures, operations and maintenance expenditures, staffing, operation and maintenance procedure changes and permitting. Severe physical impacts from storms and weather are considered in risk assessments and mitigation measures. Distribution design standards meet or exceed National Electric Safety Code (NESC) requirements. Mitigation measures include routine inspection and maintenance plans, vegetation management, various programs such as strategic undergrounding designed to help ensure system reliability and resilience, and potential flooding mitigation and management. Our Emergency Response team adheres to the National Incident Management System (NIMS) Incident Command System (ICS) structure, and we have an integrated Power Delivery Crisis Response Plan to ensure success regardless of the threat. We continually review and revise response processes by conducting After Action Reviews (AAR) of all significant events. We use this information to reinforce positive activities and make and/or implement corrective action when gaps are identified.

As provided under Dominion's Corporate Governance Guidelines and the respective committee's charter, the Board of Directors and the Audit and Finance and Risk Oversight Committees receive and discuss reports regularly from members of management, including the Chief Risk Officer, who are involved in the risk assessment and risk management functions on a daily basis.

Dominion Energy's CEO and Board of Directors have ultimate responsibility for climate-related opportunities with potential to have substantive financial or strategic impact on the Company. These include opportunities to expand renewable generation assets, energy infrastructure modernization opportunities, and energy efficiency programs. The Dominion Energy 2018 Integrated Resource Plan (IRP) presents several options representing plausible future paths for meeting the electric needs of customers in the future. All of the options presented in the 2018 IRP take advantage of opportunities provided by advances in solar photovoltaic technology. Advances in technology have made solar generation cost-competitive with other forms of generation, which presents the opportunity for renewable sources to play an increasingly important role in the Company's generation fleet.

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) 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

Physical risk

Primary climate-related risk driver

Chronic: Other

Type of financial impact driver

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

Company- specific description

The Companies' operations could be adversely affected and their physical plant placed at greater risk of damage should changes in global climate produce, among other possible conditions, unusual variations in temperature and weather patterns, resulting in more intense, frequent and extreme weather events, abnormal levels of precipitation and, for operations located on or near coastlines, a change in sea level or sea temperatures.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Potential financial impact

917800000

Explanation of financial impact

The company estimates that the proposed capital investment for Phase I of the Grid Transformation Plan, covering the years 2019-2021, will be approximately \$816.3 million and the proposed operations and maintenance expenses will be approximately \$101.5 million. Impact not quantified financially; however, significant financial impact could occur due primarily to increased capital and/or operating costs due to damage to facilities and/or operating issues resulting from storm events. Write-offs and early retirement of existing assets and increased insurance premiums are also potential financial impacts for operations located on or near coastlines.

Management method

Dominion Energy is actively implementing programs to better protect its electric distribution system from the effects of severe weather. DE helped develop and support significant legislation which was ultimately signed in to law in 2018 named the "Grid Transformation and Security Act". It includes more than one billion dollars of future energy efficiency filings and shareholder funded programs to provide bill payment assistance and free weatherization to low income customers. DE has since publicly committed to having 3000 MW of renewable energy operational or under development in VA within the next 4 years. DE has filed with the SCC approval for over 200 MW of solar as well as an off-shore wind pilot program, the first of its kind in the industry. The project is unique because it is 27 miles off of the Atlantic coast of Virginia, making it the first off shore wind installation in US federal waters and it is also the first off shore wind project proposed by a utility. These improvements will provide the grid with self-healing capabilities, automatically isolating system faults, rerouting power, and improving system operators' ability to oversee and manage the grid. Another initiative, the Strategic Underground Program, works to place outage-prone distribution lines and associated equipment in its VA electric service area underground. As the program expands, it is expected to significantly reduce the time needed to restore power to all customers after severe weather events.

Cost of management

917800000

Comment

The company estimates that the proposed capital investment for Phase I of the Grid Transformation Plan, covering the years 2019-2021, will be approximately \$816.3 million and the proposed operations and maintenance expenses will be approximately \$101.5 million.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Other

Type of financial impact driver

Other, please specify (Weather)

Company- specific description

Weather conditions directly influence the demand for electricity and natural gas and affect the price of energy commodities. In addition, severe weather, including hurricanes and winter storms, can be destructive, causing outages and property damage that require incurring additional expenses.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Potential financial impact

1341000000

Explanation of financial impact

In addition to the \$917.8 million in Grid Transformation Plan costs described in the "Cost of Management" under Risk 1 (above), the company will incur considerable expenses from the Strategic Underground Program. The company's capital costs for Phase 1 of the program were \$138.5 million and Phase 2 \$105.2 million. Phase 3 of the program, now under review by Virginia regulators, is expected to have capital costs of approximately \$179 million for the conversion of approximately 416 miles of overhead tap lines. Severe storms can cause major damage to utility electric transmission and distribution facilities. Pre-tax restoration costs after Hurricane Irene in August 2011 exceeded \$134 million. Pre-tax costs for restoration after Hurricane Isabel in September 2003 were even greater, reaching \$217 million.

Management method

As described in the "Management Method" under Risk 1 (above), the company is moving to strengthen its electric system in Virginia and improve its ability to withstand the impact of severe weather such as hurricanes. These measures include the Grid Transformation Plan and the Strategic Underground Program, both described above. The improvements included in the Grid Transformation Plan will increase distribution system reliability and resiliency, reducing the number and duration of outages through self-healing grid components and faster company response to disruptions. Both the Grid Transformation Plan and the Strategic Underground Plan will proceed in carefully managed phases, with each phase utilizing experience gained in prior years. The company is also under a Virginia legislative mandate to develop and propose \$870 million in energy efficiency programs through 2028; these programs would help hold down system demand, especially in periods of intense heat or cold, and help customers manage and reduce their overall energy usage.

Cost of management

1345000000

Comment

In addition to the \$917.8 million in Grid Transformation Plan costs described in the "Cost of Management" under Risk 1 (above), the company will incur considerable expenses from the Strategic Underground Program. The company's capital costs for Phase 1 of the program were \$138.5 million and Phase 2 \$105.2 million. Phase 3 of the program, now under review by Virginia regulators, is expected to have capital costs of approximately \$179 million for the conversion of approximately 416 miles of overhead tap lines.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Other

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Changes to federal, state and local environmental laws and regulations, including those related to climate change, the tightening of emission or discharge limits for GHGs and other substances, more extensive permitting requirements and the regulation of additional substances. The company believes that regulation of power station carbon dioxide emissions is virtually assured in the future, either through federal or state action. Regardless of the precise mechanism, the company is committed to reducing greenhouse gas emissions.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

4040000000

Explanation of financial impact

According to Dominion Energy Virginia's 2018 Integrated Resource Plan, the net present value (NPV) through 2043 of costs associated with compliance with federal or state carbon regulations under four different scenarios ranged from \$1.54 billion to \$4.04 billion.

Management method

The company is committed to reducing greenhouse gas emissions from its electric generating fleet and from 2000 through 2017, our carbon intensity decreased by 50 percent. Changes in the generating fleet include an expanded use of cleaner-burning natural gas, a fuel with approximately 50 percent of the carbon emissions of coal; an expansion of its renewable generation, exemplified by the growth of its solar capacity in Virginia and North Carolina from near zero to approximately 1,350 megawatts in service or under development over the last two years; and continued reliance on zero-emissions nuclear energy, responsible for 33 percent of the electricity provided to Virginia and North Carolina customers during 2017. The company recently committed to the procurement or development of an additional 3,000 megawatts of solar and wind-powered generation in Virginia by early 2022; this will include 240 megawatts of new solar generation proposed to regulators on July 24, 2018. It will also include the 12-megawatt Coastal Virginia Offshore Wind project to test two 6-megawatt turbines in a marine environment approximately 28 miles off the Virginia coast.

Cost of management

4040000000

Comment

According to Dominion Energy Virginia's 2018 Integrated Resource Plan, the net present value (NPV) through 2043 of costs associated with compliance with federal or state carbon regulations under four different scenarios ranged from \$1.54 billion to \$4.04 billion.

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

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact driver

Reduced exposure to future fossil fuel price increases

Company- specific description

Dominion Energy helped develop and support significant legislation which was ultimately signed in to law in 2018 named the "Grid Transformation and Security Act". The legislation declares 5500 MW of solar and wind energy is in the public interest including specific carve out for offshore wind and rooftop solar. It also includes more than one billion dollars of future energy efficiency filings and shareholder funded programs to provide bill payment assistance and free weatherization to low income customers. As a result of the legislation Dominion Energy, has since publicly committed to having 3000 MW of renewable energy operational or under development in Virginia within the next 4 years. The legislation called for significant amounts of renewable energy and as a result in the six weeks since the legislation became law, the company has filed with the SCC approval over 200 MW of solar as well as an off-shore wind pilot program, the first of its kind in the industry. Although Dominion Energy is making a 300 million dollar investment in the program, it is not seeking a rate increase from customers to do so. The project is unique for a number of reasons including the fact that it is 27 miles off of the Atlantic coast of Virginia, making it the first off shore wind installation in US federal waters and it is also the first off shore wind project proposed by a utility. Renewable energy is an important component of a diverse and reliable energy mix that helps to mitigate the environmental aspects of energy production. Nationally, Dominion Energy has nearly 2,400 MW of renewable generating capacity in operation or under development in nine states, including offtake agreements for Virginia's utility customers. Both Virginia and North Carolina have passed legislation setting targets for renewable power. Backed by a \$1 billion investment, Dominion Energy has grown its solar fleet in Virginia and North Carolina over the past two years from near zero to about 1,350 megawatts in service, in construction or under development. The company has also announced its intention to seek additional relicensing from the U.S. Nuclear Regulatory Commission for all four of its reactors in Virginia at Surry and North Anna power stations, keeping them in operation into the second half of the 21st century.

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

1700000000

Explanation of financial impact

The estimate is extremely conservative and includes costs but not benefits. On the cost side, it includes approximately \$1 billion in solar development in Virginia and North Carolina since 2016, approximately \$410 million for the publicly announced 240 megawatt solar development in Surry County, Virginia, and approximately \$300 million for a testbed offshore wind facility off the coast of Virginia. A recent company regulatory filing stated that its current cost of new solar capacity was approximately \$1,708/kW. Benefits through reduced spending on fossil fuels and less vulnerability to fuel price spikes are expected but have not yet been quantified.

Strategy to realize opportunity

Renewable resources, particularly solar power, are becoming a more cost-effective means of meeting customer energy demands. The continuing development of solar photovoltaic technology has made this type of generation cost-competitive with other, more traditional forms of generation. This has been recognized by the company's Integrated Resource Plan for serving its Virginia/North Carolina electric utility customers; by its commitment to have in operation or under development 3,000 megawatts of new solar and wind capacity in Virginia by 2022; and by its exploration of the potential for offshore wind through Coastal Virginia Offshore Wind (CVOW) project, to be developed jointly with Ørsted Energy. The company also recognizes that nuclear power must play a major power generation role in a lower-carbon, lower emissions future. This is the prime factor in the company's commitment to seek U.S. Nuclear Regulatory Commission relicensing of its four Virginia reactors, potentially keeping them in operation into the second half of the 21st century. Concurrently, the company has announced the potential shutdown of older fossil-fueled units at six Virginia sites by 2021 or 2022.

Cost to realize opportunity

1700000000

Comment

The company's 2018 Integrated Resource Plan (IRP) for its Virginia/North Carolina electric service area calls for the addition of 4,720 megawatts of additional solar capacity by 2033. By 2043, four of the five alternative scenarios presented in the IRP would expand the company solar fleet serving these customers by 7,200 megawatts. Moving aggressively, Dominion Energy on July 24, 2018 announced that it would commit to developing or procuring an additional 3,000 megawatts of solar and wind generation in Virginia by early 2022, enough capacity at peak output to supply the needs of 750,000 homes. The company has also announced its intention to seek additional relicensing from the U.S. Nuclear Regulatory Commission for all four of its reactors in Virginia at Surry and North Anna power stations, keeping them in operation into the second half of the 21st century.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Type of financial impact driver

Other, please specify (Improved Resilience)

Company- specific description

Dominion Energy's existing five-year investment plan includes significant capital expenditures to upgrade or add new electric transmission and distribution lines, substations and other facilities to meet growing electricity demand within its service territory, maintain reliability, implement a strategic underground program to minimize outage duration and address environmental requirements. These enhancements are primarily aimed at meeting Dominion Energy's continued goal of providing reliable service, and are intended to address both continued population growth and increases in electricity consumption. An additional benefit will be added capacity to efficiently deliver electricity from the renewable projects now being developed, or to be developed in the future, to meet our customers' preference for cleaner energy. The company in July 2018 presented to regulators a comprehensive plan to modernize its electric distribution grid in Virginia. The plan will improve electric reliability, provide additional security to protect the system from physical and electronic threats, improve the integration of renewable energy resources into the grid, and provide customers with more options for monitoring and managing their energy use. Dominion Energy has sharply reduced the rate of carbon dioxide emissions from its fleet of power stations and has also implemented infrastructure improvements and improved operational practices to reduce the GHG emissions from its natural gas facilities. Dominion Energy, in connection with its existing five-year investment plans, is also pursuing the construction or upgrade of regulated infrastructure in its natural gas businesses. The Company has made voluntary commitments as part of the EPA Methane Challenge Program to continue to reduce methane emissions as part of these improvements. For years, Dominion Energy has focused on reducing its lost and unaccounted for gas (LAUFG) rate. LAUFG is an annual calculated quantity of gas consisting of the sum of reported losses and the unaccounted-for gas.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Potential financial impact

5350000000

Explanation of financial impact

Cost impact includes approximately \$4.01 billion in transmission investments 2016-2022; proposed \$917.8 million investment in grid modernization program 2019-2021; approximately \$423 million in Strategic Underground Program, phases 1-3; add methane (to be quantified); benefits from improved resiliency through lower operating and maintenance expenses, reductions in environmental expenses including cost of carbon not yet quantified.

Strategy to realize opportunity

The company has undertaken numerous programs to improve the resiliency of its electric system. The improvements are designed to improve energy reliability, meet customer demand efficiently, and enable the system to better withstand inclement weather and

physical and electronic threats. The improvements in transmission and distribution also will facilitate the integration of zero-emissions renewable resources into the electric grid. The company is committed to reducing greenhouse gas emissions. From 2000-2017, the carbon intensity of the Dominion Energy's electric generation fleet (measured in the average number of metric tons of carbon dioxide discharged per net megawatt-hour of generation) decreased by 50 percent. The company is moving aggressively to reduce methane emissions from its natural gas system and is a founding member of the U.S. EPA's Methane Challenge.

Cost to realize opportunity

5350000000

Comment

As described in "explanation of financial impact" above, the costs for greater system resiliency include approximately \$4.01 billion in transmission investments 2016-2022; proposed \$917.8 million investment in grid modernization program 2019-2021; approximately \$423 million in Strategic Underground Program, phases 1-3; add methane (to be quantified). The cost to realize opportunity should be considered a very conservative estimate, as transmission and distribution investments and investments in carbon reduction will continue in the future.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Participation in renewable energy programs and adoption of energy-efficiency measures

Type of financial impact driver

Other, please specify (Energy Source)

Company- specific description

The company, through its regulated Dominion Energy Virginia electric utility, will greatly expand energy efficiency programming for all customers during the coming decade. The Grid Transformation and Security Act (GTSA) of 2018, approved earlier this year by the Virginia General Assembly, require Dominion Energy Virginia to propose \$870 million in new energy efficiency programming by July 2028. At least five percent of these programs must be designed to benefit low-income, elderly and disabled persons. Dominion Energy, through its merchant generation business and its regulated electric utility, has also launched a major expansion of its renewable generation fleet, currently the nation's sixth largest among owners of electric utilities. Renewable capacity owned or under development by the company or secured through long-term contracts totaled approximately 3,374 MW as of March 2018. The company is also fulfilling the growing customer demand for "green" energy through multiple programs, such as rate structures to allow customers to procure most or all of their usage from renewable resources and through the purchase of electricity generated by customer-owned distributed energy resources, such as rooftop photovoltaics. The GTSA also requires Dominion Energy Virginia to develop programs for the long-term strengthening and transformation of its electric distribution grid, and the company submitted its initial plans on July 24, 2018 for this transformative effort to the Virginia State Corporation Commission (SCC).

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

3798000000

Explanation of financial impact

The estimated potential financial impact is highly conservative and includes only programs and infrastructure either required by law or approved or under review by the Virginia SCC. These include energy efficiency programming (\$870 million); Greenville County Power Station (\$1.3 billion); US-3 solar projects in Surry County, VA (\$409.9 million); Coastal Virginia Offshore Wind project (\$300 million); and Phase I of Grid Transformation Plan (\$917.8 million.) Costs will increase as additional projects are built and programs expanded.

Strategy to realize opportunity

Dominion Energy Virginia currently conducts an annual integrated resource planning process to produce its IRP or IRP updates filed with the Virginia SCC and the North Carolina Utilities Commission. The IRP is a comprehensive review of all methods of meeting customer energy needs through supply-side and demand-side programming. The company also strongly supported

enactment of the Virginia GTSA during the 2018 session of the state legislature and is working to fulfill the goals and mandates of the act. For instance, the GTSA mandates that the company utilize a stakeholder process in developing the proposed energy efficiency programs required by the statute. The process will include representatives from the Virginia SCC, the Virginia Office of the Attorney General, the state energy department, representatives of consumers, and representatives of energy efficiency implementers and providers, among others.

Cost to realize opportunity

3798000000

Comment

See “explanation of financial impact” above. The estimated potential financial impact is highly conservative and includes only programs and infrastructure either required by law or approved or under review by the Virginia SCC. These include energy efficiency programming (\$870 million); Greenville County Power Station (\$1.3 billion); US-3 solar projects in Surry County, VA (\$409.9 million); Coastal Virginia Offshore Wind project (\$300 million); and Phase I of Grid Transformation Plan (\$917.8 million.) Costs will be increase as additional projects are built and programs expanded. For example, the estimated cost of new solar photovoltaic generation (expressed in 2017 dollars) is \$1,436/kW, according to the company’s 2018 IRP.

C2.5

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

	Impact	Description
Products and services	Impacted	Renewable energy is an important component of a diverse and reliable energy mix that helps to mitigate the environmental aspects of energy production. Nationally, Dominion Energy has nearly 2,400 MW of renewable generating capacity in operation or under development in nine states, including offtake agreements for its electric utility customers. Both Virginia and North Carolina have passed legislation setting targets for renewable power. Backed by a \$1 billion investment, Dominion Energy has grown its solar fleet in Virginia and North Carolina over the past two years from near zero to about 1,350 megawatts in service, in construction or under development. Renewable energy is not always available 24 hours a day, 7 days a week. Natural gas (NG) burning power generation stations are typically built to provide backup and reliability to renewable energy. NG storage, transmission, and distribution services support NG-burning power generation units. NG storage, transmission, and distribution services also support growth of NG fueled power generation units built to replace power generation units being retired (e.g., coal). In anticipation of future impacts we are modernizing the grid to allow for growth of renewables in the future. Expanded business opportunities for offering customers expanded energy efficiency programs and additional renewable energy options; substitution of zero-carbon (renewable) or lower carbon (natural gas, especially combined cycle) generation for higher-emitting, less cost-effective generation types; improvements in resiliency and reliability of power delivery to customers, avoiding lost sales and significant storm restoration costs.
Supply chain and/or value chain	Impacted	Fluctuations in weather can affect demand for the Company’s services. For example, milder than normal weather can reduce demand for electricity and gas transmission and distribution services. In addition, severe weather, including hurricanes, winter storms, earthquakes, floods and other natural disasters can disrupt operation of the Company’s facilities and cause service outages, production delays and property damage that require incurring additional expenses. Changes in weather conditions can result in reduced water levels or changes in water temperatures that could adversely affect operations at some of the Company’s power stations. Furthermore, the Company’s operations could be adversely affected and their physical plant placed at greater risk of damage should changes in global climate produce, among other possible conditions, unusual variations in temperature and weather patterns, resulting in more intense, frequent and extreme weather events, abnormal levels of precipitation and, for operations located on or near coastlines, a change in sea level or sea temperatures.
Adaptation and mitigation activities	Impacted	The national and international attention to GHG emissions and their relationship to climate change have resulted in federal, regional and state legislative and regulatory action in this area. The risks associated with changes to federal, state and local environmental laws and regulations, including those related to climate change, include the tightening of emission or discharge limits for GHGs and other substances, more extensive permitting requirements and the regulation of additional substances. The Company supports national climate change legislation that would provide a consistent, economy-wide approach to addressing this issue and are currently taking action to protect the environment and reduce GHG emissions while meeting the growing needs of their customers. Dominion Energy’s CEO and operating segment CEOs are responsible for compliance with the laws and regulations governing environmental matters, including GHG emissions. Dominion Energy’s Board of Directors receives periodic updates on these matters. As stated in the cover letter to Dominion Energy Virginia’s 2018 IRP, the company believes that regulation of power station carbon dioxide (CO2) emissions is virtually assured in the future, either through new federal initiatives or through measures adopted at the state level. For instance, the Virginia Department of Environmental Quality (DEQ) has issued a draft rule limiting power station CO2 emissions. The Virginia GTSA also sets goals and imposes mandates for renewable energy and energy efficiency. The act declares that development of 5,000 megawatts of utility owned or operated solar and wind generation in the commonwealth by July 2028 is in the public interest. The act also imposes significant energy efficiency and grid modernization mandates on the state’s utilities, requiring Dominion Energy Virginia to propose \$870 million in such programs by July 2028 and also requiring the utility to submit plans for the transformation and modernization of its electric distribution system.

	Impact	Description
Investment in R&D	Impacted	Research and Development investments have been significantly impacted by opportunities identified from renewable energy generation. Renewable energy is an important component of a diverse and reliable energy mix that helps to mitigate the environmental aspects of energy production. Research and Development investments in renewable energy include investments in solar technologies, offshore wind, and fuel cell technology. Significant expansion of energy efficiency programming offered to regulated electric utility customers in Virginia, under GTSA requirement that \$870 million in such initiatives be proposed by July 2028. Dominion Energy helped develop and support significant legislation which was ultimately signed in to law in 2018 named the "Grid Transformation and Security Act". The legislation declares 5500 MW of solar and wind energy is in the public interest including specific carve out for offshore wind and rooftop solar. It also includes more than one billion dollars of future energy efficiency filings and shareholder funded programs to provide bill payment assistance and free weatherization to low income customers. As a result of the legislation Dominion Energy, has since publicly committed to having 3000 MW of renewable energy operational or under development in Virginia within the next 4 years. The legislation called for significant amounts of renewable energy and as a result in the six weeks since the legislation became law, the company has filed with the SCC approval for over 200 MW of solar as well as an off-shore wind pilot program, the first of its kind in the industry. The GTSA mandates that Dominion Energy Virginia present plans for "electric distribution grid transformation" projects to the Virginia SCC. As defined by the act, such projects include distribution infrastructure designed to facilitate the integration of renewable energy generation resources; measures to enhance grid reliability, security, energy efficiency and customer service, including advanced metering infrastructure (AMI) and other intelligent grid systems; protective physical and cyber-security measures; and strengthening and hardening grid infrastructure, among others.
Operations	Impacted	Dominion Energy's existing five-year investment plan includes significant capital expenditures to upgrade or add new electric transmission and distribution lines, substations and other facilities to meet growing electricity demand within its service territory, maintain reliability, implement a strategic underground program to minimize outage duration and address environmental requirements. These enhancements are primarily aimed at meeting Dominion Energy's continued goal of providing reliable service, and are intended to address both continued population growth and increases in electricity consumption. An additional benefit will be added capacity to efficiently deliver electricity from the renewable projects now being developed, or to be developed in the future, to meet our customers' preference for cleaner energy. The Company has also implemented infrastructure improvements and improved operational practices to reduce the GHG emissions from its natural gas facilities. Dominion Energy, in connection with its existing five-year investment plans, is also pursuing the construction or upgrade of regulated infrastructure in its natural gas businesses. The Company has made voluntary commitments as part of the EPA Methane Challenge Program to continue to reduce methane emissions as part of these improvements. For years, Dominion Energy has focused on reducing its lost and unaccounted for gas (LAUFG) rate. LAUFG is an annual calculated quantity of gas consisting of the sum of reported losses and the unaccounted-for gas. It is an expense for the pipeline. The company has undertaken numerous programs to improve the resiliency of its electric system. The improvements are designed to improve energy reliability, meet customer demand efficiently, and enable the system to better withstand inclement weather and physical and electronic threats. The improvements in transmission and distribution also will facilitate the integration of zero-emissions renewable resources into the electric grid.
Other, please specify	Please select	

C2.6

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

	Relevance	Description
Revenues	Impacted	Other factors may cause actual results to differ materially from those indicated in any forward-looking statement. These factors include: Changes to federal, state and local environmental laws and regulations, including those related to climate change, the tightening of emission or discharge limits for GHGs and other substances, more extensive permitting requirements and the regulation of additional substances. Dominion Energy's strategic underground program also provides an opportunity for enhanced and more reliable service. There are opportunities to replace higher carbon emissions with lower carbon (natural gas) facilities.
Operating costs	Impacted	Other factors may cause actual results to differ materially from those indicated in any forward-looking statement. These factors include: cost of environmental compliance, including those costs related to climate change and changes in implementation and enforcement practices of regulators relating to environmental standards and litigation exposure.
Capital expenditures / capital allocation	Impacted	Analysis included in the company's 2018 Integrated Resource Plan for its regulated electric utility in Virginia and North Carolina (Dominion Energy Virginia/Dominion Energy North Carolina) indicate that compliance with state or federal carbon regulations would require significant capital investments above those required to meet customer demand in the unlikely absence of any new regulation or restrictions on power station carbon emissions. The 2018 plan indicated the net present value (NPV) through 2043 of costs associated with four alternative carbon regulation scenarios ranged from \$1.54 billion to \$4.04 billion than the NPV of the baseline "no carbon regulation" plan. The company has already invested almost \$1 billion in the expansion of its solar fleet in Virginia and North Carolina and future growth of generation powered by renewable energy also has significant capital costs. For example, the Coastal Virginia Offshore Wind project, a test of 12 megawatts of wind-powered generation off the coast of Virginia, includes anticipated capital expenditures of approximately \$300 million. Additionally, construction of 240 megawatts of new solar capacity in Surry County, VA, submitted to the Virginia SCC for review and approval on July 24, 2018, has an estimated capital cost of approximately \$410 million. Renewable energy is not always available 24 hours a day, 7 days a week, and is generally supported by natural gas burning power generation units to ensure service reliability. Dominion Energy invests in infrastructure to support renewable energy and reliability. These investments result in a net carbon emissions reduction. Promotion of a "greener" energy future with lower carbon emissions is also one of the drivers behind the company's development of a Grid Transformation Plan (GTP) for its Dominion Energy Virginia affiliate, submitted to the Virginia State Corporation Commission on July 24, 2018. The estimated capital cost of Phase I of the Plan (2019-2021) is approximately \$816.3 million, with proposed operations and maintenance expenses of \$101.5 million. Among other benefits, the company believes Phase I of the plan will help protect the environment by supporting the integration of renewable energy-powered.

	Relevance	Description
Acquisitions and divestments	Impacted	All five alternative plans presented in the company's Integrated Resource Plan for its regulated electric utility affiliate in Virginia and North Carolina call for the potential retirement of 2,785 MW of fossil-fueled generation powered by older, less efficient coal, oil and natural gas technology at six Virginia sites by 2021 or 2022. The company earlier this year also announced that 1,209 MW of this generation at five Virginia sites would be placed in cold reserve by December 2018. Additionally, three of the alternative scenarios in the IRP called for the potential retirement of an additional 1,445 MW of coal-fired generation in Virginia by 2025. The three alternative plans envision various forms of linkage to or participation in the Regional Greenhouse Gas Initiative (RGGI) by the Commonwealth of Virginia. All generation retirements presented in the alternative plans should be considered tentative, with a final decision made at a future date after further analysis. The alternative plans represent plausible paths forward for meeting customer demand under a variety of regulatory scenarios, ranging from the unlikely event of no future carbon dioxide regulations on power station emissions to various forms of state or federal carbon control initiatives. The Company operations and construction activities are subject to extensive federal, state and local environmental statutes, rules and regulations relating to air quality, water quality, waste management, natural resources, and health and safety. Certain facilities have become uneconomical to operate and have been shut down, converted to new fuel types or sold. These types of events could occur again in the future. We expect that existing environmental laws and regulations may be revised and/or new laws may be adopted including regulation of GHG emissions which could have an impact on the Company's business. Risks relating to expected regulation of GHG emissions from existing fossil fuel-fired electric generating units are discussed below. In addition, further regulation of air quality and GHG emissions under the Clean Air Act (CAA) have been imposed on the natural gas sector, including rules to limit methane leakage.
Access to capital	Impacted	The Company operations and construction activities are subject to extensive federal, state and local environmental statutes, rules and regulations relating to air quality, water quality, waste management, natural resources, and health and safety. Compliance with these legal requirements requires the Company to commit significant capital toward permitting, emission fees, environmental monitoring, installation and operation of environmental control equipment and purchase of allowances and/or offsets. Additionally, the Company could be responsible for expenses relating to remediation and containment obligations, including at sites where they have been identified by a regulatory agency as a potentially responsible party. Expenditures relating to environmental compliance have been significant in the past, and the Company expects that they will remain significant in the future. The Companies rely on access to short-term money markets and longer-term capital markets as significant sources of funding and liquidity for business plans with increasing capital expenditure needs, normal working capital and collateral requirements related to hedges of future sales and purchases of energy-related commodities. Deterioration in the Company creditworthiness, as evaluated by credit rating agencies or otherwise, or declines in market reputation either for the Company or their industry in general, or general financial market disruptions outside of the Company control could increase their cost of borrowing or restrict their ability to access one or more financial markets.
Assets	Impacted	Fluctuations in weather can affect demand for the Company's services. For example, milder than normal weather can reduce demand for electricity and gas transmission and distribution services. In addition, severe weather, including hurricanes, winter storms, earthquakes, floods and other natural disasters can disrupt operation of the Company's facilities and cause service outages, production delays and property damage that require incurring additional expenses. Changes in weather conditions can result in reduced water levels or changes in water temperatures that could adversely affect operations at some of the Company's power stations. Furthermore, the Company's operations could be adversely affected and their physical plant placed at greater risk of damage should changes in global climate produce, among other possible conditions, unusual variations in temperature and weather patterns, resulting in more intense, frequent and extreme weather events, abnormal levels of precipitation and, for operations located on or near coastlines, a change in sea level or sea temperatures.
Liabilities	Impacted	There are many risks associated with the Company's operations and the transportation, storage and processing of natural gas and NGLs, including nuclear accidents, fires, explosions, uncontrolled release of natural gas and other environmental hazards, pole strikes, electric contact cases, the collision of third party equipment with pipelines and avian and other wildlife impacts. Such incidents could result in loss of human life or injuries among employees, customers or the public in general, environmental pollution, damage or destruction of facilities or business interruptions and associated public or employee safety impacts, loss of revenues, increased liabilities, heightened regulatory scrutiny and reputational risk. Further, the location of pipelines and storage facilities, or generation, transmission, substations and distribution facilities near populated areas, including residential areas, commercial business centers and industrial sites, could increase the level of damages resulting from these risks.
Other	Please select	

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?

Yes, qualitative and quantitative

(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.

As part of the Company's overall long-term strategic planning overseen by the Board of Directors, we have a well-formed environmental strategy. The Company is committed to continuing to be an industry leader, delivering safe, reliable, clean and affordable energy while fully complying with all applicable environmental laws and regulations. Additionally, we seek to build partnerships and engage with local communities, stakeholders and customers on environmental issues important to them and us. Dominion Energy is dedicated to meeting our customers' growing energy needs with innovative, sustainable solutions. It is our belief that sustainable solutions should strive to balance the interdependent goals of environmental stewardship and economic effects. The integrated strategy to meet these objectives consists of three major elements:

- Reduction of GHG emissions;
- Energy infrastructure modernization, including natural gas and electric operations; and
- Conservation and energy efficiency.

Dominion Energy's integrated strategy has resulted in a reduction in GHG emission intensity. Over the past two decades, Dominion Energy has made changes to its generation mix and natural gas operations which have significantly improved environmental performance. The principal components of the strategy, which include initiatives that address electric energy production and delivery, natural gas storage, transmission and delivery and energy management, are as follows:

- Expand Dominion Energy's renewable energy portfolio, including solar, wind power, and biomass, to further diversify Dominion Energy's fleet, meet state renewable energy targets and lower the carbon footprint;
- Pursue the extension of operating licenses of existing nuclear units which provide carbon-free generation;
- Evaluate effective battery solutions, such as hydroelectric pumped storage, which help support a grid with increased renewables;
- Enhance conservation and energy efficiency programs on both the electric and gas side of our businesses to help customers use energy wisely and reduce environmental impacts;
- Sell, close, place in cold reserve or convert to cleaner fuels a number of coal-fired generation units owned by Dominion Energy;
- Evaluate behind-the-meter and rate design solutions and other business opportunities;
- Construct new electric and gas transmission infrastructure to modernize the grid, to expand availability of cleaner fuel, to reduce emissions, to promote energy and economic security and help deliver more green energy to population centers where it is needed most;
- Replace older distribution pipeline mains and services; and
- Implement and enhance voluntary methane mitigation measures through participation in the EPA's Natural Gas Star and Methane Challenge programs; and continue to evaluate business opportunities presented by a lower carbon economy and innovative technologies. For Years, Dominion Energy has focused on reducing its lost and unaccounted for gas (LAUFG) rate. LAUFG is an annual calculated quantity of gas consisting of the sum of reported losses and the unaccounted-for gas. It is an expense for the pipeline. More than five years ago, Dominion Energy joined the EPA's Natural Gas STAR program, which emphasized best management practices (BMPs) to voluntarily reduce methane emissions and report those reductions. In 2016, we demonstrated industry leadership by becoming a founding member of the EPA's Methane Challenge.

Renewable energy is an important component of a diverse and reliable energy mix that helps to mitigate the environmental aspects of energy production. Nationally, Dominion Energy has nearly 2,400 MW of renewable generating capacity in operation or under development in nine states, including offtake agreements for its Virginia utility customers. Both Virginia and North Carolina have passed legislation setting targets for renewable power. Dominion Energy is committed to meeting Virginia's goals of 12% of base year electric energy sales from renewable power sources by 2022, and 15% by 2025, and North Carolina's Renewable Portfolio Standard of 12.5% by 2021 and continues to add utility-scale solar capacity. Backed by a \$1 billion investment, Dominion Energy has grown its solar fleet in Virginia and North Carolina over the past two years from near zero to about 1,350 megawatts in service, in construction or under development.

The Dominion Energy 2018 Integrated Resource Plan (IRP) reflects the Company's belief that regulation of power station carbon dioxide (CO₂) emissions is virtually assured in the future, either through new federal initiatives or through measures adopted at the state level. Regardless of the precise mechanism of regulatory carbon control, Dominion Energy is committed to reducing greenhouse gas emissions. Renewable resources are becoming a more cost-effective means of meeting the growing energy demands of customers. This is particularly true of solar power. The continued development of solar photovoltaic (PV) technology has made this type of generation cost-competitive with other, more traditional forms of generation. The IRP evaluates the Company's options (Alternative Plans) representing plausible future paths for meeting the electric needs of customers. The plans reflect a transition to a lower emissions rate future for the Company, with renewable sources playing an increasingly important role in the Company's generation fleet serving customers in Virginia and North Carolina. All of the Alternative Plans presented in the 2018 IRP call for the potential development of 4,720 megawatts (MW) of additional solar capacity by 2033. By 2043, four of the Alternative Plans would expand the Dominion Energy Virginia solar fleet by 7,200 MW.

Dominion Energy's commitment to renewable energy and reducing greenhouse gas emissions is demonstrated by its commitment to have in operation or under development 3,000 megawatts of new solar and wind capacity in Virginia by 2022; and by its exploration of the potential for offshore wind through Coastal Virginia Offshore Wind (CVOW) project, to be developed jointly with Ørsted Energy. The company also recognizes that nuclear power must play a major power generation role in a lower-carbon, lower emissions future. This is the prime factor in the company's commitment to seek U.S. Nuclear Regulatory Commission relicensing of its four Virginia reactors, potentially keeping them in operation into the second half of the 21st century. Concurrently, the company has announced the potential shutdown of older fossil-fueled units at six Virginia sites by 2021 or 2022.

C3.1d

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
Other, please specify (PLEXOS model)	<p>A climate related scenario analysis is routinely utilized to develop Dominion Energy's business strategies. This is especially true with respect to Dominion Energy generation portfolio. Some examples of scenario analysis used by Dominion Energy are included in Dominion Energy's annual Integrated Resource Plan. The 2018 IRP presents a range of alternatives representing plausible paths forward for the Company to meet the future energy needs of its customers. Specifically, the Company presents five different alternative plans (collectively, the "Alternative Plans") designed to meet customers' needs in the future under different carbon regulation scenarios. The Company primarily used the PLEXOS model ("PLEXOS"), a utility modeling and resource optimization tool, to develop this 2018 Plan over the 25-year period beginning in 2019 and continuing through 2043 (the "Study Period"), using 2018 as the base year. The 2018 Plan is based on the Company's current assumptions regarding load growth, commodity prices, economic conditions, environmental regulations, construction and equipment costs, demand-side management ("DSM") programs, and many other regulatory and market developments that may occur during the Study Period. The PLEXOS model is used to develop a set of alternative plans that represent plausible future paths forward considering the major drivers of future uncertainty. The Company develops these alternative plans in order to test different resource strategies against plausible scenarios that may occur given future market and regulatory uncertainty. PLEXOS develops optimized resource plans based on the total utility costs over the Study Period while simultaneously adhering to other market drivers, such as price forecasts derived from possible carbon regulations modeled in alternative plans. The PLEXOS model was also used in the 2018 IRP for Retire/Co-Fire/Repower Analysis. This analysis was focused on the Company's coal-fired and heavy oil-fired facilities and assessed the cost to customers of the retirement, co-firing natural gas, and repowering of these facilities to exclusively burn natural gas. The analysis was performed using the PLEXOS model and assumed CO2 limitations and market forecasts consistent with three scenarios: No CO2 Tax, RGGI, and the Federal CO2 Program. The 2018 IRP presents five alternative plans designed to meet the energy demands of customers in the future under different carbon regulation scenarios. While these plans differ based on the carbon regulation scenarios evaluated, they do share several major common elements. Under all five plans, solar generation is becoming an increasingly important source of generation, with all five plans calling for the development of 4,720 megawatts of additional solar capacity by 2033. All five plans also call for the potential retirement of 2,785 megawatts of generation powered by older, less efficient coal, oil, and natural gas technology by 2021 or 2022 at six Virginia sites.</p>
2DS	<p>We have committed to conduct a 2-degree scenario analysis and plan to provide a report by the end of 2018. The report is expected to include an analysis of scenarios that could arise from the Paris Accord 2-degree proposal. In addition, we plan to describe corporate governance associated with climate issues and risks and opportunities for the business associated with a lower carbon economy. A 2-degree scenario analysis of our company's current generation and future plans is expected to generate additional information relative to current and future risks and opportunities than business as usual planning. The assessment is expected to include the impact of a 2 degree scenario on the company's full portfolio of power generation assets through 2050. The scenarios selected for this analysis are intended to complement the scenarios considered in the Integrated Resource Plan for the company's regulated generation assets and are expected to include both regulated and unregulated generation assets. Scenarios selected will likely be based on feedback from shareholder engagements, the TCFD "Technical Supplement: The Use of Scenario Analysis in Disclosure of Climate Related Risks and Opportunities" for two degree analysis, the IEA – WEO 2017 "Sustainable Development Scenario", IEA-WEO 2016 "450 ppm scenario" and peer benchmarking. Scenarios selected are expected to include power sector wide reductions from a 2005 baseline by 2050. Modeling by a third party will likely be used to conduct the analysis. As the evaluation is currently underway, additional assumptions associated with the analysis are expected be provided in the published report later this year.</p>

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.

Dominion Energy submits an annual Integrated Resource Plan (IRP), which presents multiple plans that demonstrate pathways to transition to a lower GHG future, based on different scenarios. The 2018 IRP reflects the transition to a lower emissions rate future. The Company has been a leader in reducing carbon emissions, having begun its transition to a generating fleet with lower carbon intensity well before the proposed federal and state carbon regulations considered in the 2018 IRP.

The reduction of GHG emissions is a major aspect of Dominion Energy's environmental strategy. The Company's integrated strategy has resulted in a reduction in GHG emission intensity. Over the past two decades, the Company has made changes to the generation mix and to natural gas operations which have significantly improved environmental performance. For example, Power Generation has significantly reduced both its carbon emissions and its carbon intensity while generating electricity with an increasingly clean portfolio. From 2000 through 2017, our carbon intensity decreased by 50%. This strategy has also resulted in significant reductions of other air pollutants such as NOX, SO2 and mercury and also reduced the amount of coal ash generated and the amount of water withdrawn. The principal components of the strategy, which include initiatives that address electric energy production and delivery, natural gas storage, transmission and delivery and energy management, are as follows:

- Expand Dominion Energy's renewable energy portfolio, including solar, wind power, and biomass, to further diversify Dominion Energy's fleet, meet state renewable energy targets and lower the carbon footprint;
- Pursue the extension of operating licenses of existing nuclear units which provide carbon-free generation;
- Evaluate effective battery solutions, such as hydroelectric pumped storage, which help support a grid with increased renewables;
- Enhance conservation and energy efficiency programs on both the electric and gas side of our businesses to help customers use energy wisely and reduce environmental impacts;
- Sell, close, place in cold reserve or convert to cleaner fuels a number of coal-fired generation units owned by Dominion Energy;
- Evaluate behind-the-meter and rate design solutions and other business opportunities;
- Construct new electric and gas transmission infrastructure to modernize the grid, to expand availability of cleaner fuel, to reduce emissions, to promote energy and economic security and help deliver more green energy to population centers where it is needed most;
- Replace older distribution pipeline mains and services; and
- Implement and enhance voluntary methane mitigation measures through participation in the EPA's Natural Gas Star and Methane Challenge programs; and continue to evaluate business opportunities presented by a lower carbon economy and innovative technologies.

Renewable energy is an important component of a diverse and reliable energy mix that helps to mitigate the environmental aspects of energy production. Nationally, Dominion Energy has nearly 2,400 MW of renewable generating capacity in operation or under development in nine states, including offtake agreements for Virginia Power's utility customers. Both Virginia and North Carolina have passed legislation setting targets for renewable power. Dominion Energy is committed to meeting Virginia's goals of 12% of base year electric energy sales from renewable power sources by 2022, and 15% by 2025, and North Carolina's Renewable Portfolio Standard of 12.5% by 2021 and continues to add utility-scale solar capacity. Backed by a \$1 billion investment, Dominion Energy has grown its solar fleet in Virginia and North Carolina over the past two years from near zero to about 1,350 megawatts in service, in construction or under development.

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Scope

Scope 1

% emissions in Scope

100

% reduction from baseline year

50

Metric

Metric tons CO₂e per megawatt hour (MWh)*

Base year

2000

Start year

2017

Normalized baseline year emissions covered by target (metric tons CO₂e)

0.55

Target year

2030

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science Based Targets initiative

% achieved (emissions)

100

Target status

Underway

Please explain

2017 company-wide target of reducing carbon intensity of Electric Generation by 50% by 2030; in the process of re-establishing target because of our projected earlier attainment of this goal, with new more aggressive target established in 2018.

% change anticipated in absolute Scope 1+2 emissions

50

% change anticipated in absolute Scope 3 emissions

0

C4.2

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

Target

Methane reduction target

KPI – Metric numerator

Natural Gas blowdown volumes (mcf) avoided by pipeline pressure reductions and hot tapping during planned maintenance activities

KPI – Metric denominator (intensity targets only)

Natural Gas blowdown volumes (mcf) that would have been emitted had these practices not taken place for planned maintenance activities

Base year

2017

Start year

2017

Target year

2021

KPI in baseline year

55

KPI in target year

50

% achieved in reporting year

100

Target Status

Underway

Please explain

The Dominion Energy Transmission team will reduce methane emissions from maintenance activities by at least 50 percent by 2021. Dominion Energy Ohio and Dominion Energy West Virginia are implementing a pipeline replacement program for their mains and service lines and committed to replacing at least 1.5% of the unprotected steel and cast iron pipes every year by the end of 2021. Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO₂e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO₂ emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. New procedures include reducing pipeline pressure before blowing down (this is the procedure where maintenance is based on first relieving pressure in the pipeline by releasing methane into the atmosphere), routing gas to a compressor or other systems for beneficial use, and using "hot taps." (This is the ability to safely tap into a pipeline while it remains under pressure. The technology is a procedure that can only be done on newer pipelines.) In Utah—our newest gas distribution market—all cast iron pipe was replaced in the 1980s; all bare steel pipe was replaced in the 1990s. Since the 2000s, the company has been focused on replacing all reconditioned high-pressure pipe in high-consequence areas at an annual investment of \$75 million.

Part of emissions target

No

Is this target part of an overarching initiative?

Other, please specify (NG STAR & Methane Challenge Program)

Target

Other, please specify (Miles of pipeline upgraded)

KPI – Metric numerator

Miles of unprotected steel and cast iron pipeline mains replaced in calendar year 2017 replacement miles = 188 for DEOH and DEWV combined

KPI – Metric denominator (intensity targets only)

Total miles of unprotected steel and cast iron pipeline mains at end of 2016 Baseline: 5,817 (for DEOH and DEWV)

Base year

2016

Start year

2016

Target year

2021

KPI in baseline year

3

KPI in target year

1.5

% achieved in reporting year

100

Target Status

Underway

Please explain

As part of the Methane Challenge, we committed to methane reduction targets through 2021. Dominion Energy Ohio and Dominion Energy West Virginia are implementing a pipeline replacement program for their mains and service lines and committed to replacing at least 1.5% of the unprotected steel and cast iron pipes every year by the end of 2021. In Utah—our newest gas distribution market—all cast iron pipe was replaced in the 1980s; all bare steel pipe was replaced in the 1990s. Since the 2000s, the company has been focused on replacing all reconditioned high-pressure pipe in high-consequence areas at an annual investment of \$75 million.

Part of emissions target

No

Is this target part of an overarching initiative?

Other, please specify (NG STAR & Methane Challenge programs)

C-OG4.2a

(C-OG4.2a) Explain, for your oil and gas production activities, why you do not have a methane-specific emissions reduction target or do not incorporate methane into your targets reported in C4.2; and forecast how your methane emissions will change over the next five years.

NOT APPLICABLE

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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	1	229009
Implementation commenced*	0	0
Implemented*	50	2742550
Not to be implemented	0	0

C4.3b

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

Activity type

Fugitive emissions reductions

Description of activity

Other, please specify (Voluntary Best Management Practices)

Estimated annual CO2e savings (metric tonnes CO2e)

376733

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

2400000

Investment required (unit currency – as specified in CC0.4)

235200000

Payback period

>25 years

Estimated lifetime of the initiative

Ongoing

Comment

Dominion Energy has implemented various voluntary best management practices to reduce natural gas loss, and thus methane emissions, from our natural gas operations. These practices include: • Directed inspection, maintenance, and leak repair programs • Replacement of unprotected steel distribution pipeline mains and services • Replacement of natural gas-driven pneumatic devices and pumps with low or non-emitting devices • Recovery of compressor blowdown gas • Reducing transmission pipeline pressures prior to maintenance blowdowns • Replacing orifice meters with ultrasonic • Use of hot tapping • Capped emergency shut down testing • Installation of plunger lifts at production wells • Damage prevention programs to reduce cut-outs • Pressure telemetry to reduce the need for relief valves

Activity type

Low-carbon energy installation

Description of activity

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

132075

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

930000000

Payback period

>25 years

Estimated lifetime of the initiative

Ongoing

Comment

Solar Projects implemented in 2017: A total of 18 solar projects totaling 462 MW generating capacity: -Solvay Solar Energy: 71.4 MW -Ridgeland Solar: 10 MW -IS37 Solar: 78.7 MW -Midway II: 30 MW -Clarke County Solar: 10 MW -Cherrydale Solar: 20 MW -Fremont Solar: 5 MW -Moorings2: 5 MW -Clipperton Solar: 4.7 MW -Pikeville Solar: 4.7 MW -Wakefield: 5 MW -Ocean Solar: 17.6 MW -Remington Solar: 19.8 MW -Southampton Solar: 100 MW -Buckingham Solar: 19.8 MW -Correctional Solar: 20 MW -Sappony Solar: 20 MW -Scott II Solar: 20 MW

Activity type

Low-carbon energy purchase

Description of activity

Other, please specify (Solar Purchase Program)

Estimated annual CO2e savings (metric tonnes CO2e)

1510

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

0

Payback period

Please select

Estimated lifetime of the initiative

3-5 years

Comment

This is a rate program for Dominion customers who own solar generation installations. On March 22, 2013, the SCC approved the Company's Solar Purchase Program as a demonstration program to purchase energy from qualifying residential and non-residential solar customer-generators at a fixed price of 15 cents per kWh under Rate Schedule SP, a voluntary experimental rate, for a period of five years. The Solar Purchase Program was launched in June 2013. • Rate Schedule SP is designed to facilitate installation of up to 3 MW of customer-owned solar DG (up to 1.8 MW residential and up to 1.2 MW non-residential) as an alternative to net energy metering by allowing the Company to purchase 100% of the energy output, including all environmental attributes and associated RECs, from qualifying solar customer-generators. The 15 cents per kWh price paid under Rate Schedule SP includes an avoided energy cost component and a voluntary environmental contribution component provided by those customers participating in the Company's Green Power® program. • 150 customers are participating with total generation capacity of 1.8 MW as of 12/31/2017. The Solar Purchase Program facilitates customer-owned solar DG as an alternative to net metering. Under this program, the Company purchases energy output, including all environmental attributes and associated RECs, from participants at a premium rate under Rate Schedule SP, a voluntary experimental rate, for a period of five years.

Activity type

Low-carbon energy purchase

Description of activity

Other, please specify (Green Power Program)

Estimated annual CO2e savings (metric tonnes CO2e)

93143

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

0

Payback period

Please select

Estimated lifetime of the initiative

Ongoing

Comment

Voluntary program for customers to purchase renewable energy certificates (RECs) . Customers can purchase RECs in blocks or equal to their usage. 28,000 customers participating 51% at 100% option and 49% block option as of 12/31/2017. The Company's Green Power Program allows customers to promote renewable energy by purchasing RECs through the Company in discrete

blocks for a portion or up to 100% of their usage. The Company purchases and retires RECs on behalf of participants.

Activity type

Energy efficiency: Building services

Description of activity

Other, please specify (Energy Efficiency Building Services)

Estimated annual CO2e savings (metric tonnes CO2e)

152083

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

0

Payback period

Please select

Estimated lifetime of the initiative

3-5 years

Comment

Conservation and load management play a significant role in meeting the growing demand for electricity while also helping to reduce the environmental footprint of our customers. The Regulation Act provides incentives for energy conservation through the implementation of conservation programs. Additional legislation in 2009 added definitions of peak-shaving and energy efficiency programs, and allowed for a margin on operating expenses and recovery of revenue reductions related to energy efficiency programs. Virginia Power's demand side management programs, implemented with Virginia State Corporation Commission and North Carolina Public Utility Commission approval, provide important incremental steps in assisting customers to reduce energy consumption through programs that include energy audits and incentives for customers to upgrade or install certain energy efficient measures and/or systems.

Activity type

Energy efficiency: Processes

Description of activity

Other, please specify (ThermWise Program)

Estimated annual CO2e savings (metric tonnes CO2e)

47718

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

22000000

Payback period

>25 years

Estimated lifetime of the initiative

Ongoing

Comment

ThermWiseR is our Utah program to promote the use of energy-efficient appliances and practices to reduce natural gas usage. Program Spend 2017: \$22 million -Total 2017 Rebates Paid: Nearly 76,049 (90% approval rate) -Total Dekatherm Savings 2017:

Nearly 900,000 -Savings equivalent to 47,718 metric tons of CO2 -Savings are equivalent to approximately 11,000 general service residential customers The ThermWise energy assistance budget for 2018 is \$24.5 million, with a target of more than 81,000 customers participating. The team forecasts saving 1.15 million dekatherms of natural gas in 2018, which equates to the annual usage of nearly 14,500 customers.

Activity type

Other, please specify (Process NG and CHP utilization)

Description of activity

<Not Applicable>

Estimated annual CO2e savings (metric tonnes CO2e)

1939288

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

0

Investment required (unit currency – as specified in CC0.4)

Payback period

>25 years

Estimated lifetime of the initiative

Ongoing

Comment

Combined Liquefaction Design Efficiency Reductions from Process Natural Gas utilization and Combined Heat and Power (CHP) utilization. During normal operation, the Cove Point auxiliary boilers, combustion turbines, and thermal oxidizer are designed to operate on process natural gas. This process natural gas would otherwise be flared as waste gas. The use of process natural gas as fuel, replacing the need for pipeline natural gas combustion, during normal operation, reduces the CO2e emissions by 50%, as one-half of the amount of natural gas (process and pipeline) will be combusted. The Cove Point combustion turbines were designed for CHP operation as bottom cycle cogeneration units. Each combustion turbine utilizes turbine shaft horsepower to operate three (3) liquefaction compressors, while waste heat from the turbine is captured in the heat recovery steam generator to produce steam for electric generation and other plant purposes. This design reduces the need for a combustion turbine for each operation, essentially reducing the amount of combustion turbines required to operate the Cove Point Liquefaction Facility.

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	The Companies are subject to costs resulting from a number of federal, state and local laws and regulations designed to protect human health and the environment. These laws and regulations affect future planning and existing operations. They can result in increased capital, operating and other costs as a result of compliance, remediation, containment and monitoring obligations.
Dedicated budget for energy efficiency	New company office buildings are Leadership in Energy and Environmental Design (LEED)-certified by the U.S. Green Building Council and are constructed with low-water consumption landscaping and building fixtures. Six of our offices have been built to these standards: Cove Point liquefaction plant in Maryland; White Oaks in West Virginia; the new Systems Operations Center near Richmond; the administrative building at Brunswick Power Station; the gas transmission facility in Sabinsville, Pa.; and the Ohio Training Center in Boston Heights. Another five are currently under construction: the corporate office at 600 Canal Place; an administrative building and warehouse in Lima, Ohio; facilities in Oakford, Pa., and Summersville W.Va.; and the administrative building at Greensville Power Station in Virginia.
Dedicated budget for low-carbon product R&D	Research Partnerships: Dominion Energy partners with about a dozen Virginia colleges and universities, providing \$1.7 million in funding for a variety of renewable energy and alternative technology research projects. The projects include high-efficiency solar cells, advanced offshore wind technologies, and the integration of battery storage with solar distributed generation, among others. Additional Research and Development projects and investments are described in question C-EU9.6.
Internal price on carbon	Dominion Energy typically utilizes a price for carbon to assess the cost of future generation portfolios. This price for carbon has a negative impact on assets that emit GHGs and a positive impact on lower emitting assets. Thus, Dominion Energy can assess the overall cost and value of its current and future asset portfolio in a consistent manner.
Internal incentives/recognition programs	Dominion's Annual Incentive Plan ("AIP") provides a monetary reward to eligible employees based on the achievement of annual Company financial, business unit financials and individual operating and stewardship goals. For certain employees, a portion of their AIP payout may be tied to the accomplishment of environmental goals linked to climate change directly or indirectly. Examples of common AIP goals in 2017 included the following: -Support the development of an enhanced corporate environmental management system (EMS). -Goals such as completion of environmental management system and targeted environmental summits. -Completion of environmental awareness course(s). -Comparing annual year 2017 to annual year 2000, the entire electric generating fleet (based on ownership percentage) reduced its average CO2e emissions rate per MWh of energy produced from electric generation by approximately 50%. The 50% target was established in 2016 when the CO2 emission rate compared to 2000 was 43%. The 2016 target is under re-evaluation. In 2017 and 2018, Dominion Energy's AIP goals related to management of climate-related issues that had participation from each of the Company's business groups. The 2017 Dominion Energy leadership sustainability goal involved the materiality assessment and included development of the public goals on CO2 intensity and methane reductions as well definitions for the 2018 Dominion Energy climate-related AIP goals. Completed 2017 Dominion Energy milestones in the Sustainability Plan included the following: • Revised Sustainability and Corporate Responsibility Report and outreach tools. • Updated Environmental Policy Statement and 2017 Environmental Report. • Participation in at least one benchmarking; Establish team and meet benchmarking key dates.

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

Group of products

Description of product/Group of products

Demand-Side Management (DSM) programs

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 (energy efficiency emissions reduc. prog.)

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

9.4

Comment

Virginia Power's demand-side management (DSM) programs, implemented with Virginia Commission and North Carolina Commission approval, provide important incremental steps in assisting customers to reduce energy consumption through programs

that include energy audits and incentives for customers to upgrade or install certain energy efficient measures and/or systems. Currently, there are residential and non-residential DSM programs active in the two states. Virginia Power continues to evaluate opportunities to redesign current DSM programs and develop new DSM initiatives in Virginia and North Carolina. Dominion Energy Ohio offers two DSM programs, approved by the Ohio Commission, designed to help customers reduce their energy consumption. One program provides weatherization assistance to help income-eligible customers reduce their energy usage. Another program has been designed to help Dominion Energy Ohio's residential customers improve their homes' energy efficiency, with a home energy assessment. Customers receive a report with recommendations on how to save energy. This program includes rebates and free installation of several energy-efficient products such as, high-efficiency showerheads, programmable thermostat or carbon monoxide detector. Dominion Energy Utah, Dominion Energy Wyoming and Dominion Energy Idaho offers an energy-efficiency program, approved by the Utah and Wyoming Commissions, designed to help customers reduce their energy consumption. This program promotes the use of energy-efficient appliances and practices to reduce natural gas usage. The program provides home owners with energy-saving devices such as pipe insulation and low-flow shower heads as well as rebates on appliances and weatherization items. The program also offers new construction builders with rebates for installing high-efficiency equipment and offers commercial businesses with rebates on energy efficient equipment and retrofits. The return on investment was approximately 9.4% for 2017.

Level of aggregation

Product

Description of product/Group of products

Dominion Energy Green Power – voluntary green pricing program in and around Virginia

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 (voluntary contribution)

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

0

Comment

Purchasing Renewable Energy Credits (RECs) through the Dominion Energy Green Power program allows customers to claim the specific environmental benefits associated with the renewable energy supported. For a typical residential customer, the renewable energy generated through participation in the 100 Percent Option for one year will reduce carbon dioxide emissions by more than five metric tons — the amount of greenhouse gas reduction achieved by planting 193 trees, according to the U.S. EPA. Our program is certified by Green-e® Energy, the nation's leading independent consumer protection program for renewable energy sales. For our 120,000 customers in North Carolina, we support NC GreenPower, which enables customers to add voluntary, tax-deductible contributions to their electric bills. These contributions are used to reduce carbon emissions and increase the production of renewable energy power supplies in North Carolina.

Level of aggregation

Product

Description of product/Group of products

Dominion Energy Solar Programs

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 (renewable energy certificates)

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

0

Comment

Qualified homeowners and business customers in Virginia can participate in our five-year pilot Solar Purchase Program, which allows customers to generate and sell electricity and solar Renewable Energy Certificates directly to Dominion Energy at a premium rate of 15 cents per kilowatt-hour. Participating customers continue to purchase all of the electricity for their home or business from Dominion Energy on their current rate schedule. The Solar Purchase Program is currently limited to 3,000 kilowatts of installed capacity and is designed to help customers cover the cost of installing solar generation, while also promoting local clean energy production. The Dominion Energy Green Power Energy program directly supports these solar projects through the purchase and retirement of RECs produced by the Solar Purchase Program. Since the program's inception in 2013, about 150 solar installations have been completed. In 2016, these projects generated more than 2 million kilowatthours of clean energy and produced more than 2,000 RECs. Through the Solar Partnership Program, Dominion Energy is constructing solar energy facilities

on leased rooftops or other grounds of private businesses and public properties in Virginia. This multi-year pilot program is designed to increase our understanding of community-based solar energy by studying its impact and benefits while supporting the growth of this renewable resource in Virginia. We have 11 solar facilities either completed or under construction, with a total generating capacity of more than 7,600 kilowatts — enough to power about 1,900 typical homes at peak production. Solar Partnership installations completed in 2017 include: (1) A 384 kW rooftop installation at the University of Virginia. (2) a 1,512 kW ground-mount installation at Merck in Elkton, VA. (3) A 1MW rooftop installation at Canon Virginia Inc. in Newport News.

Level of aggregation

Product

Description of product/Group of products

Dominion Energy Paperless Billing Program

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 (Customer Service)

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

0

Comment

Customers are reducing paper usage by choosing to participate in the Company's paperless billing program, eBill. Nearly 42 percent of Virginia and North Carolina customers opt to receive their bill notification via email and text message each month either through the Company's website or through their financial institution. Customers can create on-line accounts to view and pay bills electronically and enroll in programs such as paperless billing, energy conservation and the Dominion Green Power® Program. Further, customers want to do business electronically and the Company is providing the channel and options to do so.

C-EU4.6

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

Routine facility-wide inspections are conducted at the power generation facilities to ensure equipment is maintained and operated in accordance with good air pollution control practices for minimizing emissions (which includes methane emissions). This applies to facilities that contain air emitting emission sources, and for methane emissions, our natural gas facilities. Standard operating procedures and best management practices are in place to ensure that our electric generation facilities are inspected for leaks and necessary repairs are made as soon as possible.

The facility-wide inspections vary, depending on the facility, but may include any of the following (including but not limited to):

- Visible stack emissions
- Fugitive emissions from natural gas piping components (valves and flanges)
- Odors
- Equipment
- Storage vessels/storage tanks

These observations are to ensure continued compliance with source-specific visible emission limitations, fugitive emissions, and equipment maintenance and repair. If leaks are detected, attempts to make repairs or replacements are conducted as soon as practicable.

C-OG4.6

(C-OG4.6) Describe your organization’s efforts to reduce methane emissions from oil and gas production activities.

Experience has taught us that one of the most effective ways to reduce methane emissions is to upgrade older pipelines. In Ohio — our largest gas distribution market — we have been actively replacing more than 5,000 miles of bare steel mains since 2008. As part of the Methane Challenge we are planning to reduce methane emissions by investing \$200 million or more annually over the next two decades to upgrade aged bare steel, cast iron, wrought iron and copper pipe in our Ohio pipeline system — expanding on the \$1.2 billion investment we have already made to replace more than 1,300 miles of pipeline in the Buckeye State. In 2016, we began to grow a similar program we created in West Virginia in 2016, and plans call for an additional \$58 million investment there over the next two years. On the high pressure transmission side of our business, we are reducing emissions in the Methane Challenge by relieving pressure before conducting pipeline maintenance. The Dominion Energy Transmission team will reduce methane emissions from maintenance activities by at least 50 percent by 2021. New procedures include reducing pipeline pressure before blowing down (this is the procedure to allow re-routing of gas to lower pressure lines/uses to reduce pressure before venting remaining pressure prior to maintenance) routing gas to a compressor or other systems for beneficial use, and using “hot taps.” (This is the ability to safely tap into a pipeline while it remains under pressure. The technology is possible only on newer pipelines.) In Utah — our newest gas distribution market — we will reduce methane emissions under the Methane Challenge through a new program to prevent excavation damage of pipelines. Dominion Energy Wexpro will install new air compressors and air dryers to 31 devices at Canyon Creek and Church Buttes, eliminating 46,000 MCF gas lost and related emissions. We are proud that Clean Cities recognized Dominion Energy as one of the top idle-free businesses in Utah in 2017.

In Utah—our newest gas distribution market—all cast iron pipe was replaced in the 1980s; all bare steel pipe was replaced in the 1990s. Since the 2000s, the company has been focused on replacing all reconditioned high-pressure pipe in high-consequence areas at an annual investment of \$75 million.

Dominion Energy has recently challenged operations to find additional voluntary measures to reduce methane emissions even further. We launched new voluntary initiatives to achieve additional reductions over the next 5 years (in addition to the prior voluntary programs of EPA’s NgSTAR and Methane Challenge). These initiatives, referred to as ‘Methane Million’ are expected to prevent approximately 1.3M MT CO₂e emissions over the next 5 years.

COG4.7

(C-OG4.7) Does your organization conduct leak detection and repair (LDAR) or use other methods to find and fix fugitive methane emissions from oil and gas production activities?

Yes

C-OG4.7a

(C-OG4.7a) Describe the protocol through which methane leak detection and repair or other leak detection methods, are conducted for oil and gas production activities, including predominant frequency of inspections, estimates of assets covered, and methodologies employed.

Dominion Energy implements both regulatory and voluntary programs to periodically scan for, locate, evaluate, and fix fugitive leaks. Leak detection ranges from 10,000 ppm under the GHGRP to 500 ppm under the Subpart OOOOa program. At Dominion Energy facilities, leaks not required to be surveyed or fixed by regulation, are surveyed and fixed within 30 days as a voluntary Best Management Practice, or put on Delay or Repair (DOR) to ensure adequate parts and labor are available, and to minimize station blowdown emissions for maintenance.

A unique LDAR program is implemented at Dominion Energy's Cove Point LNG facility that is more stringent in frequency, identification level, and repair provisions. The Cove Point LNG program is a mesh of Maryland VOC LDAR, which involves daily AVO requirements, and the Texas TCEQ 28 LAER program, using EPA Alternative Work Practice for optical camera use in addition to annual Method 21. The program requires leak repairs within 15 days, and a first attempt at repair within five days. Due to the large number of components to be surveyed, LDAR is conducted at least twice a month daily in order to capture all components quarterly.

LDAR programs have a variety of names, but can all be categorized as a form of LDAR. Federal or state-required Leak Detection and Repair (LDAR) programs, whose methodology involves scanning for leaks using an optical gas imaging (OGI) camera and/or vapor analyzers, and then fixing the leaks on a specified schedule. LDAR, as required under USEPA's New Source Performance Standard (NSPS), Subpart OOOOa, is required at approximately 17% of our transmission and storage compressor stations, which represents new or modified facilities as defined under the NSPS, and 100% of our processing facilities. A minimum of 20% of our metering and regulating stations undergo leak detection and repair every year encompassing 100% over a rolling five year period. The predominant frequency of LDAR inspections is quarterly, although a small number are semiannual and/or annual. Regarding DE-Wexpro production wells, 100% had at least one annual LDAR inspection, unless the well was not producing or was shut in. The LDAR methodology on the wells included monitoring via an infrared OGI camera, with an occasional EPA Method 21 spot check. The USEPA greenhouse gas reporting program requires annual leak detection on approximately 30% of transmission and storage compressor stations.

C-OG4.8

(C-OG4.8) If flaring is relevant to your oil and gas production activities, describe your organization's efforts to reduce flaring, including any flaring reduction targets.

The company does not have a flaring reduction goal. Flaring is not a significant practice at Dominion Energy, making up less than one tenth of one percent of total GHG emissions corporate-wide, with one exception. At our LNG Import/Export facility, flaring is used to reduce methane emissions. At that facility the need for flaring is reduced by the use of process gas for fuel and combined cycle technology.

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 2000

Base year end

December 31 2000

Base year emissions (metric tons CO2e)

42619300

Comment

Scope 2 (location-based)

Base year start

January 1 2000

Base year end

December 31 2000

Base year emissions (metric tons CO2e)

239732

Comment

eGRID 2000

Scope 2 (market-based)

Base year start

Base year end

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 Climate Registry: Electric Power Sector (EPS) Protocol
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?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

30155246

End-year of reporting period

<Not Applicable>

Comment

Power Gen, System and Merchant, equity share/ownership based, combustion emissions only

Row 2

Gross global Scope 1 emissions (metric tons CO2e)

37186655

End-year of reporting period

2016

Comment

Power Gen, System and Merchant, equity share/ownership based, combustion emissions only

Row 3

Gross global Scope 1 emissions (metric tons CO2e)

34253305

End-year of reporting period

2015

Comment

Power Gen, System and Merchant, equity share/ownership based, combustion emissions only

Row 4

Gross global Scope 1 emissions (metric tons CO2e)

33638714

End-year of reporting period

2014

Comment

Power Gen, System and Merchant, equity share/ownership based, combustion emissions only

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

EPA's eGRID emission factors for VA NERC region

C6.3

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

Row 1

Scope 2, location-based

55784

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

<Not Applicable>

Comment

(Power Gen, System Electricity Usage, based on FERC Form 1, page 401a, Line 26) (Emission factors from EPA's eGRID)

Row 2

Scope 2, location-based

59143

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

2016

Comment

(Power Gen, System Electricity Usage, based on FERC Form 1, page 401a, Line 26) (Emission factors from EPA's eGRID)

Row 3

Scope 2, location-based

70155

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

2015

Comment

(Power Gen, System Electricity Usage, based on FERC Form 1, page 401a, Line 26) (Emission factors from EPA's eGRID)

Row 4

Scope 2, location-based

76133

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

2014

Comment

(Power Gen, System Electricity Usage, based on FERC Form 1, page 401a, Line 26) (Emission factors from EPA's eGRID)

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

Power Generation (Scope 1)

Relevance of Scope 1 emissions from this source

No emissions excluded

Relevance of location-based Scope 2 emissions from this source

Emissions are relevant and calculated, but not disclosed

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

Emissions are not relevant

Explain why the source is excluded

Scope 2: Lack of available electricity usage data for merchant power stations and miscellaneous facilities (warehouses, satellite offices, etc.) outside of Virginia.

Source

HFCs

Relevance of Scope 1 emissions from this source

Emissions are relevant but not yet calculated

Relevance of location-based Scope 2 emissions from this source

Emissions are relevant but not yet calculated

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

Emissions are not relevant

Explain why the source is excluded

Incomplete data availability; Emissions not material to organization

Source

Mobile sources

Relevance of Scope 1 emissions from this source

Emissions are relevant but not yet calculated

Relevance of location-based Scope 2 emissions from this source

Emissions are relevant but not yet calculated

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

Emissions are not relevant

Explain why the source is excluded

Incomplete data availability; Emissions not material to organization

Source

Fugitives

Relevance of Scope 1 emissions from this source

Emissions are relevant and calculated, but not disclosed

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

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

Emissions are not relevant

Explain why the source is excluded

Fugitive emissions are evaluated but not disclosed for consistency with other corporate reports.

C6.5

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

Purchased goods and services

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Not relevant to energy sector.

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

47718

Emissions calculation methodology

Estimated based on ThermWise program savings of 900,000 dekatherms time 0.053 metric tons CO2 per dekatherm.

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

50

Explanation

ThermWise is a customer natural gas conservation program implemented by DE-UT/WY/ID.

Upstream transportation and distribution

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Information about our waste generation is provided in separate corporate disclosures and is not considered relevant for the CDP.

Business travel

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Employee commuting

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Upstream leased assets

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

The emissions from transportation and distribution of electricity are included in Scope 1 emissions. See oil and gas section of CDP for the Scope 1 emissions related to that sector.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

The emissions from the generation of electricity are reported under Scope 1 emissions. Emissions from processing of natural gas liquids and natural gas are reported under Scope 1 under the oil and gas section of the CDP.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Use and End of life treatment in next row are essentially the same in that energy is either consumed (generation emissions are under Scope 1) or combusted (see next row).

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

19296093.7

Emissions calculation methodology

US EPA Mandatory Greenhouse Gas Reporting Rule

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

100

Explanation

Use and End of life treatment in next row are essentially the same in that energy is either consumed or combusted. The combustion of natural gas and natural gas liquids supplied to customers is reported under Subpart NN of the US EPA Mandatory Greenhouse Gas Reporting Program and are provided in this section of the CDP because there is no opportunity to provide this Scope 3 data in the oil and gas portion of the CDP.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

No downstream leased assets of which we are aware

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

No downstream franchises of which we are aware.

Investments

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Other (upstream)

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Other (downstream)

Evaluation status

Not evaluated

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

C6.7

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

Yes

C6.7a

(C6.7a) Provide the emissions from biologically sequestered carbon relevant to your organization in metric tons CO2.

8404596

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

0.29599

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

30213971

Metric denominator

megawatt hour transmitted (MWh)

Metric denominator: Unit total

102076492

Scope 2 figure used

Location-based

% change from previous year

13

Direction of change

Decreased

Reason for change

Both metrics decreased compared to the year before due to reductions in carbon emissions. 2017 was a mild weather year, so we did not produce as much power (MWH) as in 2016. We also brought additional renewable energy on line in 2017.

Intensity figure

0.0035

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

30213971

Metric denominator

unit total revenue

Metric denominator: Unit total

881200000

Scope 2 figure used

Location-based

% change from previous year

16.7

Direction of change

Decreased

Reason for change

Both metrics decreased compared to the year before due to reductions in carbon emissions. 2017 was a mild weather year, so we did not produce as much power (MWH) as in 2016. We also brought additional renewable energy on line in 2017.

C-OG6.12

(C-OG6.12) Provide the intensity figures for Scope 1 emissions (metric tons CO2e) per unit of hydrocarbon category.

Unit of hydrocarbon category (denominator)

Million cubic feet of natural gas

Metric tons CO2e from hydrocarbon category per unit specified

0.33

% change from previous year

0

Direction of change

No change

Reason for change

No value for previous year

Comment

Value derived from Scope 1 CO2e from all company natural gas operations as reported to the USEPA under 40 CFR 98, Subpart W, also known as the Greenhouse Gas Reporting Program (GHGRP). The emissions do not represent all of operations. The gas throughput is the sum of throughputs reported at the facility level under the GHGRP.

C-OG6.13

(C-OG6.13) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

Oil and gas business division

Upstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

1.57

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

1.57

Comment

Values derived from Scope 1 CH4 from all company natural gas operations as reported to the USEPA under 40 CFR 98, Subpart W, also known as the Greenhouse Gas Reporting Program (GHGRP). The emissions do not represent all of operations. The gas throughput is the sum of throughputs reported at the facility level under the GHGRP.

Oil and gas business division

Downstream

Estimated total methane emitted expressed as % of natural gas production or throughput at given division

0.03

Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

0.03

Comment

Values derived from Scope 1 CH4 from all company natural gas operations as reported to the USEPA under 40 CFR 98, Subpart W, also known as the Greenhouse Gas Reporting Program (GHGRP). The emissions do not represent all of operations. The gas throughput is the sum of throughputs reported at the facility level under the GHGRP.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

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	30137002	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	53511	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	101480	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	37841	IPCC Fourth Assessment Report (AR4 - 100 year)

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)	26388741	2072	1.66	26478382	(Regulated Generation) *N2O is excluded from this table, so it was excluded from the total gross CO2e in this table.
Combustion (Gas utilities)	0	0	0	0	Combustion of gas supplied to our customers is reported under Scope 3 emissions
Combustion (Other)	3661620	122	0	3668267	Merchant Generation
Emissions not elsewhere classified	0	0	0	0	

C-OG7.1b

(C-OG7.1b) Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives (Oil:Total)	0	0	0	
Fugitives (Oil: Venting)	0	0	0	
Fugitives (Oil: Flaring)	0	0	0	
Fugitives (Oil: E&P, excluding venting and flaring)	0	0	0	
Fugitives (Oil: All Other)	0	0	0	
Fugitives (Gas: Total)	0	77385	1934625	All natural gas operations methane has been attributed to fugitives, all CO2 to natural gas operations combustion.
Fugitives (Gas: Venting)	0	0	0	
Fugitives (Gas: Flaring)	0	0	0	
Fugitives (Gas: E&P, excluding venting and flaring)	0	0	0	
Fugitives (Gas: Midstream)	0	0	0	
Fugitives (Gas: All other)	0	0	0	
Combustion (Oil: Upstream, excluding flaring)	0	0	0	
Combustion (Gas: Upstream, excluding flaring)	0	0	0	
Combustion (Refining)	0	0	0	
Combustion (Chemicals production)	0	0	0	
Combustion (Electricity generation)	0	0	0	
Combustion (Other)	1703570	0	1703570	All natural gas operations methane has been attributed to fugitives, all CO2 to natural gas operations combustion.
Process emissions	0	0	0	
Emission not elsewhere classified	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)
United States of America	30155246

C7.3

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

By facility

C7.3b

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Fairless CT Station	2848662	40.147092	-74.741792
Manchester Street Power Station	815694	41.816841	-71.405649
Millstone Nuclear Station	957	41.310744	-72.167634
Altavista Power Station	4811	37.118231	-79.275603
Bear Garden Generating Station	1238810	37.694608	-78.290609
Bellemeade Power Station	87582	37.496903	-77.432519
Bremo Power Station	72383	37.709759	-78.287583
Brunswick County Power Station	3074187	36.764622	-77.712641
Chesapeake Energy Center	136	36.773921	-76.302492
Chesterfield Power Station	4554742	37.382016	-77.383579
Clover Power Station	1696724	36.870154	-78.704596
Darbytown CT Station	79259	37.499067	-77.368508
Elizabeth River CT Station	67013	36.774842	-76.310577
Gordonsville Power Station	106889	38.124699	-78.203366
Gravel Neck CT Station	45863	37.157755	-76.690937
Hopewell Power Station	5432	37.297619	-77.28347
Ladysmith CT Station	323930	38.072911	-77.514476
Low Moor CT Station	304	37.777072	-79.892033
Mecklenburg Power Station	194653	36.59934	-78.531272
Mount Storm Power Station	6862560	39.203335	-79.266258
North Anna Nuclear Station	379	38.060581	-77.789455
Northern Neck CT Station	825	37.947744	-76.711489
Pittsylvania Power Station	2187	37.104358	-79.276553
Poosum Point Power Station	1254222	38.550534	-77.287679
Remington CT Station	283400	38.544369	-77.770425
Rosemary CT Station	71887	36.452391	-77.660455
Southampton Power Station	5128	36.652173	-76.995283
Surry Nuclear Station	280	37.165549	-76.697824
Virginia City Hybrid Energy Center	2977219	36.915585	-82.339721
Warren County Generating Station	3311626	38.9701	-78.17749
Yorktown Power Station	167502	37.213903	-76.457885

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	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility generation activities	30155246	<Not Applicable>	No comment necessary
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	633303	<Not Applicable>	
Oil and gas production activities (downstream)	2828432	<Not Applicable>	
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

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	55784	0	74957	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)
Electric Utilities Activities	55784	

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization’s total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)			
Oil and gas production activities (downstream)			
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

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	478826.86	Decreased	117	Dominion Energy increased solar energy with the addition of several solar facilities. 2017 solar net generation (1,953,263.29) – 2016 solar net generation (902,046.17) = 1,051,217.12 Solar Net MWhs eGRID 2016 factors were used to convert MWhs to CO2e 2017 MT CO2e emisissions savings (889,706.72) – 2016 MT CO2e emissions savings (410,879.85) = 478,828.86 divided by 2016 MT CO2e savings = 117%
Other emissions reduction activities	6369435	Decreased	30	Less usage of coal combustion by increasing natural gas usage and renewable generation. 2017 coal CO2e emissons = 15, 124,193 MT. 2016 coal co2e emissions = 21, 493,628 MT. -6,369,435 CO2e (change in coal related emissions) / 21,493,628 (2016 CO2e coal combustion related emissions) * 100 = -30%
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output	7031409	Decreased	19	Less emissions in 2017 compared to 2016 due to mild weather in our service territory. 7,031,409 (change in total CO2e emissions) / 37,186,655 (2016 CO2e) * 100 = -19%
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

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)	2902869	113820896.07	116723765.07
Consumption of purchased or acquired electricity	<Not Applicable>	536770	12882469	13419239
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	3403728	<Not Applicable>	3403728
Total energy consumption	<Not Applicable>	3439639	126703365	133546732

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 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)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

62017109.42

MWh fuel consumed for the self-generation of electricity

62017109.42

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Bituminous Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

50704232.21

MWh fuel consumed for the self-generation of electricity

50704232.21

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Jet Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

264.05

MWh fuel consumed for the self-generation of electricity

264.05

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

719594.71

MWh fuel consumed for the self-generation of electricity

719594.71

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

379616.55

MWh fuel consumed for the self-generation of electricity

379616.55

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Wood

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

2902869.27

MWh fuel consumed for the self-generation of electricity

2902869.27

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Fuels (excluding feedstocks)

Propane Liquid

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

78.86

MWh fuel consumed for the self-generation of electricity

78.86

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

C8.2d

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

Bituminous Coal

Emission factor

93.28

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

Fuel Oil Number 2

Emission factor

73.96

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

Fuel Oil Number 6

Emission factor

75.1

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

Jet Kerosene

Emission factor

72.22

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

Natural Gas

Emission factor

53.06

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

Propane Liquid

Emission factor

62.87

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

Propane (total)

Wood

Emission factor

93.8

Unit

kg CO2 per million Btu

Emission factor source

US CFR 40 Part 98

Comment

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	103403030	1326538	4567182	2998
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

(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)**

4622.1

Gross electricity generation (GWh)**Net electricity generation (GWh)**

15376.31

Absolute scope 1 emissions (metric tons CO2e)

15124193.48

Scope 1 emissions intensity (metric tons CO2e per GWh)

983.6

Comment**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**Oil****Nameplate capacity (MW)**

2151.6

Gross electricity generation (GWh)**Net electricity generation (GWh)**

435.01

Absolute scope 1 emissions (metric tons CO2e)

125576.68

Scope 1 emissions intensity (metric tons CO2e per GWh)

288.68

Comment

Gas

Nameplate capacity (MW)

10556.3

Gross electricity generation (GWh)

Net electricity generation (GWh)

37497.41

Absolute scope 1 emissions (metric tons CO2e)

14829674.88

Scope 1 emissions intensity (metric tons CO2e per GWh)

395.49

Comment

Biomass

Nameplate capacity (MW)

303.31

Gross electricity generation (GWh)

Net electricity generation (GWh)

1163.45

Absolute scope 1 emissions (metric tons CO2e)

20275.61

Scope 1 emissions intensity (metric tons CO2e per GWh)

17.43

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)

5508.6

Gross electricity generation (GWh)

Net electricity generation (GWh)

44548.24

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)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Hydroelectric

Nameplate capacity (MW)

286.1

Gross electricity generation (GWh)

Net electricity generation (GWh)

876.17

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Wind

Nameplate capacity (MW)

282.65

Gross electricity generation (GWh)

Net electricity generation (GWh)

574.3

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Solar

Nameplate capacity (MW)

1290

Gross electricity generation (GWh)

Net electricity generation (GWh)

1953.26

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other 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

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)

25000.66

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

102424.15

Absolute scope 1 emissions (metric tons CO2e)

30099720.66

Scope 1 emissions intensity (metric tons CO2e per GWh)

293.6

Comment

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.

Basis for applying a low-carbon emission factor

No purchases or generation of low-carbon electricity, heat, steam or cooling accounted with a low-carbon emission factor

Low-carbon technology type

<Not Applicable>

MWh consumed associated with low-carbon electricity, heat, steam or cooling

<Not Applicable>

Emission factor (in units of metric tons CO₂e per MWh)

<Not Applicable>

Comment

C-EU8.4

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

No

C9. Additional metrics

C9.1

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

Description

Waste

Metric value

22

Metric numerator

Tons of coal combustion products beneficially used

Metric denominator (intensity metric only)

Tons of coal combustion products generated

% change from previous year

5

Direction of change

Increased

Please explain

2017 EEI ESG Sustainability Template is posted on our website. Question 9.2 – Percent of Coal Combustion Products Beneficially Used.

Description

Other, please specify (Total CO₂ Emissions Intensity)

Total Owned + Purchased Generation CO₂ Emissions Intensity (MT/Net MWh)

Metric value

0.35

Metric numerator

Metric tons of CO₂

Metric denominator (intensity metric only)

Net MWH from generation plus purchased power

% change from previous year

4.4

Direction of change

Decreased

Please explain

2017 EEI ESG Sustainability Template is posted on our website. Question 5.3.1.2 - Total Owned + Purchased Generation CO2 Emissions Intensity (MT/Net MWh).

Description

Other, please specify (Total CO2e from SF6 (Transmission))

*Total CO2e (MT) from SF6 in electric transmission and distribution equipment***Metric value**

37841

Metric numerator

n/a

Metric denominator (intensity metric only)

n/a

% change from previous year

11.7

Direction of change

Decreased

Please explain

2017 EEI ESG Sustainability Template is posted on our website. Question 5.4.1 - Fugitive CO2e emissions of sulfur hexafluoride (MT).

C-OG9.2a**(C-OG9.2a) Disclose your net liquid and gas hydrocarbon production (total of subsidiaries and equity-accounted entities).**

	In-year net production	Comment
Crude oil and condensate, million barrels	0	Dominion Energy does not operate in this category.
Natural gas liquids, million barrels	3.03	From Subpart W: Cumulative quantity of all NGLs (bulk and fractionated) leaving the gas processing plant in the calendar year. (barrels) divided by 1,000,000 to get millions of barrels
Oil sands, million barrels (includes bitumen and synthetic crude)	0	Dominion Energy does not operate in this category.
Natural gas, billion cubic feet	48.66	From Subpart W mcf divided by 1,000,000 to get bcf.

C-OG9.2b

(C-OG9.2b) Explain which listing requirements or other methodologies you use to report reserves data. If your organization cannot provide data due to legal restrictions on reporting reserves figures in certain countries, please explain this.

Dominion Energy Wexpro's proved developed producing (PDP) cost-of-service gas reserves are listed in the SEC Form 10-K filed by Questar Gas Company.

This information is provided with respect to estimated natural gas reserves, which are managed, developed, and delivered by Wexpro at cost-of-service pursuant to the Wexpro Agreement. The estimates of proved gas reserves were prepared by Wexpro's reservoir engineers. Gas reserve estimates are subject to numerous uncertainties inherent in estimating quantities of proved reserves, projecting future rates or production and timing of development expenditures. The accuracy of these estimates depends on the quality of available data and on engineering and geological interpretation and judgment. Reserve estimates are imprecise and will change as additional information becomes available. Geological and engineering data demonstrate with reasonable certainty that these quantities are recoverable under existing economic and operating conditions. Since the gas reserves operated by Wexpro are delivered to Questar Gas at cost-of-service, SEC guidelines with respect to standard economic assumptions are not applicable. The SEC anticipated this potential difficulty and provides that companies may give appropriate recognition to differences because of the effect of the ratemaking process. Accordingly, Wexpro uses a minimum-producing rate or maximum well-life limit to determine the ultimate quantity of gas reserves.

C-OG9.2c

(C-OG9.2c) Disclose your estimated total net reserves and resource base (million boe), including the total associated with subsidiaries and equity-accounted entities.

	Estimated total net proved + probable reserves (2P) (million BOE)	Estimated total net proved + probable + possible reserves (3P) (million BOE)	Estimated net total resource base (million BOE)
Row 1	71.6		

C-OG9.2d

(C-OG9.2d) Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.

	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)
Crude oil / condensate / Natural gas liquids	0		
Natural gas	100		
Oil sands (includes bitumen and synthetic crude)	0		

C-OG9.2e

(C-OG9.2e) Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.

Development type

Please select

In-year net production (%)

Net proved reserves (1P) (%)

100

Net proved + probable reserves (2P) (%)

Net proved + probable + possible reserves (3P) (%)

Net total resource base (%)

Comment

Wexpro disclosed only PDP reserves

C-OG9.3a

(C-OG9.3a) Disclose your total refinery throughput capacity in the reporting year in thousand barrels per year.

	Total refinery throughput capacity (Thousand barrels per day)
Capacity	0

C-OG9.3b

(C-OG9.3b) Disclose feedstocks processed in the reporting year in million barrels per year.

	Throughput (Million barrels)	Comment
Oil	0	Dominion Energy does not operate any oil refineries
Other feedstocks	0	Dominion Energy does not operate any oil refineries
Total	0	Dominion Energy does not operate any oil refineries

C-OG9.3c

(C-OG9.3c) Are you able to break down your refinery products and net production?

No

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	182.35	10.5		2017 Actual CAPEX
Lignite	0	0		2017 Actual CAPEX
Oil	4.61	0.3		2017 Actual CAPEX
Gas	529.05	30.6		2017 Actual CAPEX
Biomass	8.21	0.5		2017 Actual CAPEX
Waste (non-biomass)	0	0		2017 Actual CAPEX
Nuclear	179.37	0		2017 Actual CAPEX
Geothermal	0	0		2017 Actual CAPEX
Hydroelectric	5.88	0.3		2017 Actual CAPEX
Wind	1.64	0.1		2017 Actual CAPEX
Solar	985.7	56.9		2017 Actual CAPEX

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
Lighting	Smart Lighting - a network of streetlights that utilize intelligent grid devices for remote monitoring and control, and that can be operated and managed by an automated control system.	13064286	0.1	2023
Prosumer services	Prosumer Services - a framework of technologies and applications that together deliver comprehensive customer information and streamlined transactions, as well as multi-channeled engagement between Dominion Energy Virginia and its customers. This framework includes smart lighting and smart grid.	155797027	1.6	2023
Smart grid	Smart Meters - Dominion Energy Virginia proposes to fully deploy smart meters and their supporting network infrastructure across the service territory. Through this technology, the Company can remotely read smart meters and send commands, inquiries, and upgrades to individual smart meters, minimizing the need for field visits. The technology will also allow the Company to identify outages rapidly and precisely, leading to faster restoration after both small disruptions and widespread events caused by major storms. Continuous data analytics leveraging smart meters and upgrades to infrastructure that allow for a smarter, greener, grid.	1456109565	14.5	2023
Other, please specify (DER Application Automation Cost)	Small Scale Distributed Energy Resources (DER) Application Automation Cost (Other)	100000	0	2023

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

June 1 2015

Investment end date

June 1 2016

Investment area

R&D

Technology area

Renewable energy

Investment maturity

Large scale commercial deployment

Investment figure

930000

Low-carbon investment percentage

100

Please explain

Dominion Energy participates in the Clear Sky Technology Fund. Through the company's participation in the fund, Dominion Energy is invested in NextTracker. NextTrack provides an innovative new design for utility scale trackers. This product increases the amount of energy produced by a solar installation. In June 2015, Clearsky Technology Fund invested \$5 Million in NexTracker. The company designs and engages with contract manufacturers to build single-axis tracking systems for utility-scale and large commercial photovoltaic solar projects to improve power output by 1% to 2%. The company was purchased by Flextronics in September of 2015. Dominion, among others, has several sites utilizing NexTracker technology.

Investment start date

May 1 2013

Investment end date

May 1 2014

Investment area

Products

Technology area

Renewable energy

Investment maturity

Large scale commercial deployment

Investment figure

90000000

Low-carbon investment percentage

100

Please explain

In 2012, Dominion Energy formed Tredegar Solar Fund I, an entity managed by Dominion Energy's Corporate Strategies Group now called Spruce Finance Inc. Formally Clean Power Finance and focused on unregulated residential solar projects. The Fund owns residential roof-top solar systems that are originated and administered by Clean Power Finance, Inc., a provider of solar finance products, in which Dominion has a small indirect equity investment. The systems are subject to power purchase agreements with third parties. In September 2013 and December 2013, Dominion Energy's Board of Directors approved incremental investments in the Fund, for a total authorized investment of \$90 million. As of August 2015, the Fund has installations in service totaling nearly \$90 million. The Fund is involved in the financing of residential solar rooftop projects in New Jersey, Massachusetts, and California.

Investment start date

September 1 2017

Investment end date

September 1 2018

Investment area

R&D

Technology area

Other, please specify (Applied research and development)

Investment maturity

Applied research and development

Investment figure

Low-carbon investment percentage

100

Please explain

Between Sept 2017 and March 2018, DETI completed a proof of concept (POC) utilizing Big Data Analytics to improve processes around Lost and Unaccounted for Gas with Space Time Insights (STI). The POC proved that significant efficiencies would be gained by using machine learning, data visualization and business rules to more readily identify meter anomalies. Clearsky Technology Fund invested in STI starting 2012 until recently when the company was acquired by Nokia in April 2018. Currently, Dominion Energy is examining the best method to scale the technology.

Investment start date

July 1 2014

Investment end date

Investment area

R&D

Technology area

Other, please specify (Microgrid, Battery Storage, Fuel Cells)

Investment maturity

Pilot demonstration

Investment figure

Low-carbon investment percentage

100

Please explain

Dominion Energy completed construction of its microgrid demonstration project at its North Carolina Kitty Hawk District Office in July 2014. The microgrid project included innovative distributed renewable generation and energy storage technologies. A microgrid, as defined by the DOE, is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid, allowing it to operate in grid-connected or island mode. The project included four different types of micro-wind turbines, a solar PV array, and a lithium-ion battery integrated behind the-meter with the existing on-site diesel generator and utility feed. In the third quarter of 2015, the Company integrated two small, residential-sized fuel cells in order to study the fuel cell's interaction with the on-site renewable energy technologies in a microgrid environment. The knowledge gained from this microgrid project has been used to further assess the best practice for integrating large amounts of intermittent generation (such as wind and solar PV) into the existing grid. Dominion Energy received federal Investment Tax Credits and North Carolina Renewable Energy Tax Credit incentives to develop the Microgrid Demonstration. As of June 30, 2016, the total net cost of the project with both federal and state tax incentives was \$844,195.46.

Investment start date

January 1 2013

Investment end date

December 31 2016

Investment area

R&D

Technology area

Other, please specify (Research Partnerships)

Investment maturity

Basic academic/theoretical research

Investment figure

1700000

Low-carbon investment percentage

100

Please explain

Research Partnerships: Dominion Energy partners with about a dozen Virginia colleges and universities, providing \$1.7 million in funding for a variety of renewable energy and alternative technology research projects. The projects include high-efficiency solar cells, advanced offshore wind technologies, and the integration of battery storage with solar distributed generation, among others.

Investment start date

January 1 2013

Investment end date

December 31 2013

Investment area

Equipment

Technology area

Renewable energy

Investment maturity

Applied research and development

Investment figure

1600000

Low-carbon investment percentage

100

Please explain

Dominion Energy Virginia is leveraging our experience with the Coastal Virginia Offshore Wind Project (CVOW) to support the development of a commercial offshore wind generation facility. The Company bid \$1.6 million on September 4, 2013, winning the lease for 112,799 acres of submerged federal land off the coast of Virginia to develop a commercial offshore wind turbine facility capable of generating up to 2,000 MW of electricity, enough for 500,000 homes. The Company continues to comply with the lease obligations (effective November 1, 2013) established by the Bureau of Offshore Energy Management (BOEM), part of the U.S. Department of the Interior. On October 12, 2017, BOEM approved the Dominion Site Assessment Plan (SAP), which describes the activities (e.g. installation of meteorological buoys, surveys, etc.) that will be performed for the wind resource characterization, as the development effort continues. The Site Assessment Term will run through October 2022, with the Construction and Operations Plan (COP) due 6 months before the end date of the Site Assessment Term.

Investment start date

January 1 2017

Investment end date

December 31 2017

Investment area

Equipment

Technology area

Renewable energy

Investment maturity

Large scale commercial deployment

Investment figure

930000000

Low-carbon investment percentage

100

Please explain

Solar Projects implemented in 2017: A total of 18 solar projects totaling 462 MW generating capacity: -Solvay Solar Energy: 71.4 MW -Ridgeland Solar: 10 MW -IS37 Solar: 78.7 MW -Midway II: 30 MW -Clarke County Solar: 10 MW -Cherrydale Solar: 20 MW -Fremont Solar: 5 MW -Moorings2: 5 MW -Clipperton Solar: 4.7 MW -Pikeville Solar: 4.7 MW -Wakefield: 5 MW -Ocean Solar: 17.6 MW -Remington Solar: 19.8 MW -Southampton Solar: 100 MW -Buckingham Solar: 19.8 MW -Correctional Solar: 20 MW -Sappony Solar: 20 MW -Scott II Solar: 20 MW

C-OG9.7

(C-OG9.7) Disclose the breakeven price (US\$/BOE) required for cash neutrality during the reporting year, i.e. where cash flow from operations covers CAPEX and dividends paid/ share buybacks.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	No third-party verification or assurance
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No emissions data provided

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, but we are actively considering verifying within the next two years

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.

RGGI

C11.1b

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

RGGI

% of Scope 1 emissions covered by the ETS

100

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

0

Allowances purchased

896519

Verified emissions in metric tons CO2e

896519

Details of ownership

Facilities we own and operate

Comment

The emissions in metric tons CO2e were “certified” by the compliance entity, Dominion, per the requirements of the Regional Greenhouse Gas Initiative (RGGI). RGGI does not require that emissions be verified. Additionally, compliance obligations under RGGI are in terms of CO2, not CO2e and in terms of U.S. short tons. Furthermore, compliance requirements for RGGI are on a three year period. Therefore, “Allowances purchased” do not correlate with our 2017 purchases. The emissions reported are CO2 emissions only because RGGI relates to CO2 emissions only.

C11.1d

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

The Regional Greenhouse Gas Initiative (RGGI) is a market-based cap and trade program among nine Northeastern and Mid-Atlantic states (RI, CT, DE, MA, ME, MD, NH, NY, VT) to reduce emissions of carbon dioxide (CO2), the principal gas that contributes to climate change. The program establishes a regional budget (cap) of CO2 allowances and each state's allocation of CO2 allowances under the budget. Each state promulgated regulations ([CO2 Budget Trading Program](#) and [Allowance Distribution Rules](#)) consistent with the Model Rule. These regulations require electric power generators with a capacity equal to or greater than 25 MWe (megawatt electrical), to surrender a tradable CO2 allowance for each ton of CO2 they emit. Through quarterly allowance auctions, emission allowances are purchased and States invest the proceeds from the auctions into energy efficiency and conservation, renewable non-carbon emitting energy technologies, cost-effective direct rate relief for consumers and direct rate relief for low-income consumers.

One of Dominion's facilities, Manchester Street, is subject to RGGI. Beginning with calendar year 2009, RGGI requires that Dominion cover each ton of CO2 direct stack emissions from these facilities with either an allowance or an offset. The allowances can be purchased through auction or through a secondary market. Dominion plans to comply through a combination of strategies including procurement of RGGI allowances in regional auctions, secondary market purchases of RGGI allowances, as well as greenhouse gas offset procurement. Dominion periodically participated in RGGI allowance auctions to date and has procured allowances to meet its estimated compliance requirements under RGGI for 2009 through 2017 and partially for 2018. In March 2018, Dominion surrendered 2,871,283 RGGI allowances to meet its 2015-2017 compliance obligation.

The Dominion Energy Cove Point LNG Terminal contains four (4) units subject to RGGI through the Maryland CO2 Budget Program. The Dominion Energy Cove Point LNG Terminal complies with the Maryland CO2 Budget Program through the Maryland Limited Industrial Exemption Set-aside Account. To be eligible for the Maryland Limited Industrial Exemption Set-aside Account, the Dominion Energy Cove Point LNG Terminal has implemented a Maryland Department of the Environment (MDE) approved Climate Action Plan developed to reduce CO2 emissions across the entire Dominion Energy Cove Point LNG Terminal.

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?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

- Navigate GHG regulations
- Drive energy efficiency
- Drive low-carbon investment
- Stress test investments
- Identify and seize low-carbon opportunities

GHG Scope

- Scope 1
- Scope 2
- Scope 3

Application

Price is applied to all business units with particular emphasis on the power generation business. Using a price for carbon allows DE to quantify the cost impacts of CO2 emissions. It also allows for a "level playing field" when evaluating demand side resources of other zero or low emitting supply side resources. The price for carbon is used in all internal modeling of DE's current and future assets.

Actual price(s) used (Currency /metric ton)

Variance of price(s) used

Depending on the carbon program being evaluated, and the time period, the price for carbon typically varies between ~\$3 per Ton CO2 to ~\$50/Ton CO2.

Type of internal carbon price

- Shadow price
- Implicit price

Impact & implication

Using a price for carbon allows DE to quantify the cost impacts of CO2 emissions. It also allows for a "level playing field" when evaluating demand side resources of other zero or low emitting supply side resources. The price for carbon is used in all internal modeling of DE's current and future assets.

C12. Engagement

C12.1

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

- Yes, our suppliers
- Yes, our customers
- Yes, other partners in the value chain

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

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Other, please specify (supplier evaluation database)

% of suppliers by number

% total procurement spend (direct and indirect)

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

In 2017, as part of our planning for a new community solar program, we utilized a public stakeholder process to help shape the program and the RFP for individual solar projects. Solar suppliers and solar advocates were invited to provide input regarding the program design, ranging from rate structure to best practices from a procurement standpoint.

Impact of engagement, including measures of success

Because the company had not been issued an RFP for small solar projects (less than 10 MW), the input provided by stakeholders was very informative and resulted in an RFP design more appropriate for this type of program. The RFP was issued in the Fall of 2017, projects were selected, and the corresponding regulatory filing was made shortly thereafter.

Comment

Going forward we plan to leverage our relationship with the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA) to engage our suppliers as we work to be a more sustainable supply chain. Our membership with EUISSCA gives us the opportunity and forum to benchmark our environmental performance/progress against industry peers. Each year EUISSCA does a supplier survey that includes an assessment of environmental practices and whether those practices are standard across the supplier's organization. The survey is extensive and provides questions for a range of suppliers and industries.

Type of engagement

Other, please specify (Engagement with environmental suppliers)

Details of engagement

Other, please specify (Supplier monitoring and accountability)

% of suppliers by number

% total procurement spend (direct and indirect)

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

We evaluate suppliers/vendors environmental performance. We also monitor and hold vendors/suppliers who work on-site to high environmental standards and are accountable for their performance with regulators and other stakeholders to best practices from a procurement standpoint.

Impact of engagement, including measures of success

If a supplier does not meet up to the high environmental standards, then they may not be selected to continue being a supplier for Dominion Energy in the future. The high standards that the suppliers are held to, has helped to maintain environmental awareness as a focus in the services that are provided to Dominion Energy.

Comment

Going forward we plan to leverage our relationship with the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA) to engage our suppliers as we work to be a more sustainable supply chain. Our membership with EUISSCA gives us the opportunity and forum to benchmark our environmental performance/progress against industry peers. Each year EUISSCA does a supplier survey that includes an assessment of environmental practices and whether those practices are standard across the supplier's organization. The survey is extensive and provides questions for a range of suppliers and industries.

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

Size of engagement

0.5

% Scope 3 emissions as reported in C6.5

0.2

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

ThermWise is our Utah program that promotes the use of energy-efficient appliances and practices to reduce natural gas usage. In 2017, the program paid rebates to approximately 76,049 Utah customers. To ensure affordability, ThermWise has filed for a total 2018 budget for Energy Efficiency of \$24.5 million, forecasting that more than 81,000 customers will participate in the program in 2018. ThermWise is forecasting 1.15 million dekatherms of natural gas savings from 2018 programs, which equates to the annual usage of nearly 14,500 customers. The ThermWise Energy program generates a Comparison Report which is a customized report for Dominion Energy Utah customers who are interested in seeing how their energy-usage compares to similar homes in their area. In addition, the report provides tips on how best to manage energy use, cut costs and save money. The report is updated regularly to help customers measure their conservation progress.

Impact of engagement, including measures of success

Program Spend 2017: \$22 million -Total 2017 Rebates Paid: Nearly 76,049 (90% approval rate) -Total Dekatherm Savings 2017: Nearly 900,000, equivalent to 47,718 metric tons CO2 savings (900,000 dekatherms times 0.053 metric tons CO2 per dekatherm.) -Savings are equivalent to approximately 11,000 general service residential customers.

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

Size of engagement

% Scope 3 emissions as reported in C6.5

0

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

The Energy Assistance team travels across the state hosting and attending community events. The team provides low-cost/no-cost tips to reduce energy usage and information about available bill payment programs. To ensure the team is working in the areas of most need, demographic data is used to target the correct regions and market appropriately to drive participation. At events, the team uses a systematic approach to provide the most needed information. Along with providing energy efficiency literature, hands on demonstrations on conservation products are used to ensure the customer can associate the products to the energy usage and the usage impact to their bills. In addition, the team gives the customer conservation product(s) that can be used in the home. These products include energy efficiency kits, LED light bulbs, weather-stripping, caulk, faucet aerators and hot water gauges. Using all of these measures provides a holistic approach of assisting with the immediate crisis as well as long term solutions through changing customer behaviors. Since 2015, the Energy Assistance team has participated in over 950 outreach events, reaching more than 400K of our most vulnerable customers (at-risk, low income, seniors, veterans and persons living with disabilities). The team's mission is to proactively educate them about how activities in the home impact their energy usage and therefor impact their utility bill.

Impact of engagement, including measures of success

The team has seen growing success based on the increased number of requests and events completed each year since the program expansion in 2015. A total of 157 events were attended in 2015, with more than double attended in 2017 at 424 events. The team is on track to increase the number of events to 440 in 2018. Beyond the educational component, the Energy Assistance team has distributed over 50,000 9W LED light bulbs to customers across Virginia. In one year, customers can save potentially more than \$6.00 for each traditional 60W incandescent light bulb replaced by a 9W LED light bulb (average use of 3 hours/day). For 50,000 LED's, that is a potential savings of almost \$300K annually or \$7M based on a 23 year average life span (savings are based on generic 11¢/kWh – not indicative of Dominion Energy's rate).

Type of engagement

Other, please specify (Consumer Education)

Details of engagement

<Not Applicable>

Size of engagement**% Scope 3 emissions as reported in C6.5**

0

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

The Company's consumer education initiatives include providing demand and energy usage information, educational opportunities, and online customer support options to assist customers in managing their energy consumption. The Company's website has a section dedicated to energy conservation that contains helpful information for both residential and non-residential customers, including information about the Company's DSM programs. Through consumer education, the Company is working to encourage the adoption of energy-efficient technologies in residences and businesses in Virginia and North Carolina. Examples of how the Company seeks to increase customer awareness include newsletters, news releases, social media, online calculators and outreach.

Impact of engagement, including measures of success

Not tracked quantitatively

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

Size of engagement

99

% Scope 3 emissions as reported in C6.5

0

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

Nearly 42 percent of Virginia and North Carolina customers have chosen to receive their bill notification electronically. We encourage customers to reduce paper usage by choosing to participate in our eBill paperless billing program, which saves energy and decreases deforestation. Customers can create on-line accounts via dominionenergy.com to view and pay bills electronically and enroll in programs such as paperless billing, energy conservation and the Dominion Energy Green Power® Program. All residential customers are invited to participate in the eBill paperless billing program. Key account customers are educated about Dominion Energy products and partnerships are developed to meet customer requests for renewables by building Solar.

Impact of engagement, including measures of success

Nearly 42 percent of Virginia and North Carolina customers have chosen to receive their bill notification electronically. Through 2017, more than 28,000 electric customers were enrolled in Dominion Energy Green Power®, our voluntary green pricing program in and around Virginia.

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

Dominion Energy engages with other partners in the value chain in various ways. Renewable energy is an important aspect of Dominion Energy's environmental strategy, and Dominion Energy engages with both customers and other partners to develop solar partnerships. Several of these programs are detailed in previous questions, including customer programs such as Net Metering, Solar Purchase programs, and the Green Power Program; other such programs are described here.

In 2015, Dominion and a partnership team were selected to receive a 3-year award for up to \$2.5 million from the U.S. Department of Energy to assist in expanding solar power in Virginia. The funding will be used to develop short- and long-term strategies to make solar energy more cost-competitive with traditional energy sources without raising rates for other customers. Dominion's partnership team consists of the Virginia Department of Mines, Minerals, and Energy; the City of Virginia Beach; Old Dominion University; Metro Washington Council of Governments; Bay Electric Co., Inc.; Piedmont Environmental Council; Virginia Community College System; and the National Renewable Energy Laboratory. Four solar studies have been completed that assessed the impacts of increased solar penetration on the generation, transmission, and distribution systems, the potential reduction of soft costs and tax normalization, as well as best practices for implementing community solar programs across the country. The results of these studies will be used to develop a solar strategy for the Commonwealth of Virginia in consultation with a team of stakeholders from across the Commonwealth.

In 2017 the University of Virginia and Dominion Energy announced another partnership that would aid in the schools efforts to meet its sustainability goals. Under a 25-year agreement, the University will purchase the entire output of a proposed 120-acre solar facility in Middlesex County. The solar facility, developed by Coronal Energy, will be constructed and owned by Dominion Energy. It will produce an estimated 15 megawatts of alternating current, or about 9 percent of the University's electric demand. The facility is expected to be operational in late 2018. The UVA Puller Solar facility joins the previously announced UVA Hollyfield Solar facility. In total, the two sites will produce 32 megawatts of solar energy and will offset about 21 percent of the University's electric demand. In the past, Dominion Energy has also partnered with universities in Virginia to conduct various Research and Development projects. These R&D partnerships were carried out from 2013 through 2016, and totaled over \$1.8 million dollars funded to twelve different Virginia universities for R&D projects such as solar, biomass, and offshore wind studies.

In 2017, Dominion Energy engaged in a number of collaborative efforts with stakeholders including year-long discussions with the "Rubin Solar Collaborative" working toward policy consensus to advance solar development in Virginia. The group met more than 50 times in 2017, including multiple public stakeholder meetings and conversations. The group focused on utility-scale solar, small-scale solar, land use and permitting, and implementation of community solar. The collaboration was helpful for both parties – we sought input from solar and environmental advocates and other utilities in developing our community solar program. They helped design the request for proposal (RFP) based on best practices. As a result, multiple RFPs were issued, and the program was filed with our regulators.

In 2017, we announced a partnership with DONG Energy (now called Orsted) to move forward with developing two test turbines approximately 27 miles off the coast of Virginia. The announcement is the culmination of many years of collaboration, dating back to 2011. We are the only regulated utility moving forward with an offshore wind installation. Stakeholders helped design and allow the project to be the first of its kind to go through certain types of federal permitting (some steps took 3 or more years). When the initial RFP resulted in high costs, more than 100 stakeholders and subject matter experts were gathered by Dominion. The stakeholder interactions were professionally facilitated and resulted in a series of revised RFPs, helped drive out a significant amount of cost, and ultimately led to the announcement with Orsted in 2017. Dominion Energy has partnered with/using new technology/vendors for methane emission reduction programs.

The development of the annual Integrated Resource Plan (IRP) involves engagement and feedback from Dominion Energy stakeholders. Dominion Energy engages with Dominion Energy customers, non-governmental organizations, and regulators during the development of the IRP.

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
- Other

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
Other, please specify (Solar Legislation) <i>Solar legislation as a product of Rubin solar</i>	Support	We participated in Rubin Solar collaborative discussions with solar and environmental advocates, utilities, business associations and developed and supported legislation such as community solar (SB 1393), agricultural generators (SB 1394) expansion of solar permit by rule (SB 1395).	For each of the three bills highlighted expansion of access was a common theme. The community solar legislation was the first of its kind for Virginia and supported by a broad group of stakeholders. The agricultural generator legislation provides an alternative compensation mechanism if elected by agricultural self generator and expands system size limits. The permit by rule legislation significantly reduces the time required for regulatory approval for solar projects 150 MWs or less.
Carbon tax	Undecided	While no carbon tax legislation is currently being considered at the federal level, Dominion Energy remains engaged with other utilities that have supported creation of a federal economy wide greenhouse gas emissions reduction program in the past. In addition, through membership in trade associations and think tanks, Dominion Energy continues to be part of a dialogue among other companies about possible regulatory and legislative vehicles to curtail greenhouse gas emissions.	There is currently no comprehensive carbon emission reductions legislation being considered by Congress. While Dominion Energy has supported economy wide cap and trade legislation in the past when it was debated, current efforts are focused on conversations about what potential legislative or regulatory options for regulation might look like rather than on specific existing legislation given that legislation is not currently being contemplated.
Energy efficiency	Support	Together with a broad diverse group of stakeholders, Dominion Energy engaged several times to discuss the key components of the energy efficient legislation. As a result the legislation was amended to reflect stakeholder input and therefore, was able to achieve more expansive support.	Supported transformational legislations to enable the Company to install and promote significantly more renewable energy, energy efficiency, and grid modernization. Some highlights of the legislation include a determination that 5500 MWs of renewable energy is in the public interest. This is an eleven fold increase over the previous amount. It also commits the company to filing 870,000,000 worth of energy efficiency programs during the next 10 years. The legislation also calls for a stakeholder input process on key energy topics such as net metering, broad band access and energy efficiency.

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Clean energy generation	Support	Dominion Energy helped develop and support significant legislation which was ultimately signed in to law in 2018 named the Grid Transformation and Security Act, the legislation declares 5500 MW of solar and wind energy in the public interest including specific carve out for offshore wind and rooftop solar. It also includes more than one billion dollars of future energy efficiency filings and shareholder funded programs to provide bill payment assistance and free weatherization to low income customers. As a result of the legislation Dominion Energy, has since publically committed to having 3000 MW of renewable energy operational or under development in Virginia within the next 4 years. In January 2018, the Virginia Department of Environmental Quality (DEQ) issued a proposed rule to regulate carbon emissions from electric generating units in Virginia. In written comments, the company generally supported the concept of designing a program that would allow for emissions trading and would position the program to be "trading-ready, to the extent the Commonwealth's proposal pursued establishing a statewide emissions cap, and also provided input on key features essential to designing a reasonable and workable program to address carbon emissions. In October 2015, the U.S. EPA published final regulations under sections 111(b) and 111(d) of the Clean Air Act, known as the "Carbon Pollution Standards" and the "Clean Power Plan," respectively. Following the publication of the final regulations, several states and parties challenged the Clean Power Plan. Dominion Energy joined other utilities and parties to intervene in that case in support of the flexible compliance options provided by the Clean Power Plan.	Dominion Energy and other utilities intervened to support the Clean Power Plan. However, the Supreme Court has issued a stay on implementation of that regulation. In addition, U.S. EPA has proposed to repeal the Clean Power Plan and is undertaking a rulemaking process for a potential replacement for the Clean Power Plan.
Mandatory carbon reporting	Support	Dominion Energy is committed to transparency and disclosure of its greenhouse gas emissions and began reporting greenhouse gases, including methane emissions, from our natural gas and electric businesses years before being required by the Environmental Protection Agency (EPA). This includes emissions from electric generating stations with units subject to the Acid Rain program, electric transmission and distribution system containing SF6 in insulating equipment, and natural gas processing, transmission, distribution and storage facilities. Dominion Energy willingly discloses its methane emissions, estimation methods, and reduction practices to the public. The company has the most comprehensive public methane disclosures of any peer gas company. Dominion Energy performs greenhouse gas leak surveys and uses methods specified by the EPA under the mandatory reporting program, along with publicly available and peer reviewed protocols, to estimate methane emissions beyond what is required for submittal to EPA. Measurement and estimation methods follow those specified in EPA's Mandatory Greenhouse Gas Reporting Program, as well as other publicly available industry protocols for sources not covered by that rule. In 2017, we published our second methane management report on our website dominionenergy.com, which discusses our efforts to measure, mitigate, and reduce methane emissions from our natural gas business. We plan to update this report in 2018. Dominion Energy actively engaged in the public comment and review process during EPA's development of the mandatory GHG reporting rules under 40 CFR Part 98, The Company generally supported the reporting rules and provided recommendations to improve technical and operational accuracy.	The Mandatory Greenhouse Gas Reporting is a mandatory rule that Dominion Energy supported.
Regulation of methane emissions	Support	In July 2015, the EPA announced the next generation of its voluntary Natural Gas STAR Program, the Natural Gas STAR Methane Challenge Program. The program covers the entire natural gas sector from production to distribution, with more emphasis on transparency and increased reporting for both annual emissions and reductions achieved through implementation measures. In March 2016, Dominion Energy and four of its subsidiaries joined the EPA as founding partners in the new Methane Challenge program and submitted implementation plans in September 2016. In 2017, Dominion Energy met with Congressional offices to encourage continued funding of the Methane Challenge and Natural Gas Star programs.	In March 2016, Dominion Energy and four of its subsidiaries joined the EPA as founding partners in the new Methane Challenge program and submitted implementation plans in September 2016.
Cap and trade	Support with major exceptions	While no cap and trade legislation is currently being considered at the federal level, Dominion Energy remains engaged with other utilities that have supported creation of a federal economy wide cap and trade program in the past. In addition, through membership in trade associations and think tanks such as the Center for Climate and Energy Solutions, Dominion Energy continues to be part of a dialogue among other companies about possible regulatory and legislative vehicles to curtail greenhouse gas emissions.	There isn't currently comprehensive carbon emission reductions legislation being considered by Congress. While Dominion Energy has supported economy wide cap and trade legislation in the past when it was debated, current efforts are focused on conversations about what potential legislative or regulatory options for regulation might look like rather than on specific existing legislation given that legislation is not currently being contemplated.

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

American Gas Association Center for Liquefied Natural Gas Consumer Energy Alliance Edison Electric Institute Greater Akron Chamber of Commerce Greater Cleveland Partnership Interstate Natural Gas Association of America National Association of Manufacturers New England Power Generators Association Nuclear Energy Institute U.S. Chamber of Commerce Virginia Chamber of Commerce Others

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

Dominion Energy belongs to a wide range of federal and state trade associations reflecting the business in which we operate. These organizations engage to varying degrees and advance a range of positions on climate change issues. We do not necessarily subscribe to an organization's beliefs or positions by virtue of various memberships.

How have you, or are you attempting to, influence the position?

Dominion Energy works with trade associations in its government relations activities. Depending on their roles, these organizations may be subject to lobbyist registration and disclosure reporting obligations, with their reports made available to the public by the federal and state agencies overseeing lobbying activities. For the trade associations where Dominion Energy has contributed \$50,000 or more, and the organization informs the Company a portion of annual dues was used for lobbying, Dominion Energy discloses the name of the trade association and the dollar amount used for lobbying in its Annual Report of Contributions which is discussed above.

C12.3d

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

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Dominion Energy actively participates in the political process to help shape policies that advance our business strategies and goals, promote effective public and government relations, and serve the interests of key stakeholder groups. By engaging with elected officials, regulators, community and business leaders, and environmental and safety agencies, among others, we strive to conduct our business as transparently as possible in hopes of building public trust and forming lasting partnerships that are mutually beneficial.

Dominion Energy engages registered lobbyists, both federal and state, to support its legislative and regulatory activities. These lobbyists are carefully selected and are engaged only with the approval of our senior governmental affairs officer at the appropriate entity.

Management provides regular updates on lobbying activities to the CEO or to the President of the applicable subsidiary. When appropriate, management also discusses Company lobbying activities with Dominion Energy's Board of Directors as part of its oversight responsibilities.

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?

Dominion Energy centralizes communication and implementation of environmental policies through our Environment and Sustainability business group to ensure direct and indirect activities are consistent with our climate change strategy. We have a clear and consistent environmental policy statement implemented through a recently enhanced environmental management system. Through engagement with a wide range of federal and state trade associations reflecting the business in which we operate, we communicate our positions to industry peers. We establish and revise our positions as issues and regulations evolve and we continuously validate the positions through corporate executive and management briefings. From time to time our position differs from that of a trade group, and we may not agree to sign-on to their positions if inconsistent. We do not necessarily subscribe to an organization's beliefs or positions by virtue of membership.

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

DOM17CSR-Sustainable-Value.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Publication

In mainstream reports

Status

Complete

Attach the document

0001193125-18-059578.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Publication

In other regulatory filings

Status

Complete

Attach the document

2018-irp.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Publication

In voluntary sustainability report

Status

Complete

Attach the document

methane-management-report-2017 (rev 2018).pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

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	Vice President, Environmental Services	Other, please specify (Vice President, Environmental Services)

Submit your response

In which language are you submitting your response?

English

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	Investors

Please confirm below

I have read and accept the applicable Terms