

C0. Introduction

C0.1

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

TC Energy proudly delivers the energy that millions of North Americans rely on to power their lives and fuel industry.

Guided by core values of safety, integrity, responsibility and collaboration, our people are deeply rooted in their communities and ensure we develop and operate our facilities in an economically, socially and environmentally sustainable manner. We are committed to working closely with our neighbours and key stakeholders to develop better project plans and create long-term opportunities and economic benefits in the communities where we operate across Canada, the United States and Mexico.

Our success is achieved in large part by the efforts and actions of more than 7,500 people who work on our behalf. From our corporate offices to our field operations, we actively seek out a wide range of candidates for all positions; recognizing that diverse backgrounds, cultures, opinions, expertise and skills drive innovation and strengthen our teams.

We have three complementary energy infrastructure businesses:

Natural Gas Pipelines - Our 93,300-kilometre (57,900-mile) network of natural gas pipelines supplies more than 25% of the clean-burning

natural gas consumed daily across North America. This pipeline network strategically connects growing supply in the most prolific basins on the continent to key markets across Canada, the U.S. and Mexico. In addition to our natural gas pipelines, we have regulated natural gas storage facilities in the U.S. with a total working gas capacity of 535 billion cubic feet (Bcf), making us one of the largest providers of natural gas storage and related services to key markets in North America.

Liquids Pipelines - Our 4,900-kilometre (3,000-mile) liquids pipeline system connects growing continental oil supplies to key markets and refineries. The Keystone System delivers approximately 20% of western Canadian exports to the U.S. Midwest and Gulf Coast, where it is converted into fuel and other useful petroleum products.

Power and Storage - TC Energy's portfolio of high-quality, long-life energy infrastructure assets currently includes investments in six low-emission natural gas-fired power plants and the Bruce Power nuclear facility, resulting in a combined generating capacity of approximately 4,200 megawatts (MW). Nearly three-quarters of the power we provide is generated from an emission-less nuclear power facility and we are leaders in the development and operation of high efficiency, natural gas-fired generating stations. On April 29, 2020, we completed the sale of our Halton Hills and Napanee power plants as well as our 50 per cent interest in Portlands Energy Centre. Halton Hills and Portlands Energy Centre were operating under TC Energy ownership in 2019 and their emissions are included in this questionnaire.

We also own and operate approximately 118 Bcf of non-regulated natural gas storage capacity in Alberta non-regulated natural gas storage assets.

For further details about our business, including additional details on the scope, size and strategy of our operations, please refer to our 2019 Annual Report. For more recent information about our business beyond the 2019 time frame of this report, please review our subsequent quarterly filings.

TC Energy's common shares trade on the Toronto (TSX) and New York (NYSE) stock exchanges under the symbol TRP.

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.

- Canada
- Mexico
- United States of America

C0.4

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

- CAD

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.

Equity share

C-EU0.7

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

Row 1

Electric utilities value chain

Electricity generation

Other divisions

Gas storage, transmission and distribution

C-OG0.7

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

Row 1

Oil and gas value chain

Midstream

Other divisions

Grid electricity supply from gas

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 President and Chief Executive Officer reports to the Board of Directors of the Company, although sits on the Board as a non-independent director. He is not a member of any of our committees but is invited to attend committee meetings as required. He is responsible for our overall leadership and vision in developing with our Board our strategic direction, values and business plans. This includes overall responsibility for operating and growing our business while managing risk, including climate-related risks, to create long-term sustainable value for our shareholders. His role and primary responsibilities also include: i) managing the overall business to ensure strategic and business plans are effectively implemented within the authority limitations delegated by the Board, the results are monitored and reported to the Board, and financial and operational objectives are attained; ii) managing the business to create sustainable long-term shareholder value; and, iii) ensuring the identification and communication to the Board of all material risks along with mitigation plans and procedures. The full Terms of Reference for the CEO can be found within the following document: https://www.tcenergy.com/siteassets/pdfs/about/governance/TC Energy-terms-of-reference-ceo-02-14-2011.pdf
Board Chair	The Chair of the Board is responsible for ensuring that the Board and Committees are organized properly, functions effectively and meets its obligations and responsibilities, including the mandates of each Board committee. The Chair's role includes coordinating the affairs of the Board, working with management (primarily the CEO), and ensuring effective relations with Board members, shareholders, other stakeholders and the public. Climate-related issues are included in the mandate of the Health, Safety and Environment Committee of the Board (now the HSSE Committee), which, in 2019, was updated to include "sustainability" to recognize the growing intersection of governance, risk, environmental and social issues. The full Terms of Reference for Chair of the Board of Directors can be found within the following document: https://www.tcenergy.com/siteassets/pdfs/about/governance/TC Energy-terms-of-reference-board-directors-10-2012.pdf
Board-level committee	The HSSE committee is responsible for oversight of health, safety, sustainability, security and environmental matters (HSSE matters). The committee reviews and monitors the performance and activities of TC Energy HSSE matters including compliance with applicable and proposed legislation, conformance with industry standards and best practices. It also monitors the performance of actions and initiatives undertaken by TC Energy to prevent, mitigate and manage risks related to HSSE matters, including climate change-related risks and any critical incidents respecting our assets, operations, personnel and public safety. In addition to its existing activities, the HSSE committee also reviews reports on climate-related risks and opportunities (physical, technological, regulatory and social), receives information on stakeholder engagement on sustainability issues, oversees management's approach to voluntary reporting on sustainability matters, and reports and updates on initiatives with operations, research and development, and projects that support sustainability.
Board-level committee	The Governance committee oversees the risk management activities of TC Energy. The committee monitors, reviews with management and makes recommendations related to TC Energy's risk management programs and policies on an ongoing basis. This includes overseeing the Enterprise Risk Management (ERM) framework and process and meets with management annually to ensure there is proper Board and committee oversight according to the terms of their charters. The committee also recommends, along with the respective committee (or executive) assigned responsibility for specific risks, any enhancements to our risk management program and policies to the Board. The Governance committee focuses on risk management process and management allocation of risks by way of the following: <ul style="list-style-type: none"> • Reviews TC Energy's emerging risks with management at each committee meeting. • Oversees the enterprise risk register and mapping of enterprise risks with management annually to ensure there is proper Board and committee oversight according to the terms of their charters. • Ensures that we have management programs in place to mitigate those risks. • Recommends, along with the respective committee (or executive) assigned responsibility for specific risks, any enhancements to our risk management program and policies to the Board.

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	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding risk management policies Reviewing and guiding business plans Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures 	<Not Applicable>	<p>The Board's primary responsibilities are to foster long-term success & sustainability, oversee our business affairs & management, & to act honestly, in good faith & in the best interests of TC Energy. The Chair is responsible for ensuring that the Board is organized properly, functions effectively & meets obligations & responsibilities. The role includes coordinating the affairs of the Board, working with management (primarily CEO), & ensuring effective relations with Board members, shareholders, other stakeholders & the public. The Governance committee has accountability for overseeing the strategy development process & works with management to identify & discuss emerging issues, elevating topics for discussion with the entire Board as necessary. The Governance Committee is responsible for overseeing our ERM Framework which provides for management systems & processes for identification, evaluation, prioritization, mitigation & monitoring of risk. It also guides management in planning the annual strategy session. We update our 5-year strategic plan annually during a 2-day strategic planning session where the Board reviews, discusses & approves the revised & extended strategic plan. Management includes an assessment of energy fundamentals, the competitive environment & the stakeholder landscape to identify opportunities & threats to our business strategy. This session informs annual strategic priorities & performance measures. Throughout the year, the Board monitors management's progress toward achieving strategic goals. At each scheduled Board meeting, management provides updates on the human, technological & capital resources required to implement our strategy & relevant regulatory, environmental & social issues that may impact the execution of our strategy. The HSSE committee oversees operational risk, people & process safety, security of personnel, environmental & climate-change related risks, & monitors development & the implementation of systems, programs & policies related to HSSE matters through regular reporting from management. We use an integrated management system that establishes a framework for managing these risks, & which is used to capture, organize, document, monitor & improve our related policies, programs & procedures. The HSSE committee also: •reviews reports on climate change-related laws & regulations & their potential impact on TC Energy •reviews reports on climate-related risks & opportunities (physical, technological, regulatory & social) •receives information on stakeholder engagement on sustainability issues •oversees management's approach to voluntary reporting on sustainability matters •reports & updates on initiatives with operations, research & development, & projects that support sustainability. The Management Risk Committee manages climate-related risk through each of the distinct enterprise risks listed in our proxy to ensure transition plans align with the other actions being planned & executed on each risk.</p>

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
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Chief Sustainability Officer (CSO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

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

The CEO position is at the highest level of executive leadership at TC Energy. The President and Chief Executive Officer reports to the Board of Directors of the Company, although sits on the Board as a non-independent director. He is not a member of any of our committees but is invited to attend committee meetings as required.

He is responsible for our overall leadership and vision in developing with our Board our strategic direction, values and business plans. This includes overall responsibility for operating and growing our business while managing risk, including climate-related risks, to create long-term sustainable value for our shareholders.

His role and primary responsibilities also include:

- managing the overall business to ensure strategic and business plans are effectively implemented within the authority limitations delegated by the Board, the results are monitored and reported to the Board, and financial and operational objectives are attained;
- managing the business to create sustainable long-term shareholder value; and,
- ensuring the identification and communication to the Board of all material risks along with mitigation plans and procedures.

The full Terms of Reference for the CEO can be found within the following document:

https://www.tcenergy.com/siteassets/pdfs/about/governance/TC_Energy-terms-of-reference-ceo-02-14-2011.pdf

Effective May 1, 2019, TC Energy appointed our first Chief Sustainability Officer (CSO), in addition to his role as Executive Vice-President, Stakeholder Relations and General Counsel. The CSO is responsible for directing the coordination, communication and management of sustainability-related issues for TC Energy, particularly the intersection of risk, governance, environmental and social issues. The CSO, a member of the Executive Leadership Team (ELT), reports to the HSSE committee of the Board on sustainability matters, including climate-related issues, as well as to the CEO and the rest of the executive leadership team. The CSO role formalizes our commitment to sustainability by establishing a coordination role at the highest level of the organization, and communicates with management, shareholders, customers, employees and other stakeholders to address sustainability matters, including climate-related issues.

TC Energy made additional significant improvements in 2019 to further embed sustainability into the governance, risk management and day-to-day operations of our organization. We added "Sustainability" to the mandate of the Health, Safety and Environment Committee of the Board (now the HSSE Committee) to recognize the growing intersection of governance, risk, environmental and social issues.

The HSSE committee of TC Energy's Board oversees operational risk, people and process safety, security of personnel, environmental and climate change related risks, and monitors development and implementation of systems, programs and policies relating to HSSE matters through regular reporting from management. We use an integrated management system that establishes a framework for managing these risks and is used to capture, organize, document, monitor and improve our related policies, programs and procedures. In 2019, there were 3 regularly-scheduled HSSE committee meetings, which included monitoring progression of the company's approach to sustainability and the company's voluntary disclosure on sustainability matters, as well as updates to Canadian and U.S. air emissions and greenhouse gas legislation, climate change initiatives and related compliance matters.

In addition to the HSSE oversight of climate-related issues, the Governance committee oversees our risk management process. The Board reviews emerging risks with management at each meeting to ensure that we have management programs in place to mitigate those risks. The Governance committee reviews the enterprise risk register with management annually to ensure there is proper Board and committee oversight according to the terms of their charters. The committee also recommends, along with the respective committee (or executive) assigned responsibility for specific risks, any enhancements to our risk management program and policies to the Board. In 2019, there were 4 regularly-scheduled Governance committee meetings, which included a review of identified principal enterprise risks with management to ensure we have proper Board and committee oversight and management programs in place to mitigate risks.

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	No, not currently but we plan to introduce them in the next two years	TC Energy does not currently have climate-related issues targets included in the incentive structure, although risk reduction related to optimization & utilization of our existing asset base, is included as a Key Performance Area indicator. TC Energy's compensation programs are designed to 'pay for performance' by rewarding employees, including our executives, for delivering results that meet or exceed our corporate objectives and support our overall strategy. Our core strategies incorporate aspects of climate-related issues and include maximizing the full-life value of our infrastructure assets and commercial positions, commercially developing and building new asset investment programs, cultivating a focused portfolio of high-quality development options, and maximizing our competitive strengths. The Board's HR committee is responsible for exec. compensation, closely linked to our strategic plan, and the Governance committee is responsible for director compensation and risk oversight.

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	1	2	TC Energy understands that shareholders and other stakeholders want more information on how the company is addressing climate change and associated risks. As the tools available to assess the risks and opportunities associated with climate change improve, we are utilizing them to increase the rigour of our assessment, as a key input into our strategic planning process. We regularly Communicate with the investor community to solicit feedback and are committed to continually improving our disclosure to meet the needs and expectations of shareholder and stakeholders. We own assets and have business interests in several regions subject to greenhouse gas (GHG) emissions regulations, including GHG emissions management and carbon pricing policies. In 2019, we incurred \$69 million (2018 – \$62 million) of expenses under existing carbon pricing programs. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at reducing GHG emissions. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. Beyond the short-term, we expect that, over time, most of our assets will be subject to some form of regulation to manage GHG emissions. Changes in regulations may result in higher operating costs or other expenses, or higher capital expenditures to comply with possible new regulations. TC Energy's time horizons are aligned with TC Energy's Operational Management System (TOMS) Risk Standard and our Enterprise Risk Management framework.
Medium-term	3	10	We recognize the future energy system will evolve. As part of this, management includes an assessment of energy fundamentals, the competitive environment and the stakeholder landscape to identify opportunities and threats to our business strategy. This session informs our annual strategic priorities and performance measures, and provides the opportunity to review our risk preferences, as described in our 2019 Annual Report: • live within our means project risks known and acceptable • business underpinned by strong fundamentals • manage credit metrics to ensure "top-end" sector ratings • prudent management of counterparty exposure We also update our five-year strategic plan annually during a two-day strategic planning session in which the Board reviews, discusses and approves the revised and extended strategic plan.
Long-term	11	20	At TC Energy, we look at long-term energy scenarios pertaining to how the energy transition will unfold from multiple organizations. We monitor trends specific to energy supply and demand fundamentals, broader energy trends, in addition to analyzing how our portfolio will perform under one or more outlooks. Looking forward we will continue to use scenario analysis in our strategic planning cycle to enhance the rigour of our assessment of our long-term resilience. Our three major lines of business provide diversification as the energy future unfolds, allowing us to allocate capital to various opportunities across the energy infrastructure sector, within our risk preferences, as signposts indicate. Long-life infrastructure assets covering strategic North American corridors and supported by long-term commercial arrangements are the cornerstones of our low-risk business model. Our pipeline assets include large-scale natural gas and liquids pipelines and associated storage facilities that connect low cost supply basins with stable and growing North American and export markets, generating predictable and sustainable cash flows and earnings. Our power and non-regulated storage assets are primarily under long-term contracts that provide stable cash flows and earnings.

C2.1b

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

TC Energy examines risks holistically, seeking to understand the potential consequences of a risk event by examining it through different lenses. This enables a consistent risk analysis and furthermore informs the response to and treatment of risks. We have established criteria on risk impact, through our Enterprise Risk Matrix, including financial on our business and we use differing levels relating to damage/financial loss estimates (i.e. impact to share price or issuing restatements).

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
Upstream
Downstream

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

Our vision is to be the leading energy infrastructure company in North America, focused on energy infrastructure opportunities in regions where we have or can develop a significant competitive advantage. We have decades of experience managing our portfolio to capitalize on opportunities and mitigate risks, by leveraging key components of our strategy including: 1. Maximize the full-life value of our infrastructure assets and commercial positions 2. Commercially develop and build new asset investment programs 3. Cultivate a focused portfolio of high-quality development and investment options 4. Maximize our competitive strengths Additional details regarding each of the above-mentioned components of our strategy are described in Question C3.1d. Risk management is integral to the successful operation of our business. Since our inception in 1951, we have managed risks throughout our organization to keep our employees and the communities in which we operate safe and secure as we deliver the energy North Americans need, every day. The ERM program provides a framework and an end-to-end process for risk identification, analysis, evaluation and treatment, with ongoing monitoring and reporting to the Board and Executive Leadership Team. Recognizing many risks, including climate-related risks, are interrelated and should be

managed across the enterprise, the ERM program promotes a centralized and pragmatic approach to prioritizing risks, clarifying roles and responsibilities, and improving Board and management oversight. It supports informed decision-making by identifying areas of value capture and value preservation aligned with our strategic and business objectives. The ERM program governance structure integrates risk management at every level of the organization. The Board and Board Committees have primary, fiduciary responsibility for risk oversight as part of their existing mandate, while the management of risks resides with the Management team. TC Energy's Corporate Governance Guidelines outline that the Board is responsible for understanding the Enterprise Risks associated with the Company's business, as well as ensuring Management has implemented appropriate strategies to manage these risks. It is the responsibility of Management to assure the Board and its Committees are kept well informed of these changing risks on a timely basis. The Chief Risk Officer (CRO) and the Management Risk Committee (MRC) are accountable for managing the Enterprise Risks. The Head of Enterprise Risk is responsible for the ERM Program with support from the ERM Coordinator. Other risk practitioners are consulted and informed on the ERM program through their business and corporate function MRC representatives. The CRO's responsibilities in the ERM Framework include: • Ensuring the ERM Framework governance model and processes are established, properly documented, and maintained in a manner that is suitable for TC Energy's culture and operating model. • Facilitating the annual Enterprise Risk assessment and management of the Enterprise Risk Register. • Periodically reporting enterprise and emerging risks to the Board and Board Committees. The ERM program provides a pragmatic structure for TC Energy to manage Enterprise Risks in a consistent manner across the enterprise, and it is scalable for Business Units and Corporate Functions. The program establishes the minimum requirements. TC Energy uses bow-tie analysis to identify relevant information related to the risk event to enable an informed assessment of the risk and discussion of effective controls. This approach allows for the development of clearly articulated risk statements, enabling consistent understanding of the potential scenarios that have the potential to occur. In alignment with our risk management standards, practices, and regulations, TC Energy assesses both inherent risk and residual risk when analyzing risks. TC Energy analyses risks holistically, seeking to understand the potential consequences of a risk event by examining it through difference lenses. This enables a consistent risk analysis and furthermore informs the response to and treatment of risks.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

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 assess opportunities to develop and acquire energy infrastructure that complements our existing portfolio, considers future resilience and diversifies access to attractive supply and market regions within our risk tolerance profile. This also includes assessment of decisions by Canadian and U.S. regulators, which can have a significant impact on the approval, construction, operation, commercial and financial performance of assets. We manage these opportunities and risks, by continuously monitoring regulatory and government developments and decisions to determine their possible impact on our business, by building scenario analysis into our strategic outlook and by working closely with our stakeholders in the development and operation of our assets. Changing environmental requirements or revisions to the current regulatory process may adversely impact the timing or ability to obtain approvals for our assets and as such, we are an active participant in formal and informal regulatory proceedings. Public opinion may also have an adverse impact on the regulatory process. In conjunction with this, there are individuals and special interest groups that are expressing opposition and lobbying against construction activities TC Energy is involved in.

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

Description of process

Understanding the risk related to our pipeline systems to ensure public safety and optimize asset management decision with the quantitative and industry leading risk assessment approach. TC Energy's industry leading System Wide Risk Assessment (SWRA) provides the critical risk information as quantitative and integrated risk projections. It is used by pipeline integrity functions and leadership, to thoroughly understand and quantify risks in support of the Integrity Management Program.

Value chain stage(s) covered

Direct operations

Risk management process

A specific climate-related risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term

Description of process

TC Energy is committed to be an industry leader in the safe and reliable delivery of energy. At the foundation of this commitment, is the effective identification and management of risk as it is instrumental in achieving our safety, reliability, economic, social and environmental objectives. TOMS is instrumental in achieving our safety, reliability, economic, social and environmental objectives and is comprised of elements and mandated programs. The mandated programs are driven by risk areas, internal objectives, industry best practices and regulatory requirements, and include, but are not limited to, the following areas which incorporate climate-related risks: • Environment: TC Energy is committed to managing our environmental and climate-related effects and protecting the environment through the complete life-cycle of our assets. We understand that our ability to have strong environmental stewardship, protection and performance has a direct impact on the communities where we work and our ability to competitively build and operate our assets. • Facility and Pipeline Integrity: Maintaining the integrity of our assets is one of our guiding principles that helps

prevent unplanned releases that could result in a major incident. Such incidents can result in serious injuries to personnel or the public, property damage, the loss of production and environmental impacts. This include threat management related to weather and other outside forces.

Value chain stage(s) covered

Direct operations

Risk management process

A specific climate-related risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Long-term

Description of process

Scenario planning against several demand outlooks is considered as part of our long-term corporate strategic planning process. We update our five-year strategic plan annually during a two-day strategic planning session in which the Board reviews, discusses and approves the revised and extended strategic plan. As part of our strategic planning process, we analyze long-term energy market scenarios to assess the resilience of our business – in other words, how well TC Energy tolerates and adapts to external changes that may affect our ability to meet long-term goals and remain effective. We continuously develop mitigation strategies to enhance our resiliency and monitor signposts, such as technology shifts and policy changes, to gauge the direction of the energy sector to help inform our capital allocation decisions. Scenarios consider the uncertainty and complexity of the energy system to identify a range of energy futures. By examining outcomes within this broad hypothetical context, we gain perspective on the impact of energy system changes on our current portfolio and uncover potential growth opportunities.

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	We own and operate assets and have business interests in several jurisdictions, which are subject to GHG emissions regulations, including GHG emissions management and carbon pricing policies. In 2019, we incurred \$69 million (2018 – \$62 million) of expenses under existing carbon pricing programs.
Emerging regulation	Relevant, always included	Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at reducing GHG emissions. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. We expect that, over time, most of our assets will be subject to some form of regulation to manage GHG emissions. Changes in regulations may result in higher operating costs or other expenses, or higher capital expenditures to comply with possible new regulations.
Technology	Relevant, always included	Should alternative lower-carbon forms of energy result in decreased demand for our current services, the value of some of our long-lived energy infrastructure assets could be negatively impacted. We are cognizant of such consequences and monitor the development of innovative technologies that have longer-term implications for our strategy.
Legal	Relevant, always included	TC Energy manages existing Canadian and Mexican legal requirements through the the corporate Legal Registry, including those related to GHG emissions, carbon taxes and other climate-related legislation. Legal requirements for the U.S., including those related to GHG emissions, carbon taxes and other climate-related legislation, are managed by relevant departments.
Market	Relevant, always included	We view commodity price and volume risk being the primary market risk related to climate change. We are exposed to market risk and counterparty credit risk and have strategies, policies and limits in place to manage the impact of these risks on our earnings, cash flows and, ultimately, shareholder value. Risk management strategies, policies and limits are designed to ensure our risks and related exposures are in line with our business objectives and risk tolerance. Market risk and counterparty credit risk are managed within limits that are established by our Board of Directors, implemented by senior management and monitored by our risk management and internal audit groups. Our Board of Directors' Audit Committee oversees how management monitors compliance with market risk and counterparty credit risk management policies and procedures and oversees management's review of the adequacy of the risk management framework. Market risk: We construct and invest in energy infrastructure projects, purchase and sell commodities, issue short-term and long-term debt, including amounts in foreign currencies, and invest in foreign operations. Certain of these activities expose us to market risk from changes in commodity prices, foreign exchange rates and interest rates, which may affect our earnings and the value of the financial instruments we hold. We assess contracts used to manage market risk to determine whether all, or a portion, meet the definition of a derivative. Commodity price risk: The following strategies may be used to manage exposure to commodity price risk in our non-regulated businesses: • in our power generation business, we manage our exposure to fluctuating commodity prices through long-term contracts and hedging activities including selling and purchasing power and natural gas in forward markets • in our non-regulated natural gas storage business, our exposure to seasonal natural gas price spreads is managed with a portfolio of third-party storage capacity contracts and through offsetting purchases and sales of natural gas in forward markets to lock in future positive margins • in our liquids marketing business, we enter into pipeline and storage terminal capacity contracts, as well as crude oil purchase and sale agreements. We fix a portion of our exposure on these contracts by entering into financial instruments to manage our variable price fluctuations that arise from physical liquids transactions.
Reputation	Relevant, always included	Our operations and growth prospects require us to have strong relationships with key stakeholders including Indigenous communities, landowners, governments and government agencies, and environmental non-governmental organizations. Inadequately managing expectations and issues important to stakeholders, including those related to climate change, could affect our reputation and our ability to operate and grow, as well as our access to and cost of capital. Constructing and operating our pipelines to ensure transportation services are provided safely and reliably is essential to the success of our business. Interruptions in our pipeline operations impacting our throughput capacity may result in reduced revenues and can affect corporate reputation as well as customer and public confidence in our operations. We manage this by investing in a highly skilled workforce, hiring third-party inspectors during construction, operating prudently, monitoring our pipeline systems continuously, using risk-based preventive maintenance programs and making effective capital investments. We use pipeline inspection equipment to regularly check the integrity of our pipelines, and repair or replace sections when necessary. We also calibrate meters regularly to ensure accuracy and employ robust reliability and integrity programs to maintain compression equipment and ensure safe and reliable operations. As a risk that is fundamental to our business, the Management Risk Committee manages climate-related risk through each of the distinct enterprise risks listed in our proxy to ensure transition plans align with the other actions being planned and executed on each risk. For example, our CSO is the governance owner of Enterprise Risk related to "political and regulatory" and "reputation and relationship" risks. As owner he is accountable for the company's mitigation of these risks, as well as for the reporting of risk ratings and mitigation plans to our board of directors, including a deep dive presentation on these risks in Q1 2020 which included a discussion on climate risks to each business unit.
Acute physical	Relevant, always included	Significant changes in temperature and weather, including the potential impacts of climate change, have many effects on our business, ranging from the impact on demand, availability and commodity prices, to efficiency and output capability. Extreme temperature and weather can affect market demand for power and natural gas and can lead to significant price volatility. Extreme weather can also restrict the availability of natural gas and power if demand is higher than supply. Seasonal changes in temperature can reduce the efficiency and production of our natural gas-fired power plants. Physical risks may result in decreased revenues and increased operating costs, legal proceedings, regulatory actions or other expenses all of which could reduce our earnings. Losses not recoverable through tolls or contracts or covered by insurance could have an adverse effect on operations, cash flow and financial position. Certain events could lead to the risk of injury and environmental damage. TC Energy's Crisis Management Program (CMP) is a strategic system that sets out a framework and a management structure to effectively manage a crisis event which has the potential to greatly affect the operations and credibility of a company, which includes adverse weather conditions. Crisis management includes anticipating, preventing, preparing for and responding to a crisis which falls outside the normal company management structure. The CMP is designed to complement the normal operations of TC Energy, its operational business units, and the current Emergency Response Plans (ERP) and does not supersede normal operating procedures unless and until a crisis occurs.
Chronic physical	Relevant, always included	All relevant chronic physical risk considerations are included in our response to acute physical risks. Significant changes in temperature and weather, including the potential impacts of climate change, have many effects on our business, ranging from the impact on demand, availability and commodity prices, to efficiency and output capability. TC Energy's Crisis Management Program (CMP) is a strategic system that sets out a framework and a management structure to effectively manage a crisis event which has the potential to greatly affect the operations and credibility of a company, which includes adverse weather conditions. Additional to the monitoring and mitigation highlighted in the acute physical risk assessment, we have incident, emergency and crisis management systems to ensure an effective response to minimize further loss or injuries and to enhance our ability to resume operations. We also have a Business Continuity Program that determines critical business processes and develops resumption plans.

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

Market	Other, please specify (business interruption through drivers including, but not limited to, current and emerging regulation, market behaviour, and exposure to litigation.)
--------	---

Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Business Interruption - Operational risks, including equipment malfunctions and breakdowns, labour disputes, or natural disasters and other catastrophic events, including those related to climate change, acts of terror and sabotage.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

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

Decrease in revenues and increase in operating costs, legal proceedings or regulatory actions, insurance, or other expenses all of which could reduce our earnings.

Cost of response to risk

Description of response and explanation of cost calculation

Losses not recoverable through tolls or contracts or covered by insurance could have an adverse effect on operations, cash flows and financial position. Certain events could lead to risk of injury and environmental damage.

Comment

TOMS includes corporate health, safety, environment and asset integrity programs to prevent incidents and protect people, the environment and our assets. TOMS includes incident, emergency and crisis management programs to ensure TC Energy can effectively respond to operational risk events, minimize loss or injury and enhance our ability to resume operations. This is supported by our business continuity program that identifies critical business processes and develops corresponding business resumption plans. The procedures included in our Emergency Management Program (within TOMS) manage our response to natural disasters, which include catastrophic events such as forest fires, tornadoes, earthquakes, floods, volcanic eruptions and hurricanes. The procedures are designed to help protect the health and safety of our employees, minimize risk to the public and limit the potential for adverse effects on the environment. We also have a comprehensive insurance program to mitigate a certain portion of these risks, but insurance does not cover all events in all circumstances. This is a summary of a general risk that affects our company and is being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation	Other, please specify (current and emerging climate-related regulations)
--------------------	--

Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Climate change and related regulation risk - We own assets and have business interests in several regions subject to GHG emissions regulations, including GHG emissions management and carbon pricing policies. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at reducing GHG emissions.

Time horizon

Long-term

Likelihood

Very 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

Changes in regulations may result in higher operating costs or other expenses, or higher capital expenditures to comply with possible new regulations. Changing environmental requirements or revisions to the current regulatory process may also adversely impact the timing or ability to obtain permit approvals for new energy infrastructure projects.

Cost of response to risk

Description of response and explanation of cost calculation

We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. We expect that, over time, most of our assets will be subject to some form of regulation to manage GHG emissions.

Comment

We recognize interest from governing bodies to reduce GHG emissions through the implementation of various carbon policy and regulatory mechanisms. We support policies that recognize the global nature of climate change and promote the reduction of both GHG intensity and absolute volume in a way that enhances human well-being now and, in the future, considering the need for affordable, reliable energy and economic growth. We believe that carbon pricing can be an efficient financial mechanism to manage GHG emissions and achieve environmental economic outcomes. TC Energy also agrees that for carbon pricing policies to be effective, they must be founded on a legislative and regulatory framework that establishes clearly-defined, predictable and transparent pricing signals over the long-term. This is a summary of a general risk that affects our company and is being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation	Increased stakeholder concern or negative stakeholder feedback
------------	--

Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Reputation and relationships - Our operations and growth prospects require us to have strong relationships with key stakeholders including Indigenous communities, landowners, governments and government agencies, and environmental non-governmental organizations. Inadequately managing expectations and issues important to stakeholders, including those related to climate change could affect our reputation and our ability to operate and grow, as well as our access to and cost of capital.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium

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

Our reputation with stakeholders, including Indigenous groups, can have a significant impact on our operations and projects, infrastructure development and overall reputation. Should investors develop negative perceptions regarding the energy infrastructure business, future access to investment capital could be negatively impacted.

Cost of response to risk**Description of response and explanation of cost calculation**

Our 4 core values – safety, responsibility, collaboration & integrity – are at the heart of our commitment to stakeholder engagement & guide our interactions with stakeholders. We also have specific stakeholder programs & policies that set requirements, assess risks & facilitate compliance with legal & policy requirements. We face various competitive forces that impact our existing assets & prospects for growth. For instance, our existing power plants will compete over time with new power capacity. New supply could come in several forms including supply that employs more efficient power generation technologies or additional supply from regional power transmission interconnections. We also face competition from other power companies in Alberta & Ontario as well as in the development of greenfield power plants. Interruptions in our pipeline operations impacting our throughput capacity may result in reduced revenues & can affect corporate reputation as well as customer & public confidence in our operations. We manage this by investing in a highly skilled workforce, hiring third-party inspectors during construction, operating prudently, monitoring our pipeline systems continuously, using risk-based preventive maintenance programs & making effective capital investments. We also face competition from other pipeline companies seeking to invest in greenfield natural gas pipeline development opportunities. This competition could result in fewer projects being available that meet our investment hurdles or projects that proceed with lower overall financial returns. Shifts in government policy by existing bodies or following changes in government can impact our ability to grow our business. Restrictions on carbon fuel use, cross-border economic activity, & developing new infrastructure can impact our opportunities for continued growth. We are committed to working with all levels of government to ensure our business benefits & risks are understood, & mitigation strategies implemented. As we continue to further develop our competitive position in the North American liquids transportation market to connect growing crude oil & diluent supplies between key North American producing regions & refining & export markets, we face competition from other midstream companies which also seek to transport these crude oil & diluent supplies to the same markets. Our success is dependent on our ability to offer & contract transportation services on terms that are market competitive.

Comment

This is a summary of a general risk that affects our company and is being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Market	Uncertainty in market signals
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Primary potential financial impact

Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Access to capital at a competitive cost - A critical factor in the financial performance of investments is the investor's ability to identify drivers of the expected risk and return of investments. Financial analysts and portfolio managers are expected to be familiar with the financial factors that drive the value of an investment. However, issues that are difficult to measure in monetary terms and that do not form part of traditional financial metrics also affect the risk and return of investments—at times, decisively. The environment, social and governance (ESG) issues, which include climate-related risk, are relevant to investment risk and return across asset classes. The consideration of ESG issues is a complement to (not a substitute for) traditional fundamental analysis, and ESG issues remain relevant throughout the investment process—from the initial analysis to the buy/sell/hold decision to ongoing ownership practices. TC Energy strives to be a leader in the delivery of energy in a safe, responsible and sustainable manner, ensuring we are positioned to maximize long-term value creation. Being a leader also means communicating candidly about our performance and approach, aiming to provide comprehensive, decision-useful and material disclosure on our environmental, social and governance management. Our ESG profile (<https://www.tcenergy.com/siteassets/pdfs/investors/esg/tc-esg-profile-2020.pdf>) provides details of our comprehensive management of ESG themes for investment purposes, including capturing opportunities for responsible, sustainable growth, excellence in leadership and governance, and our track record of robust environmental management and social engagement.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

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

Significant deterioration in market conditions for an extended period and changes in investor and lender sentiment could affect our ability to access capital at a competitive cost, which could negatively impact our ability to deliver an attractive return on our investments.

Cost of response to risk

Description of response and explanation of cost calculation

We operate within our financial means and risk tolerances, maintain a diverse array of funding levers and utilize portfolio management as an important component of our financing program. In addition, we have candid and proactive engagement with the investment community, including credit rating agencies, with the objective of keeping them apprised of developments in our business and factually communicating our prospects, risks and challenges, including those related to ESG.

Comment

Our access to capital markets for required capital at competitive rates is influenced by our credit rating and rating outlook, as determined by credit rating agencies such as Moody's, S&P, Fitch and DBRS. If our ratings were downgraded, TC Energy's financing costs and future debt issuances could be unfavourably impacted. This is a summary of a general risk that affects our company and is being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation	Shifts in consumer preferences
------------	--------------------------------

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Capital allocation strategy - To be competitive, we must offer energy infrastructure services in supply and demand areas, and for forms of energy that are attractive to customers.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

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

Should alternative lower-carbon forms of energy result in decreased demand for our current services, the value of our long-lived energy infrastructure assets could be negatively impacted.

Cost of response to risk

Description of response and explanation of cost calculation

We have a diverse portfolio of assets and we utilize portfolio management to divest of non-strategic assets. We conduct analyses to identify resilient supply basins as part of our energy fundamentals and strategic development reviews. We also monitor innovative technology development to inform our capital allocation strategy.

Comment

This is a summary of a general risk that affects our company and is being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report.

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation	Shifts in consumer preferences
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Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Execution and capital costs - Investing in large infrastructure projects involves substantial capital commitments and associated execution risks based on the assumption

that these assets will deliver an attractive return on investment in the future.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

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

While we carefully determine the expected cost of our capital projects, under some commercial arrangements we bear capital cost overrun and schedule risk which may decrease our return on these projects.

Cost of response to risk

Description of response and explanation of cost calculation

Our Project Governance Program supports project execution and operational excellence. The program aligns with TOMS which provides the framework and standards to optimize project execution, ensuring timely and on budget completion. We prefer to contractually structure our projects to recover development costs if a project does not proceed along with mechanisms to minimize the impact should cost overruns occur. However, under some commercial arrangements, we share or bear the cost of execution risk. Additionally, we can utilize project financing and/or involve partners in our projects to advance funding plans.

Comment

This is a summary of a general risk that affects our company and is being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report.

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

Other, please specify (Reduced exposure to methane emissions)

Primary potential financial impact

Other, please specify (less sensitivity to current and emerging climate-related regulations)

Company-specific description

Federal Methane Regulations - The Paris Agreement came into force in November 2016 as a global commitment to undertake ambitious efforts to combat climate change and adapt to its effects. Its primary aim is to strengthen the global average increase in temperature below 2°C relative to pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. In support of this global commitment, Environment and Climate Change Canada (ECCC) issued the final Methane Reduction Regulation in April 2018. The regulations detail requirements to reduce methane emissions through operational and capital modifications. There are multiple time frames for compliance, which commenced in 2020. Compliance will involve equipment retrofits, frequent leak detection, repair surveys and measurements to quantify emission reductions and associated annual reporting. This specific regulation covers ~30% of our carbon footprint.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-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

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

The objectives of the methane regulations are consistent with TC Energy's commitment to minimizing the environmental impact of pipelines throughout the entire pipeline lifecycle and we have been actively engaged in reducing methane emissions for several decades. Capturing and reusing methane instead of releasing it to the atmosphere has driven our research and development efforts for decades. We believe technological innovation is critical to managing the complex issues surrounding GHG emissions and we have a robust research and development program, with a focus on improving the safety and efficiency of our facilities, and we continue to develop and implement new practices and technologies that reduce fugitive emissions and minimize methane loss during routine operations and maintenance on our pipelines, improving operations and regulatory reporting activities resulting in improved ability to plan maintenance activities.

Comment

In a capital and carbon-constrained world, the long-term viability of natural gas in part depends on its ability to play the role of the cleaner fossil fuel of the future and as such, minimizing methane leaks is essential to ensuring natural gas provides climate and public health benefits going forward.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Natural Gas and Changing Demand - Transporting natural gas – the cleanest-burning fossil fuel – in our pipelines continues to support the significant shift away from coal-fired power generation occurring in North America and beyond. We have a role in developing North America's liquefied natural gas (LNG) export industry with several pipeline projects in the U.S. and Canada.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

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

The growing supply of natural gas has resulted in relatively low natural gas prices in North America which has supported increased demand, particularly in the following areas: • natural gas-fired electric-power generation • petrochemical and industrial facilities • Alberta oil sands • exports to Mexico to fuel power generation and other industrial facilities. Natural gas producers continue to progress opportunities to sell natural gas to global markets which involves connecting natural gas supplies to liquid natural gas export terminals, both operating and proposed, along the U.S. Gulf Coast; the west coast of Canada, the U.S. and Mexico; and the east coast of Canada. The demand created by the addition of these new markets creates opportunities for us to build new pipeline infrastructure and to increase throughput on our existing pipelines.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Our Coastal GasLink project in British Columbia will initially move 2.1 Bcf/d of Canadian natural gas to international markets via the LNG Canada liquefaction and export facility. LNG Canada's exports could reduce annual global carbon dioxide emissions by 60 to 90 million tonnes (LNGCanada.ca) by displacing coal-fired electricity in importing countries, which equates to more than the total annual emissions of British Columbia and roughly 10% of Canada's total annual emissions. TC Energy also played a significant role in Ontario's transition away from coal-fired power generation through multibillion-dollar investments in nuclear refurbishment at the Bruce Nuclear complex, natural gas-fired generation and solar power installations. TC Energy has also enabled Alberta to begin the process of moving off coal fired electricity by providing the necessary provincial natural gas pipeline infrastructure to enable co-firing and coal to natural gas conversions at the coal power stations. In the U.S., our Columbia Gulf pipeline system supplies the Cameron LNG export terminal in Louisiana with approximately 0.8 Bcf/d and our recently completed WB Xpress project supplies gas to the Cove Point LNG facility in Maryland. Combined with our Louisiana Xpress, Grand Chenier Xpress, and Alberta Xpress projects that are under development, we will supply approximately 5 Bcf/d directly to U.S. LNG export markets within the next five years. TC Energy's US natural gas pipeline infrastructure has also aided natural gas generation output growth, displacing coal fired electricity output and significantly reducing GHG emissions in the power sector. Since 2000, US coal GHG emissions have fallen by 50% . Our proposed Keystone XL liquids pipeline project would more than double the capacity of our Keystone Pipeline System with enhanced access to over 4.3 million Bbl/d of refining capacity in Houston and Port Arthur, Texas. Keystone XL would safely deliver Canadian and U.S. crude oil produced under stringent regulatory environments by companies with strong histories of innovation, high ESG performance, and responsible development, supplanting other internationally-sourced heavy

crudes used by Gulf Coast refineries.

Comment

Electrification investment also complements our natural gas pipeline business, as seen in Mexico. For over a decade, Mexico has significantly transitioned to natural gas from fuel oil and diesel as its primary electricity generation source. The subsequent natural gas demand growth required new pipeline infrastructure. At December 31, 2019, TC Energy had invested approximately \$1.4 BUSD in capital expenditure commitments for its construction of the Villa de Reyes (\$0.8 BUSD) and Tula (\$0.6 BUSD) Mexico natural gas pipeline projects. We also placed Sur de Texas Mexico-based pipeline in service and completed the East Section of Tula, which is available for interruptible transportation services. In Mexico, TC Energía has identified the federal directive to increase the use of fuel oil for power generation, as made official in the Energy Ministry's 2020-2024 Energy Sector Program, as a pressing issue. In the past months, TC Energía has funded two independent studies showcasing the detrimental environmental and health effects of the continued use of fuel oil via a case study of a state utility's power plant in Tula Hidalgo, Mexico. In an effort to make the consequences of these policy decisions known, the results of the first study have been initially presented to Confederación Patronal de la República Mexicana (COPARMEX) members for feedback, and mainly centre on the power plant's and fuel oil-burning's pernicious effects on regional air pollution. The results of the first study linked health issues and pollution contingencies in Mexico City to the operation of the Tula power plant and its use of fuel oil. It also showed that if the plant carried out its planned transition to natural gas environmental harm from fuel oil emissions would be minimized, by providing specific statistics and projections regarding the change.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Participation in carbon market

Primary potential financial impact

Other, please specify (less sensitivity to current and emerging climate-related regulations)

Company-specific description

Carbon Pricing - Lowering the world's GHG emissions is essential to realizing a low-carbon future. We support broad-based, economy-wide carbon pricing and believe that an effective carbon pricing structure must: • Facilitate meaningful emissions reductions • Balance economic, environmental, and energy security needs • Provide the regulatory certainty required to attract capital • Consider the role of natural gas in the timely transition to a low-carbon economy • Maintain and encourage the North American energy sector competitiveness • Support market-based policies to promote industry innovation • Ensure compliance flexibility and support for carbon offsets • Recognize and account for early and/or voluntary actions • Harmonize policy frameworks and avoids duplication When such principles inform public policy, they minimize overall societal costs and allow markets to determine the technologies that will be most successful. We know that strong climate change policy will take a collective effort among industry, governments, communities and consumers to see true change in our actions against climate change. We will continue to advance our efforts to work with policy-makers and industry peers to help our industry fully participate in the North American climate change discussion.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

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

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

For more than 15 years, TC Energy has proactively managed emissions associated with its core businesses through asset-level efficiency improvements and installations, as well as by taking an industry-leading role in carbon markets across North America.

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of new technologies

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Technological Innovation - We believe technological innovation is critical to managing the complex and inter-related issues surrounding GHG emissions. With demand for

low-emissions natural gas and electricity steadily climbing, the industry must continuously seek out new technologies to improve system and process efficiencies and limit the release of emissions. For over half a century, we have pioneered innovative technology and practices to enhance efficiency and reduce emissions at our facilities. For example, in the mid-2000s, TC Energy was the first Canadian company to test prototypes of hand-held, high-flow, leak-detection samplers that were 20 times faster and significantly more accurate than traditional methods. We have been instrumental in distributing this breakthrough technology across the industry. Our liquids pipelines also feature several solar and propane powered meter stations operating the electrical actuators on the pipeline.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Unknown

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

We continue to look at all forms of energy to balance energy demand with global emission reduction goals and we continue to demonstrate commitment to sustainable energy and the ongoing management of GHG emissions across our footprint.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

In early 2019, we launched two first-of-their-kind power generation projects with funding from Emissions Reductions Alberta to support the development of a new and innovative technology aimed at improving energy efficiency and reducing GHG emissions in Alberta. These Alberta-based projects illustrate how we are realizing new business opportunities that yield economic and environmental benefits: 1. Developed in partnership with Siemens, the waste heat recovery project will provide the first commercial-scale waste heat recovery unit utilizing supercritical carbon dioxide (sCO₂) in the world. The technology is a first-of-a-kind approach in waste heat recovery and uses supercritical carbon dioxide as the working fluid to recover waste heat from a gas turbine and convert it to emissions-free electricity. This technology has the potential to achieve the elimination of water use, operational simplicity, minimal environmental impact and an increased heat recovery cycle efficiency. 2. We are also pursuing a novel, utility-scale solar-plus-storage electricity generation facility near Aldersyde, Alberta. The proposed project contemplates the use of state-of-the-art bifacial solar panels which are double-sided to take advantage of the indirect sunlight from reflective ground cover such as snow-covered surfaces found in Alberta during the winter months. While bifacial technology has been commercially available since 2010 and several solar panel manufacturers have installed small test installations, this project would represent one of the first utility-scale facilities to use the technology in Canada.

Comment

In Ontario, TC Energy has had an ownership position in Bruce Power nuclear since 2003 and since that time Bruce Power has significantly increased output of its emissions free electricity enabling Ontario to fully end coal-fired power generation in 2014 and lower GHG levels (in 2003 Bruce produced about 25 TWh and averaged about 46 TWh per year in the 2013 to 2019 period). Through a long-term agreement with the Ontario Independent Electricity System Operator (IESO), Bruce Power has begun to progress a series of incremental life extension investments to extend the operating life of the facility to 2064. This agreement represents an extension and material amendment to the earlier agreement that led to the refurbishment of Units 1 and 2 at the site. Under the amended agreement, which took economic effect in January 2016, Bruce Power began investing in life extension activities for Units 3 through 8 to support the long-term refurbishment programs. Investment in the Asset Management (AM) program is designed to result in near-term life extensions of each of the six units up to the planned major refurbishment outages and beyond. The AM program includes the one-time refurbishment or replacement of systems, structures or components that are not within the scope of the Major Component Replacement (MCR) program which focuses on the actual replacement of the key, life-limiting reactor components. The Unit 6 MCR outage commenced on January 17, 2020 and has an expected completion in late 2023. Investments in the remaining five-unit MCR program are expected to continue through 2033. Future MCR investments will be subject to discrete decisions for each unit with specified off-ramps available for Bruce Power and the IESO. TC Energy continues progressing a grid-scale pumped hydraulic storage clean energy project to be located near Meaford, Ontario on Georgian Bay. The proposed facility is designed to store 1,000 MW of clean electricity in the form of water during periods of surpluses to be later returned to the electric grid during periods of high electricity demand. The project is expected to reduce CO₂ emissions by 500,000 tonnes/year. Please refer to the following website for additional details: <https://www.tcenergy.com/operations/power/pumped-storage-project/>

Identifier

Opp5

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Electric Compression - TC Energy has applied to the Canadian Energy Regulator for the installation of new electric and gas driven compression capacity to meet new delivery contract volumes for its pipeline assets Canadian Mainline and partially owned Trans-Quebec Maritime system. By pursuing electric compression where potential for electrical interconnections exist while using gas units for reliability and back-up (and vice-versa), we are designing a system that optimizes environmental performance while ensuring safe, resilient energy transmission service. Electricity supply in Quebec is primarily generated from hydropower assets.

Time horizon

Short-term

Likelihood

Very 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**Cost to realize opportunity****Strategy to realize opportunity and explanation of cost calculation****Comment**

Identifier

Opp6

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Hydrogen - TC Energy is assessing the potential to transport hydrogen by utilizing the extensive pipeline infrastructure currently in place. This includes examining the potential of blending hydrogen into our existing natural gas pipelines to reduce the carbon intensity of delivered energy or adding dedicated hydrogen assets along our footprint. For all opportunities, we must understand the implications for our assets and stakeholders.

Time horizon

Long-term

Likelihood

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**Cost to realize opportunity****Strategy to realize opportunity and explanation of cost calculation**

We are investing in research to assess how our extensive natural gas network can be leveraged to economically and safely connect potential sources of hydrogen energy to consumers across North America while minimizing the impact to landowners and communities. Though utilizing the existing natural gas network and right of ways may be efficient and economic, it will require investment. To attract the required capital, long term commercial arrangements and/or funding support would be necessary. TC Energy continues to work through the technical evaluation surrounding the introduction of hydrogen into its system, including through industry partnerships.

Comment

Identifier

Opp7

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of new technologies

Primary potential financial impact

Other, please specify (increased revenues through capture and converting waste energy)

Company-specific description

Identifying Waste Energy Project Opportunities - TC Energy is investigating the potential for several waste energy projects across our pipeline system. Waste energy projects will increase the operational efficiency by effectively converting simple cycle compression units to combined cycle efficiency, resulting in tangible financial and environmental benefits. One project is at our Acme Compressor station on our Foothills pipeline system in Alberta. This project will utilize new technology by Siemens utilizing supercritical CO2 to capture waste heat and convert into electricity to re-inject into the local grid. This project as well as others across our system will be critical to capture waste energy and convert into useful energy for the surrounding areas.

Time horizon

Short-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**Cost to realize opportunity****Strategy to realize opportunity and explanation of cost calculation****Comment****Identifier**

Opp8

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Methane capture and re-injection - TC Energy is diligently investigating and advancing the deployment of methane capture and injection technologies, including capturing dry gas seal primary vents; reconfiguring yard pipeline infrastructure or utilizing mobile units to capture natural gas that would otherwise be released during a blowdown event and re-inject it into the pipeline.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

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**Cost to realize opportunity****Strategy to realize opportunity and explanation of cost calculation****Comment**

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
<p>Other, please specify (IHS Markit, "Global Scenarios." https://ihsmarkit.com/products/energy-climate-scenarios.html)</p>	<p>TC Energy operates under a low-risk and enduring business model that maximizes the full-life value of our long-life assets and commercial positions through all points in the business cycle. While renewables are the fastest growing form of new power generation, respected authorities such as the International Energy Agency forecast that oil and natural gas will continue to be dominant energy sources and a vital part of the energy mix for decades to come. Our investment in balanced and sustainable energy systems, our current asset portfolio and our future growth plans all reflect the long-term supply and demand forecasts for all forms of energy. We have, and will continue to, utilize scenario analysis in our strategic planning cycle to enhance the rigour of our assessment of our long-term resilience. Scenarios offer alternative outlooks for the energy future but do not describe what will or should happen, and therefore investors should not rely on them to make investment decisions. We did not assign probabilities to the scenarios. Our objective is to better understand the resilience of our asset portfolio over a large range of potential energy supply and demand outcomes. In this context, resilience refers to our ability to tolerate disruptions and adapt to external changes or uncertainties that may affect our ability to meet our long-term goals and remain effective under most situations and conditions. As part of our strategic planning process, we analyze long-term energy market scenarios to assess the resilience of our business – in other words, how well TC Energy tolerates and adapts to external changes that may affect our ability to meet long-term goals. We continuously develop mitigation strategies to enhance our resiliency and monitor signposts, such as technology shifts and policy changes, to gauge the direction of the energy sector to help inform our capital allocation decisions. Scenarios consider the uncertainty and complexity of the energy system to identify a range of energy futures. By examining outcomes within this broad hypothetical context, we gain perspective on the impact of energy system changes on our current portfolio and uncover potential growth opportunities. In 2019, we used four scenarios and identified measures to retain or create additional value: Rivalry: TC Energy continues to see growth in its core businesses as North American oil and gas supply play a key role in serving rising global energy demand. Discord: In a more volatile political and economic future, TC Energy’s portfolio remains resilient, largely due to proactive risk management in gas pipelines (e.g., adjusting timing and scale of capital spending), sustained energy demand and continued fossil fuel dominance of the energy mix (particularly natural gas). Autonomy: TC Energy’s portfolio largely withstands most threats posed by this accelerated transition to less carbon intensive energy sources, even with faster declines in North American crude oil supply and diminished reliance on gas as a transition fuel. Being positioned in the lowest cost basins reduces the impact of gas-on-gas competition and efficiency gains from building improvements that reduce fossil fuel demand. 2°C case: Pre-2030, our assets are largely insulated from fossil fuel demand destruction with only modest exposure for our liquids and natural gas pipelines. Risk emerges post-2030 as policy aspirations are realized and materially reduce fossil fuel demand. Uncertainty remains around the long-term resilience of traditional energy markets and the subsequent implications for energy infrastructure companies. The scenarios were developed by IHS Markit. More information can be found at: https://ihsmarkit.com/products/energy-climate-scenarios.html</p>

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	Leveraging the key components of our strategy, highlighted below, we have decades of experience managing our portfolio to capitalize on opportunities and mitigate risks related to our products and services. TC Energy strives to cultivate a focused portfolio of high-quality development and investment options through assessment of opportunities to develop and acquire energy infrastructure that complements our existing portfolio, considers future resilience, and diversifies access to attractive supply and market regions within our risk tolerance profile. We also monitor trends specific to energy supply and demand fundamentals, in addition to analyzing how our portfolio performs under different energy scenarios considering the TCFD recommendations. These results contribute to the identification of opportunities to maintain our resilience, strengthen our asset base or seek diversification, if required. We also endeavor to maximize the full-life value of our infrastructure assets and commercial positions through maintaining long-life infrastructure assets covering strategic North American corridors and supported by long-term commercial arrangements are the cornerstones of our low-risk business model. Our pipeline assets include large-scale natural gas and crude oil pipelines and associated storage facilities that connect low cost supply basins with stable and growing North American and export markets, generating predictable and sustainable cash flows and earnings. Our power and non-regulated storage assets are primarily under long-term contracts that provide stable cash flows and earnings. We are continually refining core competencies in key sustainability and ESG areas such as safety, operational excellence, supply chain management, project execution and stakeholder relations to ensure we deliver maximum shareholder value over the short, medium and long terms. Please refer to our 2019 Annual Report for a summary of certain general risks that affect our company and are being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion.
Supply chain and/or value chain	Yes	We are developing high quality, long-life assets through continued advancement of our \$30 billion secured capital program and over \$20 billion in largely commercially-supported projects under development (as at December 31, 2019). These investments will contribute incremental earnings and cash flows as they are placed in service and will complement our existing extensive footprint, which offers replenishable growth opportunities. Our expertise in project development, managing construction risks and maximizing capital productivity ensures a disciplined approach to reliability, cost and schedule, resulting in superior service for our customers and returns to shareholders. As part of our growth strategy, we rely on our experience and our regulatory, commercial, financial, legal and operational expertise to successfully permit, fund, build and integrate new pipeline and other energy facilities. Safety, profitability and responsible ESG performance are fundamental to our investments. Please refer to our 2019 Annual Report for a summary of certain general risks that affect our company and are being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion.
Investment in R&D	Yes	Our industry-leading research and development (R&D) program focuses on improving the safety and efficiency of our operations and minimizing environmental impacts. Partnering with universities, colleges, governments and industry peers, our R&D program has invested more than \$142 million in R&D projects across North America in the last five years. We have also worked with industry partners on R&D successes such as the development of "smart pigs." Originally used to detect large dents or obstructions in the pipe, pigs have been adapted through R&D to detect flaws, cracks or corrosion from the inside. TC Energy's invention of the Two-Stage Supersonic Ejector exemplifies another R&D success in reducing emissions. TC Energy won several prestigious awards for developing this innovative ejector that fits into compressors to capture and recycle 100 per cent of the fugitive emissions that would have been normally vented into the atmosphere. The system, which TC Energy patented and has now licensed to a third-party manufacturer, presents a viable way to reduce carbon emissions and increase energy efficiency. Please refer to our 2019 Annual Report for a summary of certain general risks that affect our company and are being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion.
Operations	Yes	We assess opportunities to develop and acquire energy infrastructure that complements our existing portfolio, considers future resilience, and diversifies access to attractive supply and market regions within our risk tolerance profile. Refer to the Enterprise risk management section of the 2019 Annual Report for additional information. We focus on commercially regulated and/or long-term contracted growth initiatives in core regions of North America and prudently manage development costs, minimizing capital-at-risk in early stages of projects and we will advance selected opportunities to full development and construction when market conditions are appropriate and project risks and returns are acceptable. We also continuously monitor trends specific to energy supply and demand fundamentals, in addition to analyzing how our portfolio performs under different energy scenarios considering the TCFD recommendations. These results contribute to the identification of opportunities to maintain our resilience, strengthen our asset base or seek diversification, if required. Please refer to our 2019 Annual Report for a summary of certain general risks that affect our company and are being continuously monitored. Risks specific to each operating business segment can be found in each business segment discussion.

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 Capital allocation Acquisitions and divestments Access to capital Assets Liabilities	<p>We are exposed to market risk and counterparty credit risk and have strategies, policies and limits in place to manage the impact of these risks on our earnings, cash flows and, ultimately, shareholder value. Climate change also presents a potential financial impact to commodity prices and volumes. Our exposure to climate change risk and resulting policy changes is managed through our business model which is based on a long-term, low-risk strategy whereby most of our earnings are underpinned by regulated cost-of-service arrangements and long-term contracts. In addition, scenario planning against several demand outlooks is also considered as part of our long-term corporate strategic planning process. Other factors may cause actual results to differ materially from those indicated in any forward-looking statement. Revenues - Our strategy is to ensure that our risks and related exposures are aligned with our business objectives and risk tolerance. We manage risk through a centralized enterprise risk management process that identifies risks that could materially impact the achievement of our strategic objectives. This includes ESG related risks. Our Board Governance Committee oversees our enterprise risk management activities, which includes ensuring appropriate management systems are in place to identify and manage our risks, ensuring adequate Board oversight of our risk management policies, programs and practices. Other Board committees oversee specific types of risk: • the HR Committee oversees executive resourcing, organizational capabilities and compensation risk to ensure compensation practices align with our overall business strategy • the HSSE Committee oversees health, safety, sustainability, security and environmental matters (HSSE matters), • the Audit Committee oversees management's role in managing financial risk, including cyber security. Our executive leadership team is accountable for developing and implementing risk management plans and actions, and effective risk management is reflected in their compensation. Direct/indirect Costs - We own assets and have business interests in several regions subject to GHG emissions regulations, including GHG emissions management and carbon pricing policies. Business interruption related to operational risks (including equipment malfunctions and breakdowns, labour disputes, or natural disasters and other catastrophic events, including those related to climate change, acts of terror and sabotage) could result in increased operating cost. Capital expenditures / capital allocation - To be competitive, we must offer energy infrastructure services in supply and demand areas, and for forms of energy that are attractive to customers. Should alternative lower-carbon forms of energy result in decreased demand for our current services, the value of our long-lived energy infrastructure assets could be negatively impacted. We have a diverse portfolio of assets and we utilize portfolio management to divest of non-strategic assets. We conduct analyses to identify resilient supply basins as part of our energy fundamentals and strategic development reviews and monitor innovative technology developments to inform our capital allocation strategy. Acquisitions and divestments – A key component of our corporate strategy includes cultivating a focused portfolio of high-quality development and investment options. To do that we: - assess opportunities to develop and acquire energy infrastructure that complements our existing portfolio, considers future resilience, and diversifies access to attractive supply and market regions within our risk tolerance profile - focus on commercially regulated and/or long-term contracted growth initiatives in core regions of North America and prudently manage development costs, minimizing capital-at-risk in early stages of projects - advance on selected opportunities to full development and construction when market conditions are appropriate and project risks and returns are acceptable - monitor trends specific to energy supply and demand fundamentals, in addition to analyzing how our portfolio performs under different energy scenarios considering the TCFD recommendations. These results contribute to the identification of opportunities to maintain our resilience, strengthen our asset base or seek diversification, if required. Access to capital – We are exposed to market risk and counterparty credit risk and have strategies, policies and limits in place to manage the impact of these risks on our earnings, cash flows and, ultimately, shareholder value. Risk management strategies, policies and limits are designed to ensure our risks and related exposures are in line with our business objectives and risk tolerance. Market risk and counterparty credit risk are managed within limits that are established by our Board implemented by senior management and monitored by our risk management and internal audit groups. Assets – We review long-lived assets, such as plant, property and equipment, equity investments and capital projects in development, for impairment whenever events or changes in circumstances lead us to believe we might not be able to recover an asset's carrying value. Factors we consider in our assessment of the recoverability of long-lived assets include, but are not limited to, macroeconomic conditions, changes in the industries and markets in which we operate, our ability to renew contracts, and the financial performance and prospects of our assets. Liabilities – We maintain an Environment Program to minimize potentially adverse environmental impacts. This program identifies our requirements to proactively and systematically manage environmental hazards and risks throughout the lifecycle of our assets. Our assets are subject to federal, state, provincial and local environmental statutes and regulations governing environmental protection, including air and GHG emissions, water quality, species at risk, wastewater discharges and waste management. Operating our assets requires obtaining and complying with a wide variety of environmental registrations, licenses, permits and other approvals and requirements. Failure to comply could result in administrative, civil or criminal penalties, remedial requirements, or orders affecting future operations. Through the implementation of our Environment Program, we continually monitor our facilities for compliance with all material legal and regulatory environmental requirements across all jurisdictions where we operate. We also comply with all material legal and regulatory permitting requirements in our project routing and development. We routinely monitor proposed changes in environmental policy, legislation and regulation, and where the risks are uncertain or have the potential to affect our ability to effectively operate our business, we comment on proposals independently or through industry associations.</p>

C3.1f

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

The transition to a lower carbon-emissions energy system has begun and will continue for decades to come. Our role is to deliver diverse forms of energy in the safest, most efficient manner possible, and we are working hard to manage our own emissions and reduce the GHG intensity of our operations.

As climate change is a global issue, we support national and industry commitments leading to global emissions reduction in line with the objective set out by the Paris Agreement, and we support collective actions towards a balanced energy future including investments in new energy infrastructure and advancing innovative and economically effective solutions to reduce our GHG emissions.

TC Energy operates under a low-risk and enduring business model that maximizes the full-life value of our long-life assets and commercial positions through all points in the business cycle. While renewables are the fastest growing form of new power generation, respected authorities such as the International Energy Agency forecast that oil and natural gas will continue to be dominant energy sources and a vital part of the energy mix for decades to come. Our investment in balanced and sustainable energy systems, our current asset portfolio and our future growth plans all reflect the long-term supply and demand forecasts for all forms of energy.

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

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

2013

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1

Base year

2010

Covered emissions in base year (metric tons CO2e)

118421

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

1

Target year

2019

Targeted reduction from base year (%)

20

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

94736.8

Covered emissions in reporting year (metric tons CO2e)

139973

% of target achieved [auto-calculated]

-90.9973737766106

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)

The province of Québec has a GHG cap-and-trade program under the Western Climate Initiative (WCI) GHG emissions market, to which there is an annual reduction target of 20% of emissions from assets subject to this program. Should an asset not meet the annual reduction target by way of operational improvement or other performance measure improvements for example, regulatory compliance to this target can be met using 'free' emission units or purchased instruments such as emission performance credits. The Bécancour cogeneration plant is subject to this program and met 2019 compliance requirements with a combination of free emission units from the Government as well as GHG instruments purchased at auctions or secondary markets. The costs of these emissions units are recovered through commercial contracts. The Canadian Mainline natural gas pipeline facilities in Québec are also subject to this program and compliance instruments have been purchased to comply with the requirements of this initiative. TC Energy was actively involved in developing this program during industry consultation. Adherence to this program inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a TC-specific target. TC Energy supports regulations and programs that standardize emission requirements across our assets jurisdictionally.

Target reference number

Abs 2

Year target was set

2013

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1

Base year

2015

Covered emissions in base year (metric tons CO2e)**Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)****Target year**

2019

Targeted reduction from base year (%)

20

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

<Calculated field>

Covered emissions in reporting year (metric tons CO2e)**% of target achieved [auto-calculated]**

<Calculated field>

Target status in reporting year

Underway

Is this a science-based target?

Please select

Please explain (including target coverage)

California has a GHG cap-and-trade program under the WCI GHG emissions market. In California, TC Energy incurs costs associated with the cap-and-trade program with respect to our electricity marketing activities. Adherence to this program inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a TC-specific target.

C4.1b

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

Target reference number

Int 1

Year target was set

2019

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Intensity metric

Metric tons CO2e per unit of production

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

0.03785

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

Target year

2019

Targeted reduction from base year (%)

20

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.03028

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.05376

% of target achieved [auto-calculated]

-210.171730515192

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)

The CCIR regulation requires established industrial facilities with GHG emissions above a regulatory-specific threshold to reduce their emissions below a 2015-2017 average intensity baseline (reported as "intensity figure in base year") which is prescribed by the Alberta Government. The CCIR covers our natural gas pipelines and certain power and storage assets in Alberta. The CCIR has since been replaced with the Technology Innovation and Emissions Reduction (TIER) regulation as of January 1, 2020. The TIER system follows a similar regulatory framework as the CCIR and will cover all our natural gas pipelines, power and storage assets in the province. In December 2019, the Government of Canada announced that Alberta's TIER regulation meets the federal government's criteria for carbon-pollution pricing systems for the emission sources it covers. TC Energy met 2019 compliance requirements with a combination of fund credits, purchased from the Alberta Government, emission offsets and performance credits (EPCs) purchased from secondary markets, and EPCs generated from other TC Energy-owned cogeneration assets. Canadian natural gas pipeline compliance costs are recovered through regulated tolls. TC Energy was actively involved in developing this regulation during industry consultation. Adherence to this regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a TC-specific target. TC Energy supports regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

Target reference number

Int 2

Year target was set

2019

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Intensity metric

Metric tons CO2e per unit of production

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

0.37

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

Target year

2019

Targeted reduction from base year (%)

20

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.296

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

% of target achieved [auto-calculated]

<Calculated field>

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)

The CCIR regulation requires established industrial facilities with GHG emissions above a regulatory-specific threshold to reduce their emissions below a 2015-2017 average intensity baseline (reported as "intensity figure in base year") which is prescribed by the Alberta Government. The CCIR covers our natural gas pipelines and certain power and storage assets in Alberta. The CCIR has since been replaced with the Technology Innovation and Emissions Reduction (TIER) regulation as of January 1, 2020. The TIER system follows a similar regulatory framework as the CCIR and will cover all our natural gas pipelines, power and storage assets in the province. In December 2019, the Government of Canada announced that Alberta's TIER regulation meets the federal government's criteria for carbon-pollution pricing systems for the emission sources it covers. TC Energy is unable to quantify the electricity output "intensity figure in target year"; an allocation of total calculated emissions to produce electricity, and an allocation of total calculated emissions to produce heat, is currently not possible. TC Energy met 2019 compliance requirements with a combination of fund credits, purchased from the Alberta Government and EPCs generated from other TC Energy-owned cogeneration assets. A portion of the compliance costs for the Power and Storage assets are recovered through market pricing and hedging activities. TC Energy was actively involved in developing this regulation during industry consultation. Adherence to this regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a TC-specific target. TC Energy supports regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

Target reference number

Int 3

Year target was set

2019

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Intensity metric

Metric tons CO2e per unit of production

Base year

2015

Intensity figure in base year (metric tons CO2e per unit of activity)

0.06299

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

Target year

2019

Targeted reduction from base year (%)

20

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.050392

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

% of target achieved [auto-calculated]

<Calculated field>

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)

The CCIR regulation requires established industrial facilities with GHG emissions above a regulatory-specific threshold to reduce their emissions below a 2015-2017 average intensity baseline (reported as "intensity figure in base year") which is prescribed by the Alberta Government. The CCIR covers our natural gas pipelines and certain power and storage assets in Alberta. The CCIR has since been replaced with the Technology Innovation and Emissions Reduction (TIER) regulation as of January 1, 2020. The TIER system follows a similar regulatory framework as the CCIR and will cover all our natural gas pipelines, power and storage assets in the province. In December 2019, the Government of Canada announced that Alberta's TIER regulation meets the federal government's criteria for carbon-pollution pricing systems for the emission sources it covers. TC Energy is unable to quantify the industrial heat output "intensity figure in target year"; an allocation of total calculated emissions to produce electricity, and an allocation of total calculated emissions to produce heat, is currently not possible. TC Energy met 2019 compliance requirements with a combination of fund credits, purchased from the Alberta Government and EPCs generated from other TC Energy-owned cogeneration assets. A portion of the compliance costs for the Power and Storage assets are recovered through market pricing and hedging activities. TC Energy was actively involved in developing this regulation during industry consultation. Adherence to this regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a TC-specific target. TC Energy supports regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

Target reference number

Int 4

Year target was set

2017

Target coverage

Business activity

Scope(s) (or Scope 3 category)

Other, please specify (methane emissions)

Intensity metric

Other, please specify (%)

Base year

2017

Intensity figure in base year (metric tons CO2e per unit of activity)

0.3

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

Target year

2025

Targeted reduction from base year (%)

1

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.297

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.089

% of target achieved [auto-calculated]

7033.3333333333

Target status in reporting year

Underway

Is this a science-based target?

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

Please explain (including target coverage)

The ONE Future Coalition is a group of 26 Natural Gas companies working together to voluntarily reduce methane emissions across the Natural Gas value chain to 1% (or less) by 2025. Our coalition is comprised of some of the largest Natural Gas Production, Gathering & Boosting, Processing, Transmission & Storage and Distribution companies in the U.S. and represents approximately 15% of the U.S. natural gas value chain. From 2017 to 2018, ONE Future decreased its methane intensity by 0.52% registering a methane intensity of 0.326%, demonstrating that the natural gas industry can minimize methane emissions and increase production and throughput while supplying much needed energy to the U.S. and around the globe for years to come. The 2019 numbers will be published in the fourth quarter, 2020. TC Energy assets reports under the "Transmission and Storage" (T&S) Industry Segment, which is comprised of high pressure, large diameter pipelines that transport natural gas from production and processing to natural gas distribution systems or large-volume consumers such as power plants or chemical plants. This includes interstate and intrastate facilities. Storage facilities, such as underground storage in expended gas reservoirs are used by transmission companies to hold gas and allow for seasonal demand differences. EPA combines T&S into one segment since many of the storage facilities are owned and operated by transmission companies, and since, in some cases the surface facilities (compression at underground storage, for example) are similar to other transmission facilities. Compression of natural gas is a significant operation for the T&S sector, and therefore emissions from compressors, including fugitive components, components designed to vent gas, and compressor exhaust play a larger role in CH4 emissions. The ONE Future Methane Intensity Value target for the Transmission & Storage sector is 0.31%; in 2017, TC Energy's Methane Intensity Value was 0.071%, and in 2018, TC Energy Methane Intensity Value was 0.049%. Please refer to the following document for further details: <http://onefuture.us/wp-content/uploads/2019/11/ONE-Future-2018-Final-Report-LN.pdf>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

No other climate-related targets

C-OG4.2c

(C-OG4.2c) Indicate which targets reported in C4.1a/b incorporate methane emissions, or if you do not have a methane-specific emissions reduction target for your oil and gas activities, please explain why not and forecast how your methane emissions will change over the next five years.

TC Energy supports objectives to reduce methane emissions to help meet local, federal, and global climate change targets, and is a signatory to the United Nations Methane Guiding Principles. These principles focus on priority areas for action towards the reduction of methane emissions across the natural gas value chain. We are committed to minimizing the environmental impact of pipelines throughout the entire pipeline lifecycle and have been actively engaged in reducing methane emissions for several decades as a driving force in the pipeline industry on developing and implementing new practices and technologies to reduce fugitive emissions during routine operations and maintenance.

We are investing in new technology in our operations to improve tracking of our natural gas pipeline fugitive emissions data at valve sites, meter stations and compressor stations. The technology will improve operations and regulatory reporting activities resulting in improved ability to plan maintenance activities.

CANADA – At the federal level, we adhere to the methane reduction regulation which is expected to reduce overall industry emissions by 40-45% by 2030. The regulations detail requirements to reduce methane emissions through operational and capital modifications. There are multiple time frames for compliance depending on the provision, beginning in 2020. Compliance will involve equipment retrofits, frequent leak detection and repair (LDAR) surveys and measurements to quantify emission reductions and associated reporting. We expect methane to reduce relative to the first year of LDAR surveys, which we anticipate being completed December 31, 2020. TC Energy will explore setting an emission reduction target based on those results. Initiatives to reduce methane emissions include pilot projects for implementation of two Dry Gas Seal projects. While the technology is still in development, TC Energy is currently the only Canadian company to employ this specific technology and our plan is to have them in service, at sites TBD, starting 2021.

Power facilities are not affected by the Methane Reduction Regulation. Non-regulated gas storage facilities in Alberta are regulated under the provincial methane emission rules; Alberta Energy Regulator (AER) Directive 60.

U.S. EPA - published regulations related to fugitive methane emissions for new and modified compressor stations in the natural gas transmission and storage sector in 2015. In 2017, the EPA indicated its intention to reconsider this regulation. In 2018, with direction from the current administration, the EPA began working on reducing the requirements of this regulation. No amendments have been published to date.

ONE Future - a coalition of 26 Natural Gas companies focused on implementing an innovative, performance-based approach to the management of methane emissions directed toward a concrete goal of 1% (or less) of total produced natural gas by 2025. By orienting activities toward a specific and measurable outcome (a sustained low rate of CH4 emissions that is consistent with efficient operations), focus is on identifying the most cost-effective abatement opportunities.

USEPA Natural Gas STAR Program - provides a framework for Partner companies with U.S. oil and gas operations to implement methane reducing technologies and practices and document their voluntary emission reduction activities. By joining the Program, Partner companies commit to evaluate and implement cost-effective methane emission reduction opportunities and communicate and share that information across their corporation and with the Natural Gas STAR Program.

Other methane reduction commitments, specific to our US gas operations include INGAA methane commitments & API Environmental Partnership Pipeline Blowdown Program commitments. In addition, the Environmental Partnership (TEP) is a coalition of U.S. natural gas and oil production, processing, and transmission companies operating in every major oil and gas basin across the country.

MEXICO - In 2018, the Government of Mexico published a new regulation that established guidelines for the prevention and control of methane emissions in the hydrocarbon sector, which will impact our Mexico natural gas pipelines. Companies are required to prepare a Program for the Comprehensive Prevention and Control of Methane Emissions (PPCIEM) which includes identification of sources of methane, quantification of baseline emissions, and an estimate of the expected emission reductions from prevention and control activities. Each company is required to set a reduction goal as part of the PPCIEM and is expected to meet the reduction goal within a period not exceeding six calendar years from the delivery of the PPCIEM.

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	66	
To be implemented*	10	
Implementation commenced*	3	55000
Implemented*	0	0
Not to be implemented		

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	We own assets, and have business interests, in several regions subject to GHG emissions regulations, including GHG emissions management and carbon pricing policies. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at reducing GHG emissions. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. Please refer to our 2019 Annual Report for an overview of existing policies, anticipated policies, and changes to environmental assessment legislation, which drive emission reduction activities. These include, but are not limited to, the following: • Canadian Methane Reduction Regulation • Canadian Output-based Pricing System (OBPS) regulation • California Air Resources Board • Mexico-based establishment of guidelines for the prevention and control of methane emissions in the hydrocarbon sector. Additional regulations not currently listed in our Annual Report which are considered drivers for emission reduction activities include: USA EPA Natural Gas STAR: methane reductions provided with EPA Natural Gas STAR reporting (equipment leaks, pipeline replacement, pipeline pump-downs, use of turbines) including: • Pipeline "pump downs" during construction and pipeline integrity digs to reduce methane blown to atmosphere (reported to EPA Natural Gas STAR). • Installation of cathodically-protected pipe replacing unprotected pipe to reduce methane leakage to atmosphere. • Compliance driven and State LDAR (CA, PA) fugitive methane surveys which require leaks to be corrected. • Electric driven compressors for new US Gas Operations Mexico ETS: The Ministry of the Environment and Natural Resources began its pilot program for implementing an ETS in 2019. The pilot program is set to run for 3 years, 2 years corresponding to the pilot phase and one to transition fully to begin in 2023. The ETS pilot is set to cover direct CO2 emissions representing approximately 45% of national emissions from around 300 entities. The pilot program will impose no economic impact on regulated entities and looks to test the system design, build emissions trading capacity, and generate a reference value for emission allowances and offsets of the operational phase.
Internal price on carbon	We own assets and have business interests in several regions subject to carbon pricing policies. An internal carbon price is applied in the annual business planning process for each of our facilities to understand the impact that the expected carbon regulations will have on our operating costs. The internal cost of carbon is also applied to all our potential growth projects and strategies to assess the viability of the projects over the long term, under both our base and stress cases. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. We expect that, over time, most of our assets will be subject to some form of regulation to manage GHG emissions, which includes carbon pricing policies. Changes in regulations may result in higher operating costs or other expenses, or higher capital expenditures to comply with possible new regulations.
Dedicated budget for low-carbon product R&D	Low carbon technology is a key aspect of TC's efforts to reduce emissions. In the last five years, we have invested more than \$142 million on technology development and deployment and digital technologies targeting the reduction of capital expenditures, lowering operating costs and improving environmental performance.
Partnering with governments on technology development	Our Government Relations (GR) and Community Relations (CR) teams advance business objectives by identifying issues, opportunities, and risks within the local, provincial, and federal government political arenas in which TC Energy does business or would like to do business. GR and CR works continuously to build, cultivate and leverage positive and constructive relationships with government officials and other stakeholders through project advocacy and education, and identifying and addressing stakeholder issues, concerns, values and needs. This allows us to gain trust and respect in the public sector, obtain government and community support for its activities and initiatives, and to contribute to and collaborate with the communities where the company operates, which includes technology development. In Canada, TC Energy collaborates with government-based organizations such as Emissions Reductions Alberta and Alberta Innovates to promote technological advancements and innovative solutions for GHG abatement and increased environmental performance. In the USA, TC Energy has been an active participant in the US EPA Natural Gas STAR since 2016, which consists of exploring potential methane reduction opportunities in conjunction with the EPA. In Mexico, TC Energía has identified the federal directive to increase the use of fuel oil for power generation, as made official in the Energy Ministry's 2020-2024 Energy Sector Program, as a pressing issue. TC Energía has funded two independent studies showcasing the detrimental environmental and health effects of the continued use of fuel oil via a case study of a state utility's power plant in Tula Hidalgo. The results of the first study have been initially presented to COPARMEX members for feedback and mainly center on the power plant's and fuel oil-burning's pernicious effects on regional air pollution. The results of the first study linked health issues and pollution contingencies in Mexico City to the operation of the Tula power plant and its use of fuel oil. It also showed that if the plant carried out its planned transition to natural gas environmental harm from fuel oil emissions would be minimized.
Other (Operational excellence and effectiveness)	TC Energy's focus on operational excellence and effectiveness increases efficiency, thereby reducing emissions. TC Energy's drive for continual improvement including aligning metrics, improving information accessibility, and completing integration activities, extends through our integrated business, applying consistent stringent standards and practices to improve overall performance.
Internal incentives/recognition programs	TC Energy leveraged employee engagement strategies to navigate and implement novel requirements of the Federal Methane Emissions Regulations and relied heavily on the technical expertise, creativity and innovative thinking of its work force in this endeavor. This collective effort enabled TC Energy to develop an in-house Emissions Management Application within SAP (EMA-SAP Tool) to support the LDAR program for Canada Gas Operations. The application developed creates an API between SAP and our external vendor databases to automatically extract all necessary leak data (Pictures, Video, Text Descriptions) into EMA/SAP for our team to Triage. In rewarding employees for their efforts and contributions, TC Energy is using an internal recognition program (Spotlight) which creates a rewarding work environment.

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

Product

Description of product/Group of products

Cogeneration and Nuclear Power

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

Low-carbon product

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

Other, please specify (Electricity Grid Factors – Environment Canada National Inventory Report, 1990-2017, Part 3, Annex 13 Electricity in Canada: Summary and Intensity Tables , GWPs – Environment Canada Global Warming Potentials, IPCC Fourth Assessment Report)

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

6

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

Our Power operations provide lower-carbon energy. Nearly three-quarters of the power we provide is generated from an emission-less nuclear power facility and we are leaders in the development and operation of high-efficiency natural gas-fired and cogeneration power facilities. The Power and Storage segment currently consists of six low-emission natural gas-fired power plants and the Bruce Power nuclear facility, and approximately 118 Bcf of non-regulated natural gas storage capacity in Alberta. The power assets are in Alberta, Ontario, Québec and New Brunswick. On April 29, 2020, we completed the sale of our Halton Hills and Napanee power plants as well as our 50 per cent interest in Portlands Energy Centre. Halton Hills and Portlands Energy Centre were operating under TC Energy ownership in 2019 and their emissions are included in this report. % revenue value includes revenue from Storage assets and may overestimate slightly.

Level of aggregation

Product

Description of product/Group of products

Renewable Natural Gas

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

Low-carbon product

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

Other, please specify (Renewable Natural Gas (RNG) Technology Roadmap Steering Committee with support from Government of Canada)

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

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

The Trans-Quebec & Maritimes Pipeline Inc, carries robust volumes of renewable natural gas, effectively connecting supply and demand of low-carbon fuels and supporting provincial clean energy programs and objectives.

C-EU4.6

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

In alignment with our commitment as a signatory to the United Nations (UN) Methane Guiding Principles, we are committed to managing our GHG emissions, focusing on our GHG intensity and continuing to integrate climate considerations into our overall business strategy, risk management and business development. We look for innovative and economically effective solutions to improve system and process efficiencies that help manage emissions.

Through developing world-class technologies, we are working hard to reduce the GHG intensity of our operations and reduce energy use on our pipelines and other facilities. We comply with absolute and intensity-based GHG emissions targets based on regulatory requirements in Alberta and Québec. In California and Québec where cap-and-trade programs are in place, we employ a variety of operational and market mechanisms to obtain emission units and offset credits.

For over half a century, we have pioneered innovative technology and practices to enhance efficiency and reduce emissions at our facilities, and we maintain a robust corporate research and development program, with a focus on improving the safety and efficiency of our operations.

We also continue to implement practices to enhance our management of fugitive methane emissions from our power generation activities. For example, our power generation facilities perform fugitive emission inspections on a monthly or annual frequency depending on the location of the gas equipment (within the plant vs. outside the plant). Leaks are tagged if they cannot be repaired immediately and the repair activity is recorded for that piece of equipment.

C-OG4.6

(C-OG4.6) Describe your organization's efforts to reduce methane emissions from your activities.

TC Energy fully supports objectives to reduce methane emissions and engages with regulators, contributing to development of voluntary and mandatory methane emission reduction programs to meet federal and provincial targets. We are also a signatory to the United Nations (UN) Methane Guiding Principles. These principles focus on priority areas for action towards the reduction of methane emissions across the natural gas value chain.

We are committed to minimizing the environmental impact of pipelines throughout the entire pipeline lifecycle and have been actively engaged in reducing methane emissions for several decades as a driving force in the pipeline industry on developing and implementing new practices and technologies to reduce fugitive emissions during routine operations and maintenance. Please refer to question **C-OG4.2c** for details regarding our commitment to methane reduction emissions.

TC also participates in Petroleum Technology Alliance Canada (PTAC) and Canadian Energy Pipeline Association (CEPA) committees which emphasize industry sharing of best practices learned with focus on methane, and shared response to government agencies regarding upcoming regulations.

C-OG4.7

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

Yes

C-OG4.7a

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

TC Energy does not own or operate any upstream oil and gas production assets; however, we have proactively undertaken LDAR for years.

As well, regulatory rules require leak tests at selected compressor stations in the following jurisdictions:

- Alberta – Alberta Energy Regulator Directive 060
- British Columbia - Greenhouse Gas Industrial Reporting and Control Act: Greenhouse Gas Emission Reporting Regulation
- Ontario - Environmental Protection Act: O. Reg. 452/09: Greenhouse Gas Emissions Reporting,
- Quebec - Regulation Respecting Mandatory Reporting of Certain Emissions of Contaminants into the Atmosphere,
- US Federal: 40 CFR Part 98 Greenhouse Gas Reporting Rule Subpart W (M12) and 40 CFR Part 60 Oil and Natural Gas Emission Standards for New, Reconstructed and Modified Sources (M3).

In Canada, TC Energy has been completing LDAR surveys at compressor stations on an annual basis and meter stations every three years. Starting in 2020, these LDAR frequencies will increase to three times a year for both the compressor and the meter stations per federal and provincial methane regulation requirements. While valves are excluded from this initiative, per regulatory guidance, TC Energy will complete valve surveys twice a year.

TC Energy has also developed an in-house Emissions Management Application within SAP (EMA- SAP Tool) to support the LDAR program for Canada Gas Operations. The application developed creates an API between SAP and our external vendor databases to automatically extract all necessary leak data (pictures, video, text descriptions) into EMA/SAP triage. We can use this tool to evaluate all leaks and automate the generation of work orders to operations departments for repair, within 2 business days. This sets up our field personnel for success to achieve regulatory repair timeline requirements (within 30 days).

C-OG4.8

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

While TC Energy does not own or operate any upstream oil and gas production assets, we use flares at the gas storage operations at a minimal capacity for process safety purposes. Where practical and safe, flaring is also used as part of the Canada gas operations to combust the methane releases from pipeline blowdowns during maintenance activities, and on dehydration skids at our US gas operations, however, some thermal oxidizers exist as an alternative to flares.

We also operate a limited number of flares at liquids terminals. In these instances, we capture vent gas from oil storage tanks and loading activities and flare this captured gas to minimize the impact to the environment by destroying potentially harmful compounds and reducing overall GHG emissions through combustion.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Based on CDP guidance, a baseline year for enterprise-wide TC emissions is more complex than possible to reflect in this question response format and individual year-over-year comparisons (e.g. within a line of business) are described in specific subsequent questions.

Scope 2 (location-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Based on CDP guidance, a baseline year for enterprise-wide TC emissions is more complex than possible to reflect in this question response format and individual year-over-year comparisons (e.g. within a line of business) are described in specific subsequent questions.

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

TC Energy does not report Scope 2 emissions using market-based figures.

C5.2

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

The Climate Registry: General Reporting Protocol

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

The Greenhouse Gas Protocol: Scope 2 Guidance

US EPA Mandatory Greenhouse Gas Reporting Rule

US EPA Emissions & Generation Resource Integrated Database (eGRID)

Other, please specify (Western Climate Initiative (WCI), USPEA 40 CFR Part 98, Canadian Energy Partnership for Environmental Innovation (CEPEI), Clearstone Engineering Ltd., GREET, The Climate Registry, Canada National Inventory Report)

GREET and WCI/WBSCD – Greenhouse Gas Protocol to calculate Scope 2 emissions

C5.2a

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

TC Energy calculates its GHG emissions using a combination of methods required by various regulations in the different jurisdictions where we operate.

We report our emissions to British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Québec, Environment and Climate Change Canada, the U.S. Environmental Protection Agency, California, Oregon, Washington, and Mexico's Ministry of Environment and Natural Resources (SEMARNAT). These methods can include, but are not limited to, direct measurement and use of emission factors in conjunction with operating conditions.

The 2019 dataset reported within includes source emissions which would not be mandated under regulatory reporting regimes, as they are considered below reporting thresholds. They have been disclosed in this year's CDP response, for inclusiveness and transparency.

These updated emissions sources include:

- Canada and USA Scope 1 emissions from Liquids Pipelines entities,
- Scope 1 emissions from various US compressor stations from Natural Gas Pipeline entities,
- Scope 2 emissions from Canada Storage entities, and
- Canada and USA Scope 2 emissions from Liquids Pipelines operations.

A separate intensity metric has also been newly included this year for our Alberta-based gas storage facilities.

Reported emissions have been adjusted based on legal entity ownership, as of December 31, 2019, as disclosed in our 2019 Annual Report. Emissions data disclosed within this submission includes emissions associated with power assets subsequently sold in April 2020; Halton Hills and our 50 per cent interest in Portlands Energy Centre.

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)

14427861

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

TC Energy's gross global Scope 1 emissions are calculated as per jurisdictional regulatory reporting program guidance, including reporting boundary, emission category, calculation methodology and global warming potentials. In instances where regulatory reporting program guidance does not align across jurisdictions, TC Energy has attempted to align the emission calculation methodology consistently across all legal entities, including those outside minimum regulatory reporting thresholds. As detailed in Question C5.2a, additional emission sources have been included, informed by considerations including transparency, external reputation, resource availability and impact, and future-use initiatives. These updated emissions sources include: • Canada and USA Scope 1 emissions from Liquids Pipelines entities, • Scope 1 emissions from various US compressor stations from Natural Gas Pipeline entities, • Scope 2 emissions from Canada Storage entities, and • Canada and USA Scope 2 emissions from Liquids Pipelines operations.

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment

Indirect (Scope 2) includes emissions from energy purchased or acquired and consumed by the reporting company. It includes the emissions from purchased electricity, steam, heat and cooling. Scope 2 emissions are considered an indirect emissions source (along with Scope 3), because the emissions are a consequence of activities of the reporting organization but occur at sources owned or controlled by another organization (e.g. an electricity generator or utility). TC Energy's location-based Scope 2 emissions are calculated based on generic emission factors (i.e. grid electricity emission factors). TC Energy is unable to calculate Scope 2 market-based emissions, due to the nature of our operations.

C6.3

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

Reporting year

Scope 2, location-based

2010031

Scope 2, market-based (if applicable)

<Not Applicable>

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

Electricity emissions factors for location-based Scope 2 accounting are taken from the 2019 Canadian National Inventory Report as submitted to the United Nations Framework Convention on Climate Change or supplied by grid operators where available, the USEPA Emissions & Generation Resource Integrated Database (eGRID), and The Climate Registry (April 2020) Climate Registry Default Emission Factors, for default emission factors applicable to Mexico entities.

C6.4

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

Yes

C6.4a

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

Source

Emissions from supplier-owned and operated vehicles that are operated inside specific large-emitting facilities, when delivering goods/services.

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

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

Emissions are not evaluated

Explain why this source is excluded

Incomplete data availability; TC Energy estimates this is not a significant source of emissions.

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

Relevant, not yet calculated

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

TC Energy is evaluating opportunities to obtain an annual supply chain spend analysis to further quantify emissions from purchased goods and services, including, but not limited to, fuel feedstocks and professional and technical services. Scope 3 emissions in this category are not currently quantified. We anticipate utilizing the "GHG Protocol Quantis Scope 3 Evaluator" tool to assist in future quantification.

Capital goods

Evaluation status

Relevant, not yet calculated

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

TC Energy is evaluating opportunities to obtain an annual supply chain spend analysis to further categorize and quantify associated emissions from purchased capital goods, such as construction materials (concrete and steel) for capital projects. Scope 3 emissions in this category are not currently quantified. We anticipate utilizing the "GHG Protocol Quantis Scope 3 Evaluator" tool to assist in future quantification.

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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

3033539

Emissions calculation methodology

PURCHASED ELECTRICITY: Inputs: (1) Annual electricity consumption; (2) Asset ownership %; (3) % load received from grid when power plant is offline. Emission Factors: Canada/US/Mexico Electricity Feedstock Life Cycle CO₂e Emission Factors: (GREET provides feedstock emissions factors based on generation type. Electricity generation mix % is sourced from 'Canada's Energy Future 2018 - Energy Supply and Demand Projections to 2040 - An Energy Market assessment'.) Methodology: Input * Asset Ownership % * Emission Factor. FUEL CONSUMPTION: Inputs: (1) Fuel consumption by business segment and country; (2) Ownership % by country and asset. Emission Factors: (1) Lower Heating Value for Natural Gas (2019 GREET); (2) Natural CO₂e Gas Emission Factors for Stationary Fuels and Electricity Generation (2019 GREET). Methodology: Input * Ownership % * Emission Factor TRANSMISSION AND DISTRIBUTION (T&D) LOSSES: Inputs: Natural Gas Pipelines and Energy Scope 2 CO₂e emissions . Emission Factor: Electric T&D loss factor (2019 GREET). Methodology: Input * Emission Factor AVIATION FUEL: Inputs: (1) Canada and US Annual total dollars spent on aviation fuel; (2) Estimated Fuel Price; (3) Bank of Canada closing exchange rate between US and Canadian dollars, annual average at December 31, 2019. Emission Factors: (1) Lower heating value of Conventional Jet Fuel (2019 GREET); (2) Jet Fuel Cycle CO₂e Emission Factor (2019 GREET). Methodology: \$CDN Spend * Estimated Fuel Price * LHV * Emission Factor.

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

100

Please explain

Included in this Scope 3 category are emissions from purchased products used for operational purposes and/or business activities, which have not already been quantified as a direct (Scope 1) or indirect (Scope 2) emissions source and are located outside of operational boundaries. This includes: • Purchased Electricity • Fuel Consumption (extraction, processing and transport emissions that are outside our operational boundaries.) • T&D Losses • Aviation Fuel Purchases For the 2019 reporting year, this category represents approximately 99% of TC Energy's Scope 3 emissions profile.

Upstream 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

Emissions previously reported in this category have been further evaluated and included in other categories. Previously reported fleet leased vehicular travel has been included in Scope 1 – Corporate transportation emissions (based on guidance from USEPA GHG accounting reporting guidance), and rental vehicles and extensity travel emissions have been included in Category 6: Business Travel. Emissions associated with transportation and distribution of services have been quantified in Scope 1 accounting.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

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

TC Energy is evaluating opportunities to obtain an annual waste expenditure spend analysis to further categorize and quantify associated emissions from disposal and treatment of waste generated at TC Energy legal entities. Scope 3 emissions in this category are not currently quantified. We anticipate utilizing the "GHG Protocol Quantis Scope 3 Evaluator" tool to assist in future quantification.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

11236

Emissions calculation methodology

Air and Rail travel emissions are quantified by our travel services team. VEHICULAR TRAVEL Inputs: Rental vehicle kilometers and; (2) Extensity kilometers. Emission Factors: (1) Canadian Average fuel economy; (2) US average fuel economy, (3) National Inventory Report Greenhouse Gas Sources and Sinks in Canada 1990-2018, Part 2, and (4) US Emission Factors for Greenhouse Gas Inventories [26 March 2020] Methodology: Input / Fuel Mileage * Emission Factor

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

100

Please explain

Emissions included in this Scope 3 category cover employee business-related travel activities. Included in this Scope 3 category: • Domestic, continental and intercontinental air travel • Rail travel • Car Rental • Extensity

Employee commuting

Evaluation status

Relevant, not yet calculated

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

TC Energy is evaluating opportunities to obtain employee commuting information, via employee surveys, to further categorize and quantify associated. Scope 3 emissions in this category are not currently quantified. TC Energy-owned and leased air and vehicular travel data is captured under Scope 1 emissions quantification.

Upstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

24315

Emissions calculation methodology

Inputs: The primary inputs for calculating emissions from Upstream Leased Assets are (1) TC Energy building electricity consumption in Canada and the US and; (2) Occupancy percentage in Canadian office buildings. Emission Factors: (1) Canada Electrical CO₂e Emission Factor by Province (National Inventory Report Greenhouse Gas Sources and Sinks in Canada 1990-2018, Part 3) and; (2) US Electrical CO₂e Emission Factor by eGRID subregion (USEPA, eGRID2018) Methodology: Inputs * Building Occupancy % * Emission Factor.

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

100

Please explain

Emissions included in this Scope 3 category include day-to-day operation of office space leased by TC Energy. Included in this Scope 3 category: • Leased office space electricity consumption • Leased office space natural gas consumption

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

TC Energy does not take ownership of the natural gas and crude oil we transport, nor do we take ownership of the natural gas we store; we simply transport or store it for various shippers to other transmission pipelines, power plants and local distribution companies who then bring it to the places where we work and live. As such, emissions relating to facilitation of carrying materials are reported under Scope 1 and 2 emissions. No Scope 3 emissions from this category are relevant to TC Energy's natural gas and liquids pipeline business. Downstream electricity use, after generation, is transmission and distribution (T&D) of electricity. There are typical losses from T&D and emissions have been quantified under 'Scope 3 - Fuel-and-energy-related activities (not included in Scope 1 or 2)'.
TC Energy does not take ownership of the natural gas and crude oil we transport, nor do we take ownership of the natural gas we store; we simply transport or store it for various shippers to other transmission pipelines, power plants and local distribution companies who then bring it to the places where we work and live. As a result, quantification of GHG emissions relating to the processing of sold products is not relevant (if there is no product ultimately sold). Relative to our Power entities, as electricity is not 'processed', quantification of GHG emissions relating to the processing of sold products (electricity) is null.

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

TC Energy does not take ownership of the natural gas and crude oil we transport, nor do we take ownership of the natural gas we store; we simply transport or store it for various shippers to other transmission pipelines, power plants and local distribution companies who then bring it to the places where we work and live. As a result, quantification of GHG emissions relating to the processing of sold products is not relevant (if there is no product ultimately sold). Relative to our Power entities, as electricity is not 'processed', quantification of GHG emissions relating to the processing of sold products (electricity) is null.

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

TC Energy does not take ownership of the natural gas and crude oil we transport, nor do we take ownership of the natural gas we store; we simply transport or store it for various shippers to other transmission pipelines, power plants and local distribution companies who then bring it to the places where we work and live. As a result, quantification of GHG emissions relating to the use of sold products is not relevant (if there is no product ultimately sold). Electricity produced from some of our power generation facilities are sent directly to the grid, from which industrial, commercial and residential (indirectly) customers procure, as needed. Purchases from the grid are completed on an as-needed basis and cannot be purchased from a specific electricity generator. As a result, quantification of these Scope 3 emissions is not possible, as we are unable to discern who purchases our generated electricity at any given time. TC Energy is evaluating opportunities to obtain reported-emissions data from customers who purchase our generated electricity directly (through contracts) in which to quantify emissions from this category.

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

TC Energy does not take ownership of the natural gas and crude oil we transport, nor do we take ownership of the natural gas we store; we simply transport or store it for various shippers to other transmission pipelines, power plants and local distribution companies who then bring it to the places where we work and live. As a result, quantification of GHG emissions relating to the end of life treatment of sold products is not relevant (if there is no product ultimately sold). There is no end of life treatment required of electricity generated from power generation facilities. As per the laws of thermodynamics, energy changes form or is transferred, e.g. electricity powers a light bulb and the energy changes form to radiant energy (light).

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

Emissions from this Scope 3 category are not relevant to our operations, as we are not aware of any 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

Emissions from this Scope 3 category are not relevant to our operations as TC Energy does not operate franchises as defined in the GHG Scope 3 Accounting and Reporting Standard.

Investments

Evaluation status

Relevant, not yet calculated

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

TC Energy is evaluating opportunities to obtain annual GHG emissions from sites that we have a financial or equity ownership percentage but are not the operator, to further categorize and quantify associated emissions. Scope 3 emissions in this category are not currently quantified.

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

TC Energy does not have other upstream Scope 3 emissions to report.

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

TC Energy does not have other downstream Scope 3 emissions to report.

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

211

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

4984621

Metric denominator

Other, please specify (billion cubic feet (Bcf) natural gas throughput)

Metric denominator: Unit total

23596

Scope 2 figure used

Location-based

% change from previous year

21.92

Direction of change

Decreased

Reason for change

This metric is relevant to our natural gas pipelines in the U.S. and represents Scope 1 and 2 emissions only from those facilities. The relationship between natural gas transmission pipeline GHG emissions and the volume of gas transported is complex. The nature of a transmission network, such as a single, long-haul pipeline with few connections or points where gas is added and removed from the system, will have a different design (including operational equipment) and emissions profile than highly integrated networks with a large number of "branches" over a smaller geographic area. In addition, the amount of GHGs released during operation does not have a linear relationship to the volume of gas that is transported on the system. The utilization of compressor units and GHG emissions from combustion of natural gas are dictated by both the volume and distance of travel of gas being transported. As a result, comparing emissions intensities between natural gas transmission pipeline systems must consider of the type of pipeline network and the service that it is providing. Increased throughput (utilization) at all US legal entities (apart from Midstream, Northern Border, and Tuscarora entities), contributed to the intensity decrease between 2018 and 2019.

Intensity figure

983

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

7029190

Metric denominator

Other, please specify (billion cubic feet (Bcf) natural gas throughput)

Metric denominator: Unit total

7152

Scope 2 figure used

Location-based

% change from previous year

9.45

Direction of change

Increased

Reason for change

This metric is relevant to our natural gas pipelines in Canada and represents Scope 1 and 2 emissions only from those facilities. The intensity increase does not represent a significant year-over-year change (<10%).

Intensity figure

179

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

72410

Metric denominator

Other, please specify (billion cubic feet (Bcf) natural gas throughput)

Metric denominator: Unit total

405

Scope 2 figure used

Location-based

% change from previous year

21.87

Direction of change

Decreased

Reason for change

This metric is relevant to our natural gas pipelines in Mexico and represents Scope 1 and 2 emissions only from those facilities. Increased throughput (utilization) at all Mexico entities (66% increase from 2018), including Sur de Texas coming online in 2019, contributed to the intensity decrease between 2018 and 2019.

Intensity figure

0.0953

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

2615803

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

27442310

Scope 2 figure used

Location-based

% change from previous year

7.97

Direction of change

Decreased

Reason for change

Metric tonnes CO2e per MWh produced is relevant to our Power entities and measures Scope 1 and 2 emissions only from those facilities. Many of TC Energy's electricity-generating facilities also generate a heat product, which is not accounted for here. Therefore, an emissions intensity simply based on electricity generation is only partially representative of the Company's true emissions intensity. The intensity decrease does not represent a significant year-over-year change (<10%).

Intensity figure

768

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

41143

Metric denominator

Other, please specify (Total natural gas volume (Injected + Withdrawn) (e3 m3))

Metric denominator: Unit total

54

Scope 2 figure used

Location-based

% change from previous year

10.51

Direction of change

Decreased

Reason for change

This is a new metric for 2019 CDP reporting. Metric tonnes CO2e per total natural gas volume (Injected + Withdrawn) is relevant to our Canadian Gas Storage entities and measures Scope 1 and 2 emissions only from those facilities. When compared to a recalculated 2018 intensity value, the decrease is attributed to a decrease in both numerator and denominator, attributed to operational requirements.

C-OG6.12

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

Unit of hydrocarbon category (denominator)

Other, please specify (MWh of Natural Gas and Electricity)

Metric tons CO2e from hydrocarbon category per unit specified

0

% change from previous year

26

Direction of change

Decreased

Reason for change

Increased throughput (utilization) at most US and Mexico entities (76% and 66% respectively, year-over-year), contributed to the intensity decrease between 2018 and 2019.

Comment

Metric tons CO2e from hydrocarbon category per unit specified is 0.002. Throughput in MMcf of Natural Gas for Pipelines was converted to MWh and added to the MWh of Electricity consumed from generated electricity within power generation facilities. The total CO2e emissions were then divided by MWh to obtain a corporate intensity for 2019.

C-OG6.13

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

Oil and gas business division

Midstream

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

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

0.005

Comment

Methane emissions are 0.0050% of total natural gas and hydrocarbon throughput

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	12592386	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	1764400	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	71057	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	0	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	18	IPCC Fourth Assessment Report (AR4 - 100 year)

C-EU7.1b

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

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	5		137	
Combustion (Electric utilities)	2578175	283		2605523	
Combustion (Gas utilities)					
Combustion (Other)					
Emissions not elsewhere classified	1	64		1624	Emissions disclosed in this category represent venting emission sources and HFC releases during the 2019 calendar year.

C-OG7.1b

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

Emissions category

Combustion (excluding flaring)

Value chain

Midstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

9953550

Gross Scope 1 methane emissions (metric tons CH4)

2622

Total gross Scope 1 emissions (metric tons CO2e)

10069149

Comment

Emissions category

Flaring

Value chain

Midstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

17131

Gross Scope 1 methane emissions (metric tons CH4)

233

Total gross Scope 1 emissions (metric tons CO2e)

22967

Comment

Emissions category

Venting

Value chain

Midstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

882

Gross Scope 1 methane emissions (metric tons CH4)

46436

Total gross Scope 1 emissions (metric tons CO2e)

1161777

Comment

Emissions category

Fugitives

Value chain

Midstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

381

Gross Scope 1 methane emissions (metric tons CH4)

20488

Total gross Scope 1 emissions (metric tons CO2e)

512570

Comment

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Canada	9567246
United States of America	4788196
Mexico	72419

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Natural Gas Pipelines	11765765
Liquids Pipelines	699
Power and Storage	2626956
Corporate	34441

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	2607284	<Not Applicable>	The value reported here includes emissions from our Power Generation entities only; previously disclosed emission totals included emissions from our non-regulated Canadian Gas Storage entities, which do not meet the CDP definition of an "Electric Utility", however are included in TC Energy's Power and Storage business segment. The Storage business in Canada operates independently from our regulated natural gas transmission and storage businesses.
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)		<Not Applicable>	
Oil and gas production activities (midstream)	11766464	<Not Applicable>	The value reported here includes estimated emissions from our Liquids Pipelines entities, as well as emissions from our Natural Gas Pipeline entities; emissions from the Liquids Pipelines business segment were not previously quantified or disclosed in this category.
Oil and gas production activities (downstream)		<Not Applicable>	
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Canada	702550		1674429	
United States of America	1305652		2414602	
Mexico	1829		3622	

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Natural Gas Pipelines	320457	
Liquids Pipelines	1659584	
Power and Storage	29990	

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)			
Oil and gas production activities (midstream)	1980041		The value reported here includes estimated emissions from our Liquids Pipelines entities, as well as emissions from our Natural Gas Pipeline entities; Scope 2 emissions from certain entities within our Liquids Pipelines business segment were not previously disclosed.
Oil and gas production activities (downstream)			
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

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

Increased

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		<Not Applicable >		
Other emissions reduction activities		<Not Applicable >		
Divestment	84188.5	Decreased	0.51	On May 21, 2019, we completed the sale our Coolidge generating station in Arizona to Salt River Project Agriculture Improvement and Power District (SRP).
Acquisitions		<Not Applicable >		
Mergers		<Not Applicable >		
Change in output	302523	Decreased	1.84	Change in output was noted at the following: • Scope 1 - Canada; Power and Storage: previously reported emissions at certain power generation entities were using Second Assessment GWPs. The emissions disclosed within represent the Fourth Assessment GWPs. • Scope 1 - Canada; Corporate: source data was updated for improved accuracy and emission factors were updated to account for emission per vehicle type • Scope 1 - USA; Natural Gas Pipelines: annual GHG data not received for one JV pipeline asset. Asset emissions represent 0.5% of total 2018 USA emissions profile, and 0.15% of total TC Energy 2018 emissions profile. • Scope 1 - USA; Corporate: emission factors were updated to account for emission per vehicle type and previously used exchanges rates were updated • Scope 1 - Mexico; Natural Gas Pipelines; emissions updated to reflect quantification improvements • Scope 1 - Mexico; Corporate: emission factors were updated to account for emission per vehicle type, and reflect quantification improvements
Change in methodology	1542817	Increased	9.39	Change in methodology was noted at the following: • Scope 1 - Canada; Liquids Pipelines: inclusion of estimated Scope 1 emissions from Liquids Pipelines • Scope 2 - Canada: values updated to reflect (1) electrical power use values at Natural Gas Pipeline entities (2) load percentages, to represent a calculated value, based on actual data, at Power Generation assets in Alberta, and (3) inclusion of Keystone entity Scope 2 emissions with other Liquids Pipelines entities. • Scope 2 – USA: inclusion of Keystone entity Scope 2 emissions
Change in boundary		<Not Applicable >		
Change in physical operating conditions		<Not Applicable >		
Unidentified		<Not Applicable >		
Other		<Not Applicable >		

C7.9b

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

Location-based

C8. Energy

C8.1

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

Don't know

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)		69780932	69780932
Consumption of purchased or acquired electricity	<Not Applicable>		4092652	4092652
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>		<Not Applicable>	
Total energy consumption	<Not Applicable>		73873584	73873584

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	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

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

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1123

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

Unit

Please select

Emissions factor source

Please refer to the "Comment" section for further details regarding emission factors sources.

Comment

Various emission factors were used based on type of fuel / electricity, source of fuel / electricity and whether emissions to be calculated were Scope 1, Scope 2, or Scope 3. Scope 1 emissions factors are generally prescribed by the regulatory agencies, in jurisdictions where our assets are located. Third-party verification of GHG calculations, including use of emission factors, are completed on several assets; please refer to Question C10.1a for further details. Scope 2 and 3 emissions factors have been disclosed in our response to question C5.2.

Fuels (excluding feedstocks)

Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

4

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

Unit

Please select

Emissions factor source

Please refer to the "Comment" section for further details regarding emission factors sources.

Comment

Various emission factors were used based on type of fuel / electricity, source of fuel / electricity and whether emissions to be calculated were Scope 1, Scope 2, or Scope 3. Scope 1 emissions factors are generally prescribed by the regulatory agencies, in jurisdictions where our assets are located. Third-party verification of GHG calculations, including use of emission factors, are completed on several assets; please refer to Question C10.1a for further details. Scope 2 and 3 emissions factors have been disclosed in our response to question C5.2.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

414

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

Unit

Please select

Emissions factor source

Please refer to the "Comment" section for further details regarding emission factors sources.

Comment

Various emission factors were used based on type of fuel / electricity, source of fuel / electricity and whether emissions to be calculated were Scope 1, Scope 2, or Scope 3. Scope 1 emissions factors are generally prescribed by the regulatory agencies, in jurisdictions where our assets are located. Third-party verification of GHG calculations, including use of emission factors, are completed on several assets; please refer to Question C10.1a for further details. Scope 2 and 3 emissions factors have been disclosed in our response to question C5.2.

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

69779391

MWh fuel consumed for self-generation of electricity

14182870

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

10390725

Emission factor

Unit

Please select

Emissions factor source

Please refer to the "Comment" section for further details regarding emission factors sources.

Comment

Various emission factors were used based on type of fuel / electricity, source of fuel / electricity and whether emissions to be calculated were Scope 1, Scope 2, or Scope 3. Scope 1 emissions factors are generally prescribed by the regulatory agencies, in jurisdictions where our assets are located. Third-party verification of GHG calculations, including use of emission factors, are completed on several assets; please refer to Question C10.1a for further details. Scope 2 and 3 emissions factors have been disclosed in our response to question C5.2.

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	27442310	20054		
Heat	6664228			
Steam				
Cooling				

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)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)

Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Lignite

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)

Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Oil

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)

Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Gas

Nameplate capacity (MW)

2046

Gross electricity generation (GWh)

5074

Net electricity generation (GWh)

5036

Absolute scope 1 emissions (metric tons CO₂e)

2607284

Scope 1 emissions intensity (metric tons CO₂e per GWh)

514

Comment

Nameplate capacity and gross electricity generation have been adjusted for asset ownership as at December 31, 2019, as disclosed in the 2019 Annual Report. On April 29, 2020, we completed the sale of our Halton Hills and Napanee power plants as well as our 50 per cent interest in Portlands Energy Centre. Halton Hills and Portlands Energy Centre were operating under TC Energy ownership in 2019 and their nameplate capacity is included in this total. There is a negligible difference in Natural Gas activity emission intensity, year-over-year.

Biomass

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Waste (non-biomass)

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Nuclear

Nameplate capacity (MW)

3109

Gross electricity generation (GWh)

22368

Net electricity generation (GWh)

22216

Absolute scope 1 emissions (metric tons CO₂e)Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Nameplate capacity and gross electricity generation have been adjusted for asset ownership as at December 31, 2019, as disclosed in the 2019 Annual Report. TC Energy does not quantify or disclose emissions associated with the Bruce Power Nuclear facility.

Fossil-fuel plants fitted with CCS

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Geothermal

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Hydropower

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO₂e)Scope 1 emissions intensity (metric tons CO₂e per GWh)

Comment

Wind

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO2e)

Scope 1 emissions intensity (metric tons CO2e per GWh)

Comment

Solar

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO2e)

Scope 1 emissions intensity (metric tons CO2e per GWh)

Comment

Marine

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO2e)

Scope 1 emissions intensity (metric tons CO2e per GWh)

Comment

Other renewable

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO2e)

Scope 1 emissions intensity (metric tons CO2e per GWh)

Comment

Other non-renewable

Nameplate capacity (MW)

Gross electricity generation (GWh)

Net electricity generation (GWh)

Absolute scope 1 emissions (metric tons CO2e)

Scope 1 emissions intensity (metric tons CO2e per GWh)

Comment

Total

Nameplate capacity (MW)

5155

Gross electricity generation (GWh)

27442

Net electricity generation (GWh)

27252

Absolute scope 1 emissions (metric tons CO2e)

2607284

Scope 1 emissions intensity (metric tons CO2e per GWh)

95

Comment

C-EU8.4

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

No

C9. Additional metrics

C9.1

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

C-EU9.5a

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

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Nuclear	2400000000	6.45		CAPEX plan as of July 30, 2020. The \$2.4B reflects our proportionate share of the Bruce Power – Life Extension Unit 6 Major Component Replacement program costs, expected to be in service in 2023, and amounts to be invested under the Asset Management program through 2023.

C-EU9.5b

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

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Large-scale storage	TC is currently introducing or developing three large-scale storage projects; Saddlebrook Solar + Storage (Alberta), Canyon Creek Pumped Storage (Alberta) and Ontario Pumped Storage (Ontario). As a partner in the Canyon Creek Hydro Pump project in Alberta, we're planning a pumped hydro energy storage facility with initial generation capacity of 75 MW that will use existing infrastructure from a decommissioned open pit coal mine. The Saddlebrook Solar project is a novel, utility-scale solar-plus-storage electricity generation facility that contemplates the use of state-of-the-art bifacial solar panels that take advantage of local climate conditions. The Ontario energy storage project proposed would provide 1,000 megawatts of flexible, clean energy to Ontario's electricity system. Pumped hydro storage (pumped storage) involves pumping water from a low-lying reservoir during periods of low demand for electricity, typically at night, to a higher-elevation reservoir. When electricity demand is greater (and therefore electricity is more expensive), operators release water back to the lower reservoir through turbines that generate electricity (similar to hydropower from dams). Please refer to the following websites for additional details of each project: https://eralberta.ca/projects/details/saddlebrook-solar-storage/ https://www.hydroreview.com/2020/05/21/tc-energy-investing-in-400-mw-canyon-creek-pumped-storage-project-in-alberta/#gref https://www.tcenergy.com/operations/power/pumped-storage-project/ These storage projects are not currently included in the current CAPEX plan; the Ontario project is still in the early feasibility stages with external public consultation underway, we are equity investor in the Canyon Creek project and Saddlebrook is partially funded by Emissions Reduction Alberta, with the remaining costs less than CAPEX reporting thresholds.			

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	In the last five years, TC Energy has invested more than \$125 million in technology development, supporting an internal research program as well as joint partnerships — an investment that pays off across the board. Our innovation programs are globally recognized for advancing the safety and efficiency of our industry. We also monitor trends specific to energy supply and demand fundamentals, in addition to analyzing how our portfolio performs under different energy scenarios considering the TCFD recommendations. These results contribute to the identification of opportunities to maintain our resilience, strengthen our asset base or seek diversification, if required. While we're proud of the role we've played in empowering businesses and families for more than 65 years, we know demand for energy is increasing. It's also becoming more complex. To meet demand for traditional fuels, we're focused on projects such as Keystone XL. To address climate change and a lower carbon future, we're developing cleaner energy sources including natural gas and nuclear. TC Energy also remains committed to investment in Energy Impact Partners, a venture capital fund that invests in innovative technologies, services and products throughout the electricity supply chain from generation to consumption. Our commitment to sustainable energy is unwavering. With our diverse portfolio of assets and projects, the table is set to safely deliver the affordable energy we all depend on, for many years to come.

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
Other, please specify (Technologies focused on cleaner, digital, and decentralized energy future. This includes digital technology, distributed energy resources, energy storage, renewable energy, smart grids and meters, and steam turbine and/or other component upgrades)	Applied research and development	41-60%		TC Energy has a long-time commitment to reduced emissions and improved efficiency. For over half a century we have tested promising new technologies to minimize fugitive emissions and reduce emissions and fuel consumption of our pipeline compressors. We have played a key role in advancements related to reducing the environmental footprint not only of our own activities, but across the industry. Below is a list of research and development (R&D) organizations TC Energy funds*: •Construction Industry Institute •Electric Power Research Institute •Gas Machinery Research Council - Operating Company - Annual Research Contribution Renewal •Reliability & Maintainability Center •Alberta Sulphur Research Ltd. •Canadian Energy Partnership for Environmental Innovation (CEPEI) •Petroleum Technology Alliance Canada (PTAC) •Pipeline Research Council International (PRCI) •Pipeline Integrity Institute – UBC *R&D project-specific funding or initiatives funded through other memberships are not included TC Energy also remains committed to investment in Energy Impact Partners, a venture capital fund that invests in innovative technologies, services and products throughout the electricity supply chain from generation to consumption.
Energy storage	Large scale commercial deployment	Please select		TC Energy is proposing to develop an energy storage facility that would provide 1,000 megawatts of flexible, clean energy to Ontario's electricity system using a process known as pumped storage. Pumped hydro storage (pumped storage) involves pumping water from a low-lying reservoir during periods of low demand for electricity, typically at night, to a higher-elevation reservoir. When electricity demand is greater (and therefore electricity is more expensive), operators release water back to the lower reservoir through turbines that generate electricity (similar to hydropower from dams). TC Energy is in the very early stages of introducing and developing this project. There are numerous levels of assessment and approvals required before this concept could become a reality. If developed, the proposed facility would be co-located on the existing Canadian Army's 4th Canadian Division Training Centre, north of Meaford, Ontario. It will be designed to store emission-free energy and would provide that energy to Ontarians when they need it most. Energy storage enables electricity to be saved for a time when it is most needed. In Ontario, a large pumped storage facility would: • Lower electricity costs for consumers: Capturing excess power that would otherwise be wasted • Reduce environmental impacts: Storing clean electricity and avoiding gas generation at peak hours • Improve power system reliability and resilience: Providing backup power during grid disruptions • Better integrate existing resources: Optimize existing clean/intermittent resource. Additional information can be found at the following webpage: https://www.tcenergy.com/operations/power/pumped-storage-project/

C10. Verification

C10.1

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

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

Reasonable assurance

Attach the statement

BC Pipe_CR19 Verification Statement.pdf

Page/ section reference

Page/section reference: entire document Additional relevant standards include: • British Columbia Reporting Regulation Guidance Document: Verification • ISO 14065:2013 • IAF MD4:2018 • Greenhouse Gas Industrial Reporting and Control Act, and Reporting Regulation 249 •WCI "Final Essential Requirements for Mandatory Reporting – Amended for Canadian Harmonization", and 2011 and 2013 amendments

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

Alberta Power Bear Creek_CR19 Verification Statement.pdf
Alberta Pipe_CR19 Verification Statement.pdf
Alberta Power MacKay_CR19 Verification Statement.pdf
Alberta Power Carseland_CR19 Verification Statement.pdf
Alberta Power Redwater_CR19 Verification Statement.pdf

Page/ section reference

Page/section reference: entire document. Additional relevant standards include: • CCIR Standard for Validation, Verification and Audit, V3.0, December 2018 (Verification Standard) • ISO 14065:2013

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance

Reasonable assurance

Attach the statement

Ontario Pipe_MY18 Verification Statement.pdf
Ontario Power HaltonHills_FY18 Verification Statement.pdf
Ontario Pipe_FY18 Verification Statement.pdf

Page/ section reference

Page/section reference: entire document Additional relevant standards include: • Output-Based Pricing System Regulations: SOR/2019-266, Canada Gazette, Part II, Volume 153, Number 14, June 28, 2019 • ISO 14065:2013

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

Quebec Pipe_OBPS19 Verification Statement.pdf
Quebec Power Becancour_OBPS19 Verification Statement.pdf

Page/ section reference

entire document

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for current reporting year – first year it has taken place

Type of verification or assurance

Reasonable assurance

Attach the statement**Page/ section reference**

At the time of CDP submission, third-party verification was underway for Saskatchewan-based (Canada) assets regulated under the Output-Based Pricing System (OBPS) Regulations: SOR/2019-266

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for current reporting year – first year it has taken place

Type of verification or assurance

Reasonable assurance

Attach the statement

Page/ section reference

At the time of CDP submission, third-party verification was underway for Manitoba-based (Canada) assets regulated under the Output-Based Pricing System (OBPS) Regulations: SOR/2019-266

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

Alberta Power Bear Creek_CR19 Verification Statement.pdf

Alberta Pipe_CR19 Verification Statement.pdf

Alberta Power MacKay_CR19 Verification Statement.pdf

Alberta Power Carseland_CR19 Verification Statement.pdf

Alberta Power Redwater_CR19 Verification Statement.pdf

Page/ section reference

Page/section reference: entire document Additional relevant standards include: • CCIR Standard for Validation, Verification and Audit, V3.0, December 2018 (Verification Standard) • ISO 14065:2013

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.2

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

No, but we are actively considering verifying within the next two years

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

- Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS
- BC carbon tax
- California CaT - ETS
- Canada federal fuel charge
- Canada federal Output Based Pricing System (OBPS) - ETS
- Québec CaT - ETS
- Saskatchewan OBPS - ETS
- Other ETS, please specify (Manitoba OBPS - ETS)

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS

% of Scope 1 emissions covered by the ETS

100

% of Scope 2 emissions covered by the ETS

85

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Facilities we own and operate

Comment

TC Energy was actively involved in this Regulation being developed during industry consultation. Adherence to this Regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

California CaT

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Other, please specify (TC Energy does not own or operate assets in California, however we trade power into the state (not necessarily generated by us) and are regulated by this regulation.)

Comment

TC Energy does not own or operate assets in California, however we trade power into the state (not necessarily generated by us) and are regulated by this regulation.

Canada federal OBPS - ETS

% of Scope 1 emissions covered by the ETS

90

% of Scope 2 emissions covered by the ETS

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Facilities we own and operate

Comment

TC Energy's operations in Saskatchewan, Manitoba and Ontario are subject to this regulation. TC Energy was actively in this Regulation being developed during industry consultation. Adherence to this Regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

Québec CaT

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Facilities we own and operate

Comment

Saskatchewan OBPS - ETS

% of Scope 1 emissions covered by the ETS

90

% of Scope 2 emissions covered by the ETS

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Facilities we own and operate

Comment

TC Energy's operations in Saskatchewan, Manitoba and Ontario are subject to this regulation. TC Energy was actively in this Regulation being developed during industry consultation. Adherence to this Regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

90

% of Scope 2 emissions covered by the ETS

Period start date

January 1 2019

Period end date

December 31 2019

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

Verified Scope 2 emissions in metric tons CO2e

Details of ownership

Facilities we own and operate

Comment

TC Energy's operations in Saskatchewan, Manitoba and Ontario are subject to this regulation. TC Energy was actively in this Regulation being developed during industry consultation. Adherence to this Regulation inherently drives TC Energy to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

BC carbon tax

Period start date

January 1 2019

Period end date

December 31 2019

% of total Scope 1 emissions covered by tax

100

Total cost of tax paid

Comment

BC adopted their carbon tax system in 2008, the first broad-based carbon tax in North America. Applied to the purchase and use of fossil fuels, BC's carbon tax rate increased from \$35/tonne in 2018 to \$40/tonne in 2019.

Canada federal fuel charge

Period start date

January 1 2019

Period end date

December 31 2019

% of total Scope 1 emissions covered by tax

100

Total cost of tax paid

Comment

Under the Greenhouse Gas Pollution Pricing Act, adopted in 2018, the Canadian federal carbon pollution pricing system has two parts: a regulatory charge on fuel (fuel charge), under Part 1 of the Act, and a regulatory trading system for industry known as OBPS, under Part 2 of the Act. Under the OBPS, persons responsible for covered facilities are required to compensate GHG emissions that exceed the facility's annual emissions limit. For facilities covered by the OBPS, remitting offset credits to compensate for excess emissions can allow to reduce the cost of compliance for facilities covered by the OBPS.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Across North America, there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at reducing GHG emissions. We actively monitor and submit comments to regulators as new and evolving initiatives are undertaken, and expect that, over time, most of our facilities will be subject to some form of regulation to manage GHG emissions. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. We believe environmental considerations and competitive economics must coexist to help drive emission reductions.

TC Energy follows a portfolio approach, seeking abatement opportunities within its own footprint (e.g. waste heat recovery, process optimization, electrification), as well as retirement of self-generated cogeneration environmental performance credits and active procurement of carbon offset credits. Most carbon pricing regimes (Alberta TIER, Canadian federal OBPS) limit the use of carbon offsets and performance credits, mandating payments for excess emissions. In cap-and-trade markets, we exercise commercially reasonable hedging strategies and compliance requirements are met by retirement of appropriate vintage allowances purchased at auctions or from secondary markets.

We continue to advocate for the use of carbon markets to create immediate and measurable reductions in GHGs at the lowest possible cost.

Please refer to our Annual Report for a listed of relevant regulations our assets are governed by.

C11.2

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

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit purchase

Project type

Biomass energy

Project identification

TC Energy has had a long-standing contractual relationship in place with an Alberta-based biomass energy project. We purchase credits from several other suppliers from a variety of protocol types including wind, in the Alberta market every year to help reduce our emissions liability and profile. The credits purchased in 2019 were made up of a combination of offsets and emissions performance credits.

Verified to which standard

Other, please specify (Alberta Carbon Competitiveness Incentive Regulation - Offset System)

Number of credits (metric tonnes CO2e)

886154

Number of credits (metric tonnes CO2e): Risk adjusted volume

886154

Credits cancelled

No

Purpose, e.g. compliance

Compliance

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
Stress test investments
Other, please specify (Change Internal Behavior)

TransCanada incorporates an expected future cost of carbon emissions into economic analyses of new investments and existing assets. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at achieving GHG emission reductions. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We expect that, over time, most of our facilities will be subject to some form of regulation to manage GHG emissions.

GHG Scope

Scope 1

Application

Company-wide (with local variations accepted). TC Energy incorporates an expected future cost of carbon emissions into economic analyses of new investments and existing assets. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at achieving GHG emission reductions. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We expect that, over time, most of our facilities will be subject to some form of regulation to manage GHG emissions.

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

50

Variance of price(s) used

Actual price is a range between \$22.34 - \$50. In determining internal carbon price, we use scenario analysis with variations over time, geographies and policy outcomes. Our currency varies over geographies – for example, TC Energy is subject to different provincial, regional and state-level carbon pricing in North America. TC Energy continuously refines the Company's strategy for managing climate change risks and opportunities, including carbon price forecasts.

Type of internal carbon price

Shadow price

Impact & implication

TC Energy understands that shareholders and other stakeholders want more information on how the company is addressing climate change and associated risks. As the tools available to assess the risks and opportunities associated with climate change improve, we are utilizing them to increase the rigour of our assessment, as a key input into our strategic planning process, applied against a range of policy design options.

C12. Engagement

C12.1

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

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

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Other, please specify (collection of environmental regulations and laws/compliance information)

% of suppliers by number

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

Impact of engagement, including measures of success

TC Energy's contractor qualification process reviews all contractors in our qualification tool "Aravo". This process ensures current and potential contractors meet TC Energy's minimum requirements in EH&S and regulatory, legal, quality, Anti-Bribery and Corruption policy and finance. During our contractors' qualification process, we ask our "Environmental Services" contractors about their environmental programs and policies. Any contractor to be found with a violation or fine is reviewed internally and assessed a classification on the severity of the incident. Decisions are based on working with contractors that align to our environmental principals of Stewardship, Performance and Protection of our footprint and interactions with the Environment in the work we conduct.

Comment

TC Energy has recently updated our environmental qualification protocol with International Suppliers Network (ISN) to include questions around environmental policies and written standards. ISN is also evaluating 4 additional Supplier programs as part of this enhancement including Erosion and Sediment, General Waste, Spill Prevention and Wastewater Programs. TC Energy has numerous initiatives under consideration to bolster our climate-related supplier engagement strategy including: • Climate change/sustainability performance featured in a contractor awards scheme • Encourage contractors to register for SmartWay Transport Partnership: o The SmartWay Transport Partnership is a free and voluntary program that helps businesses move goods efficiently while keeping fuel costs and environmental impact at a minimum. SmartWay encourages best practices in freight supply chains. It helps carriers and shippers benchmark their operations, track fuel consumption and improve their overall performance. • Track in addition to cost savings climate reduction opportunities • Classify contractors that meet diversity goals or who have achieved certain status • Include on bid tabs scoring for sustainability programs/certifications or climate reductions to executing work • Obtain memberships in climate related groups for contractors

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Other, please specify (contractor encouragement to identify opportunities for improvement (OFI's))

% of suppliers by number

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

TC Energy contractors are encouraged to provide opportunities for improvements and reductions in our environmental and carbon impacts across our projects for contracted work packages.

Impact of engagement, including measures of success

TC Energy's contractor qualification process reviews all contractors in our qualification tool, "Aravo". This process ensures current and potential contractors meet TC Energy's minimum requirements in EH&S and regulatory, legal, quality, Anti-Bribery and Corruption policy and finance. This process also reviews a contractor's conformance to all environmental laws and regulations as part of the review. Any contractor to be found with a violation or fine is reviewed internally and assessed a classification on the severity of the incident and is reviewed by our senior leadership. Decisions are based on working with contractors that align to our environmental principals of Stewardship, Performance and Protection of our footprint and interactions with the Environment in the work we conduct.

Comment

TC Energy has recently updated our environmental qualification protocol with International Suppliers Network (ISN) to include questions around environmental policies and written standards. ISN is also evaluating 4 additional Supplier programs as part of this enhancement including Erosion and Sediment, General Waste, Spill Prevention and Wastewater Programs. TC Energy has numerous initiatives under consideration to bolster our climate-related supplier engagement strategy including: • Climate change/sustainability performance featured in a contractor awards scheme • Encourage contractors to register for SmartWay Transport Partnership: o The SmartWay Transport Partnership is a free and voluntary program that helps businesses move goods efficiently while keeping fuel costs and environmental impact at a minimum. SmartWay encourages best practices in freight supply chains. It helps carriers and shippers benchmark their operations, track fuel consumption and improve their overall performance. • Track in addition to cost savings climate reduction opportunities • Classify contractors that meet diversity goals or who have achieved certain status • Include on bid tabs scoring for sustainability programs/certifications or climate reductions to executing work • Obtain memberships in climate related groups for contractors

Type of engagement

Other, please specify (reduction of client carbon liability through marketing and trading activities)

Details of engagement

Please select

% of suppliers by number

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

Impact of engagement, including measures of success

Comment

TC's Power & Storage group supplies several counterparties (approximately 5 to 6) with offsets to reduce their emissions obligations in the province of Alberta.

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

Type of engagement

Education/information sharing

Details of engagement

Other, please specify (informal conversation)

% of customers by number

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

Portfolio coverage (total or outstanding)

<Not Applicable>

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

Impact of engagement, including measures of success

TC's engagement with customers tends to be done informally through conversations. At times we have provided formal presentations to prospective customers who are trying to understand current or potential future exposures associated with environmental regulation.

Type of engagement

Other, please specify (Informal customer / potential value-chain partners engagement)

Details of engagement

Please select

% of customers by number

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

Portfolio coverage (total or outstanding)

<Not Applicable>

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

Commercial customers occasionally inquire about TC Energy's climate change position and actions; questionnaires are completed as required for commercial contracts and bids. TC Energy's Report on Sustainability and ESG Datasheet are published publicly to encourage further engagement with TC Energy on its climate change position and actions.

Impact of engagement, including measures of success

While we have not had engagement sessions with our customers on our GHG emissions and climate change strategies, TC Energy has engaged with our customers with respect to the introduction of the climate change policies that have been legislated across Canada, and how those policies may impact the costs and operation our assets (building awareness and increasing understanding of climate change, and enhancing engagement with internal and external stakeholders about TC Energy's sustainability performance).

C12.1d

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

TC Energy engages value chain partners in various ways to ensure the interests and concerns of its stakeholders are always incorporated. Renewable energy is an important aspect of TC Energy's environmental strategy, and TC Energy engages with other partners to develop meaningful relationships.

In 2019, TC Energy signed an eight-year power purchase agreement (PPA) with Perimeter Solar Inc. (Perimeter) for 74.25 megawatts (MW) of electricity from a proposed 130-MW Claresholm Solar project located about 125 kilometers south of Calgary. Both partners credit Alberta's unregulated electricity market for their decision to proceed, noting in a news release the project will produce power during the day when demand and power pool prices tend to be the highest. Under the terms of the agreement, Perimeter will construct the project with an expected Q2 2021 commercial operation date, utilizing approximately 450,000 photovoltaic modules. The project will add to the 450 MW of electricity TC Energy currently operates and markets in Alberta.

TC Energy has also recently partnered with Threemile Canyon Farms in Oregon, where some 33,000 dairy cows produce 2 million lbs. of milk each day. Those cows also currently produce 1.2–1.4 MMscf/d of renewable natural gas, or biogas, with room to grow. TC Energy owns the important role of making sure the gas reaches consumers in energy-hungry California via an interconnect brought in service last year. Participation in the project is part of TC Energy's commitment to helping remove emissions from the gas value chain while continuing to deliver affordable energy to consumers. The benefits to the environment are also significant. As part of Threemile's methane extraction process, some 136,000 tonnes/year of CO₂ are avoided. And, when considering TC Energy's involvement in other biogas projects in the U.S., the company is helping make an even larger impact. TC Energy is also receiving gas captured from cow manure at Town Hall Road in Wisconsin and, beyond the cow pastures, a landfill at Dane County in Wisconsin and hog manure at Ruckman Farm in Missouri, each of which delivers around 1 MMscf/d. Several other TC Energy pipelines have received inquiries from prospective developers and producers. Because of the high demand, the company is working to create a standard biogas meter skid that will cut installation cost and time, part of its effort to make future participation in these projects more seamless.

TC Energy has also partnered with the University of Houston to support the development of a pipeline of diverse talent for the workforce of tomorrow. TC Energy and the TC Energy Foundation donated US\$50,000 to the University of Houston's College of Natural Sciences and Mathematics (NSM) to support a summer program that enables high school students interested in science, technology, engineering or math (STEM) majors to prepare for the transition to college. TC Energy is proud to partner with the University of Houston to offer the Summer Scholars Academy and support a uniquely diverse group of students in pursuit of a STEM education that will prepare them to be future innovators in the workforce.

C12.3

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

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Carbon Pricing) <i>Pan-Canadian Framework on Clean Growth and Climate Change</i>	Support with minor exceptions	TC Energy engaged with multiple levels of government regarding federal and provincial carbon pricing programs including: the Canadian federal OBPS, Alberta's TIER, Ontario's Emissions Performance Standard (EPS) and Quebec's Cap-and-Trade program. TC Energy engaged with government directly and through several technical working groups. TC Energy provided written comments on the initiatives above through a combination of independent and industry association submissions.	Carbon pricing has a role to play in the transition to a lower carbon-emissions energy system. We support sensible and cohesive public policy frameworks. We encourage consistent interjurisdictional implementation and between provinces/states for improved efficiency. TC Energy has highlighted the need for clear rules and a stable framework to give the market clearly-defined, predictable and transparent pricing signals over the long term. TC Energy encourages government to promote technological innovation to reduce emissions and provides additional solutions for consideration.
Other, please specify (Clean Fuel Standard (CFS))	Support with minor exceptions	TC Energy engaged with government directly and through engagement with industry associations. TC Energy provided written comments on the initiatives above through a combination of independent and industry association submissions.	TC Energy supports efforts to reduce the carbon intensity of fuels, while encouraging policy makers to ensure policy supports innovation and the development and implementation of new technologies. We continue to highlight the need to consider Canadian competitiveness and ensure this policy recognizes the transportation role that pipelines serve in the energy lifecycle.
Regulation of methane emissions	Support with minor exceptions	TC Energy has been involved with multiple levels of government in Canada, through CEPA, to better understand the discrepancies between the BC and federal Methane Regulations and implications for pipelines.	TC Energy supports methane regulations that standardize emission requirements across our assets jurisdictionally and minimize duplicative regulation.
Clean energy generation	Support with minor exceptions	TC Energy engaged with the BC Government on the CleanBC initiative to provide additional context on current and future pipeline related emissions and highlight opportunities for natural gas as part of the future fuel mix	TC Energy supports regulations that highlight the role of natural gas in the future fuel mix while encouraging the global reduction of GHG emissions.
Climate finance	Support with minor exceptions	TC Energy made a written submission to the Canadian federal government on the Interim Report of the Expert Panel on Sustainable Finance.	TC Energy supports climate finance regulations that lead to actual resolutions while building in the flexibility to adapt to economic realities and address unintended outcomes. Given the fungible nature of finance and investment, TC Energy supports the development of financial reporting standards or practices on climate change that maintain the competitiveness of the Canadian investment community and energy infrastructure developers.

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

Canadian Energy Pipelines Association (CEPA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

For the last 10 years, CEPA has participated in industry, government and other stakeholder forums that address the challenge of climate change in Canada. CEPA supports GHG emission regulations that include price certainty and achievable targets. CEPA believes the following should be recognized in Canadian climate change policy: • The dual objective of reducing GHG emissions while also ensuring people and businesses around the world have access to reliable and affordable sources of energy. • Pipelines are critical to meeting domestic and international demand for energy. • As the global energy mix evolves, the need for Canada's pipelines to safely transport energy products will remain. • Enabling and encouraging collaboration, innovation and technology in the pipeline industry is critical to addressing climate change.

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

TC Energy is an active participant in the development of public policy positions, sharing our expertise and experience using technology and contributing to research and development to reduce emissions.

Trade association

Interstate Natural Gas Association of America (INGAA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Increased use of natural gas is helping to combat climate change by lowering carbon dioxide emissions. While U.S. gas production is up 37% since 1990, GHG emissions are down 17%. Because natural gas is made of methane, a greenhouse gas, the natural gas industry is hard at work lowering those emissions. The natural gas pipeline industry is tackling methane emissions through the further refinement of its system. In the past 30 years, the industry has reduced the number of pipeline leaks by 94% through pipeline integrity and maintenance programs and continued investment in new pipeline facilities. That has prevented emission of 122 million metric tons of carbon dioxide-equivalent. That is like eliminating a yearlong 25 million car traffic jam, enough to wrap the earth three times. INGAA is also looking for ways to reduce releases from compressor equipment by establishing industry guidelines with a focus on equipment with the largest-emissions profile. Natural gas has an important role in helping the nation become a larger user of renewable energy, like wind and solar in electric generation. It is the number one "back stop" to ensure we continue to have electricity, even when the sun isn't shining, or the wind isn't blowing.

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

TC Energy is an active participant in the development of public policy positions, sharing our expertise and experience using technology and contributing to research and development to reduce emissions. We are working with INGAA in the U.S. to provide input and guidance on proposals, including, but not limited to, various commitments, practices and initiatives that support methane reduction.

Trade association

American Petroleum Institute (API)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

API commits to delivering solutions that reduce the risks of climate change while meeting society's growing energy needs. We support global action that drives greenhouse gas emissions reductions and economic development. The natural gas and oil industry are part of the global solution and plays a vital role in developing and deploying technologies and products that continue to reduce GHG emissions while advancing human and economic prosperity and that are essential to extending the benefits of modern life to all. API will lead by providing platforms for industry action to reduce greenhouse gas emissions through industry-led solutions, and actively work on policies that address the risks of climate change while meeting the global need for affordable, reliable and sustainable energy.

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

TC Energy is an active participant in the development of public policy positions, sharing our expertise and experience using technology and contributing to research and development to reduce emissions.

Trade association

Canadian Electricity Association (CEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Canadian electricity industry is committed to acting on climate change and improving environmental performance while maintaining a reliable and cost-effective supply of electricity. Electricity generators have already made gains in areas such as low-emission technologies, energy efficiency, emerging renewable power, and emission offsets. Currently, the electricity industry is working cooperatively with the federal government to find an equitable approach for emission reductions. Measures to address electricity sector GHG emissions and broader air issues must be designed, however, to address the diversity of technologies, fuel/generation sources, environmental pressures, political and socio-economic climates from region to region. Strategies adopted to address these issues generally adhere to a set of principles aimed at optimizing solutions: • Continued provision of safe, cost-effective, and reliable electricity; • Integrated management of GHGs and other air pollutant emissions; • Accommodation of full fuel/generation source diversity; • Consideration of regional differences, in electricity supply and demand as well as air quality issues; • Flexibility of implementation mechanisms, allowing a full array of market and other instruments; and • Consideration of GHG policies of the U.S., Canada's primary trading partner.

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

TC Energy is an active participant in the development of public policy positions, sharing our expertise and experience using technology and contributing to research and development to reduce emissions.

Trade association

Confederación Patronal de la República Mexicana (COPARMEX)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Supportive of Mexico's clean energy goals (as established in Mexican legislation and its 2015 Nationally Determined Contribution submitted to the UNFCCC) and critical of the current administration's landmark projects (Maya Train, Dos Bocas Refinery etc.). Throughout 2018 and 2019 the Environmental Affairs Committee published COPARMEX's Environmental Agenda, taking UN Sustainable Development Goals as benchmarks.

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

We support Mexico's clean energy goals, while also respecting the Mexican government's right to enact infrastructure projects in line with its energy policy. We are opposed to a regression to an increased use of high polluting fuels, such as fuel oil. TC Energy actively participates in the Confederation's Environmental and Energy Committees to this effect.

Trade association

Canadian Chamber of Commerce in Mexico (CANCHAM)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

TC Energy is generally supportive of Mexico's clean energy goals but has not committed to be an official position as a Chamber.

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

TC Energy participates in CANCHAM's monthly committee and executive board meetings, where the committee's agendas for discussion are set.

Trade association

Asociación Mexicana de Gas Natural (AMGN) / Mexican Association of Natural Gas (AMGN)

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

Representing natural gas users and companies, the Association is supportive of Mexico's environmental agenda, promoting natural gas as a transition fuel for the country, to replace more carbon-intensive fuel sources. With technical committees, the Association follows-up and make collective comments on regulatory initiatives, such as the methane directives. In addition, the Association promotes meetings with public officials in charge of environmental measures (i.e. ASEA).

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

TC Energy is an active participant in the Association's Board Meetings and technical committees, focused on the transportation of natural gas; as well as their Annual Members' Meeting.

C12.3d

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

No

C12.3e

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

Please refer to information provided in questions C4.2, C4.3, C4.5, C-EU/OG 4.6, C-OG 4.7 and C-OG 4.8 for details regarding other engagement activities TC Energy undertakes.

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?

TC Energy has numerous policies and practices implemented, ensuring our significant direct and indirect activities that influence policy, are consistent with our overarching climate change strategy. In maintaining consistency with our overarching climate strategy, TC Energy relies on the ERM and Risk Management teams to continuously refine the Company's direct and indirect activities that may influence climate policy.

These teams provide input from their experience and expertise to inform policy response strategies and ensure consistency. The team includes members of corporate groups (e.g. environment (governance and operational services), government relations, industry relations, legal, and regulatory services); representatives from business segments (e.g. commercial teams); and elicits feedback from external stakeholders (e.g. professional peers, industry associations, non-governmental organizations). The viewpoint of all stakeholders is utilized in response to policy developments to establish an understanding of policy and implications and to identify potential response strategies. Policy positions are reviewed, to ensure consistent engagement.

The risks associated with climate policy are monitored and escalated to Senior Management through TC Energy's ERM process to ensure leadership has visibility on the broader perspective, and that treatments are applied in a holistic and consistent manner. As carbon policy plays a role in the volume and makeup of future energy demand, this information is also used to inform scenario analysis that looks to assess the impact to the business of various energy scenarios. This work is iterative, in that the outcome of this scenario analysis in-turn helps highlight where and how TC Energy should be looking to shape energy policy.

A formalized ERM Framework was approved in 2018. Recognizing that many risks are interrelated and are managed across the enterprise, the ERM Framework promotes a centralized and pragmatic approach to prioritizing risks, clarifying roles and responsibilities, and improving Board and management oversight. It supports informed decision-making by identifying areas of value capture and value preservation that is aligned with our strategic and business objectives.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In voluntary sustainability report

Status

Underway – previous year attached

Attach the document

tc-sustainability-and-climate-change.pdf

Page/Section reference

Entire document

Content elements

Governance

Strategy

Risks & opportunities
Emissions figures
Other metrics

Comment

TC Energy's 2018 "Report on Sustainability and Climate Change" is informed by TCFD, while our ESG Data Sheets were informed by SASB. Our 2019 Report on Sustainability and Climate Change is expected to be published October 2020.

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

tc-2019-annual-report.pdf

Page/Section reference

Entire document

Content elements

Governance
Strategy
Risks & opportunities
Other metrics
Other, please specify (Environmental compliance and liabilities, revenues)

Comment

TC Energy discloses climate change and related regulation risk challenges, and our strategy to address such risks, which is aligned to TCFD recommendations.

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

tc-2020-management-information-circular.pdf

Page/Section reference

Pages 28-59

Content elements

Governance
Strategy
Other metrics

Comment

TC Energy discloses our governance of climate change-related risks, including Board committee oversight, which is aligned to TCFD recommendations.

Publication

In voluntary communications

Status

Underway – previous year attached

Attach the document

tc-2018-cr-report-datasheet.pdf

Page/Section reference

Entire document

Content elements

Emissions figures
Other metrics

Comment

Recognizing the value of ESG reporting frameworks such as the Global Reporting Standard (GRI), Sustainability Accounting Standards Board (SASB), TCFD, this data sheet shows our initial alignment to GRI and SASB and complements the TCFD disclosures in our May 2019 Report on Sustainability and Climate Change. Where non-standard measures are required, we have disclosed in alignment with internal standards. Our 2019 ESG datasheet is expected to be published October 2020 and will demonstrate alignment to TCFD, SASB and UN SDG standards.

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.

This publication is one element of our environmental, social and governance (ESG) reporting. For more data and information of interest to investors, including content that is aligned with global reporting standards, we invite you to review our other disclosures:

- ESG Data Sheet (2019 version publication date: October 2020)
- Materiality Assessment (2019 version publication date: October 2020)
- TCFD Alignment Table (2019 version publication date: October 2020)
- SASB Alignment Table (2019 version publication date: October 2020)
- Report on Sustainability and Climate Change (2019 version publication date: October 2020)

The content and data included in this submission is aligned to content disclosed in our Report on Sustainability and Climate Change and ESG Data Sheet, both of which have both been thoroughly reviewed and signed-off by our Chief Sustainability Officer.

All data cited within this submission reflects 2019 numbers. Where relevant, 2020 developments are reflected in the discussion and analysis.

FORWARD-LOOKING INFORMATION: This questionnaire response contains certain information that is forward-looking and is subject to important risks and uncertainties (such statements are usually accompanied by words such as "anticipate", "expect", "believe", "may", "will", "should", "estimate", "intend" or other similar words). Forward-looking statements do not guarantee future performance. Actual events and results could be significantly different because of assumptions, risks or uncertainties related to our business or events that happen after the date of this presentation. Our forward-looking information in this questionnaire response includes statements related to future dividend and earnings growth and the future growth of our core businesses, among other things. Our forward-looking information is based on certain key assumptions and is subject to risks and uncertainties, including but not limited to: our ability to successfully implement our strategic priorities and whether they will yield the expected benefits, our ability to implement a capital allocation strategy aligned with maximizing shareholder value, the operating performance of our pipeline and power and storage assets, amount of capacity sold and rates achieved in our pipeline businesses, the amount of capacity payments and revenues from our power generation assets due to plant availability, production levels within supply basins, construction and completion of capital projects, cost and availability of labour, equipment and materials, the availability and market prices of commodities, access to capital markets on competitive terms, interest, tax and foreign exchange rates, performance and credit risk of our counterparties, regulatory decisions and outcomes of legal proceedings, including arbitration and insurance claims, our ability to effectively anticipate and assess changes to government policies and regulations, including those related to the environment and COVID-19, competition in the businesses in which we operate, unexpected or unusual weather, acts of civil disobedience, cyber security and technological developments, economic conditions in North America as well as globally, and global health crises, such as pandemics and epidemics, including the recent outbreak of COVID-19 and the unexpected impacts related thereto. You can read more about these factors and others in the MD&A and in other reports we have filed with Canadian securities regulators and the SEC, including the MD&A in our 2019 Annual Report and in our Second Quarter 2020 Quarterly Report. As actual results could vary significantly from the forward-looking information, you should not put undue reliance on forward-looking information and should not use future-oriented information or financial outlooks for anything other than their intended purpose. We do not update our forward-looking statements due to new information or future events, unless we are required to by law.

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	Vice President, Sustainability, Communications & Policy	Other, please specify (Vice President, Sustainability, Communications & Policy)

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 state the main reason why you are declining to respond to your Customers

Prefer to work directly with customer, not through a third party

Please confirm below

I have read and accept the applicable Terms