FirstEnergy Corporation - Climate Change 2020

C0. Introduction

C0.1

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

Headquartered in Akron, Ohio, FirstEnergy (NYSE: FE) is a forward-thinking electric utility powered by a diverse team of employees committed to making customers' lives brighter, the environment better and communities stronger. Our subsidiaries are involved in the transmission, distribution, and regulated generation of electricity.

Our workforce of approximately 12,000 employees is dedicated to safety, reliability and operational excellence. Our 10 electric distribution companies form one of the nation's largest investor-owned electric systems, based on serving 6 million customers in Ohio, Pennsylvania, New Jersey, West Virginia, Maryland and New York. The company's transmission subsidiaries operate approximately 25,000 miles of transmission lines connecting the Midwest and Mid-Atlantic regions.

On February 27th, 2020 FirstEnergy Solutions split from FirstEnergy and reformed as a new company named Energy Harbor (EH). Due to this all EH data has been removed and we will no longer be reporting on their data.

For the purposes of this CDP report, all financial and emissions information is based on FirstEnergy's 2019 year-end portfolio.

This report contains forward looking statements based on information available to the company. For more information, including our full forward-looking statement please visit: https://www.firstenergycorp.com/content/fecorp/investor/engagement.html

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
Reporting year	January 1 2019	December 31 2019	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas 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 chosen approach for consolidating your GHG inventory.

Operational control

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

Please select

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	The Chief Executive Officer of FirstEnergy Corp, is responsible for management of climate change issues for FirstEnergy. The CEO is a member of the Board of Directors. FirstEnergy's Board of Directors provides oversight of significant issues for FirstEnergy including those related to climate change. Periodic updates, including those related to business strategy and legislative and regulatory policies and initiatives, are provided to the Board and/or Board committee on climate change by senior executives. The Board and the Board's Audit Committee and the Corporate Governance, Corporate Responsibility and Sustainability Committee discuss climate change in the context of Risk Management and Corporate Responsibility.

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	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Company's Chief Risk Officer regularly provides updates to the Board's Audit Committee regarding risk management (which incorporates climate change/environmental matters) and the full Board receives a related report from the Company's Chief Risk Officer at least annually. As further discussed on page 1 of the Company's 2019 proxy statement, the Board's Compensation Committee approved "Operational Linkage" (that includes an environmental component) as a short-term incentive program (STIP) performance metric for certain executive officers. The status of this STIP performance metric is regularly reported to the Board and the Board's Finance Committee. The Board's Corporate Governance, Sustainability and Corporate Responsibility Committee oversees corporate citizenship practices including environmental, social and governance ("ESG") and sustainability initiatives. As further discussed on page 15 of the Company's 2019 proxy statement, in recruiting and selecting Board candidates, the Board's Corporate Governance, Sustainability and Corporate Responsibility Committee considers a "skills matrix" to determine whether those skills and/or other attributes qualify candidates for service on the Board. The attributes, experiences, qualifications and skills considered in accordance with Corporate Governance Policies and the Corporate Governance, Sustainability and Corporate Responsibility Committee charter for each director nominee allows the Board to determine if the nominee is qualified to serve on FirstEnergy's board.

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Other, please specify (Senior Vice President, Strategy)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other, please specify (Vice President, Risks & Internal Audit)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Corporate responsibility committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	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 (do not include the names of individuals).

FirstEnergy's Chief Executive Officer is responsible for management of climate-related issues for the company and our Board of Directors provides oversight. The Corporate Governance and Corporate Responsibility Committee of the Board of Directors expanded its responsibilities in 2018 to include oversight of the company's sustainability and corporate responsibility strategy. This Committee solely comprises independent directors and typically meets five times per year to discuss updates on a broad range of issues related to corporate governance and corporate responsibility, such as ESG initiatives. Company management updates the Committee regularly throughout the year.

In addition, we established a cross-functional, executive-level steering committee to review our corporate responsibility strategy and initiatives and provide updates to the Corporate Governance and Corporate Responsibility Committee. Members of this group include senior leadership from the Community Involvement, Corporate, Environmental, Human Resources, Investor Relations, Risk and Strategy departments.

FirstEnergy's Senior Vice President, Strategy is responsible for overseeing the company's corporate responsibility strategy. The Corporate Responsibility organization includes a dedicated staff who are focused on the companies environmental, social, governance (ESG) and corporate responsibility initiatives, including climate risks and opportunities. The SVP Strategy is also responsible for the long-term strategic plan of the organization. As part of the organizational design the Corporate Responsibility department was included under the Strategy portion of the organization in order to ensure that sustainability is included in the company's long-term strategy.

FirstEnergy's Vice President, Risk & Internal Audit, reports to the Senior Vice President and Chief Legal Officer. The Risk and Internal Audit teams have an established process for continuous review of risks and governance processes to effectively manage risks. The process is supported by FirstEnergy leadership, the Board of Directors and the Board's Audit and Finance Committees.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

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

Entitled to incentive	Type of incentive	Activity inventivized	Comment
All employees	Monetary reward	Other (please specify) (Environmental Excursions and NOVs)	FirstEnergy's compensation program is based on the fundamental premise of Pay for Performance, this includes base pay and incentive pay. FirstEnergy offers short term incentive programs (STIP) to reward outstanding performance and achievement of business goals. FirstEnergy 's business goals include achieving financial goals as well as operational goals. Achieving financial goals are predicated upon successful execution of FirstEnergy's operations. FirstEnergy employee's compensation under our STIP is directly impacted by the number of environmental excursions - either independently or as one of six components in our Operations Index for 2019. Environmental Excursions and notice of violation's (NOV) is one of our Key Performance Indicators and includes all regulatory reportable air emissions, water discharges or other unauthorized releases that exceed the allowable limitations, conditions or deadline established in the facilities' environmental permits and all NOV's issued by a Federal, State or Local Regulatory Agency for the violation of an environmental law or regulation.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	FirstEnergy's short-term horizons are considered to be within one year.
Medium-term	1	3	FirstEnergy's medium-term horizons are considered to be from 1-3 years.
Long-term	3	5	FirstEnergy's long-term horizons are considered to be from 3-5, or more years.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

FirstEnergy identifies substantive financial and/or strategic risks through an assessment process that includes several factors. Examples of these factors include, but are not limited to:

- Injury or health exposure
- Direct financial loss
- Violation of applicable laws or regulations
- Adverse impact to customers
- Interruption to core business operations
- Adverse reputational impact
- Adverse environmental impact

To determine whether the risk is substantive, FirstEnergy evaluates the possible impact for each of these factors, as well as the likelihood of occurrence. A substantive impact of relatively high magnitude could include any combination of risk factors

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
We operate in a business environment that involves significant risks, many of which are beyond our control. Management regularly evaluates the most significant risks and reviews those risks with the FirstEnergy Board of Directors or appropriate Committees of such Board.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	FirstEnergy's Regulatory Compliance and Reporting department regularly monitors and reports on the utility commissions' regulations in the states in which we operate (Ohio, Pennsylvania, New Jersey, West Virginia, Maryland, and New York) to eliminate the risk of non-compliance. In addition, FirstEnergy's Environmental, External Affairs, and Legal Departments specifically monitors USEPA's regulations.
Emerging regulation	Relevant, always included	FirstEnergy's Environmental, External Affairs, and Legal Departments continuously monitor emerging climate related statutes; regulations, such as the Affordable Clean Energy (ACE) rule; judicial decisions; and regulatory proceedings. Emerging statutes, regulations, or EPA actions under existing rules could be impactful to FE operations; particularly the 3082 MW of regulated scrubbed coal in WV (Fort Martin and Harrison Power Stations) owned by FE's subsidiary, Monongahela Power Company. New statutes, regulations, or EPA actions are reviewed by the appropriate departments to determine potential impacts to the company's operations with respect to carbon pricing as it relates to long term planning, opportunities for improvements, and risks. At a minimum, emerging risks are reviewed by the Enterprise Risk Management (ERM) team during a formal semi-annual risk interview process with participation by Corporate Strategy and Responsibility and Long-Term Planning, in addition to the three departments noted above.
Technology	Relevant, always included	Technology in the energy space continues to develop and change and the electric grid needs to be able to enable change. Since 2010, FE has constructed and studied Smart Grid technology through pilot projects in Ohio, Pennsylvania, and New Jersey. These improvements have produced quantifiable improvements in reliability and resiliency. FE continues to monitor and study the evolution of technology and adapt in ways that will benefit our customers. We partner with industry experts, DOE, Universities, and EPRI to guide our analyses and modernization efforts. In 2017, the Emerging Technologies Roadmap was developed to address how best to integrate new technologies. For example, FirstEnergy is part of pilot studies/programs involving energy storage, microgrids, and electric vehicles. FirstEnergy completes a detailed roadmap review every two years and refines the signposts annually.
Legal	Relevant, always included	FirstEnergy's Legal Department actively monitors changes and/or additions to Federal and/or State laws and regulations for the areas in which we operate (Federal – United States; States - Ohio, Pennsylvania, New Jersey, West Virginia, Maryland, and New York). For example, FirstEnergy Legal regularly updates ERM on potential litigation risk associated with environmental laws for the costs of remediating environmental contamination of property now or formerly owned by FE, and of property contaminated by hazardous substances.
Market	Relevant, always included	Monitoring of market and commodity prices is relevant and always included – including monitoring of NOx and SOx markets. FirstEnergy's Environmental department, among others, continuously monitors and discuss NOx and SOx markets, and existing and emerging regulations to assess potential impact to our regulated scrubbed coal fleet (Harrison and Fort Martin).
Reputation	Relevant, always included	FirstEnergy takes reputation risk very seriously across all facets of the organization. As an example, FirstEnergy's Environmental, Transmission and Utility Operations work together to ensure compliance with environmental laws and regulations, including those related to the Endangered Species Act. There are numerous species that are State and/or Federally listed as threatened or endangered species within the region of the United States in which we operate (i.e. the northern long-eared bat). As FirstEnergy plans for and executes projects we work to ensure protection of these species. While this not only provides compliance with environmental laws and regulations, it also provides benefit to the environment, and reduces risk to our reputation.
Acute physical	Relevant, always included	The requirements for the National Pollutant Discharge Elimination System (NPDES) is an example of an acute physical risk. Acute physical risk includes the potential cost of environmental compliance with future air, water, waste or climate regulations.
Chronic physical	Relevant, always included	As part of our efforts to support climate change mitigation, FirstEnergy has invested over $1.6 billion dollars in environmental control systems in our two-coal generating facilities Harrison and Ft. Martin Power Stations. FirstEnergy's coal generation plants are equipped with scrubbers that remove 98 percent of the sulfur dioxide emissions. The Harrison Power Station is equipped with selective catalytic reduction systems that removes nitrogen oxides from the flue gases. The Ft. Martin Power Station is equipped with electrostatic precipitators that remove fly ash from flue gases. Both of our power stations recycle 100% their non-contact cooling water. This list in not meant to be all-inclusive but instead a highlight of our commitment to minimizing our impact on climate change.

C2.3

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

C2.3a

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

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Current regulation	Mandates on and regulation of existing products and services

Primary potential financial impact
Please select

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2019 FirstEnergy conducted a two-degree scenario analysis as a part of our climate report. This scenario described dramatic change in the 6 states in which FirstEnergy operations (Ohio, West Virginia, Pennsylvania, New Jersey, Maryland, and New York). The anticipated scale and pace of those changes present a risk to our transmission and distribution system that consists of more than 277,000 miles of distribution lines, and approximately 25,000 miles of transmission lines, as well as our more than 6 million customers. As a fully regulated utility, the implications to FirstEnergy of the changes outlined in the scenario analysis present strategic risks since the ability to implement the required charges are dependent on future public policy and regulatory decisions that would allow for regulated utilities to own renewable generation and electric vehicle charging stations. Federal and state regulatory frameworks would need to adapt to the changing market, operational and technological conditions to achieve the decarbonization described in the scenario. These changes would necessitate market reforms and pricing mechanisms that create financial incentives to integrate renewable generation, incentive retirements of fossil plants and support expansion of the transmission grid. Policy and regulatory reforms would be needed at an accelerated pace to ensure regulated utilities have enough resources to provide safe, reliable and affordable service that is responsive to customer preference.

Time horizon
Medium-term

Likelihood
About as likely as not

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
FirstEnergy cannot currently estimate the financial impact of climate change policies, although they could have a negative impact on FirstEnergy's revenues and operations.

Cost of response to risk
0

Description of response and explanation of cost calculation
To manage this risk, we actively engage with federal and state legislators, regulators, customers and other stakeholders to facilitate an open and constructive dialogue on changing market conditions and appropriate measures required to maintain high-quality service for our customers. With our transition to a fully-regulated utility company, we are well-positioned to respond to and fulfil evolving customer preference. For example, residential and commercial customers can make use of our new value-added products and services that can help them save energy and improve the quality of their lives. For instance, customers with smart meters can access our Energy Analyzer Tool on their smartphones to view energy consumption data. The tool provides energy saving tips and data that can help them better understand their energy usage and manage their monthly electric bills. In addition, we work with state and federal policymakers to educate and advance FirstEnergy's position on legislative and regulatory proposals that shape FirstEnergy's future. Policymakers who understand our vision, mission and strategies can help support our efforts toward a brighter energy future.

Comment
The cost of management of climate-related policy and legal risks are incorporated in our business plan.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Technology	Other, please specify (Electricity Transmission)

Primary potential financial impact
Please select

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
The scenario analysis FirstEnergy conducted envisions a future with widespread electrification, including extensive use of electric vehicles and widespread conversion to heat pumps in residential, commercial and industrial buildings. This increase would result in the need to accommodate dramatic increases in load during peak and non-peak hours, thereby potentially causing an operational risk to the transmission and distribution system. In a highly electrified economy such as the one described in the scenario analysis, the loss of power would not just mean loss of lighting and refrigeration; it would also mean losing the ability to heat homes and businesses, power transportation and communication systems, and operate water and sewage pumps. According to FirstEnergy's analysis, transportation load on the electric system increases from virtually zero today to more than 95 million MWh per year by 2050 across the six-state region (Ohio, Pennsylvania, New Jersey, Maryland, West Virginia, and New York) where we operate. To put that in perspective, 95 million MWh represents an approximately 20 percent increase over total current electric consumption within the region.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
FirstEnergy cannot currently estimate the financial impact of operational risks, however they could cause increased costs to our company and our customer.

Cost of response to risk
0

Description of response and explanation of cost calculation
As part of our management method of this risk, FirstEnergy's Energizing the Future transmission investment program and comparable improvements on the distribution system are critical to providing a more flexible system that can respond to the continually changing demand and power flows on the system. From 2014 to 2018, we invested nearly $5.6 billion on grid improvement projects, and we are on track to invest approximately $1.2 billion per year on our transmission system from 2019-2021. Of the $1.2 billion per year, we expect over 75 percent of the investment to go toward enhancing grid reliability. Looking beyond 2021, we have identified more than $20 billion in additional projects designed to help us meet the evolving energy needs of our customers, ensure service reliability into the future, add resiliency to our transmission system, meet potential future load growth in our service area, and increase physical and cyber security. FirstEnergy will continue to work with developers, researchers and policymakers to better understand these risks and help advance new technologies that are critical to the effective and efficient operation of the changing transmission and distribution system. Our ability to sustain reliable and resilient electric service is critical to our region's economic success and security. It also will be critical to building a low-carbon energy infrastructure.

Comment
The costs of this climate-related risk are part of existing management practices.

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Current regulation	Other, please specify (Changes to regulation)

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2019, FirstEnergy was subject to a number of Energy Efficiency (EE) and/or Peak Demand Reduction (PDR) requirements in Maryland, Ohio and Pennsylvania. Legislation in Maryland set eventual targets of 2% annual incremental energy efficiency savings, while Pennsylvania and Ohio has lesser goals. These requirements direct FirstEnergy to provide energy efficiency and peak demand reduction portfolios with multiple programs and hundreds of measures (covering residential, commercial and industrial offerings, and all major electric end uses, e.g. HVAC equipment, lighting technologies, building measures, behavioural programs, commercial and industrial equipment, etc.) that enable customers to reduce electric consumption and peak demand impact. These programs reduce FirstEnergy Distribution, Transmission, and Generation sales and revenues. Failure to achieve these EE/PDR requirements may subject FirstEnergy to significant financial penalties, or strain relationships with regulators and stakeholders. EE/PDR requirements and associated portfolios will continue in Maryland, Ohio, and Pennsylvania in 2020 and New Jersey requirements will

begin in 2021 with an ultimate goal in excess of 2% annual incremental energy efficiency savings per year by 2026.

Time horizon
Short-term

Likelihood
Exceptionally unlikely

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
140000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
FirstEnergy spent approximately $159 million during 2019 on its portfolios that were created in response to state Energy Efficiency and Peak Demand Reduction requirements. These costs were approved by regulatory bodies and have associated cost recovery mechanisms. Failure to meet state targets may subject the Company to financial penalties that vary by jurisdiction of up to $20 million per offense (max potential is $140 million). Additionally, FirstEnergy's distribution revenues in certain jurisdictions will be lower as a result of reduced usage arising from its Energy Efficiency and Peak Demand Reduction programs.

Cost of response to risk
0

Description of response and explanation of cost calculation
FirstEnergy developed a dedicated Energy Efficiency department that manages all programs in response to state requirements. In 2019, this department conducted monthly progress reviews and forecasted performance against these targets. FirstEnergy utility programs have a strong track record of meeting or significantly exceeding state targets. In 2019, the FirstEnergy companies produced energy efficiency savings of approximately 1,328,000 MWh, approximately 145,000 MWh in MD, 640,000 MWh in OH, 543,000 MWh in PA. FirstEnergy's energy efficiency programs help customers invest in energy efficient equipment and gain insight into their energy usage. In 2019, FirstEnergy's behavioural energy efficiency programs delivered over 5,100,000 print and email home energy usage reports to approximately 756,000 customers. By highlighting customers' energy usage characteristics and providing energy savings tips, these programs saved approximately 178,000 MWh.

Comment
Ohio regulatory structure also has revenue recovery mechanisms offsetting the impacts of reduced distribution sales. In other jurisdictions, revenue impacts based on Energy Efficiency and Peak Demand Reduction programs can only be adjusted during base rate case proceedings. While the prospect of FirstEnergy being fined the full $140 million is exceptionally unlikely, the revenue reduction in certain jurisdictions arising from its EE/PDR programs is virtually certain until such times as such Operating Companies would hold a base rate case.

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Market	Changing customer behavior

Primary potential financial impact
Decreased access to capital

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Risks Associated with Owning Coal-Fired Generation may have an Adverse Impact on our Business Operations, Financial Condition and Cash Flows FirstEnergy’s generation fleet, totalling 3,082 MWs, is coal-fired. Recently certain members of the investment community have adopted investment policies promoting the divestment of coal-fired generation or otherwise restricting new investments in coal-fired generation. The impact of such efforts may adversely affect the demand for and price of our common stock and impact our and Mon Power’s access to the capital and financial markets. Further, certain insurance companies have established policies limiting coal-related underwriting and investment. Consequently, these policies aimed at coal-fired generation could have a material adverse impact on our business operations, financial condition, and cash flows.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
FirstEnergy cannot estimate the financial impact on our business operations, financial condition and cash flows.

Cost of response to risk

Description of response and explanation of cost calculation
We continue to explore opportunities to decrease our carbon footprint.

Comment

C2.4

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

C2.4a

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

Identifier
Opp1

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Shift toward decentralized energy generation

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
We are actively working to advance the development of regulated utility-scale renewable generation across all states in our service territory. It will be important to make distributed energy resources (DERs) available in the most cost-effective way, which is to leverage economies of scale provided by a utility. FirstEnergy knows that providing utilities with the ability to own DERs is in the best interest of our customers, the environment and our communities. We support our customers' right to safely use DERs and have developed interconnection processes for solar, energy storage and other DERs consistent with the laws and regulations of individual states. As new generation technologies are developed, we will evaluate those that can be incorporated into the grid to best serve our customers and communities. We also support the use of DERs in emergency situations for critical facilities. When sited at optimal locations and owned and operated by the electric utility, distributed energy resources provide benefits to the distribution grid such as reducing peak load, providing voltage support, improving reliability and resiliency, and reducing line losses. DERs also can be a key component for utilities to enable emerging technologies, including utility scale solar, microgrids, energy storage projects and electric vehicles. To maximize the locational net benefit of DERs, utilities are in the best position to ensure their safety and reliability for the benefit of customers on the distribution grid. FirstEnergy is also exploring advanced technologies that benefit customers and promote state and federal policy efforts to enhance grid performance, environmental stewardship and recognition of electric utility involvement to develop a comprehensive EV infrastructure buildout program that facilitates electrification throughout each of our states.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
6000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
In Maryland a $6,000,000 program includes installation & ownership of up to 59 EV chargers and a rebate program for Residential and Multi-Unit Dwellings. We are currently evaluating additional programs but cannot yet estimate the financial impact of any additional programs.

Cost to realize opportunity
6000000

Strategy to realize opportunity and explanation of cost calculation
We are taking action to build a more climate resilient energy network and continue to evaluate the impacts of climate change on our business. We are working toward reducing emissions across our footprint. FirstEnergy is exploring opportunities that will result from the growing adoption of distributed generation resources and electrification. For example, in West Virginia we strongly support the economic development efforts in the state and are currently evaluating opportunities to serve our customers with sustainable energy resources. We believe our future also includes electrification implementation across our footprint and we support efforts to accelerate

customers' switch to electrified solutions. This approach will advance a cleaner energy alternative for all our customers and support efforts to reduce our region's carbon impact. In Maryland, our Potomac Edison Company is installing up to 59 utility-owned public charging stations throughout the Maryland service area. Additionally, FirstEnergy participates in research conducted by forward-thinking industry and research organizations. For example, FirstEnergy was part of a three-year collaborative research project funded by the Department of Energy's (DOE) SunShot Initiative to develop solar energy storage and a more secure and resilient electrical grid. The funding was awarded under the DOE Sustainable and Holistic Integration of Energy Storage and Solar PV, or SHINES, program. Led by the electric power research institute (EPRI), the project team also includes Case Western Reserve University, industrial companies and other utilities. As part of this project, researchers will investigate how to transform the design and operation of the electric power system to seamlessly integrate photovoltaic resources, load management and energy storage systems. We're investing in Energy Impact Partners, the world's largest venture fund focused on the transformation of the utility industry. We join a coalition of leading energy companies in supporting the development of emerging industry solutions and close-to-market utility technologies. Our participation provides exposure to new revenue opportunities, better line-of-sight to innovative technologies that can benefit our customers and the environment, and insight into future industry trends, threats and opportunities.

Comment
In Maryland a $6,000,000 program includes installation & ownership of up to 59 EV chargers and a rebate program for Residential and Multi-Unit Dwellings. Aside from our MD EV pilot, FirstEnergy cannot currently estimate the cost to realize this opportunity.

Identifier
Opp2

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

Primary potential financial impact
Please select

Company-specific description
Our utility operating companies helped customers better manage their energy use through the energy efficiency programs they offered via EnergySave Maryland, EnergySave Ohio, and EnergySave Pennsylvania. These programs also played a key role in helping the companies meet state mandates for energy efficiency. Our operating companies offered a portfolio of programs for residential, commercial and industrial customers. Our programs for residential customers included discounted compact fluorescent light and LED bulbs; rebates on the purchase of new, efficient appliances and products; rebates on the cost of home energy audits and heating, ventilation and air conditioning replacements; incentives to recycle older, less efficient refrigerators, freezers and room air conditioners; home energy usage reports and energy efficiency kits; and targeted programs for low-income customers. Our programs for commercial and industrial customers provided incentives to install efficient lighting, HVAC motors, drives and other energy-efficient equipment and processes.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
10000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
FirstEnergy's Ohio operating companies have the potential to earn financial incentives of up to $10 million after tax per year based on Energy Efficiency program performance, and an additional 20% of revenues for managing Energy Efficiency and Demand Response resources borne from the companies' Energy Efficiency program in PJM Base Residual Auctions.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
FirstEnergy is committed to our mission of making our customers' lives brighter, the environment better and our communities stronger. To support this, FirstEnergy continues to maintain a dedicated Energy Efficiency department offering energy savings programs with the goal of surpassing energy efficiency targets set by states and regulatory agencies. FirstEnergy's Energy Efficiency department conducted monthly progress reviews and forecasted performance of energy efficiency programs.

Comment
FirstEnergy cannot currently estimate the costs to realize this opportunity.

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Shift toward decentralized energy generation

Primary potential financial impact
Please select

Company-specific description
In 2019 FirstEnergy conducted a two-degree scenario analysis as part of our climate report. The scenario presents a situation in which there is a transition to a lower carbon electric grid. This future presents significant opportunities for FirstEnergy. For example, the scenario analysis requires rapid and widespread electrification of end-use technologies, including a large number of electric vehicles. Consistent with the goal to reduce economywide emissions, we support moving forward with transportation electrification. However, it is important that there is electric distribution company engagement from the beginning of this transition. Regulated electric utilities like FirstEnergy are well-positioned to offer public charging services for electric vehicles because utilities can best plan and manage regular maintenance and upkeep to avoid long plug-in electronic vehicles (PEV) service equipment downtime, optimize charging retail rates and plan for long-term infrastructure rollouts that are not subject to short-term profitability goals. Utilities also can identify PEV charging station sites in optimal locations across the service territory, considering low-income and disadvantaged neighbourhoods, travel corridors – which can help induce tourism – and optimal placement for grid interconnections. Electric utility support for electric vehicle adoption, charging infrastructure and the efficient use of electricity will yield tremendous environmental benefits, including significant CO2 reductions, by lowering emissions from transportation fuels.

Time horizon
Long-term

Likelihood
More likely than not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
900000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
FirstEnergy has included CAPEX in it's future years budgets for EV charging stations in our Potomac Edison operating company, located in Maryland.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
We will continue to research opportunities to support electrification of the transportation sector. For example, in Maryland, our Potomac Edison utility received approval to establish a utility pilot program featuring rebate and PEV charging infrastructure offerings. The programs will include customer and company-owned charging stations and customer outreach components.

Comment
FirstEnergy cannot currently estimate the costs to realize this opportunity.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?
Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?
Yes, qualitative and quantitative

C3.1b

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

Climate-related scenarios and models applied	Details
2DS	In 2019 FirstEnergy published a climate report that included a two-degree scenario analysis. The analysis is based on the International Energy Agency's 2DS (IEA 2DS). In selecting a scenario to study, our objective was to evaluate a 2DS with sufficient detail to provide meaningful insights for our business and geography. We also prioritized a publicly available analysis to promote greater transparency in the process. The structure of our analysis was guided by recommendations from the TCFD as well as a report published by Ceres and authored by MJ Bradley & Associates (MJB&A). We also took into consideration other third-party produced 2-degree scenarios, including "beyond 2-degree" scenarios that are consistent with an October 6, 2018, Special Report on Global Warming of 1.5°C from the Intergovernmental Panel on Climate Change. While the IEA 2DS publication provided a strong basis for this analysis, we engaged a consultant to develop state-level detail from the IEA 2DS for the six states where FirstEnergy primarily operates: OH, PA, WV, NJ, MD, and NY. The IEA 2DS envisions that a 90% reduction in multi-sector U.S. CO2 emissions by 2060, along with other reductions across the globe, would be necessary to limit global temperature rise to below 2 degrees Celsius. When applied to our operating states, the scenario results show significant changes in energy use across all sectors of the economy, with the largest contribution from electricity generation and transportation sectors. The electric generating fleet across our five-state region is almost completely restructured in the scenario. Renewables and other zero-carbon resources dominate the generation mix by 2050, accounting for almost 75% of electricity produced within the region. Nuclear generation accounts for almost 20% of generation followed by natural gas combined-cycle plants at 3% and coal with carbon capture and storage at 2%. All existing coal plants operating in the region (approximately 40,000 MW of capacity) are retired by 2035. Achieving this level of decarbonization would require a significant increase in utility-scale renewable energy projects with higher average capacity factors than are currently available, transmission expansions to access regions with better renewable resource potential and an increase in energy storage capacity. Through our evaluation of a 2DS, we have envisioned an ambitious reduction in economywide carbon emissions over the next several decades. We have studied the implications of this scenario on our five-state service area to better understand the risks and opportunities to our business. While this scenario is not used as a part of our current planning forecast, we are confident that we are already well-positioned to mitigate those risks, and we are exploring and acting upon many of the related opportunities that can benefit our shareholders, customers and communities. These actions include the continued implementation of our Corporate Responsibility, Emerging Technologies, Regulated Generation, and Transmission and Distribution strategies. The insights gained from this scenario will help inform our strategic planning process.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	FirstEnergy's Risk Management group proactively works with stakeholders to minimize risks and maximize opportunities associated with new and existing products and services. This process remains the same regardless if the product/services are climate related or not. Risk workshops are held with key stakeholders for each product and/or service at the discovery phase as well as the development phase. At the discovery phase, a risk register is built out with identified risks/opportunities, quantified to the extent possible, and associated mitigation strategies and/or pivots are identified. This is an iterative process and is continually updated as information is received. In the development phase, additional risks/opportunities and/or new risks/opportunities (if product has pivoted) are identified, measured and have developed mitigation strategies documented. Enterprise risk management will provide a final recommendation per the review of the results of each workshop that is presented to executive management for signoff.
Supply chain and/or value chain	Yes	FirstEnergy's Risk Management group proactively works with stakeholders to minimize risks and maximize opportunities associated with climate change. Uncertainty presents both risk and opportunity which is why it is essential all stakeholders be involved in the identification of risks as we seize opportunities to maximize value. By understanding the full range of potential events, we are able to identify risk responses and seize growth opportunities by offering new value-added products and services, investing in our infrastructure, and re-aligning our operations as a regulated utility. Given FirstEnergy is a larger purchaser, we have the ability to influence the move toward more sustainable supply chain practices by taking into account environmental and social risks and benefits with our suppliers. Through our procurement decisions, we continuously work to create efficiencies and improve environmental and safety performance by collaborating with our suppliers to maintain the highest quality standards while minimizing their impacts on natural resources. In addition, we value supplier diversity in all aspects of our business and supply chain practices. For example, we connect certified, diverse businesses with opportunities to provide goods and services at FirstEnergy. By working to align these businesses with our company's culture, we are supporting long-term business growth while sharing of vision of inclusiveness. Having diversified business relationships enhances competition that will ultimately increase innovative products and services that improves reliability and lowers costs for everyone. In addition, the credit risk management department maintains a Supply Chain Top Vendor Report and Summary which is updated quarterly. This report details FirstEnergy's top vendors company-wide including such information as vendor name, buyer, workgroup, industry type, annual spend, credit rating, and comments from both Credit Risk and the buyer. This report is presented at a quarterly meeting with Supply Chain representatives and management. Energy Efficiency vendors are highlighted to distinguish these vendors on the report.
Investment in R&D	Yes	FirstEnergy's Risk Management group proactively works with stakeholders to minimize risks and maximize opportunities associated with climate change. Risk Workshops are held with key stakeholders for each R&D initiative. For example: The use of GORE Technology Workshops begins with the identification of all risks around investing in a new and unproven technology. Bowtie analysis are performed to identify threats and consequences. All available analytics are reviewed to determine mitigation strategies along with ERMs recommendations around the associated residual risks. This information is packaged into a Risk Assessment document to be reviewed by executive management for decision making purposes.
Operations	Yes	FirstEnergy's Risk Management group proactively works with stakeholders to minimize risks and maximize opportunities associated with climate change. Uncertainty presents both risk and opportunity which is why it is essential all stakeholders be involved in the identification of risks as we seize opportunities to maximize value. By understanding the full range of potential events, we are able to identify risk responses and seize growth opportunities by offering new value-added products and services, investing in our infrastructure, and re-aligning our operations as a regulated utility. From an operational perspective, risks are reviewed using a top down and bottom up approach. Top down: The strategic plan at the corporate level has a risk assessment performed annually with risks being analyzed both at the inherent and residual level for financial implications. Bottom up: The business unit performs project level risk assessments to ensure goals and objectives are achievable. All risks and opportunities are reviewed to ensure alignment with strategic level goals.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Access to capital Assets Liabilities	Enterprise Risk Management ("ERM") and Internal Auditing ("IA") have established a continuous review of risks and governance processes to assist the Company in achieving its objectives by effectively managing risks. The process utilizes a single risk universe for the Company to engage key stakeholders and subject matter experts in an on-going dialogue regarding risks. Risks are managed through a risk management strategy to avoid, mitigate, transfer or accept the risk. The ERM framework is used in activities from strategic and financial planning to individual projects, so risks can be effectively managed and allow the Company to use its resources to minimize the risks and seize opportunities to successfully achieve goals to maximize shareholder value. The ERM process is supported by FE leadership including, but not limited to, the Board of Directors, the Audit Committee, the Finance Committee, the Operations, Safety, and Nuclear Oversight Committee and the Risk Policy Committee. To facilitate the risk oversight process, risks can be reported by current year and out years to apprise these oversight areas of significant risks facing the company in the short and long term. The risk severity, probability and velocity will determine the urgency for quantifying and managing the risk. Project Risk Management ("PRM") is a systemic and structured analysis of project risks and is required on all major projects. PRM is tailored to the requirements of the project (i.e. budget, scope, schedule) and ERM adjusts the process to match the specific project challenges. Project risk assessment deliverables are also tailored to the requirements of the project, but usually include a risk register with a categorical list of risks with risk descriptions, risk owners, risk quantification, and risk mitigation strategies. Project risk assessments are used to allocate resources to address significant risks facing the project and FE. They can be used to support a decision to fund or not fund business decisions including but not limited to staffing levels, reporting requirements, accruals, and whether or not to contract for third party support (i.e. legal, external contractor, or consultants).

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

Risk provides Treasury the estimated cash impacts of risk events for use in determining liquidity position. Information includes but is not limited to extreme storm events, cash impacts from market exposure such as interest rate changes, variance in revenue due to weather, financial planning impacts, pension contributions, surety bond impacts and impacts related to various other contractual obligations. Information provided to Treasury is directly related to risks managed within the ERM framework.

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

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

Target reference number
Abs 1

Year target was set
2015

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1

Base year
2005

Covered emissions in base year (metric tons CO2e)
86403130

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
99.72

Target year
2045

Targeted reduction from base year (%)
62

Covered emissions in target year (metric tons CO2e) [auto-calculated]
32833189.4

Covered emissions in reporting year (metric tons CO2e)
51095630

% of target achieved [auto-calculated]
65.9091639911208

Target status in reporting year
Underway

Is this a science-based target?
No, and we do not anticipate setting one in the next 2 years

Please explain (including target coverage)
FirstEnergy's Scope 1 stationary emissions continue to decrease through the use of innovative technology and changes to fleet operations.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
No other climate-related targets

C4.3

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

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	4	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	0	0
Not to be implemented	0	0

C4.3b

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

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	FirstEnergy supports research with EPRI, government agencies, and universities to identify and evaluate technologies which can reduce emissions and which can be cost effective in supplying power to our customers.
Dedicated budget for energy efficiency	Improvements are funded by membership in EPRI for research, and through established plant operating and capital improvement budgets. Improvements in heat rate/efficiency reduces the GHG emissions by reducing the amount of coal burned to produce electricity.

C4.5

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

C4.5a

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

Level of aggregation
Company-wide

Description of product/Group of products
Energy Efficiency

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 (State regulatory programs)

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

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
State regulatory programs

C-EU4.6

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

FirstEnergy's generating fleet does not utilize natural gas in our operations, therefore methane emissions are not relevant to our organization's operations.

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 2005

Base year end
December 31 2005

Base year emissions (metric tons CO2e)
86403130

Comment
The 2005 base year emissions represent FirstEnergy's Scope 1 emissions from our generation fleet.

Scope 2 (location-based)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
1099865

Comment
The office facilities (both owned and leased), transmission and distribution lines, and substations and other electrical infrastructure that fall within the operational boundary and report electricity consumption are included in the calculation of 2019 Scope 2 emissions. 2019 Scope 2 emissions were calculated using kwh purchased for FirstEnergy's corporate locations. Regional specific emission factors were used based on the location of the buildings.

Scope 2 (market-based)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
1156210

Comment
The office facilities (both owned and leased), transmission and distribution lines, and substations and other electrical infrastructure that fall within the operational boundary and report electricity consumption are included in the calculation of 2019 Scope 2 emissions. 2019 Scope 2 market based emissions were calculated using kwh purchased for FirstEnergy's corporate locations. The corporate facilities are within FirstEnergy's territory, therefore FirstEnergy specific CO2, CH4 and N2O rates were used.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
US EPA Mandatory Greenhouse Gas Reporting Rule
US EPA Emissions & Generation Resource Integrated Database (eGRID)
Other, please specify (The World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol and supplements and the Electric Power Sector (EPS) Protocol)

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
18085006

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
FE's gross global Scope 1 emissions includes FE's stationary energy generation, fugitive emissions, and mobile sources.

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 are reporting a Scope 2, market-based figure

Comment
The World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol and supplements and the Electric Power Sector (EPS) Protocol were used to develop and calculate the both the location- and market-based Scope 2 GHG emissions for 2019.

C6.3

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

Reporting year

Scope 2, location-based
1099865

Scope 2, market-based (if applicable)
1156210

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
FirstEnergy's Scope 2 location-based emissions reflects the average emissions intensity of grids where energy consumption occurs and was calculated, generally using grid-average emission factor data. Included in this calculation were the office facilities (both owned and leased), transmission and distribution lines, and substations and other electrical infrastructure that fall within the operational boundary of FirstEnergy.

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?
No

C6.5

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

Purchased goods and services

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
FirstEnergy has not calculated Scope 3 emissions from purchased goods and services.

Capital goods

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
FirstEnergy has not calculated Scope 3 emissions for capital goods.

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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
31884188

Emissions calculation methodology
Greenhouse Gas Protocol Scope 3 Standard and Technical Guidance

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream transportation and distribution

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
FirstEnergy has not calculated Scope 3 emissions associated with upstream transportation and distribution.

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
13557.2

Emissions calculation methodology
Greenhouse Gas Protocol Scope 3 Standard and Technical Guidance

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
FirstEnergy calculated Scope 3 emissions associated with waste from mixed paper, mixed recyclable, and mixed MSW. These numbers were obtained from our waste management vendors. The total emissions calculated by EPA's WARM model was a negative number.

Business travel

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
7481.4

Emissions calculation methodology
Data obtained from both the Concur platform and in-house resources and include commercial air travel miles, employee mileage, and air travel.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
FirstEnergy's corporate travel agent, Concur, provided data for FirstEnergy employee commercial air flights, and rental cars. FirstEnergy internal records were used to include total number of miles expensed by FirstEnergy employees with their personal vehicles.

Employee commuting

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
FirstEnergy has not calculated Scope 3 emissions associated with employee commuting.

Upstream leased assets

Evaluation status
Not evaluated

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Scope 3 emissions from upstream leased assets have not been evaluated.

Downstream transportation and distribution

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Downstream transportation and distribution is capture in Scope 1 emissions.

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

Use of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Any GHG emissions associated with use of sold products are accounted for in Scope 1 emissions.

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
The production and delivery of electricity does not result in any Scope 3 emissions associated with end of life treatment of sold products.

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
FirstEnergy does not have any relevant Scope 3 emissions associated with downstream leased assets.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
FirstEnergy does not own/operate any franchises.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Any relevant GHG emissions associated with FirstEnergy's investments would be captured in Scope 1 or Scope 2 emissions.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
No additional Scope 3 upstream GHG's are considered relevant for FirstEnergy.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
No additional Scope 3 downstream GHG's are considered relevant for FirstEnergy.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
No

C6.10

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

Intensity figure
0.003

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
19184871

Metric denominator
unit total revenue

Metric denominator: Unit total
11261000000

Scope 2 figure used
Market-based

% change from previous year
3.8

Direction of change
Decreased

Reason for change
FirstEnergy's emissions continue to decrease through use of innovative technology and changes to fleet operations

C7. Emissions breakdowns

C7.1

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

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	17873731.39	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	4811.9	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	91782.9	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	114679.86	IPCC Fifth Assessment Report (AR5 – 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)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	5.03	114679.86	FirstEnergy's calculated Scope 1 fugitive emissions include SF6 emissions as reported to the EPA's GHG MRR.
Combustion (Electric utilities)	17839367.7	191.79	0	17935528.06	The total gross Scope 1 emissions also includes N20 emissions which are not asked for in this table
Combustion (Gas utilities)	0	0	0	0	FirstEnergy does not have gas utilities.
Combustion (Other)	0	0	0	0	FirstEnergy does not have other material combustion sources.
Emissions not elsewhere classified	34363.69	0.69	0	34798.13	Corporate vehicles and jets. The total gross Scope 1 emissions also includes N20 emissions which are not asked for in this table

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	18085006

C7.3

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

By facility
By activity

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
Fort Martin Power Station	6145532.7	39.423859	-79.553991
Harrison Power Station	11789995.3	39.230213	-80.195185

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Stationary	17935528
Fugitive	114680
Fleet Services	34798

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 activities	18085006	<Not Applicable>	FE's gross global Scope 1 emissions sources include stationary energy generation, mobile sources, and fugitive emissions.
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<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>

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	
Other emissions reduction activities	0	No change	0	
Divestment	0	No change	0	
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	14739822	Decreased	45	Changes in output are due to the separation of FirstEnergy and Energy Harbor data as stated in section 0.1.
Change in methodology	34798.13	Increased	100	We have included mobile sources in our scope 1 emissions
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

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 undertook this energy-related activity in the reporting year
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 (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	21126614	21126614
Consumption of purchased or acquired electricity	<Not Applicable>	0	1669045	1669045
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>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	0	22795659	22795659

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)
Subbituminous Coal

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
1531383

MWh fuel consumed for self-generation of electricity
21126614

MWh fuel consumed for self-generation of heat

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>

Emission factor

Unit
Please select

Emissions factor source

Comment

C-EU8.2d

(C-EU8.2d) 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)
3082

Gross electricity generation (GWh)
21126.61

Net electricity generation (GWh)
19595.23

Absolute scope 1 emissions (metric tons CO2e)
17935528

Scope 1 emissions intensity (metric tons CO2e per GWh)
848.95

Comment
Includes Fort Martin and Harrison power stations using gross gigawatts.

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
FirstEnergy does not have any generation from lignite.

Oil

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
FirstEnergy does not have any generation from oil.

Gas

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
FirstEnergy does not have any generation from gas.

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
FirstEnergy does not have any generation from biomass.

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
FirstEnergy does not have any generation from waste (non-biomass)

Nuclear

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
FirstEnergy does not have any generation from nuclear generating plants.

Fossil-fuel plants fitted with CCS

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
FirstEnergy does not have any generation from Fossil-fuel plants fitted with CCS.

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
FirstEnergy does not have any generation from geothermal.

Hydropower

Nameplate capacity (MW)
420

Gross electricity generation (GWh)
119.62

Net electricity generation (GWh)
0

Absolute scope 1 emissions (metric tons CO2e)
0

Scope 1 emissions intensity (metric tons CO2e per GWh)
0

Comment
Net generation for FE's hydroelectric units is -47.06 GWH, we are unable to input a negative number.

Wind

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
FirstEnergy does not have any generation from wind.

Solar

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
FirstEnergy does not have any generation from solar.

Marine

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
FirstEnergy does not have any generation from Marine.

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
FirstEnergy does not own any other renewable generating facilities.

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
FirstEnergy does not own any other non-renewable electricity generating facilities.

Total

Nameplate capacity (MW)
3502

Gross electricity generation (GWh)
21246.23

Net electricity generation (GWh)
19548.17

Absolute scope 1 emissions (metric tons CO2e)
17935528

Scope 1 emissions intensity (metric tons CO2e per GWh)
844.05

Comment
Total Generation for FirstEnergy

C-EU8.4

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

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region
United States of America

Voltage level
Transmission (high voltage)

Annual load (GWh)
176655

Annual energy losses (% of annual load)
4.1

Scope where emissions from energy losses are accounted for
Scope 2 (location-based)

Emissions from energy losses (metric tons CO2e)
980576

Length of network (km)
39406.39

Number of connections
6132000

Area covered (km2)
168349.23

Comment
FirstEnergy calculates transmission and distribution losses as a whole as part of the Scope 2 and does not provide a breakdown between the two entities. For the purposes of this CDP report our total combined scope 2 location-based T&D emissions from energy losses (metric tons CO2e) is 980,576.

Country/Region
United States of America

Voltage level
Distribution (low voltage)

Annual load (GWh)
161379

Annual energy losses (% of annual load)
6.3

Scope where emissions from energy losses are accounted for
Scope 2 (location-based)

Emissions from energy losses (metric tons CO2e)
980576

Length of network (km)
434025.59

Number of connections
6132000

Area covered (km2)
168349.23

Comment
FirstEnergy calculates transmission and distribution losses as a whole as part of the Scope 2 and does not provide a breakdown between the two entities. For the purposes of this CDP report our total combined scope 2 location-based T&D emissions from energy losses (metric tons CO2e) is 980,576.

C9. Additional metrics

C9.1

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

C-EU9.5a

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

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment

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
Charging networks	FirstEnergy has included CAPEX in it's future years budgets for EV charging stations in our Potomac Edison operating company, located in Maryland. The estimated CAPEX spend for 2020 is included here.	1500000		

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	FirstEnergy's Smart Meter program began in four of our operating companies (Met-Ed, Penelec, Pennsylvania Power Co, and West Penn Power Company) in 2015 and through 2019 has included more than $480,000,000 in investment. This Smart Meter program in those regions is planned to continue through 2022.

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

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Unable to disaggregate by technology area	<Not Applicable>	Please select		FirstEnergy's Smart Meter program began in four of our operating companies (Met-Ed, Penelec, Pennsylvania Power Co, and West Penn Power Company) in 2015 and through 2019 has included more than $480,000,000 in investment. This Smart Meter program in those regions is planned to continue through 2022.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

C10.1a

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

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
High assurance

Attach the statement

Page/ section reference

Relevant standard
Other, please specify (The World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol and supplements, Electric Power Sector (EPS) Protocol)

Proportion of reported emissions verified (%)
99

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?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 1)	EPA Continuous Emissions Monitoring Systems (CEMs) Relative Accuracy Tests Audits (RATA) procedures certify monitors to ±10%.	FirstEnergy's Scope 1 emissions from the generation facilities are considered high quality and verified.

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)?
No, and we do not anticipate being regulated in the next three years

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
Stakeholder expectations
Stress test investments

GHG Scope
Scope 1

Application
A 2020 Reference Forecast is currently being evaluated and will be approved in Q3 2020. That forecast is based on Wood Mackenzie's Reference case and will include an implicit CO2 tax beginning in 2028. FirstEnergy's most recent Reference Forecast for power, capacity and natural gas was approved in 2018. It is consistent with current policy and the 2018 EIA AEO, and as such, does not include an implicit carbon price. However, we develop an alternative forecast scenario that assumes a potential carbon reduction policy with key assumptions consistent with the reductions mandated in the Clean Power Plan. Using information from Navigant Consulting and internal planning tools, we estimated a CO2 emission "tax" which would be sufficient to reduce aggregate carbon emissions across PJM by forcing a re-dispatch of the generation fleet (with regard to the other assumptions in that scenario). That carbon price is presented in the next section. We do not assume a specific variance in that price.

Actual price(s) used (Currency /metric ton)
0

Variance of price(s) used
Reference Case: zero - reflective of current applicable State and Federal regulations and policy trends. Highest Carbon Price Case: prices reflect a limit consistent with the Clean Power Plan $/ton $/metric ton 2019 $- $- 2020 $- $- 2021 $- $- 2022 $- $- 2023 $2.61 $ 2.88 2024 $4.78 $ 5.27 2025 $9.97 $10.98 2026 $14.21 $ 15.67 2027 $26.91 $ 29.66 2028 $31.86 $ 35.12 2029 $36.30 $ 40.01 2030 $38.36 $ 42.84 2031 $40.39 $ 44.52 2032 $41.97 $ 46.26 2033 $43.61 $ 48.07 2034 $45.29 $ 49.93 2035 $47.05 $ 51.86 2036 $48.86 $ 53.86 2037 $50.76 $ 55.96

Type of internal carbon price
Other, please specify (See application description.)

Impact & implication
As a regulated utility, we are investing in our infrastructure to enable emerging technologies and electrification. We are also making the switch to a cleaner energy future by transitioning to renewable energy sources, deploying smart technologies and meeting our customers' energy needs in a more environmentally sustainable way. We're also taking aggressive steps to improve the environmental performance of our operations in the years ahead. We've established a goal to reduce CO2 emissions companywide by at least 90 percent below 2005 levels by 2045. This goal builds on the significant reduction in CO2 emissions we have already achieved since 2005 (62% to date). With the deactivation of several older coal-fired units and improvements in the efficiency of our remaining generating units, we're also creating a fleet that is increasingly cleaner, with significantly lower CO2 emissions. FirstEnergy is an industry leader in pursuing new technologies that show promise in achieving CO2 and other emissions reductions.

C12. Engagement

C12.1

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

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)

% of customers by number
100

% of customer - related Scope 3 emissions as reported in C6.5
0

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
FirstEnergy offers multiple programs to residential, commercial and industrial customers to help them better manage their energy use. These include major electricity end uses, such as HVAC equipment, lighting and building technologies, and commercial and industrial equipment, in addition to consumer behavioural programs.

Impact of engagement, including measures of success
In 2019, FirstEnergy's Energy Efficiency Department conducted monthly progress reviews and forecast our performance against state requirements. Programs offered by our utility companies have a solid track record for meeting or significantly exceeding each state's energy efficiency targets. In 2019, we produced energy efficiency savings of approximately 1.33 million megawatts across our service area.

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

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
Energy efficiency	Support with minor exceptions	FirstEnergy supported numerous bills where Energy and Efficiency was a component at both the state and federal level. FirstEnergy supports Energy Efficiency measures that are in the best interest of its customers.	FirstEnergy supports energy efficiency measures that are cost effective for its customers.
Clean energy generation	Support	FirstEnergy is a supporter of Research and Development technologies such as small modular reactors and energy storage.	FirstEnergy has supported state clean energy legislation.
Adaptation or resilience	Support	FirstEnergy supported grid resiliency, critical infrastructure efforts, and fuel security provisions in legislative language.	FirstEnergy is committed to supporting the electric infrastructure, mitigate power outages, continued delivery of vital services and maintaining the flow of power to facilities critical to public health, safety, and welfare of our customers.

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
Edison Electric Institute (EEI)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
EEI member companies are committed to addressing the challenge of climate change and have undertaken a wide range of initiatives over the last 30 years to reduce, avoid or sequester GHG emissions. Policies to address climate change should seek to minimize impacts on consumers and avoid harm to U.S. industry and the economy.

How have you influenced, or are you attempting to influence their position?
FirstEnergy serves in a leadership role, participates in several committees including the ESG/Sustainability committee, and actively engages in EEI policy development and advocacy efforts.

Trade association
Association of Edison Illuminating Companies, Inc.

Is your position on climate change consistent with theirs?
Unknown

Please explain the trade association's position
AEIC encourages research and enables the exchange of technical information and best practices through a committee structure, staffed with experts from management of member companies, to solve challenges and create opportunities for electric utilities, worldwide.

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

Trade association
New Jersey Utilities Association, Inc.

Is your position on climate change consistent with theirs?
Unknown

Please explain the trade association's position
While NJUA has referenced climate change in response to other issues, to our knowledge they have no official position on climate change.

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

Trade association
Energy Association of Pennsylvania

Is your position on climate change consistent with theirs?
Unknown

Please explain the trade association's position
While EAP is engaged on climate-related issues where they may intersect with the interests of its member companies, it does not at this time have a formal position on climate change.

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

C12.3e

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

FirstEnergy participates in the electric power research institute (EPRI) which conducts research on all aspects of electric power production and use, including fuels, generation and delivery, efficient management of energy use, environmental effects, and energy analysis.

FirstEnergy also participates in other initiatives with industry R&D consortiums and universities to address technology needs for its various business units in areas such as plant operaitons and maintenance, major component reliability, environmental controls, advance energy technoloiges, and transmission/distribution infrastructure to improve performance, and develop new technologies for advanced energy and grid applications.

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?

FirstEnergy has multiple policy-facing groups that work together to ensure that all direct and indirect activities that influence policy are consistent with our overall climate strategy. These groups work closely and coordinate with one another on all climate-related issues to ensure consistency in our corporate position. The Policy and Support group handles internal coordination to ensure consistent positions throughout the company on both federal and state legislation and market policy issues. The Policy and Support group has a policy process that responds to policy proposals. The process begins with our External Affairs Team identifying proposed legislation or other issues that needs a FirstEnergy position/response. Then the proposed legislation/issue is sent to an Initial Review Team composed of internal subject matter experts to review and develop a position. Finally, the position is reviewed and approved by a cross functional Management Review Team.

FirstEnergy's Emerging Technologies team is responsible for developing the overall corporate strategy as it pertains to new, emerging technologies in the electric industry, such as energy storage, distributed energy resources and grid modernization. As part of that responsibility, the Emerging Technologies team is also responsible for monitoring and developing strategies as it pertains to policies at the state and federal level that drive the development of these technologies. The Emerging Technologies team is a key internal stakeholder that provides expertise and guidance on climate-related legislation at the federal and state levels as well .

FirstEnergy's Environmental Department leads the Company's efforts and strategy as it pertains to all environmental regulations, guidelines, and initiatives at the local, state, and federal level; including climate-related issues dealing with regulation, policy, socio-economic impacts, and adaptation. The Environmental group is a key internal stakeholder that provides expertise and guidance on climate-related legislation at the federal and state levels as well.

FirstEnergy's Corporate Responsibility team is responsible for evaluating ways to create long-term stakeholder value through the implementation of a business strategy that focuses on positive impact to our stakeholders including leading efforts on our Environmental, Social, Governance strategy and our recently published Climate Report. The Corporate Responsibility group is a key internal stakeholder that provides expertise and guidance on climate related legislation at the federal and state levels as well.

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 communications

Status
Complete

Attach the document
FE Climate Report.pdf

Page/Section reference

Content elements
Emissions figures
Emission targets

Comment

Publication
In voluntary communications

Status
Complete

Attach the document
FirstEnergy_CorporateResponsibilityReport.pdf

Page/Section reference

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication
In mainstream reports

Status
Complete

Attach the document
FE 2020 Annual Report.pdf

Page/Section reference

Content elements
Governance
Strategy
Risks & opportunities

Comment

C15. 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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Senior Vice President and Chief Strategy Officer	Other C-Suite Officer

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

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

Please confirm below
I have read and accept the applicable Terms