

Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

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

Our business is a vital part of everyday life — delivering the energy millions of people rely on to power their lives in a sustainable way. Thanks to a safe, reliable network of natural gas and crude oil pipelines, along with power generation and storage facilities, wherever life happens — we're there. Guided by our core values of safety, responsibility, collaboration and integrity, our 7,500 people make a positive difference in the communities where we operate across Canada, the U.S. and Mexico.

We have three complementary energy infrastructure businesses:

Natural Gas Pipelines - Our 93,400-kilometre (58,000-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 Pipeline 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 - We own or have interests in seven power generation facilities with combined capacity of approximately 4,200 megawatts (MW) — enough to power more than four million homes. Approximately 75% of our power capacity is emission-less and we are leaders in the development and operation of high efficiency, natural gas-fired generating stations. In April 2020, we completed the sale of our Halton Hills and Napanee power plants and our 50 per cent interest in Portlands Energy Centre. Napanee, Halton Hills and Portlands Energy Centre were not operating under operating ownership as of December 31, 2020 and emissions are not included in this questionnaire.

We also own and operate 118 Bcf of non-regulated natural gas storage capacity in Alberta. This business operates independently from our regulated natural gas transmission and U.S. storage businesses



For further details about our business, including additional details on the scope, size and strategy of our operations, please refer to our 2020 Annual Report. For more recent information about our business beyond the 2020 timeframe of this report, please review our subsequent quarterly filings (<https://www.tenergy.com/investors/reports-and-filings/>).

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
Reporting year	January 1, 2020	December 31, 2020	No

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)	<p>The President and Chief Executive Officer (CEO) reports to the Board of Directors (BOD) and maintains open communication with the Board Chair. The President and CEO also sits on the Board as a non-independent director and while not a member of any of committees, is invited to attend committee meetings.</p> <p>The CEO provides overall leadership and vision in developing, in concert with the BOD, strategic direction, values, and tactics and business plans necessary to realize corporate objectives.</p> <p>Together, they are responsible for creating a tone and culture that ensures safe and efficient asset operation and compliance with environment, health and safety policies and practices.</p> <p>The duties and responsibilities of the CEO includes, but is not limited to:</p> <ul style="list-style-type: none"> • lead and manage the Company consistent with the approved strategic and business plans of the Company. • develop and recommend strategic plans to the Board that ensure the Company's profitable growth and overall success. This includes updating and making changes as required and involving the Board in the early stages of developing strategy. • successfully implement the corresponding business and operational plans. Review and report regularly to the Board on the overall progress and results against operating and financial objectives and initiate courses of action for improvement. • keep the Board fully informed on all aspects of the Company's operational and financial affairs, and on all matters of significant relevance to the Company. This includes internal items and external items emanating from governments and regulators on issues such as fiscal, monetary and environment policies, legislation affecting operations and regulating oversight, etc. • develop annual operating forecasts of revenue, expenditures, operational results and financial performance. • authorize commitment of funds to capital projects included in budgets approved by the Board, and commitments and expenditures to \$50M max. for unbudgeted commitments and expenditures. • ensure Company's assets are adequately safeguarded and optimized in the best interests of the shareholders. • ensure effective communications and appropriate relationships are maintained with shareholders and other stakeholders

Position of individual(s)	Please explain
	<p>The full ToR for the CEO can be found here: https://www.tcenergy.com/siteassets/pdfs/about/governance/TC Energy-terms-of-reference-ceo-02-14-2011.pdf</p>
Board Chair	<p>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. 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.</p> <p>The duties and responsibilities for the Chair of the Board includes, but is not limited to:</p> <ul style="list-style-type: none"> • act as the principal sounding board, counselor and confidant for the CEO, including helping to review strategies, define issues, maintain accountability, and build relationships; • at the request of the CEO, provide advice to the CEO on major policy issues; • in co-operation with the CEO, assist in representing the Company in a general industry and community context; • ensure the CEO is aware of concerns of the Board, shareholders, other stakeholders and the public • ensure the Board is aware of its obligations to the Company, shareholders, management, other stakeholders and to carry out such obligations pursuant to applicable law • ensure the Board receives adequate and regular updates from the CEO on all issues important to the welfare and future of the Company • maintain a liaison and communication with all directors and Committee Chairs to co-ordinate input from directors, and optimize the effectiveness of the Board and its committees <p>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</p>
Board-level committee	<p>The Health, Safety, Sustainability and Environment (HSSE) Committee is responsible for oversight of operational health, personal and process safety, sustainability, security (including personnel safety) and environmental and climate-related matters (HSSE matters). The Committee reviews and monitors the performance and activities of HSSE matters including compliance with current and potential impact to proposed laws and legislations, conformance with industry standards and best practices.</p> <p>The Committee also monitors the performance of actions and initiatives undertaken, 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, while also reviewing and monitoring significant regulatory audit findings, orders, reports and/or recommendations issued by or to</p>

Position of individual(s)	Please explain
	<p>us related to HSSE matters, incidents or issues, together with management's resultant response.</p> <p>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.</p>
Board-level committee	<p>The Governance Committee oversees our risk management process. The Board reviews emerging risks with management quarterly to ensure there are management programs in place to mitigate those risks. We manage risk through a centralized Enterprise Risk Management (ERM) program which identifies risks that could materially impact the achievement of strategic objectives. Climate-related risk is integrated in each of the distinct enterprise risks.</p> <p>The Governance Committee oversees our Enterprise Risk Management activities and ensures adequate oversight of risk management policies, programs and practices. This includes the annual review of the enterprise risk register with management to ensure proper Board and committee oversight according to the terms of their charters.</p> <p>The Governance Committee also has accountability for overseeing the strategy development process and works with management to identify and discuss emerging strategic issues. Key strategic issues as identified by the Governance Committee (including climate change) are elevated for discussion with the entire Board as part of the strategy development process.</p>

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy	The Board's primary responsibilities are to foster long-term success and sustainability, oversee business affairs & management, and to act honestly, in good faith and in the best interests of our company. The Board's main objective are to promote our best interests, maximize long-term

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
	<p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding business plans</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p>	<p>shareholder value, and enhance shareholder returns.</p> <p>The Governance Committee is responsible for overseeing the ERM Framework which provides management processes for identification, evaluation, prioritization, mitigation and monitoring of risk.</p> <p>The HSSE Committee oversees operational risk, people and process safety, security of personnel, environmental and climate-change related risks, and monitors development and the implementation of systems, programs and policies related to HSSE matters through regular reporting from management. An integrated management system that establishes a framework is used to manage these risks, and capture, organize, document, monitor and improve related policies, programs and procedures.</p> <p>In addition to its existing activities, the HSSE Committee also reviews report(s) on climate change-related laws and regulations and their potential impact, reviews report(s) on climate-related risks and opportunities (physical, technological, regulatory and social), receives information on stakeholder engagement on sustainability issues, and 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.</p> <p>Our five-year strategic plan is updated 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 this, management includes an assessment of energy fundamentals, the competitive environment and the stakeholder landscape to identify opportunities and threats to the company's business strategy. This session informs annual strategic priorities and performance measures across the company.</p> <p>Throughout the year, the Board monitors management's progress toward achieving strategic goals. At each regularly scheduled Board meeting, management provides updates on the human, technological, and capital resources required to implement our strategy and relevant</p>

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
		regulatory, environmental and social issues that may impact the execution of our strategy. The Board is also provided with regular “deep-dives” throughout the year on key enterprise risks, including those pertaining to sustainability and climate related risks and opportunities.

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Quarterly
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	Quarterly
Chief Risks Officer (CRO)	Both assessing and managing climate-related risks and opportunities	Quarterly
Other, please specify Corporate Health, Safety, Sustainability and Environment (HSSE) committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Risk committee	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

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

The President and CEO position is at the highest level of executive leadership with responsibility for climate-related risks and opportunities.

This position is responsible for the company's overall leadership and vision in developing strategic direction, values and business plans, and 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.

The primary responsibilities of this role 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.

In 2019, we appointed our first Chief Sustainability Officer, who also maintains the role as Executive Vice-President, Stakeholder Relations and General Counsel. The Chief Sustainability Officer is responsible for directing the coordination, communication and management of sustainability-related issues, particularly the intersection of risk, governance, environmental and social issues. The Chief Sustainability Officer, a member of the Executive Leadership Team, 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 Chief Sustainability Officer 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.

The Chief Risk Officer centralizes a pragmatic approach to facilitating the annual enterprise risk assessment and management of the enterprise risk register. The Chief Risk Officer is focused on prioritizing risks, clarifying roles and responsibilities, improving Board and management oversight, and providing the Board with quarterly in-depth presentations on the Enterprise Risks including climate-related risks. The Chief Risk Officer is responsible to ensure the Enterprise Risk Management Program governance model, framework, and processes are established, properly documented, and maintained in a manner that is suitable for our culture and operating model.

The Corporate Health, Safety, Sustainability and Environment (HSSE) committee, comprised of management representatives from various departments, recommends strategic priorities relating to HSSE matters to the Chief Sustainability Officer, monitors HSSE developments and shapes communication strategy on HSSE matters. The Committee also ensures the adequacy and effectiveness of the Health, Safety and Environment (HSE) Management Programs and sub-programs that are part of our Operational Management System (TOMS).

The Management Risk Committee, chaired by the Chief Risk Officer and comprises the Executive Leadership Team, is responsible for the management of climate-related risks including alignment of energy transition plans with enterprise risk mitigation plans.

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, and we do not plan to introduce them in the next two years	We do not currently have climate-related issue targets included in the incentive structure, although risk reduction, as it relates to optimization and utilization of our existing asset base, is included as a Key Performance Area (KPA) indicator. Our 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. The Board's Human Resources committee is responsible for executive compensation, which is closely linked to our strategic plan, and the Governance committee is responsible for director compensation and risk oversight. We believe any GHG emission reduction commitment or net zero pledge we make must be credible and realistic, with measures to ensure accountability to all our stakeholders. We will announce specific climate-related targets and commitments, and whether management will be incentivized on those targets, in Fall 2021.

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	Time horizons are aligned with our Operational Management System (TOMS) Risk Standard and our Enterprise Risk Management framework including the enterprise risk matrix consequence categories.
Medium-term	3	10	Time horizons are aligned with our Operational Management System (TOMS) Risk Standard and our Enterprise Risk Management framework including the enterprise risk matrix consequence categories.
Long-term	11	20	Time horizons are aligned with our Operational Management System (TOMS) Risk Standard and our Enterprise Risk Management framework including the enterprise risk matrix consequence categories.

C2.1b

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

We examine 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 the impact of financial risks on our business and we use differing levels relating to damage/financial loss estimates (e.g., market risk, counterparty credit risk and potential impacts of policy changes on earnings, cashflows and ultimately, shareholder value).

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

Enterprise Risk Management (ERM): Risk management is integral to the successful operation of our business.

Our strategy is to ensure our risks and related exposures are aligned with our business objectives and risk tolerance. We manage risk through our centralized Enterprise Risk Management process which identifies risks that could materially impact the achievement of our strategic objectives, including environment, social and governance (ESG)-related risks.

Recognizing many risks, including climate-related risks, are interrelated and should be managed across the enterprise, the Enterprise Risk Management 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, CEO, and Executive Leadership Team.

The Enterprise Risk Management program also promotes a centralized and pragmatic approach to classifying risks (reputation, transition, technology, market, and physical risk), clarifying roles and responsibilities, and improving Board and management oversight, with a governance structure which 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.

Our Corporate Governance Guidelines outlines that the Board is responsible for understanding the Enterprise Risks associated with the Company's business and 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.

Our ELT is accountable for developing and implementing risk management plans and actions, and effective risk management is reflected in their compensation. Select members of the ELT are identified as enterprise risk governance and execution owners, reporting quarterly to our Board of Directors and as appropriate, this includes discussion of climate-related risks.

The Chief Risk Officer and Management Risk Committee are accountable for managing Enterprise Risks.

The Chief Risk Officer's responsibilities in the Enterprise Risk Management Framework include :

- ensuring the Enterprise Risk Framework governance model and processes are established, properly documented, and maintained in a manner

that is suitable for our 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.

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

Regulatory: 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 regulators that 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 or climate-related 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 we are involved with.

Value chain stage(s) covered

Direct operations

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term

Medium-term

Description of process

Pipeline Integrity: Our Project Delivery Standard (PDS) defines the framework for planning, executing and assuring projects, and provides a consistent, disciplined approach to create new or replace, modify or add to existing operational assets throughout their project lifecycle. The Engineering Design Procedures under PDS support projects in ensuring assets are fit for purpose, comply with regulatory requirements and adhere to our engineering standards that define requirements for engineering design, drafting, construction and commissioning of new or modified assets. These processes and standards ensure assets are designed and constructed with consideration of physical risks.

Our System Wide Risk Assessment (SWRA) – an industry-leading risk framework, focused on data-driven, objective assessment - provides the critical risk information as quantitative and integrated risk projections. It is used by pipeline integrity functions and leadership, to thoroughly quantify risks in support of the Integrity Management Program and optimize asset management decisions.

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

Business Interruption: We are 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, our integrated operational management system based on global best practices is comprised of elements and mandated programs to realize these objectives.

The mandated programs set requirements, driven by specific 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: we are committed to managing our environmental and climate-related effects and protecting the environment through the complete life-cycle of our assets. We understand 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.

Asset (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 includes threat management related to weather and other outside forces.

Project Delivery Standard (PDS): applying to new or modified facilities projects only, the PDS is our project governance tool. It provides the framework to manage (plan and execute) projects, defines roles and responsibilities of key personnel, and facilitates project assurance to help identify potential gaps and risks.

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 Analysis: 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.

We recognize the future energy system will evolve. As part of our strategic planning process, we analyze long-term energy fundamentals and market scenarios, the competitive environment and the stakeholder landscape, to assess the resilience of our business – in other words, how well we tolerate and adapt 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.

Amidst the uncertainty of 2020, we continue to use scenario analysis as a foundational component in strategic planning. While our efforts are focused on developing a deeper understanding of a low-carbon energy transition scenario, we recognize the impacts of the COVID-19 pandemic have yet to unfold relative to long-term energy dynamics and we must remain flexible.

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	<p>We own assets and have business interests in a number of regions subject to GHG emissions regulations, including GHG emissions management and carbon pricing policies. In 2020, we incurred \$64 million (2019 – \$69 million) of expenses under existing carbon pricing programs.</p> <p>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 and therefore could adversely impact construction costs, in-service dates, anticipated revenues, and the opportunity to further invest in our systems. There is also risk of a regulator disallowing a portion of our prudently incurred costs, now or at some point in the future.</p>
Emerging regulation	Relevant, always included	<p>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.</p> <p>Beyond the short-term, we expect most of our assets will be subject to some form of regulation to manage GHG emissions, acknowledging changes in regulations may result in higher operating costs, other direct or indirect expenses, or higher capital expenditures to comply.</p> <p>We actively monitor and submit comments to regulators as new and evolving initiatives are undertaken and policies implemented. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. Our assets in specific geographies are currently subject to GHG regulations and we expect that the number of our assets subject to GHG regulations will continue to increase over time across our footprint.</p> <p>As part of our ongoing ERM program, we identify emerging risks on a variety of topics that may affect our business, including political, regulatory, and government policy risks. We believe our mitigation plans to address emerging regulations will help maintain the competitiveness of our business noting shifts in existing government decisions and evolving policies by regulators and other government authorities, including changes in regulation, can have an impact on the approval, timing, construction, operation, growth opportunities, and financial performance of our natural gas and liquids pipeline assets.</p>
Technology	Relevant, always included	<p>The energy industry has leveraged advanced technologies for many years. The transition to a lower-carbon future will require the continued adoption of new and innovative solutions at a much faster rate.</p> <p>Uncertainty around traditional and energy transition technology development and deployment is relevant to our operations and growth, including energy efficiency, electrification (in transportation, heating, etc.), industrial decarbonization,</p>

	Relevance & inclusion	Please explain
		<p>renewable and alternative energy sources, batteries and other electricity storage, low-carbon fuels (such as renewable natural gas (RNG) and hydrogen), and digitization.</p> <p>Developing and deploying new technologies and new products inherently involves a degree of financial risk associated with escalating costs, uncertain outcomes and delays to anticipated in-service schedules.</p> <p>Our success in navigating this transition is dependent on our ability to continue to reliably and safely provide traditional energy sources while developing and deploying new technologies at an appropriate pace. These may include carbon capture utilization and storage (CCUS), the transportation and storage of alternative gaseous fuels such as hydrogen, and increased generation and use of low carbon electricity.</p> <p>As a transporter of renewable natural gas (RNG) since 2002, connecting a landfill site in Quebec to our Trans Québec & Maritimes (TQM) system, we recognize the value this creates, furthering development and investment opportunities with commercial discussions currently underway in Canada and the U.S.</p>
Legal	Relevant, always included	<p>Decisions and evolving policies by government authorities, including changes in regulation, can affect the approval, timing, construction, operation and financial performance of our assets.</p> <p>We own assets and have business interests in several regions subject to greenhouse gas (GHG) emissions regulations and there are a variety of new and evolving initiatives aimed at reducing GHG emissions that could affect our business.</p> <p>Increasing climate-related concerns could result in an increased risk of associated litigation.</p> <p>Our Legal Requirements Monitoring Process, part of the Compliance Element in our Operational Management System (TOMS), is the corporate process for identifying and monitoring compliance with applicable legal requirements including those related to GHG emissions, carbon pricing and other climate-related legislation. The process is required by the Canadian Energy Regulator and Mexican Comisión Reguladora de Energía and is currently offered on an elective "opt-in" basis for our corporate functions, Power and Storage business and U.S. business.</p> <p>The work completed in the Legal Requirements Monitoring Process is housed and managed in the Legal Registry. This central repository contains: all legal requirements and each group's identified relevant and applicable legal requirements; asset information with linked controlled documents that evidence compliance to the requirements; and the associated contacts responsible for the maintenance of the repository.</p> <p>Legal requirements for the U.S., including those related to GHG emissions, carbon pricing and other climate-related legislation, are managed by relevant departments.</p>

	Relevance & inclusion	Please explain
Market	Relevant, always included	<p>To be competitive, we must offer integral energy infrastructure services in supply and demand areas and forms of energy that are attractive to customers. 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. Should alternative lower-carbon forms of energy result in decreased demand for our services on an accelerated timeline versus our pace of depreciation, the value of our long-lived energy infrastructure assets could be negatively impacted. We monitor signposts including customer, regulatory and government decisions as well as innovative technology development to inform our capital allocation strategy and adapt to changing market conditions. Extreme temperature and weather can affect market demand for power and natural gas and can lead to significant price volatility and can also restrict the availability of natural gas and power if demand is higher than supply. We view commodity price and volume risk being the primary market risk related to climate change. We are exposed to market and counterparty credit risks and have strategies, policies and limits to manage impact of these risks on earnings, cash flows and shareholder value. Risk management strategies, policies and limits are designed to ensure risks and related exposures are in line with business objectives and risk tolerance. Market and counterparty credit risks are managed within limits established by our BOD, implemented by senior management and monitored by risk management and internal audit groups.</p> <p>Market risk: Emerging decarbonization policies could affect North American energy consumption patterns and preferences, affecting long-term energy supply and demand trajectories. We construct and invest in energy infrastructure projects, purchase and sell commodities, issue short-, and long-term debt, and invest in foreign operations. Some of these activities expose us to market risk from changes in commodity prices, foreign exchange rates and interest rates, which may affect earnings and value of financial instruments held. We assess contracts used to manage market risk to determine whether all, or portion, meet the definition of a derivative.</p> <p>Commodity price risk: several strategies (incl. contracts) may be used to manage exposure to commodity price risk in our non-regulated power generation, natural gas storage and liquids marketing businesses.</p>
Reputation	Relevant, always included	<p>Our operations and growth prospects require us to have strong relationships with rightsholders and stakeholders such as customers, Indigenous communities, local communities, landowners, suppliers, investors, governments and government agencies, and environmental non-governmental organizations.</p> <p>Inadequately managing expectations and issues important to stakeholders, including those related to climate change, could</p>

	Relevance & inclusion	Please explain
		<p>affect our reputation and our ability to operate and grow, and our access to and cost of capital.</p> <p>Our reputation with stakeholders, including Indigenous communities, can have a significant impact on our operations and projects, infrastructure development and overall reputation. Should investors develop negative perceptions regarding our energy infrastructure business, future access to investment capital could be negatively impacted.</p>
Acute physical	Relevant, always included	<p>Significant changes in temperature and weather, including the potential impacts of climate change, have effects on our business, ranging from the impact on demand, availability and commodity prices, to efficiency and output capability.</p> <p>Extreme temperature and weather can affect market demand for power and natural gas and can lead to significant price volatility and 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.</p> <p>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.</p> <p>Designed to complement normal operations, its operational business units, and the current Emergency Response Plans (ERP), our Crisis Management Program (CMP) is a strategic system that sets out a framework and a management structure to effectively manage a crisis event, including adverse weather conditions, which has the potential to greatly affect the operations and credibility of a company. Crisis management includes anticipating, preventing, preparing for and responding to a crisis which falls outside the normal company management structure.</p> <p>Our Business Continuity Program holistically plans for, and responds to, the impact of internal or external emergencies and business disruptions through determination of critical business processes and development of resumption plans. Business Continuity Planning identifies an organization’s critical functions, the key resource dependencies of those functions via a Business Impact Analysis and then facilitates the development of loss strategies, in collaboration with our internal service providers, to resume operations.</p>
Chronic physical	Relevant, always included	All relevant chronic physical risk considerations are included in our response to acute physical risks.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation

Other, please specify

current and emerging climate-related regulations and policy

Primary potential financial impact

Increased direct costs

Company-specific description

RISK 1 - Current and emerging climate-related regulations and policy.

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.

Shifts in existing government decisions and evolving policies by regulators and other government authorities, including changes in regulation,

can have an impact on the approval, timing, construction, operation, growth opportunities, and financial performance of our natural gas and liquids pipeline assets.

Delayed or unfavourable regulatory and policy decisions could also adversely impact construction costs, in-service dates, anticipated revenues, and the opportunity to further invest in our systems.

Time horizon

Long-term

Likelihood

Very 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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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, or more stringent, regulations.

There is also risk of a regulator disallowing a portion of our prudently incurred costs, now or at some point in the future, impacting both direct and indirect (operating) costs.

Cost of response to risk

Description of response and explanation of cost calculation

We manage these risks by continuously monitoring regulatory and government developments and decisions to determine their possible impact on our assets by building scenario analysis into our strategic outlook and by working closely with our stakeholders in the development and operation of our assets. We actively monitor and submit comments to regulators and government bodies as new and evolving initiatives are undertaken, while our dedicated public policy and advocacy teams' mandates include ensuring consistent positions on major public policy issues like climate change.

Emerging policies could affect North American energy consumption patterns and preferences and we expect headwinds and tailwinds for our existing infrastructure and growth plan. Broadly, decarbonization policies will affect long-term energy supply and demand trajectories and influence capital investment decisions. Investors and customers are watching, using ESG factors to differentiate between energy companies. We support transparent climate change policies that promote sustainable and economically responsible natural resource development while considering the need for affordable, reliable energy and economic growth, and we remain committed to working with all levels of government to ensure our business benefits and risks are understood, and mitigation strategies implemented.

Natural Gas and Liquids Pipeline business segments: Decisions by Canadian and U.S. regulators can have a significant impact on the approval, construction, operation, commercial and financial performance of our natural gas and liquids pipelines. Shifts in government policy by existing bodies or following changes in government may adversely impact the timing or ability to obtain approvals, and our ability to grow our business. Public opinion about crude oil development and production, particularly considering climate change concerns, may also have an adverse impact on the regulatory process. Specific to our Liquids Pipeline business segment, there are individuals and special interest groups that are expressing opposition to crude oil production by lobbying against the construction of liquids pipelines. Impacts to our Power and Storage business segment are discussed in the "Comment" Section.

Comment

Power and Storage business segment: We operate in both regulated and deregulated power markets in Canada, which are subject to various federal and provincial regulations. As power markets evolve, there is the potential for regulatory bodies to implement new rules that could negatively affect us as a generator and marketer of electricity. These may be in the form of market rule or market design changes, changes in the interpretation and application of market rules by regulators, price caps, emission controls, emissions costs, cost allocations to generators and out-of-market actions taken by others to build excess generation, all of which may negatively impact the value of our assets. In addition, our development projects rely on an orderly permitting process and any disruption to that process can have negative effects on project schedules and costs. We are an active participant in formal and informal regulatory proceedings and take legal action where required.

This is a summary of the risk that affects our company and is being continuously monitored through the Enterprise Risk Management Program. 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

Reputation

Increased stakeholder concern or negative stakeholder feedback

Primary potential financial impact

Other, please specify

Increased difficulty gaining regulatory approvals for revenue generating assets, decreased access to capital at competitive cost

Company-specific description

RISK 2 - Reputation and relationships

We are focused on building strong relationships with our stakeholders whom include customers, Indigenous communities, landowners, suppliers, investors, governments and government agencies, and environmental nongovernmental organizations. Inadequately managing expectations and concerns important to stakeholders, including those related to climate change, could affect our reputation, impact our ability to hold or obtain regulatory permits to build and/or operate, and our access to capital at a competitive cost.

A critical factor in the financial performance of investments is the investor's ability to identify risk drivers return on 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 profile and return on investments. Financially impactful ESG issues, which include climate-related risk, are relevant to investment risk and return across asset classes, and the consideration of ESG issues is a complement to (not a substitute for) traditional fundamental analysis. ESG issues remain relevant throughout the investment process—from the initial analysis to the buy/sell/hold decision to ongoing ownership practices.

We strive 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. We continue to be transparent in how we communicate our progress on ESG matters and how relevant information is woven throughout our reporting. Our ESG directory (<https://www.tcenergy.com/investors/esg/esg-directory/>) acts as a central hub to provide our stakeholders with details of our comprehensive management and performance of relevant sustainability and ESG issues.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Our reputation with stakeholders, including employees, Indigenous groups, investors and regulators, can have a significant impact on our operations and projects, infrastructure development and competition with industry peers. Inadequately managing expectations and concerns important to stakeholders could affect our reputation and our ability to operate and grow, as well as our access to and cost of capital.

Cost of response to risk

Description of response and explanation of cost calculation

Our core values guide us in building and maintaining all our key relationships as well as our interactions with stakeholders. We are proud of the strong relationships we have built with stakeholders across our geographies, and we are continuously seeking ways to strengthen these relationships.

Beyond our core values, we take a number of actions to proactively address reputational concerns with stakeholders and shareholders through specific stakeholder programs and policies that shape our interactions, clarify expectations, assess risks and facilitate mutually beneficial outcomes.

Comment

This is a summary of the risk that affects our company and is being continuously monitored through the Enterprise Risk Management Program. Risks specific to each operating business segment can be found in each business segment discussion of the Annual Report. This risk may also result in stigmatization of the sector.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Market

Other, please specify

Changing customer behavior, commodity price and volume risk

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

RISK 3 - change to demand.

To be competitive, we must offer integral energy infrastructure services in supply and demand areas, and for forms of energy that are attractive

to customers. 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

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Should alternative lower-carbon forms of energy result in decreased demand for our services on an accelerated timeline versus our pace of depreciation, the value of our long-lived energy infrastructure assets could be negatively impacted.

We have a diverse portfolio of assets and use portfolio management to divest non-strategic assets, effectively rotating capital while adhering to risk preferences and focus on per share metrics. We conduct analyses to identify resilient supply sources as part of our energy fundamentals and strategic development reviews. We recover depreciation through our regulated pipeline rates which is an important lever to accelerate or decelerate the return of capital from a substantial portion of our assets. We also monitor signposts including customer, regulatory and government decisions as well as innovative technology development to inform our capital allocation strategy and adapt to changing market conditions.

Demand for pipeline capacity is ultimately the key driver that enables pipeline transportation services to be sold and is impacted by supply and market competition, variations in economic activity, weather variability, natural gas pipeline and storage competition, energy conservation and

demand for and prices of alternative sources of energy. Renewal of expiring contracts and the opportunity to charge a competitive toll depends on the overall demand for transportation service. A decrease in the level of demand for our pipeline transportation services could adversely impact revenues, although overall utilization of our pipeline capacity continues to grow and warrant further investment and expansion. The sustained impact of the COVID-19 pandemic and related global energy demand and supply disruption continues to contribute to market uncertainty impacting several our customers. While the majority of our credit exposure is to large creditworthy entities, we have increased our monitoring of and communication with those counterparties experiencing greater financial pressures due to market events resulting from the pandemic. At times, counterparties may endure financial challenges resulting from commodity price and market volatility, economic instability and political or regulatory changes. In addition to actively monitoring these situations, there are a number of factors that reduce our counterparty credit risk exposure in the event of default, including the competitive position of our assets and the demand for our services.

Cost of response to risk

Description of response and explanation of cost calculation

Natural Gas Pipelines: We compete for market share with other natural gas pipelines. New supply basins being developed closer to markets we have historically served may reduce the throughput and/or distance of haul on our existing pipelines and impact revenues. New markets, including those created by liquefied natural gas (LNG) export facilities developed to access global natural gas demand, can lead to increased revenues through higher utilization of existing facilities and/or demand for new infrastructure. 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.

Liquids Pipelines: A decrease in demand for refined crude oil products could adversely impact the price that crude oil producers receive for their product. Long-term lower crude oil prices could mean producers may curtail their investment in the further development of crude oil supplies. Depending on the severity, these factors would negatively impact opportunities to expand our liquids pipelines infrastructure and, in the longer term, to re-contract with shippers as current agreements expire.

Power and Storage: We face various competitive forces that impact our existing assets and 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 development of greenfield power plants and existing power companies across Canada.

Liquids marketing: Our liquids marketing business provides customers with a variety of crude oil marketing services including transportation, storage, and crude oil management, primarily through the purchase and sale of physical crude oil. Changing market conditions could adversely impact the value of the underlying capacity contracts and margins realized. Availability of alternative pipeline systems that can deliver into the

same areas can also impact contract value. The liquids marketing business complies with our risk management policies which are described in question C2.2.

Comment

This is a summary of the risk that affects our company and is being continuously monitored through the Enterprise Risk Management Program. 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

Acute physical

Other, please specify

Extreme weather events, including, but not limited to, windstorms, temperature extremes (hot and cold), forest fires, flooding, hurricanes, tornados and earthquakes

Primary potential financial impact

Other, please specify

Disruption of services and revenue

Company-specific description

RISK 4 - extreme weather

Significant changes in temperature and weather, natural disasters and other catastrophic events, including the potential impacts of climate change, have 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.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Prolonged periods of extreme weather have the potential of disrupting production, costing millions of dollars in lost revenue and increase in operating costs, legal proceedings or regulatory actions, insurance, or other expenses all of which could reduce our earnings. The likelihood of extreme weather events remains unknown, but through our risk management processes, we expect the magnitude of impact to remain low-medium for the foreseeable future, even if increases in extreme temperature or weather variations occur.

Cost of response to risk

Description of response and explanation of cost calculation

Our Operational Management System (TOMS) includes corporate health, safety, environment and asset integrity programs to prevent incidents and protect people, the environment and our assets. Our Operational Management System also includes incident, emergency and crisis management programs to ensure we can effectively respond to operational risk events, minimize loss or injury and enhance our ability to resume operations. These programs are all 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 our Operational Management System, 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.

Our comprehensive insurance program mitigates a portion of this risk but does not cover all events in all circumstances. We monitor our assets for exposure to natural catastrophes including, but not limited to, flood, wildfire, earthquake, hurricanes, to help us understand which assets may be exposed and enable us to focus on preventative measures at those locations. Emerging and unpredictable risks such as climate change pose new challenges for both insurers providing business interruption coverage and their customers. Such new risks have resulted in an evolution of business interruption coverage to ensure that policy holders are protected from the uncertainty presented by a rapidly changing climate. 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

This is a summary of the risk that affects our company and is being continuously monitored through the Enterprise Risk Management Program. 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

Resilience

Primary climate-related opportunity driver

Other, please specify

continued adoption of energy-efficiency measures, lower-emission technologies and participant in carbon market

Primary potential financial impact

Other, please specify

less sensitivity to current and emerging climate-related regulations

Company-specific description

OPPORTUNITY 1 - Resiliency to current and emerging climate related regulation and policy

We view current and emerging climate-related regulations as a potential opportunity to provide the regulatory certainty required to attract capital, facilitate meaningful emissions reductions, maintain and encourage the North American energy sector competitiveness, recognize and account for early and/or voluntary actions and support market-based policies to promote industry innovation.

We know that strong climate change policy will take a collective effort among industry, governments, communities and consumers to see true change in actions against climate change, and 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

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Effective policy development is an opportunity for government and industry to partner in driving timely, cost-effective emission reductions.

Well-designed policy can provide the regulatory certainty required to attract capital and maintain North American energy sector competitiveness, incent research and innovation, and recognize and account for early and/or voluntary actions.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

We proactively manage emissions through asset-level efficiency improvements and installations, and by taking an industry-leading role in carbon markets across North America.

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 emissions is essential to ensuring natural gas provides climate and public health benefits going forward.

While challenging, we support a price on carbon as providing a more direct signal to consumers and the economy to reduce emissions compared to other policies and a predictable price trajectory which will help the company better evaluate decarbonization pathways. We also agree 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.

Comment

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; and,
- 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.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Other, please specify

Development and/or expansion of low emission goods and services responding to shift in consumer preferences

Primary potential financial impact

Other, please specify

Increased revenues resulting from increased demand for products and services, and through access to new and emerging markets

Company-specific description

OPPORTUNITY 2 - Changing customer and consumer 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. 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 North America; and the east coast of Canada. Responding to the changing flow patterns of natural gas, as well as 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.

Our Canadian natural gas storage business helps balance seasonal and short-term supply and demand while also adding flexibility to the delivery of natural gas to markets in Alberta and the rest of North America. Market volatility creates arbitrage opportunities and our natural gas storage facilities also give us and our customers the ability to capture value from short-term price movements. Global crude oil and liquids demand is projected to increase driven generally by the transportation and industrial sectors.

Our strategic focus is to pursue emerging growth opportunities to add incremental value to our business to proactively address these anticipated demands. Expanding and leveraging our existing infrastructure to provide transportation solutions which link growing North American supply basins to key market hubs and demand regions will optimize the value of our liquids pipelines assets.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)**Explanation of financial impact figure**

Optimizing the value of our existing natural gas pipeline systems, while responding to the changing flow patterns of natural gas in North America, is a top priority. We also pursue new pipeline opportunities to add incremental value to our business.

Our key areas of focus include:

- primarily in-corridor expansion and extension of our existing large North American natural gas pipeline footprint;
- connections to new and growing industrial and electric power generation markets and local distribution companies (LDCs) ;
- expanding our systems in key locations and developing new projects to provide connectivity to liquefied natural gas (LNG) export terminals, both operating and proposed, along the U.S. Gulf Coast; the west coast of the U.S., Mexico and Canada; and the east coast of Canada; and,
- connections to growing Canadian and U.S. shale gas and other supplies.

These are early days, but we recognize the energy landscape is evolving. We continue to anticipate, adapt and position to be the premier energy infrastructure company in North America, now and in the future, with each of these areas playing a critical role in meeting the transportation requirements for supply of and demand for natural gas in North America.

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

The growing supply of natural gas has resulted in relatively low natural gas prices in North America which has supported increased demand. 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. Our ability to retain customers and recontract or sell capacity at favourable rates is influenced by prevailing market conditions and competitive factors, including alternatives available to end-use customers in the form of competing natural gas pipelines and supply sources as well as broader conditions that impact demand from certain customers or market segments.

Specific to our liquids pipeline assets, we will continue to focus on accessing and delivering the growing North American liquids supply to key markets by expanding our crude oil pipelines infrastructure to deliver directly from supply regions seamlessly along a contiguous path to market. This will position our Liquids Pipelines business segment development activities to identify and capture attractive organic growth and acquisition opportunities consistent with our risk preferences, and expand transportation service offerings to other areas of the liquids value chain including

ancillary services such as short-term and long-term storage of liquids, which complement our pipeline transportation infrastructure. Even the widest ranging scenarios show the world will continue to rely upon large quantities of natural gas and oil for the foreseeable future. As we look ahead, it is from our irreplaceable footprint that we will grow our energy offerings as we participate in the energy transition. In 2021, our key focus areas will be the continued execution of our existing \$21 billion capital program, which includes 83 per cent natural gas pipeline projects and 13 per cent emission-less power, comprising further investment in the NGTL System, continued construction of Coastal GasLink as well as the completion and initiation of new pipeline projects in the U.S. and Mexico and our ongoing life extension program at Bruce Power.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Other, please specify

use of lower-emission sources of energy, use of supportive policy incentives, and use of new technologies.

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

OPPORTUNITY 3 - Technological Innovation

Technological innovation is critical to managing the complex and inter-related issues surrounding climate-related risk. With demand for low-emissions natural gas and electricity 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.

We continually look for opportunities to enhance existing technologies, and advance new ones, in the areas of design, prevention, monitoring and leak detection to keep our pipeline safe. We see it as our duty to work with innovators, researchers, regulators and our industry peers to drive safety and reliability performance to new levels.

We also know that the world is looking to us and other members of the energy sector to help society make the transition to a lower-carbon future, so we are investing in alternative energy and promising innovative technologies to support that change.

The energy industry has leveraged advanced technologies for many years. The transition to a lower-carbon future will require the continued adoption of new and innovative solutions at a much faster rate.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Our role in the energy transition began with our incorporation in 1951. Since then we've garnered even more expertise across the energy spectrum including wind, solar, hydro and nuclear, as well as transporting and storing liquids and natural gas, including biogas. We commit time, resources, and dollars in the interest of advancing and studying technological innovation opportunities including pumped storage, hydrogen, waste-heat recovery, carbon capture and numerous other energy innovations.

Developing and deploying new technologies and new products inherently involves a degree of financial risk associated with escalating costs, uncertain outcomes and delays to anticipated schedules. Technologies such as CCUS or biofuels at scale also requires financial structures at regional levels that support economic feasibility of new technologies.

For all opportunities, we seek to understand the implications for our assets and stakeholders.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Our successful and long-standing research programs are carefully managed to both mitigate these technology risks while allowing us to realize the potential opportunities. In 2020, we invested more than \$7 million in research and development activities and advanced over 140 innovation projects focused on pipeline safety and reliability, technological advancement and sustainability.

Our ability to research, develop and deploy the right technologies and products in a timely and cost-effective manner will greatly influence the negative or positive effects on our earnings, cash flows and financial condition.

Comment

Concepts as innovative as predictive maintenance or remote-control capabilities don't happen overnight, with key milestones completed in 2020 and further efforts reaching into next year. Although there is much still on the horizon, the progress so far is an accomplishment unto itself. With other business units already seeking to leverage the work and begin implementation in their own spaces, we will continue to benefit from the innovative strategies and tools being created by everyone involved. Our broad portfolio of R&D and innovation initiatives is only briefly summarized in this submission and reflect a range of time horizons from short to long-term; likelihood and magnitude of impacts.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Other, please specify

use of lower sources of energy, use of new technologies and shift towards decentralized energy generation

Primary potential financial impact

Other, please specify

increased revenues through access to new and emerging markets, increased diversification of financial assets, and returns on investment in low-emission technology

Company-specific description

OPPORTUNITY 4 - Diversification of Energy Sources (emerging technologies)

The world will need all forms of energy in the future to support growing global population and the continued advancement of human prosperity. We are optimistic of the energy transition to a lower carbon economy and the prospect of new investment opportunities it brings. Emerging technologies will take time and require cooperation among all stakeholders along with billions of dollars in new investment to shift to a low-carbon economy.

We have all the right ingredients to be agile and to prosper in a changing energy landscape whatever pace or direction energy transition ultimately take. It's in our existing asset base, the technical capabilities of our people, our commitment to innovation and our enviable financial strength.

Time horizon

Long-term

Likelihood

Very 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)

Potential financial impact figure – minimum (currency)**Potential financial impact figure – maximum (currency)****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 across our footprint. 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. This builds on what we've learned since first transporting renewable natural gas (RNG) in our gas transmission system in 2002. We also support electrification where it optimizes environmental performance while ensuring safe, resilient energy transmission service. For all opportunities, we must understand the implications for our assets and stakeholders.

We believe natural gas and oil will remain critical to the global fuel mix for decades to come. Their efficiency, reliability and affordability are necessary to support our standard of living and backstop the intermittency of some lower-emission fuel sources. While we continue to watch for signposts and test the resiliency of our asset base against various energy outlooks, we will adhere to our tried-and-tested risk tolerances.

Whatever pace it takes, the energy transition requires expertise and billions of investment dollars. We have both. Looking forward, we believe we will be opportunity-rich and need to carefully allocate our capital to build out an ever more modern, robust and responsible energy system.

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

We are uniquely and well-positioned to capture energy source transition opportunities, targeting \$5-6B annual investment in a low carbon future, through a compelling suite of investment prospects aligned with established capabilities, risk preferences and return requirements through the following:

- Natural gas: continue to displace coal for cleaner electricity and backfill intermittent renewable energy sources;
- Liquids: meet global oil demand with responsible ESG sources and source zero emission electricity to supply pumps;
- Renewables: leverage footprint and competitive strengths to capture a share of the solar and wind build out;
- Firming resources: manage growing intermittency with pumped hydro and battery storage;
- Investment in regulated electric infrastructure: grid modernization and renewable integration;
- Small modular reactors: leverage Bruce Power operational experience and refurbishment expertise; and,
- Emerging technologies: hydrogen, carbon capture utilization and longer-duration storage.



As renewable electricity demand grows across North America, new solar, wind and energy storage capacity will be needed to meet that growing demand and facilitate a shift in the energy mix.

Comment

Outside of our diverse businesses in natural gas, power and oil, we have partnered in the liquefied natural gas (LNG) industry and have invested in several new solar projects, hydro energy pump storage projects and a first-of-its-kind waste heat recovery project. We also continue our investments in the Bruce Power project in Ontario, which provides emission-less energy to roughly one-third of Ontario.

C3. Business Strategy

C3.1

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

Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at Annual General Meetings (AGMs)	Comment
Row 1	Yes, in the next two years	No, we do not intend to include it as a scheduled AGM resolution item	We are currently assessing not only what interim GHG reduction targets might be, and ultimately what our 2050-type timeframe targets would be, but also the strategies that we would be employing to get there. We believe it's important to have a credible plan, one that not only we can communicate to not only the financial community, but our other stakeholders, indigenous communities, governments, and policymakers. We will announce specific climate-related targets and commitments in Fall 2021; please refer to documents noted in Question C-FI, specifically the Report on Sustainability and the GHG

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at Annual General Meetings (AGMs)	Comment
			Emissions Reduction Plan. We do not intend to include a low-carbon transition plan as a scheduled AGM resolution item at this time

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
Other, please specify third-party accelerated energy transition scenario	We recognize that future energy systems will evolve; therefore, we utilize scenario analysis to better understand the resilience of our asset portfolio over a range of potential energy supply and demand outcomes as part of our strategic planning process. 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. By examining outcomes within this broad hypothetical context, we gain perspective on the implications for our footprint, growth opportunities and portfolio optimization; it also plays a critical part in understanding how we can manage several of our key enterprise risks. Scenarios make a variety of future trend assumptions necessary in making long-term projections. This includes assumptions about domestic climate policies, rate of technological change, oil and gas markets (both domestic and global), major energy infrastructure and future costs of new electricity generation capacity. Scenarios offer alternative outlooks for the energy future but do not describe what will or should happen, and therefore we don’t assign probabilities to the scenarios and investors should not rely on them to

Climate-related scenarios and models applied	Details
	<p>make investment decisions. Using a scenario created by a third-party, our 2020 efforts focused on supplementing past scenario work by developing a deeper understanding of an accelerated transition to a lower-carbon energy future. We recognize the impacts of the COVID-19 pandemic have yet to completely unfold and we must consider these changing dynamics accordingly.</p> <p>Scenario overview: The accelerated energy transition scenario assumes reliance on multiple technologies to solve the world’s emissions problems and account for a pathway to lower emission levels that would keep the global temperature rise below 2oC. Technology assumptions include a major role for renewables in the power sector, a prominent role for hydrogen in the aviation and shipping sectors, battery standardization driving rapid adoption in the light-duty vehicle fleet along with the usage of some carbon capture and storage to address industrial process emissions. Governments around the world set clear regulations to drive low GHG outcomes, aggressive emission standards and efficiency regulations. Foundational to this scenario is a global carbon tax and emission standard that is imposed later this decade and accelerates over time. Developed countries take a leading role followed by emerging/developing countries.</p> <p>Scenario outcomes: Testing our portfolio against the accelerated energy transition scenario indicates our assets would be largely insulated from fossil fuel demand destruction to 2030. Post-2030, when policy aspirations are expected to materially reduce demand for fossil fuels, TC positioning in the lowest cost gas basins and projected liquefied natural gas (LNG) growth out of North America are still expected to maintain the resiliency of our assets. We remain observant of the future dependence on liquefied natural gas (LNG) exports as North American demand declines from reduced gas-fired power demand. Existing Canadian oil sands production remains resilient, but future growth would stall. Our existing Liquids pipelines are expected to maintain value given their direct access and competitive toll structures. Our current Power and Storage business, centered around Bruce Power (nuclear power), is not materially impacted in this scenario.</p>

C3.3

(C3.3) 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	<p>Leveraging 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. We strive 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, mitigate risks, strengthen our asset base or seek diversification, if required. The need for new forms of clean energy is expected to generate investments opportunities in the future. New growth prospects include either leveraging our existing assets (e.g. for hydrogen) or capitalizing on our capability to execute complex and capital-intensive projects (e.g. in carbon capture and storage). We also see the opportunity to participate in the growing electrification movement through our Power and Storage business, which can support modernization of our pipeline assets and reduce emissions from our existing operations.</p> <p>An example of business resiliency, captured through the necessity to meet low-carbon product demand, is detailed below.</p> <p>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.</p> <p>In Q1 2020, we recognized revenues of \$55M USD related to fees associated with our successful construction of Sur de Texas. This offshore pipeline transports 20% of Mexico's natural gas requirements from Texas to power and industrial markets in the eastern and central regions of the country.</p> <p>We also completed the Guadalajara pipeline flow reversal project and renegotiated the Transportation</p>

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
		Service Agreement (TSA) with Mexico’s Comisión Federal de Electricidad (CFE) enabling bidirectional flows connecting liquefied natural gas (LNG) imports and continental natural gas to regional markets.
Supply chain and/or value chain	Yes	<p>With the climate change discussion growing globally and the energy transition fully underway, we understand that this sets the stage for promoting innovative thought internally and externally. We know we have an important role to play in managing GHG emissions while balancing the need to provide safe and reliable energy to our customers and community. This challenge is not only ours to bear, but it is also a call to action for our customer which include utilities, producers, power plants and industrial customers. As a result, have a strategic focus to work with our customers. We are engaged with our customers, formally and informally, to find synergies and find solutions to reduce GHG emissions together, with the goal of sharing ideas, information and resources to better understand GHG reducing technologies. This includes examining the potential of hydrogen blending in our existing pipelines, expanding our renewable natural gas (RNG) transportation and electrification of our existing fleet of compressors along our expansive footprint. As we shift to a low-carbon future, we will work more with our customers to learn about new technologies and explore ways to reduce our carbon footprint while delivering reliable energy to meet the need of our customers and community.</p> <p>We are also developing high quality, long-life assets under our current capital program, comprised of \$20 billion in secured projects and \$8 billion in largely commercially-supported projects under development (as at December 31, 2020). 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.</p> <p>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.</p>

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Investment in R&D	Yes	<p>Our industry-leading 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 \$75 million in R&D projects across North America in the last decade. We have also committed over \$50 million across multiple funds managed by Energy Impact Partners, a venture capital fund that invests in innovative technologies, services and products to help optimize energy consumption and improve sustainable energy generation. These investments have facilitated the development of advanced real time, leak detection technologies with the potential to drive significant reductions in GHG emissions.</p> <p>These innovation efforts span a wide and diverse range of technical areas and technologies – from in line inspection advancements and machine learning to the very latest in drone technology.</p> <p>Although we have made significant advancements, we recognize the innovation landscape is always evolving and growing and it is critical that we continue to foster and support a culture of inventiveness and creativity. We will look to digital technologies along with our strong core practices of rigorous, data-driven research and technology development, to deliver innovative solutions that support a sustainable future.</p>
Operations	Yes	<p>Continually improving the integrity and reliability of our pipelines and facilities is, and always has been, one of our highest priorities.</p> <p>One specific example of our operations mitigating against climate-related risks in 2020 was the development of Operations Resiliency Business Intelligence Tool (ORBIT) software to detect anomalies within our pipeline network and assist our Operations Planners in decision making.</p> <p>The machine learning tool - designed to detect anomalies and predict upcoming issues along our system - is a new and cutting-edge technology. Additionally, pipeline network optimization software is being pursued to ensure our pipelines are operating at peak efficiency.</p>

C3.4

(C3.4) 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	<p>Revenues</p> <p>Direct costs</p> <p>Indirect costs</p> <p>Capital expenditures</p> <p>Capital allocation</p> <p>Acquisitions and divestments</p> <p>Access to capital</p> <p>Assets</p> <p>Liabilities</p>	<p>Our exposure to climate change risk and resulting policy changes, presenting a potential financial impact to commodity prices, volumes and taxes, is managed through our business model based on a long-term, low-risk strategy whereby most 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 long-term corporate strategic planning processes. Other factors may cause actual results to differ materially from those indicated in any forward-looking statement.</p> <p>Our strategy is to ensure risks and related exposures are aligned with business objectives and risk tolerance. We manage risk through a centralized Enterprise Risk Management process that identifies risks that could materially impact achievement of strategic objectives, including ESG-, and climate-related risks.</p> <p>Our Board Governance Committee oversees our Enterprise Risk Management activities, including ensuring appropriate management systems are in place to identify and manage risks, ensuring adequate Board oversight of risk management policies/programs/practices. The Human Resources Committee oversees executive resourcing, organizational capabilities and compensation risk ensuring 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 managing financial risk.</p> <p>Our executive leadership team is accountable for developing and implementing risk management plans and actions, and effective risk management is reflected in their compensation.</p> <p>We own assets and have business interests in several regions subject to GHG emissions regulations; in 2020, we incurred \$64M (2019–\$69M) of expenses under existing carbon pricing programs.</p> <p>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/sabotage) could result in increased operating cost.</p>

		<p>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.</p> <p>A key component of our corporate strategy includes cultivating a focused portfolio of high-quality development and investment options. 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 risk tolerance profile, focus on commercially regulated and/or long-term contracted growth initiatives in core regions of N.America and prudently manage development costs, minimizing capital-at-risk in early project stages, advance selected opportunities to full development/construction when market conditions are appropriate and project risks and returns are acceptable, and monitor trends specific to energy supply and demand fundamentals, in addition to analyzing how our portfolio performs under different energy scenarios considering TCFD recommendations. These results contribute to identification of opportunities to maintain resilience, strengthen our asset base or seek diversification, if required.</p> <p>We are exposed to market risk and counterparty credit risk and have strategies/policies/limits to manage impact of these risks on earnings, cash flows and, ultimately, shareholder value.</p> <p>Risk management strategies/policies/limits are designed to ensure risks/related exposures are in line with business objectives and risk tolerance. Market and counterparty credit risk are managed within limits that established by our Board, implemented by senior management and monitored by risk management and internal audit groups. Our BOD Audit Committee oversees how management monitors compliance with market counterparty credit risk management policies/procedures and oversees management review of adequacy of risk management framework.</p> <p>We review long-lived assets, such as plant, property and equipment, equity investments and capital projects in development, for impairment when events/changes in circumstances lead us to believe we might not be able to recover an asset's carrying value. Factors we consider in assessment of the recoverability of long-lived assets include, but not limited</p>
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		<p>to, macroeconomic conditions, changes in industries and markets where we operate, ability to renew contracts, and financial performance/prospects of our assets. If the total of undiscounted future cash flows we estimate for an asset within Property, plant and equipment, or the estimated selling price of any long-lived asset is less than carrying value, we consider fair value to be less than carrying value and record an impairment loss to recognize. For goodwill, if the fair value of the reporting unit determined using discounted cash flows is less than its carrying value, we consider it to be impaired.</p> <p>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 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>
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C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

We recognize there are multiple pathways in how the energy transition could unfold and our strategies are built to ensure we deliver enduring value no matter the future direction of the energy transition. We monitor the pace and magnitude of energy transition through various signposts and look for material shifts that pose threats or create opportunities. 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 toward a balanced energy future including investments in new energy infrastructure and advancing innovative and economically effective solutions to reduce our GHG emissions.

We operate under a low-risk business model that maximizes the value of our long-life assets and commercial positions through all points in the business cycle. We have a demonstrated track record in responding to a constantly evolving external environment. 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)

118,421

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

1

Target year

2020

Targeted reduction from base year (%)

20

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

94,736.8

Covered emissions in reporting year (metric tons CO₂e)

138,406

% of target achieved [auto-calculated]

-84.3811486138

Target status in reporting year

Underway

Is this a science-based target?

Target ambition

Please explain (including target coverage)

Québec has a GHG cap-and-trade program under the Western Climate Initiative (WCI) GHG emissions market. The government allocates free emission units for the majority of Bécancour's 2020 compliance requirements. The remaining requirements were met with 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 in order to comply with the requirements of this initiative.

The significant similarities between Quebec and California's systems are largely dictated by detailed policy architecture prepared over a period of several years by the WCI and their partner jurisdictions. The Quebec system linked with California's cap-and-trade system in 2014.

We were actively involved in developing this program during industry consultation, as we encourage and support regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

The ambitions of the Quebec cap-and-trade program to pursue a science-based target are unknown.

Adherence to this program inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

Target reference number

Abs 2

Year target was set

2020

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1

Base year

2020

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

2030

Targeted reduction from base year (%)

40

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

Covered emissions in reporting year (metric tons CO₂e)

% of target achieved [auto-calculated]

Target status in reporting year

Underway

Is this a science-based target?

Target ambition

Please explain (including target coverage)

The California cap-and-trade program ensures that GHG targets are met by setting an emissions limit – a declining cap – on 85% of emissions, primarily transportation, industry, and electricity generation emissions. Emitters must have sufficient allowances to meet their emissions limit, but how they do that is up to them. The system is not command and control, but rather allows for compliance flexibility and long-term business planning, while the price signals motivate long-term investment in cleaner fuel and energy efficiency.

TC Energy incurs costs associated with the cap-and-trade program with respect to our electricity marketing activities.

Adherence to this program inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

The ambitions of the California cap-and-trade program to pursue a science-based target are unknown.

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

2020

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

2020

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

0.0043

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

Target year

2020

Targeted reduction from base year (%)

0

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

0.0043

% 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)

0.05098

% of target achieved [auto-calculated]

Target status in reporting year

Underway

Is this a science-based target?

Target ambition

Please explain (including target coverage)

In Alberta, the Carbon Competitive Incentive Regulation (CCIR) was replaced with the Technology Innovation and Emissions Reduction (TIER) regulation as of January 2020 and is a recognized provincial program under the Greenhouse Gas Pollution Pricing Act for 2020 and 2021. The TIER system follows a similar regulatory framework as the CCIR and covers all our natural gas pipelines and power and storage assets in Alberta.

We met 2020 compliance requirements with a combination of fund credits purchased from the Alberta Government, emission performance credits (EPCs) purchased from secondary markets, and EPCs generated from several of our cogeneration assets. Canadian natural gas pipeline compliance costs are recovered through regulated tolls.

We were actively involved in developing this program during industry consultation, as we encourage and support regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

While not a target in the conventional sense, rather an optimization benchmark to encourage efficiency improvements and mitigate annual regulatory compliance costs, adherence to this program inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a company-specific target.

The ambitions of the Alberta TIER program to pursue a science-based target are unknown.

Target reference number

Int 2

Year target was set

2020

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

2020

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

2020

Targeted reduction from base year (%)

0

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

0.37

% 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]

Target status in reporting year

Underway

Is this a science-based target?

Target ambition

Please explain (including target coverage)

In Alberta, the Carbon Competitive Incentive Regulation (CCIR) was replaced with the Technology Innovation and Emissions Reduction (TIER) regulation as of January 2020 and is a recognized provincial program under the Greenhouse Gas Pollution Pricing Act for 2020 and 2021. The TIER system follows a similar regulatory framework as the CCIR and covers all our natural gas pipelines and power and storage assets in Alberta.

We are 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.

We met 2020 compliance requirements with a combination of fund credits purchased from the Alberta Government and EPCs generated from several of our cogeneration assets.

A portion of the compliance costs for the Power and Storage assets are recovered through market pricing and hedging activities.

We were actively involved in developing this program during industry consultation, as we encourage and support regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

While not a target in the conventional sense, rather an optimization benchmark to encourage efficiency improvements and mitigate annual regulatory compliance costs, adherence to this program inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a company-specific target.

The ambitions of the Alberta TIER program to pursue a science-based target are unknown.

Target reference number

Int 3

Year target was set

2020

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

2020

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

2020

Targeted reduction from base year (%)

0

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

0.06299

% 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]

Target status in reporting year

Underway

Is this a science-based target?

Target ambition

Please explain (including target coverage)

In Alberta, the Carbon Competitive Incentive Regulation (CCIR) was replaced with the Technology Innovation and Emissions Reduction (TIER) regulation as of January 2020 and is a recognized provincial program under the Greenhouse Gas Pollution Pricing Act for 2020 and 2021. The TIER system follows a similar regulatory framework as the CCIR and covers all our natural gas pipelines and power and storage assets in Alberta.

We are 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.

We met 2020 compliance requirements with a combination of fund credits, purchased from the Alberta Government and EPCs generated from several of our cogeneration assets. A portion of the compliance costs for the Power and Storage assets are recovered through market pricing and hedging activities.

We were actively involved in developing this program during industry consultation, as we encourage and support regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

While not a target in the conventional sense, rather an optimization benchmark to encourage efficiency improvements and mitigate annual regulatory compliance costs, adherence to this program inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a company-specific target.

The ambitions of the Alberta TIER program to pursue a science-based target are unknown.

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)

0.122

% 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]

0.12078

% 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)

0.112

% of target achieved [auto-calculated]

819.6721311475

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

Other, please specify

no target ambition has been declared by ONE Future

Please explain (including target coverage)

Our Nation's Energy Future (ONE Future) is a coalition of 50 natural gas companies representing the natural gas value chain focused on implementing an innovative, performance-based approach to the management of methane emissions directed toward a concrete goal of one percent (or less) of total produced natural gas by 2025. The 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.

Due to the year-to-year changes in sectors, the net emissions intensity from ONE Future has remained virtually flat, but still is 67% less than our one percent goal. ONE Future's overarching goal is to ensure the future of natural gas as a long-term sustainable fuel and that objective will be assured as additional players in the natural gas value chain continue to step-up and embrace the benefits of reducing methane emissions.

Our assets are reported 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. The U.S. Environmental Protection

Agency (USEPA) 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.

Please refer to the following for additional details:

<https://onefuture.us/wp-content/uploads/2021/03/ONE-Future-2020-Final-Report-030921-print.pdf>

C4.2

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

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

C-OG4.2d

(C-OG4.2d) 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.

We support objectives to reduce methane emissions to meet local, federal, & global climate change targets, & we are a signatory to the Methane Guiding Principles. These principles focus priority areas for action towards reduction of methane emissions across the natural gas value chain. New/emerging methane-related regulations/initiatives (noted below) will ensure focus on methane reduction over the next 5yrs. We are committed to minimizing the environmental impact of pipelines throughout the entire pipeline lifecycle & have actively engaged in reducing methane emissions for several decades as a driving force in the pipeline industry on developing/implementing new practices/technologies to reduce fugitive emissions during routine ops & maintenance. During maintenance, the use of pull-down compressors & hot tap procedures help capture/recycle methane emissions. During operation, fugitive emissions inspection/leak repair program identifies leaks on pipeline & compressor station valves & other components to help reduce releases. We also invest in new technology in ops to improve tracking of natural gas pipeline fugitive emissions data at valve

sites/meter/compressor stations. The technology will improve ops & regulatory reporting activities resulting in improved ability to plan maintenance activities.

In Canada we adhere to methane reduction regulation, expected to reduce overall industry emissions by 40-45% by 2030. The regs detail requirements to reduce methane emissions through operational & capital modifications. Compliance will involve equip. retrofits, frequent LDAR surveys & measurements to quantify emission reductions/associated reporting. AB, BC & SK have drafted their own methane regulations that take the place of federal regulation; compliance with the regulations requires increased LDAR surveys/measurements to quantify emission reductions/associated reporting. Power facilities are not affected by this regulation. Initiatives to reduce methane emissions continues, incl. pilot projects for Dry Gas Seal implementation. While the technology is in development, we are the only Canadian company to employ this specific technology; our plan is to have them in service 2021.

Power facilities are not affected by the federal Methane Reduction Regulation. Non-regulated gas storage facilities in AB are regulated under provincial methane emission rules; AER Directive 60.

The U.S. Senate passed the Pipeline & Hazardous Materials Safety Administration (PHMSA) reauthorization bill, PIPES Act, which included methane regulations requiring pipeline owners/operators to implement LDAR programs, deploy advanced leak detection technology & incorporate LDAR surveys in inspection & maintenance plans. The USEPA issued 2 final rules to lessen the admin/compliance cost burden on the oil & gas industry related to New Source Performance Standards (NSPS). One rule, the Methane Policy Rule, was policy amendment. The second rule, the Technical Amendment, changed several requirements incl. monitoring/repair schedules, recordkeeping/reporting requirements plus provided industry with option to meet certain state requirements in lieu of federal requirements. Lawsuits brought by environmental groups/ various state/local governments against both rules are pending in the D.C. Circuit Court of Appeals. The expected impact to our assets, incl. forecasted methane emissions, resulting from the PIPES Act & the EPA rules is still being evaluated.

We are also a member of ONE Future, a coalition of 50 Natural Gas companies focused on implementing innovative, performance-based approach to management of methane emissions toward a concrete goal of 1% (or less) of total produced natural gas by 2025.

We remain actively involved with the USEPA Natural Gas STAR Program, which provides a framework for partner companies with U.S. oil & gas operations to implement methane reducing technologies & practices & document their voluntary emission reduction activities.

The Environmental Partnership (TEP)-a coalition of U.S. natural gas & oil production, processing, & transmission companies- first initiative is focused on further emissions reduction, incl. methane & VOCs associated with natural gas & oil production/processing/transmission.

In Mexico, companies are required to prepare a *Program for the Comprehensive Prevention & Control of Methane Emissions* (PPCIEM) incl. identification of methane sources, quantification of baseline emissions, & estimate of expected emission reductions from prevention & control activities. The guidelines also order the development of a quarterly LDAR. This regulation requires PPCIEM determine a reduction goal be met within a period not exceeding 6yrs from delivery of the PPCIEM. In the first phase, the measurement instruments, staff training & implementation of documentation are

being considered such that during the second phase of the program, emission targets can be developed, monitored, & fulfilled across all of the planned strategies.

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	80	13,800,000
To be implemented*	0	0
Implementation commenced*	6	31,276
Implemented*	0	0
Not to be implemented	0	0

C4.3b

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

C4.3c

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

Method	Comment
<p>Compliance with regulatory requirements/standards</p>	<p>We own assets, & have business interests, in several regions subject to GHG emissions regulations, incl. emissions management & carbon pricing policies. Across N. America there new & evolving initiatives in development at the federal, regional, state & provincial level aimed at reducing emissions. We actively monitor/submit comments to regulators as new/evolving initiatives are undertaken/policies implemented.</p> <p>Please refer to our 2020 Annual report (p. 92-95) for overview of existing policies/anticipated policies/changes to environmental assessment legislation, which drive emission reduction activities. These include, but not limited to, Canadian Methane Reduction Regulation which details requirements to reduce methane emissions through operational & capital modifications, Canadian Output-based Pricing System (OBPS) reg to impose carbon pricing for larger industrial facilities & set federal GHG benchmarks, California Air Resources Board (CARB) published regulations related to monitoring & repairing methane leaks, Mexico-based establishment of guidelines for the prevention & control of methane emissions in the hydrocarbon sector.</p> <p>Additional regs not currently listed in our Annual Report which are considered drivers for emission reduction activities include methane reductions with U.S. EPA Natural Gas STAR reporting (equipment leaks, pipeline replacement, pipeline pump-downs, use of turbines) including pipeline construction/pipeline integrity digs “pump downs” to reduce methane, cathodically-protected pipe install to reduce methane leakage, compliance driven fugitive methane surveys, electric compressors evaluated for new U.S. Gas Operations installations to reduce CO2.</p> <p>Mexico has established non-binding, long-term target reducing emissions 30% by 2020 & 50% by 2050 (2000 baseline). The SEMARNAT, the main government agency in charge of enacting/enforcing environmental regulation federally, began a pilot program for implementing an ETS in 2019. The ETS's test programme will run for 3yrs: 2yrs on a pilot phase & 1yr on transition phase into the mandatory ETS. The pilot will impose no economic impact on regulated entities & will test system design, build emissions trading capacity & generate reference value for emission allowances & offsets during operations. Regs for the operational phase of the mandatory ETS will be published 2022.</p>
<p>Internal price on carbon</p>	<p>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</p>

Method	Comment
	<p>projects and strategies to assess the viability of the projects over the long term, under both our base and stress cases.</p> <p>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.</p>
<p>Dedicated budget for low-carbon product R&D</p>	<p>Low carbon technology is a key aspect of our efforts to reduce emissions. In the last decade, our R&D program has invested more than \$75 million on initiatives including technology development and deployment and digital technologies targeting the reduction of capital expenditures, lowering operating costs, increased reliability, toll competitiveness, and improving environmental performance. Indirectly increasing safety and modernization, technology and innovation improvements on existing infrastructure may result in a reduction of emissions intensity as a byproduct. We have also committed over \$50 million across multiple funds managed by Energy Impact Partners, a venture capital fund that invests in innovative technologies, services and products to help optimize energy consumption and improve sustainable energy generation. These investments have facilitated the development of advanced real time, leak detection technologies with the potential to drive significant reductions in GHG emissions.</p>
<p>Partnering with governments on technology development</p>	<p>We advance business objectives by identifying issues, opportunities, and risks within the local, provincial, and federal government political arenas in which we do business or would like to do business. We also continuously 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.</p> <p>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.</p>
<p>Other Operational excellence and effectiveness</p>	<p>Our focus on operational excellence and effectiveness increases efficiency, thereby reducing emissions, while our 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.</p>

Method	Comment
Internal incentives/recognition programs	<p>To comply with Canadian methane emissions regulations, we continue to use and improve our in-house developed Emissions Management Application. The application is fully integrated with our enterprise resource planning software and its automated features, enabling us to action repairs sooner, identify trends in inspections results and implement system-wide changes, as required. Several internal groups have been engaged to enhance the application’s usability for day-to-day users. In rewarding employees for their efforts and suggested improvements to the overall compliance program, we use our internal recognition program (Spotlight) which creates a rewarding work environment.</p> <p>We actively participate in several government, industry and academic collaborations dedicated to improving field research and adoption of emissions detection, quantification, mitigation, conservation and conversation technologies. The outcomes of these collaborations and pilot projects will inform our selection of practices and technologies to reduce emissions, while meeting safety and reliability requirements</p> <p>We also actively engaging in identifying and applying for government grant opportunities to support further emission reduction opportunities, where applicable. In 2020, we were successful in a competitive process to receive funding for a project through the CleanBC Industry Fund. The project involves small piping modifications at a compressor station that will allow capture and utilization of the natural gas that would otherwise be released to the atmosphere during planned blowdown events.</p>

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 NIR, 1990-2019, Part 3, Annex 13 Electricity in Canada: Summary and Intensity Tables
Global Warming Potentials – Environment Canada GWPs, IPCC Fourth Assessment Report

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

3.32

Comment

Approximately 75% of our power capacity is emission-less and we are leaders in the development and operation of high efficiency, natural gas-fired generating stations.

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 located in Alberta, Ontario, Québec and New Brunswick.

On April 29, 2020, we completed the sale of our Halton Hills and Napanee power plants and our 50 per cent interest in Portlands Energy Centre. Napanee, Halton Hills and Portlands Energy Centre were not operating under our ownership as at December 31, 2020 and as such, their emissions are not included in this questionnaire

% 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

Comment

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

Since 2002, the Trans-Quebec & Maritimes (TQM) pipeline carries robust volumes of renewable natural gas, effectively connecting supply and demand of low-carbon fuels and supporting provincial clean energy programs and objectives. TC Energy is currently capable of flowing 4 BCF/year and expects this to grow over the next year.

Examples of our RNG successes include:

- RNG from two Quebec-based landfill sites transported through our TQM system
- In the U.S., our pipeline systems are transporting RNG from 10 individual landfills and livestock farms spread across our footprint
- Quebec's Standards for Bio-methane Transportation developed with input from internal subject matter experts.

We are also evaluating future development and investment in RNG opportunities:

- RNG commercial discussions underway in Canada and the U.S.
- Policies such as the Quebec Government's commitment to flow 5% RNG by 2025 creating opportunity

C-EU4.6

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

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 efficiency of our operations.

Through continued development of world-class technologies, we are working hard to reduce the GHG intensity of our operations and reduce energy use on our power and storage facilities. Across North America there are a variety of new and evolving policies and initiatives in development at the federal, regional, state and provincial level aimed at reducing GHG emissions, including methane emissions.

Adherence to these programs inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

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 an annual frequency. 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.

We fully support 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 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-OG4.2d** for details regarding our commitment to methane reduction emissions.

We also participate in Pipeline Research Council International (PRCI), Petroleum Technology Alliance Canada (PTAC)/Canadian Emissions Reductions Innovation Consortium (CanERIC) consortium 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.

Through our regulatory Leak Detection and Repair (LDAR) Program, we have identified equipment prone to fugitive methane emissions and implemented Canada-wide programs to replace such equipment. Findings from the LDAR Program have also provided additional justification to increase gas to air pneumatic conversions.

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.

We do 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,
- U.S. 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).
- Mexico Federal: NOM-007-SECRE-2010 "Transport of Natural Gas", NOM-007-ASEA-2016 "Transport of Natural Gas, Ethane and Gas associated with Mineral Coal by means of Pipelines" and the General Administrative Provisions (DAG) that establish the "*Guidelines for the prevention and comprehensive control of methane emissions from the Hydrocarbons Sector*";

In Canada, we have been completing LDAR surveys at compressor stations on an annual basis and meter stations every three years. Starting in 2020, LDAR frequencies increased 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, we will continue its best practice of inspecting valve fugitive emissions surveys every two year.

Our in-house developed Emissions Management Application within SAP (EMA-SAP Tool) supports our Canada Gas Operations LDAR program 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 workorders 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).

In our U.S. operations, we have been completing annual LDAR surveys at approximately 80% of the compressor stations and on a quarterly basis for those facilities requiring OOOOa regulatory compliance with a requirement to complete the repair within 30 days.

Other examples of our approach to leak detection in the US include:

- Reciprocating compressor rod packing condition is assessed utilizing a condition-based replacement approach;

- Pipeline pump-downs are conducted to reduce gas blown to atmosphere and reducing pipeline pressures prior to blowdowns;
- Pressurized holds are practiced on compressors to reduce blowdown events;
- Low emitting dry gas seals are installed on most centrifugal compressors to reduce emissions;
- Electric starters have replaced gas starters on new turbine installations;
- Electric driven compression has replaced reciprocating/turbine drivers at some facilities;
- Installation of cathodically protected pipe has replaced unprotected pipe to reduce leakage to the atmosphere; and,
- Department of Transportation (DOT) emergency shutdown (ESD) annual compliance tests are conducted at 93% of U.S. compressor stations in lieu of full-scale blowdowns to atmosphere.

In Mexico, we complete gas leak detection on the equipment and accessories on a semiannual basis, at both the stations and the pipeline, in accordance with the Mexican regulations NOM-007-SECRE-2010 "Transport of Natural Gas", the NOM-007-ASEA-2016 "Transport of Natural Gas, Ethane and Gas associated with Mineral Coal by means of Pipelines" and the General Administrative Provisions (DAG) that establish the Guidelines for the prevention and comprehensive control of methane emissions from the Hydrocarbons Sector, as well as applicable internal procedures

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 we do 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 in specific situation, and on dehydration skids at our U.S. gas operations, however, some thermal oxidizers exist as an alternative to flares.

Our Mexico operating systems do not have flaring destruction systems and it is not being contemplated; our main activity is to reduce leak detection times.

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 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 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

We do 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 NIR, and memos from Registro Nacional de Emisiones (Mexico).

- Scope 1: 2011 Western Climate Initiative (WCI) quantification methods in combination with the 2012 and 2013 amendments, USPEA 40 CFR Part 98, Canadian Energy Partnership for Environmental Innovation (CEPEI), Methodology Manual: Estimation of Air Emissions from the Canadian Natural Gas Transmission, Storage and Distribution System, prepared by Clearstone Engineering Ltd., 2018

- Scope 2 - GREET via the WRI/WBSCD – Greenhouse Gas Protocol, The Climate Registry, 2021 Climate Registry Default Emission Factors [May 2021], National Inventory Report Greenhouse Gas Sources and Sinks in Canada 1990-2019, and memos released by the Registro Nacional de Emisiones (Mexico).

C5.2a

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

We calculate GHG emissions using a combination of methods mandated 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. We report gross emissions emitted to the atmosphere before accounting for offsets, credits, or other similar mechanisms that have reduced or compensated for emissions. For increased transparency, 2020 GHG emissions reported within this response include those considered below reporting thresholds under regulatory reporting regimes.

Reported emissions have been adjusted based on legal entity ownership, as of December 31, 2020, as disclosed in our 2020 Annual Report.

Emissions data disclosed within this submission does not include emissions associated with power assets subsequently sold in April 2020; Halton Hills, Napanee, and our 50% 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)

15,810,568

Comment

Gross global Scope 1 emissions are calculated as per jurisdictional regulatory reporting program guidance, including equity share reporting boundary, emission category, calculation methodology and global warming potentials. In instances where regulatory reporting program guidance does not align across jurisdictions, we have 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.

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

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

Comment

Scope 2 emissions are considered an indirect emissions source (along with Scope 3), as 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). Our location-based Scope 2 emissions are calculated based on purchased electricity and generic emission factors (i.e. grid electricity emission factors).

C6.3

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

Reporting year

Scope 2, location-based

2,049,961

Comment

Electricity emissions factors for location-based Scope 2 accounting are taken from the 2021 Canadian National Inventory Report, supplied by grid operators (where available), the USEPA Emissions & Generation Resource Integrated Database (eGRID), The Climate Registry (May 2021) Climate Registry Default Emission, and memos released by the Registro Nacional de Emisiones.

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

Data availability; we estimate 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

Please explain

We are 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

Please explain

We are 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

2,613,110

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 2020 - Energy Supply and Demand Projections to 2050 - 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 (2020 GREET); (2) Natural CO₂e Gas Emission Factors for Stationary Fuels and Electricity Generation (2020 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 (2020 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, 2020.

Emission Factors: (1) Lower heating value of Conventional Jet Fuel (2020 GREET); (2) Jet Fuel Cycle CO₂e Emission Factor (2020 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 2020 reporting year, this category represents approximately 97% of our total Scope 3 emissions profile.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

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, calculated

Metric tonnes CO₂e

74,844

Emissions calculation methodology

Inputs: annual invoice-posted/actual spend analysis (per jurisdiction) from vendors with a material group classification of “Environmental Waste Hazardous” and “Environmental Waste Non-Hazardous”, as received from Supply Chain team

Emission Factors: “GHG Protocol Quantis Scope 3 Evaluator” tool.

Air and Rail travel emissions are quantified by our travel services team.

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

0

Please explain

Included in this Scope 3 category are emissions from spend on facility waste management.

For the 2020 reporting year, this category represents approximately 3% of our total Scope 3 emissions profile.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

4,627

Emissions calculation methodology

Air and Rail travel emissions are quantified by our travel services team.

VEHICULAR TRAVEL

Inputs: Rental vehicle kilometers and; (2) Extensity/personal use kilometers.

Emission Factors: (1) Canadian Average fuel economy; (2) US average fuel economy, (3) National Inventory Report Greenhouse Gas Sources and Sinks in Canada 1990-2019, Part 2, and (4) US Emission Factors for Greenhouse Gas Inventories [01 April 2021]

Methodology: Input / Fuel Mileage * Emission Factor

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

94

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

For the 2020 reporting year, this category represents approximately <0.5% of our Scope 3 emissions profile.

Employee commuting

Evaluation status

Relevant, not yet calculated

Please explain

We are 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.

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

10,872

Emissions calculation methodology

Inputs: The primary inputs for calculating emissions from Upstream Leased Assets are (1) building electricity consumption; (2) building electricity consumption, and (3) office building percentage occupancy.

Emission Factors: (1) Canada Electrical CO2e Emission Factor by Province (National Inventory Report Greenhouse Gas Sources and Sinks in Canada 1990-2019, Part 3); (2) US Electrical CO2e Emission Factor by eGRID subregion (USEPA, eGRID2019), and (3) memos released by the Registro Nacional de Emisiones (Mexico).

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 leased office space.

Included in this Scope 3 category:

- Leased office space electricity consumption
- Leased office space natural gas consumption

For the 2020 reporting year, this category represents approximately <0.5% of our total Scope 3 emissions profile.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

We do 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 our 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).

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

We do 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

Please explain

We do 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 select 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 challenging, as we are unable to discern who purchases our generated electricity at any given time.

We are 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

Please explain

We do 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

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

Please explain

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

Investments

Evaluation status

Relevant, not yet calculated

Please explain

We are 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

Please explain

We do not have other upstream Scope 3 emissions to report.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

We do 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

1,117

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

7,486,507

Metric denominator

Other, please specify

billion cubic feet (Bcf) natural gas throughput

Metric denominator: Unit total

6,702

Scope 2 figure used

Location-based

% change from previous year

428

Direction of change

Increased

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.

Calculated GHG emission intensities for our natural gas business segments are based on a throughput denominator.

Throughput within each operational jurisdiction is calculated based on regionally distinct regulatory methodologies and definitions. 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, requires different equipment and has a different 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. Therefore, comparisons of emissions intensities between natural gas transmission pipeline systems, and between jurisdictions, should consider the type of pipeline network and the service that it is providing.

Increased business activity and throughput (utilization) at most US entities, contributed to the intensity increase between 2019 and 2020.

In 2021, TC Energy undertook a project to better understand and quantify actual pipeline leak emissions from a low-pressure gathering system.

On the basis of a study and field measurement program, system-specific EFs were developed that reflect measured losses and resulting emissions to atmosphere from pipeline leaks. The resulting emissions were retroactively included in 2020 U.S. natural gas pipeline absolute emissions.

Additionally, we shifted our approach on reporting and defining throughput volumes for the U.S. Natural Gas Pipelines business segment to

reflect commercially tracked deliveries. This is not comparable to historical methodology, and previously reported values. The U.S. natural gas pipelines emission intensity for 2019, reflecting this revision, will be reported in our upcoming 2021 ESG datasheet.

Intensity figure

910

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

6,529,148

Metric denominator

Other, please specify

billion cubic feet (Bcf) natural gas throughput

Metric denominator: Unit total

7,177

Scope 2 figure used

Location-based

% change from previous year

7.43

Direction of change

Decreased

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. Calculated GHG emission intensities for our natural gas business segments are based on a throughput denominator. Throughput within each operational jurisdiction is calculated based on regionally distinct regulatory methodologies and definitions. 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,

requires different equipment and has a different 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. Therefore, comparisons of emissions intensities between natural gas transmission pipeline systems, and between jurisdictions, should consider the type of pipeline network and the service that it is providing. The intensity increase does not represent a significant year-over-year change (<10%).

Intensity figure

198

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

97,961

Metric denominator

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

Metric denominator: Unit total

495

Scope 2 figure used

Location-based

% change from previous year

10.72

Direction of change

Increased

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. Calculated GHG emission intensities for our natural gas business segments are based on a throughput denominator.

Throughput within each operational jurisdiction is calculated based on regionally distinct regulatory methodologies and definitions. 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, requires different equipment and has a different 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. Therefore, comparisons of emissions intensities between natural gas transmission pipeline systems, and between jurisdictions, should consider the type of pipeline network and the service that it is providing.

The variance from 2019 reported intensity is attributed to increased customer demand for natural gas, which contributes to increased combustion of natural gas in operating our transmission pipelines and in turn increased GHG emissions.

Intensity figure

0.0735

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

1,769,257

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

24,060,721

Scope 2 figure used

Location-based

% change from previous year

22.86

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 our 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 our ‘true’ emissions intensity. The variance from 2019 reported intensity is attributed to asset divestiture; 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. Napanee, Halton Hills and Portlands Energy Centre were not operating under TC Energy ownership as at December 31, 2020 and as such, their emissions are not included in this questionnaire. Small variances (decreases) attributed to changes in output were also noticed at these assets.

Intensity figure

492

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

56,749

Metric denominator

Other, please specify

Total volume (Injected + Withdrawn) (e3 m3)

Metric denominator: Unit total

115

Scope 2 figure used

Location-based

% change from previous year

36

Direction of change

Decreased



Reason for change

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 operating our gas storage assets, typically more GHGs are generated during withdrawal than injection. Natural gas is combusted during gas withdrawal and injection. Injection uses incremental electricity consumption to compress and push the gas into the storage reservoir. In 2020, substantially higher volumes of gas were injected into our storage facilities than preceding years, resulting in higher absolute scope 2 emissions but a greater relative increase in the total volume of gas injected and withdrawn, resulting in a net overall intensity reduction from previous years.

Intensity figure

0.004

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

1,670,483

Metric denominator

Other, please specify

Throughput (NSV bbls)

Metric denominator: Unit total

414,551,144

Scope 2 figure used

Location-based

% change from previous year

0

Direction of change

No change



Reason for change

Metric tonnes CO2e per net standard volume (NSV) throughput is relevant to our Canadian and U.S.-based liquids pipeline entities and measures Scope 1 and 2 emissions only from those facilities.

This is a new metric for 2020/2021 CDP reporting and represents receipt volume inventory for pipelines and tank terminals.

When compared to a recalculated 2019 intensity value, the variance is not significant (<10%)

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

137

Direction of change

Increased

Reason for change

Increased throughput (utilization) at most US and Mexico entities, contributed to the intensity decrease between 2019 and 2020.

Additionally, we shifted our approach on reporting and defining throughput volumes for the U.S. Natural Gas Pipelines business segment to reflect commercially tracked deliveries. This is not comparable to historical methodology, and previously reported values. The U.S. natural gas pipelines emission intensity for 2019, reflecting this revision, will be reported in our upcoming 2021 ESG datasheet.

Comment

Metric tons CO₂e from hydrocarbon category per unit specified is 0.004. 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 2020.

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

0.032

Comment

Methane emissions are 0.0319% of total natural gas and hydrocarbon throughput.

In 2021, TC Energy undertook a project to better understand and quantify actual pipeline leak emissions from a low-pressure gathering system. On the basis of a study and field measurement program, system-specific EFs were developed that reflect measured losses and resulting emissions to atmosphere from pipeline leaks. The resulting emissions, primarily methane, were retroactively included in 2020 U.S. natural gas pipeline absolute emissions and included in the calculation of this value.

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	12,564,740	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	3,183,042	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	62,779	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	6.225	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	The SF6 emissions quantified are not related to Stationary Combustion or Fugitive source; rather regeneration
Combustion (Electric utilities)	1,817,648	117		1,834,978	The SF6 emissions quantified are not related to Stationary Combustion or Fugitive source; rather regeneration
Combustion (Gas utilities)					

	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
Combustion (Other)					
Emissions not elsewhere classified	3	60		1,517	Emissions disclosed in this category represent venting emission sources and HFC releases during the 2020 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)

10,666,133

Gross Scope 1 methane emissions (metric tons CH4)

2,894

Total gross Scope 1 emissions (metric tons CO₂e)

10,786,329

Comment

Emissions category

Flaring

Value chain

Midstream

Product

Gas

Gross Scope 1 CO₂ emissions (metric tons CO₂)

12,315

Gross Scope 1 methane emissions (metric tons CH₄)

91

Total gross Scope 1 emissions (metric tons CO₂e)

14,586

Comment

Emissions category

Venting

Value chain

Midstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

3,180

Gross Scope 1 methane emissions (metric tons CH4)

39,843

Total gross Scope 1 emissions (metric tons CO2e)

999,266

Comment

Emissions category

Fugitives

Value chain

Midstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

426

Gross Scope 1 methane emissions (metric tons CH4)

24,953

Total gross Scope 1 emissions (metric tons CO2e)

2,124,303

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	8,302,339
United States of America	7,411,063
Mexico	97,166

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	13,923,524
Liquids Pipelines	961
Power and Storage	1,852,708
Corporate	33,375

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

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

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility activities	1,761,865	The value reported here includes emissions from our electric power generation assets only. This total does not include emissions from our non-regulated Canadian Gas Storage entities, which do not meet the CDP definition of an "Electric Utility", however are included in our Power and Storage business segment. The Storage business in Canada operates independently from our regulated natural gas transmission and storage businesses.
Oil and gas production activities (upstream)		
Oil and gas production activities (midstream)	13,924,484	The value reported here includes estimated emissions from our natural gas and liquids pipeline assets.
Oil and gas production activities (downstream)		

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	911,956		2,001,940	

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)
United States of America	1,135,931		2,356,399	
Mexico	2,074		4,199	

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	328,899	
Liquids Pipelines	1,669,522	
Power and Storage	51,540	

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
Oil and gas production activities (upstream)			
Oil and gas production activities (midstream)	1,998,420		The value reported here includes estimated emissions from our natural gas and liquid pipeline assets.
Oil and gas production activities (downstream)			

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?

Remained the same overall

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				

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Other emissions reduction activities				
Divestment	774,247	Decreased	4.33	Variance from previous year, related to divestiture, was noted at the following: Scope 1 - Canada; Power and Storage: year-over-year variances are primarily attributed to asset divestiture; on April 29, 2020, we completed the sale of our Halton Hills and Napanee power plants and our 50 per cent interest in Portlands Energy Centre. Napanee, Halton Hills and Portlands Energy Centre were not operating under TC Energy ownership as at December 31, 2020 and as such, their emissions are not included in this questionnaire. Small variances (decreases) attributed to changes in output were also noticed at these assets.
Acquisitions				
Mergers				
Change in output	487,985	Increased	2.73	Variance from previous year, related to change in output, was noted at the following: <ul style="list-style-type: none"> • Scope 1 - Canada; Natural Gas Pipeline: decreases in business output at all Canada Natural Gas pipeline assets, with exception of one asset which new compressor was online • Scope 1 - Canada; Liquids Pipeline: increases in business output at all Canada Liquids Pipeline assets • Scope 1 - USA; Natural Gas Pipeline: year-over-year variances largely attributed to increased business activity at Columbia Gas and Columbia Gulf assets, as well as the inclusion of previously unavailable emissions dataset • Scope 1 - USA; Liquids Pipeline: decreases in business output at US-based Liquids Pipeline asset • Scope 1 - Mexico; Natural Gas Pipelines; variances attributed to demand from new

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
				<p>customers, full year of normalized operation, venting events due to repairs and system interconnections</p> <ul style="list-style-type: none"> • Scope 1 - Mexico; Corporate: variances attributed to travel restrictions due to COVID-19 pandemic health rules • Scope 2 - USA: decreases in electricity consumption at all US-based assets • Scope 2 - Mexico: increases in electricity consumption at all Mexico-based assets, including full-year of normalized operation at one asset
Change in methodology	1,709,406		9.57	<p>Variance from previous year, related to changes in methodology was noted at the following:</p> <ul style="list-style-type: none"> • Scope 1 - Canada; Liquids Pipelines: inclusion of previously-unavailable asset electricity consumption • Scope 1 - USA; Natural Gas Pipeline: In 2021, TC Energy undertook a project to better understand and quantify actual pipeline leak emissions from a low-pressure gathering system. Based on a study and field measurement program, system-specific EFs were developed that reflect measured losses and resulting emissions to atmosphere from pipeline leaks. The resulting emissions were retroactively included in 2019 and 2020 U.S. natural gas pipeline absolute emissions. Use of these system-specific factors provides a more accurate valuation of pipeline fugitive emissions from the low-pressure system than could be achieved using USEPA published EFs for either the transmission or gathering sectors.
Change in boundary				

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in physical operating conditions				
Unidentified				
Other				

C7.9b

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

Location-based

C8. Energy

C8.1

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

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)	0	67,798,085	67,798,085
Consumption of purchased or acquired electricity		0	4,371,538	4,371,538
Consumption of self-generated non-fuel renewable energy				
Total energy consumption			72,169,623	72,169,623

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)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

67,794,634

MWh fuel consumed for self-generation of electricity

11,170,919

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

17,957,188

Emission factor

Unit

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

8

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-cogeneration or self-trigeneration

Emission factor

Unit

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.

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,125

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-cogeneration or self-trigeneration

Emission factor

Unit

Emissions factor source

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

Comment

Total fuel MWh consumed by the organization reflects non-transportation diesel consumption.

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.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

406

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-cogeneration or self-trigeneration

Emission factor

Unit

Emissions factor source

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

Comment

Total fuel MWh consumed by the organization reflects non-transportation gasoline consumption.

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.

Fuels (excluding feedstocks)

Propane Liquid

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,811

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-cogeneration or self-trigeneration

Emission factor

Unit

Emissions factor source

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

Comment

Total fuel MWh consumed by the organization reflects non-transportation propane consumption.

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.

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	24,060,721	1,420,654	0	0
Heat	6,276,515	0	0	0
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)



1,088

Gross electricity generation (GWh)

3,302

Net electricity generation (GWh)

3,292

Absolute scope 1 emissions (metric tons CO2e)

1,758,413

Scope 1 emissions intensity (metric tons CO2e per GWh)

534

Comment

Nameplate capacity and gross electricity generation have been adjusted for asset ownership as at December 31, 2020.

On April 29, 2020, we completed the sale of our Halton Hills and Napanee power plants and our 50 per cent interest in Portlands Energy Centre; their nameplate capacity is not included in this total. There is a negligible (<10%) 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)

3,109

Gross electricity generation (GWh)

20,899

Net electricity generation (GWh)

20,768

Absolute scope 1 emissions (metric tons CO2e)

3,452

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.16

Comment

Nameplate capacity and gross electricity generation have been adjusted for asset ownership as at December 31, 2020.

Emissions associated with the Bruce Power Nuclear facility have been estimated based on asset owner publicly-available documentation and represent ownership as of December 31, 2020.

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)

4,197

Gross electricity generation (GWh)

24,201

Net electricity generation (GWh)

24,061

Absolute scope 1 emissions (metric tons CO2e)

1,761,865

Scope 1 emissions intensity (metric tons CO2e per GWh)

73

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	2,600,000,000	6.45		Secured projects (CAPEX) plan from 2020 Annual Report The \$2.6B reflects our proportionate share of the Bruce Power Unit 6 Major Component Replacement (MCR) program costs, expected to be in service in 2023, and amounts to be invested under the Asset Management program through 2024.

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	<p>We have proposed, or currently developing, three large-scale storage projects; Saddlebrook Solar and Storage (Alberta), Canyon Creek Pumped Storage (Alberta) and Ontario Pumped Storage (Ontario).</p> <p>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 75MW located on land adjacent to a decommissioned open pit coal mine and utilizes existing capacity on the electrical transmission system.</p> <p>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 condition utilizing Lockheed Martin GridStar Flow energy storage technology – a first of a kind flow battery technology at scale.</p> <p>The Ontario energy storage project proposed - the first of its kind innovative use of deep water submerged water inlets/outlets for hydroelectric pumped storage - would provide 1,000 megawatts of flexible, clean energy to Ontario's electricity system.</p> <p>Please refer to the following websites for additional details of each project:</p> <ul style="list-style-type: none"> • 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/ <p>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</p>			

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
	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	<p>In the last decade, our R&D program has invested more than \$75 million on initiatives including technology development and deployment and digital technologies targeting the reduction of capital expenditures, lowering operating costs, increased reliability, toll competitiveness, and improving environmental performance. Indirectly increasing safety and modernization, technology and innovation improvements on existing infrastructure may result in a reduction of emissions intensity as a byproduct. We have also committed over \$50 million across multiple funds managed by Energy Impact Partners, a venture capital fund that invests in innovative technologies, services and products to help optimize energy consumption and improve sustainable energy generation. These investments have facilitated the development of advanced real time, leak detection technologies with the potential to drive significant reductions in GHG emissions.</p> <p>Our investments also support internal research programs and 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.</p> <p>Since our incorporation in 1951, we’ve gained expertise across the energy spectrum including liquids, wind, solar, hydro and nuclear. We have dedicated resources advancing opportunities in pumped storage, hydrogen, waste-heat recovery, and carbon capture, and evaluating numerous other energy innovations.</p>

	Investment in low-carbon R&D	Comment
		<p>We believe natural gas and oil will remain critical to the global fuel mix for decades to come. Their efficiency, reliability and affordability are necessary to support our standard of living and backstop the intermittency of lower-emission fuel sources. While we continue to watch for signposts and test the resiliency of our asset base against various energy outlooks, considering the TCFD recommendations, we will adhere to our tried-and-tested risk tolerances.</p> <p>Whatever pace it takes, the energy transition requires expertise and billions of investment dollars. We have both. Looking forward, we believe we will be opportunity-rich and need to carefully allocate our capital to build out an ever more modern, robust and responsible energy system.</p>

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
<p>Other, please specify</p> <p>ElecUtil: Technologies focused on cleaner, digital, and decentralized energy future including digital technology, distributed energy resources, energy storage, renewable energy, smart grids and meters, and steam turbine and/or other component upgrades</p>	<p>Applied research and development</p>	<p>41-60%</p>		<p>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.</p> <p>Below is a list of select funded* R&D</p>

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
				<p>organizations:</p> <ul style="list-style-type: none"> • Construction Industry Institute • Electric Power Research Institute • Gas Machinery Research Council - Operating Company - Annual Research Contribution Renewal • Reliability & Maintainability Center • Alberta Sulphur Research Ltd. (ASRI) • Canadian Energy Partnership for Environmental Innovation (CEPEI) • Petroleum Technology Alliance Canada (PTAC) – Canadian Emissions Reductions Innovation Consortium (CanERIC) • Pipeline Research Council International (PRCI) • Pipeline Integrity Institute – UBC • iPipe Consortium • AGA – American Gas Association • CGA – Canadian Gas Association • Asociación Mexicana de Energía (AME) • INGAA Foundation <p>*R&D project-specific funding or initiatives funded through other memberships are not included. Not all organizations listed may focus on GHG reduction/low-carbon research.</p>

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
Energy storage	Large scale commercial deployment			We have introduced, or are currently developing, three large-scale storage projects; Saddlebrook Solar and Storage (Alberta), Canyon Creek Pumped Storage (Alberta) and Ontario Pumped Storage (Ontario). Please refer to question C-EU9.5b for additional details.

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

 rpt_ngtl_lfo_20210531_fin_inclApp_signed 19.pdf

 CleanBC_Foothills Pipe.pdf

Page/ section reference

Page/section reference: entire Canada [BC] - Greenhouse Gas Emission Reporting Regulation Verification Statement document(s)

Additional relevant standards include:

- ISO 14065:2013
- IAF MD4:2018

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

3

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

-  rpt-ver_2020_TCE_ab-system_20210628_fnl.pdf
-  rpt-ver_tier_carseland-2020_20210629_fnl.pdf
-  rpt-ver_tier_mackay-2020_20210629_fnl.pdf
-  rpt-ver_tier_redwater-2020_20210629_fnl.pdf
-  fnl_rpt-ver_tier_tce_storage-2020_20210628.pdf
-  rpt-ver_tier_bearcreek-2020_20210629_fnl.pdf

Page/ section reference

Page/section reference: entire Canada [AB] – TIER Verification Statement document(s)

Additional relevant standards include:

- ISO 14065:2013
- IAF MD4:2018

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

35

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

 rpt_tce_on_mainline_obps_20210527_fnl.pdf

 rpt_tce_sk_mainline_obps_20210527_fnl_signed.pdf

 rpt_tce_sk_foothills_obps_20210527_fnl_signed.pdf

 rpt_tce_mb_mainline_obps_20210527_fnl_signed.pdf

Page/ section reference

Page/section reference: entire Canada [ON + SK + MB] - Output-Based Pricing System Regulations (OBPS) Verification Statement document(s)

Additional relevant standards include:

- ISO 14065:2013
- IAF MD4:2018
- ECCC verification guidance document
- Stantec's Standard Operating Procedure
- ANSI National Accreditation Board

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

9

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

 11207825-RPT-4-03-Rapport Vérification TC Bécancour 2020.pdf

 11207825-RPT-2-04-Rapport Vérification TC Pipeline 2020.pdf

Page/ section reference

Page/section reference: entire Canada [QC] - Environment Quality Act Verification Statement document(s)

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

1

Verification or assurance cycle in place

Annual process


Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 ERM CVS - Assurance Statement for TC Energy 2019_FINAL.pdf

Page/ section reference

Page/section reference: entire [USA] ERM CVS Verification Statement document

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

42

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

 rpt-ver_2020_TCE_ab-system_20210628_fnl.pdf

 rpt-ver_tier_carseland-2020_20210629_fnl.pdf

 rpt-ver_tier_mackay-2020_20210629_fnl.pdf

 rpt-ver_tier_redwater-2020_20210629_fnl.pdf

 rpt-ver_tier_bearcreek-2020_20210629_fnl.pdf

Page/ section reference

Page/section reference: entire Canada [AB] – TIER Verification Statement document(s)

The third-party verified Scope 2 emissions are different from CDP-reported Scope 2 emissions; regulation mandates verification of 'Scope Adjustment for Indirect Emissions' based on production benchmarks. Verified indirect emissions includes imported heat however those emissions are not quantified. Proportion of emissions verified will be overestimated due to inclusion of imported heat emissions.

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

42

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

Limited assurance

Attach the statement

 ERM CVS - Assurance Statement for TC Energy 2019_FINAL.pdf

Page/ section reference

Page/section reference: entire [USA] ERM CVS Verification Statement document

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

11

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

99.9

% of Scope 2 emissions covered by the ETS

43.3

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO₂e

5,557,575

Verified Scope 2 emissions in metric tons CO₂e

53,973.34

Details of ownership

Facilities we own and operate

Comment

In Alberta, the Carbon Competitive Incentive Regulation (CCIR) was 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 covers all our natural gas pipelines and power and storage assets in Alberta.

TIER requires established industrial facilities with GHG emissions above a certain threshold to reduce their emissions below a specified average intensity baseline, or 'benchmark' (reported as "intensity figure in base year"), which is prescribed by the Alberta Government.

We were actively involved in developing this regulation during industry consultation, as we encourage and support regulations and programs that standardize emission requirements, and allow for compliance flexibility, across our assets jurisdictionally.

While not a target in the conventional sense, rather an optimization benchmark to encourage efficiency improvements and mitigate annual regulatory compliance costs, adherence to this program inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations, negating the requirement to develop a company-specific target.

The third-party verified Scope 2 emissions are different from CPD-quantified Scope 2 emissions (which reflect equity share and adjusted for load); regulatory compliance mandates verification of 'Scope Adjustment for Indirect Emissions' based on production benchmarks. Verified indirect emissions also includes those from imported heat; those emissions are not quantified for inclusion in CDP.

California CaT

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

January 1, 2020

Period end date

December 31, 2020

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

we do not own or operate assets in California which meet regulatory thresholds.

Comment

We do not own or operate assets in California which meet regulatory thresholds however we trade power into the state (not necessarily generated by us) which is regulated by this regulation.

Canada federal OBPS - ETS

% of Scope 1 emissions covered by the ETS

84

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

1,500,925

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Our assets in Saskatchewan, Manitoba and Ontario are subject to this regulation, and we actively participated in development of this Regulation during industry consultation. Adherence to this Regulation inherently drives us 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

87

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO₂e

112,998

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Adherence to this Regulation inherently drives us to reduce emissions (through innovation, technology or other practices/procedures), or accept increased financial obligations.

Saskatchewan OBPS - ETS

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO₂e

Verified Scope 2 emissions in metric tons CO₂e

Details of ownership

Comment

Please refer to response details included under "Canada federal OBPS - ETS"; information related to our assets in Saskatchewan have been included in the federal total.

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

% of Scope 2 emissions covered by the ETS

Period start date

Period end date

Allowances allocated

Allowances purchased

Verified Scope 1 emissions in metric tons CO₂e

Verified Scope 2 emissions in metric tons CO₂e

Details of ownership

Comment

Please refer to response details included under "Canada federal OBPS - ETS"; information related to our assets in Manitoba have been included in the federal total.

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, 2020

Period end date

December 31, 2020

% of total Scope 1 emissions covered by tax

3

Total cost of tax paid

Comment

BC adopted their carbon tax system in 2008, the first broad-based carbon tax in North America.

On April 1, 2021, B.C.'s carbon tax rate, applied to the purchase and use of fossil fuels, rose from \$40 to \$45 per tCO₂e. The rate is scheduled to increase to \$50 per tonne on April 1, 2022. To help provide relief during the COVID-19 pandemic, a previously scheduled increase was postponed in 2020.

Canada federal fuel charge

Period start date

January 1, 2020

Period end date

December 31, 2020

% of total Scope 1 emissions covered by tax

0

Total cost of tax paid

Comment

The Fuel Charge applies early in the supply chain and is payable by the registered distributor; no taxes were paid by TC Energy.

The percentage of total Scope 1 emissions in the reporting period that were taxed by this carbon tax are less than 0.01%.

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.

The Fuel Charge, applies to 21 types of fuel delivered, transferred, used, produced, imported, or brought into the provinces and territories in

which the federal system applies. It also applies to combustible waste that is burned for the purpose of producing heat or energy.

Generally, the Fuel Charge applies early in the supply chain and is payable by the registered distributor.

The Fuel Charge came into effect in April 2019 in Manitoba, New Brunswick, Ontario and Saskatchewan, in July 2019 in Nunavut and Yukon, and January 1, 2020 in Alberta. New Brunswick established its own provincial fuel charge on April 1, 2020 and as a result, the federal carbon pollution pricing backstop system no longer applies in that province.

The remainder of the Canadian provinces and territories either have their own version of the fuel charge (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, British Columbia and the Northwest Territories) or have implemented a cap-and-trade program (Quebec) as an alternative.

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.

We follow a portfolio approach, seeking abatement opportunities within its own footprint (e.g. waste heat recovery, process optimization, electrification and sourcing net zero power), as well as retirement of self-generated cogeneration environmental performance credits, active procurement of carbon offset credits, and replacement of leak detection equipment at our pipeline assets with more effective equipment (e.g. replacement of electrochemical cell detectors by infrared camera equipment). 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.

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

We annually purchase credits from several suppliers from a variety of protocol types in the Alberta market, including wind, to help reduce our emissions liability and profile. We also have had a long-standing contractual relationship in place with an Alberta-based biomass energy project. Carbon credits purchased in 2020 through spot transaction and forward purchases to meet compliance requirements, were a combination of offsets and emissions performance credits (EPCs).

We elect to not disclose number of purchased credits due to competitive sensitivities.

Verified to which standard

Other, please specify

Technology Innovation and Emissions Reduction (TIER) regulation - Offset System

Number of credits (metric tonnes CO₂e)

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

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

Change internal behavior

Stress test investments

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).

We incorporate 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 (average for 2020 to average for 2024), based on forecast assumptions as of November 2020. In determining internal carbon price, we use scenario analysis with variations over time, geographies and policy outcomes. Our currency varies over geographies – for example, we are subject to different provincial, regional and state-level carbon pricing across North America. We continuously refine our strategy for managing climate change risks and opportunities, including carbon price forecasts.

Type of internal carbon price

Shadow price

Impact & implication

We understand that shareholders and 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

53

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

The '% total procurement spend (direct and indirect)' and '% of supplier-related Scope 3 emissions as reported in C6.5' is not information currently available.

We started collecting information this year with our supplier base

Impact of engagement, including measures of success

Total procurement spend (direct and indirect) is ~\$2.8B

Our contractor qualification process reviews all contractors in our qualification tool “Aravo”. This process ensures current and potential contractors meet 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

We have recently updated our environmental qualification protocol with International Suppliers Network (ISN) to include questions around environmental policies and written standards. We have also implemented the recently developed ESG factors ISN has incorporated into supply chain management questionnaires, providing several benefits including enhanced business continuity, development of trusted partnerships with suppliers, cost savings through reduced energy and water consumption, prevention of fines and litigation, and minimization of disruptions in the supply chain.

We have numerous initiatives under consideration to bolster our climate-related supplier engagement strategy including:

- Climate change/sustainability performance featured in a contractor awards scheme
- Track in addition to cost savings climate reduction opportunities
- Classify contractors that meet diversity goals or who have achieved certain status
- 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

Our 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

Our contractor qualification process reviews all contractors in our qualification tool, "Aravo". This process ensures current and potential contractors meet 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

Type of engagement

Other, please specify

reduction of client carbon liability through marketing and trading activities

Details of engagement

% 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

Our Power & Storage group supplies several counterparties with offsets to reduce their emissions obligations in the province of Alberta.

Impact of engagement, including measures of success

Comment

C12.1b

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

Type of engagement

Other, please specify

education/information sharing via informal engagement and conversations

Details of engagement

% of customers by number

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

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

Impact of engagement, including measures of success

Engagement with customers regarding efforts each party is making to reduce GHGs in our operations 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

% of customers by number

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

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

Commercial customers occasionally inquire about our climate change position and actions; questionnaires are completed as required for commercial contracts and bids.

The annual Report on Sustainability and ESG Datasheet are published publicly to encourage further engagement with us on climate change positioning 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, we 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.

Type of engagement

Other, please specify

Education/information sharing via natural gas trade organizations

Details of engagement

% of customers by number

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

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

Impact of engagement, including measures of success

We formally engage with customers as members and Board members of many industry trade organizations. Collaborating in these associations allows us to educate each other and respond together on important issues regarding the natural gas industry, such as climate related risk.

Associations we actively engage with include Northwest Gas Association (NWGA), Western Energy Institute (WEI), Southern Gas Association (SGA) and The Interstate Natural Gas Association of America (INGAA).

C12.1d

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

We engage value chain partners in various ways to ensure the climate-related interests and concerns of its stakeholders are always incorporated.

One of our main tools for engaging stakeholder on climate change is the annual Report on Sustainability Report and complementary disclosures, which provide detailed information regarding our initiatives to address climate-related issues, as well as relevant performance metrics. We also provide public information about GHG emission reduction practices through voluntary disclosures like the CDP climate change questionnaire.

We engage with communities, non-governmental organizations, industry associations and government entities to conduct collaborative research, listen to different perspectives and share our position related to climate change. We maintain ongoing partnerships with industry groups and trade associations, which collectively engage industry sector companies in climate-related discussions and identify opportunities to collaborate on strategies and industry commitments.



We also continue to work with Indigenous partners to create meaningful participation across our projects and assets. Although the Keystone XL project was ultimately terminated, our equity partnership with Natural Law Energy for Keystone XL and our Coastal GasLink Indigenous equity partnership in 2019 laid the foundation for successful Indigenous partnership opportunities:

- Natural Law Energy: a Memorandum of Understanding (MOU) for NLE to pursue an equity interest in the Keystone XL Project and other potential related midstream and power projects, exemplifying the strong commitment to create a meaningful and significant long-term partnership with a very substantial and historic agreement through the practice of traditional protocols involving our grassroots Chiefs and leaders.
- Coastal GasLink Indigenous equity partnership: We're proud to have signed project agreements with all 20 elected First Nations governments along the approved route. From pipeline concept, construction and operation, our respect for the land, culture and communities' guides all of our decisions about Coastal GasLink. The agreements demonstrate that Indigenous groups can enjoy their heritage and way of life while participating in economic benefits from Coastal GasLink, and also achieve balance with protecting our environment.

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	Support with minor exceptions	We directly engaged with multiple levels of government, as well as through technical working groups, regarding federal and provincial carbon pricing programs such as Alberta's TIER program, Ontario's Emissions Performance Standard	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 however, we are concerned about the increasing complexity, overlap and potential

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
		<p>(EPS), Saskatchewan’s Management and Reduction of GHG Act, and the federal GHG Offset system.</p> <p>We also engaged Quebec officials regarding Bill 44 (Fight Climate Change and Promote Electrification) Quebec’s Cap-and-Trade program.</p> <p>We provided written comments on the Federal GHG Offset system through a combination of independent and industry association submissions.</p>	<p>duplication of policy frameworks in the multiple jurisdictions in which we operate. We encourage consistent interjurisdictional implementation between provinces/states for improved efficiency.</p> <p>We believe that effective carbon pricing systems must:</p> <ul style="list-style-type: none"> • Balance economic growth while achieving GHG emission reductions • Ensure the access to affordable sources of energy for human prosperity • Be fair in application to capture economy-wide emissions • Harmonize policy frameworks and avoid duplication • Enable flexible compliance mechanisms • Protect against carbon leakage <p>We have 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. We strongly encourage governments to promote technological innovation to reduce emissions and provides additional solutions for consideration.</p>
<p>Other, please specify Clean Fuel Standard (CFS)</p>	<p>Support with minor exceptions</p>	<p>We directly engaged with government and through industry associations. We also provided written comments on the initiatives above through a combination of independent and industry association submissions.</p>	<p>We support 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.</p>
<p>Clean energy generation</p>	<p>Support with minor exceptions</p>	<p>We directly engaged both federal and provincial governments, and through technical working groups, on an array of policy supporting clean energy generation through</p>	<p>It is vital that stakeholders and governments understand the broad nature of our assets and our contribution to clean energy. We have a major role to play in the provision of clean electricity</p>

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
		<p>renewable natural gas, hydrogen, carbon capture utilization and storage and renewables</p> <p>We also provided written comments on relevant policy such as NRCan’s Hydrogen Strategy for Canada, NRCan’s CCUS consultation through a combination of independent, and industry association submissions.</p>	<p>and will position itself as a trusted, experienced partner in the future of clean energy delivery.</p> <p>We support regulations that highlight the role of natural gas in the future fuel mix while encouraging the global reduction of GHG emissions, however remain concerned about the impact of policy layering on the competitiveness of not only the energy sector, but other industrial end-users and individual consumers.</p> <ul style="list-style-type: none"> • Regulation that places the Canadian energy industry at a competitive disadvantage may lead to a flight of capital from the country. • Negative impacts/costs of policy layering (CFS, OBPS etc.) will trickle down to several other sectors as natural gas represents a primary energy source and/or feedstock in many production and industrial processes (cement, steel, pulp and paper etc.) • Individual consumers will also see new costs reflected in their home heating and gasoline bills.
Cap and trade	Undecided	Through our involvement with the Northwest Gas Association, we have has been engaged with Oregon’s Department of Environmental Quality (DEQ) to understand the industry’s estimated exposure under the state’s Cap and Reduce Executive Order that is currently undergoing rulemaking.	We are working to understand our exposure under the new program. Simultaneous rulemaking in the state of Oregon (Regional Haze, Cap & Reduce, and Cleaner Air Oregon) creates a situation where controls being considered under one program, may increase GHG emissions regulated under other programs.
Other, please specify	Undecided	Led by our Environmental subject matter experts, we are engaged with the Oregon DEQ to understand its obligations under Oregon’s Regional Haze rules.	Our subject matter experts have met with DEQ representatives to understand Oregon’s implementation of the EPA’s Regional Haze Rule.

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Oregon Regional Haze			Simultaneous rulemaking in the state of Oregon (Regional Haze, Cap & Reduce, and Cleaner Air Oregon) creates a situation where controls being considered under one program, may increase GHG emissions regulated under other programs.

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?

We are 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.

Collaboration and research across the value chain are other important vehicles for continual improvement. CEPA and its members work with a variety of organizations and associations across the energy value chain to meet climate objectives and ensure industry is working together for positive change.

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%. As natural gas is made of methane, a greenhouse gas, the natural gas industry is hard at work lowering those emissions, and tackling methane emissions through the further refinement of its system.

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?

We are 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?

We are 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.

This includes the March 2021 release of the Climate Action Framework, which highlights how cross-sector collaboration can accelerate meaningful development toward addressing the risks of climate change focused on the following five actions:

1. Accelerate technology and innovation to reduce emissions while meeting growing energy needs.
2. Further mitigate emissions from operations to speed additional environmental progress.
3. Endorse a carbon price policy to drive economy-wide, market-based solutions.
4. Advance cleaner fuels to power lower-carbon choices for consumers.
5. Drive climate reporting to provide consistency and transparency.

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. With the Government of Canada's Net Zero by 2050 targets, the Canadian electricity industry has been identified as a safe bet as the need for clean energy increases. The sector is working cooperatively with the federal government to find an equitable approach for emission reductions. 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?

We are 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. We actively participate 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

We are generally supportive of Mexico's clean energy goals but has not committed to an official position as a Chamber.

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

We participate 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?

We are 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 undertaken.

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?

We have numerous policies and practices implemented, ensuring our significant direct activities that influence policy, are consistent with our overarching climate change strategy.

The risks associated with climate policy are monitored and escalated to senior management through our 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 we should be looking to shape energy policy.

We endeavour to facilitate indirect activity and lobbying approaches are aligned with its overall climate change strategy. This includes seeking to align industry association positions with our climate-related perspectives and potentially abstaining from commenting on industry associations documents that run counter to our overarching climate change strategy.

Our Sustainability and Policy team acts a governance function facilitating position review to ensure consistent engagement.

In maintaining consistency with our strategy, we rely on several internal teams to provide input from their experience and expertise to inform direct and indirect policy and positions response strategies and ensure consistency.

The team includes members of corporate groups (e.g. environment (governance and operational services), government relations, industry relations, policy, air emissions, legal, and regulatory services); representatives from business units (e.g. commercial teams); and elicits feedback from external stakeholders (e.g. professional peers, industry associations, non-governmental organizations).

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-ros-report-en.pdf

Page/Section reference

2020 Report on Sustainability; entire document.

The 2020 Report on Sustainability is also available online:

<https://www.tcenergy.com/siteassets/pdfs/sustainability/sustainability-report/2020/tc-ros-report-en.pdf>

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Other metrics

Comment

Our 2020 Report on Sustainability is aligned to TCFD, and concurs with select SASB Oil & Gas – Midstream industry standard topics and metrics.

Our 2021 Report on Sustainability, and complementary disclosures, is expected to be published October 2021.

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

Page/Section reference

2020 Annual Report; entire document

An error occurred when attempting to upload the document as supporting reference.

Please refer to the following webpage to view:

<https://www.tcenergy.com/siteassets/pdfs/investors/tc-annual-report.pdf>

Content elements

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

Comment

We disclose 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-2021-management-information-circular.pdf

Page/Section reference

2021 Management Information Circular; pages 33-65

The 2021 Management Information Circular is also available online:

<https://www.tcenergy.com/siteassets/pdfs/investors/reports-and-filings/regulatory-filings/2021/tc-2021-management-information-circular.pdf>

Content elements

Governance
Strategy
Other metrics

Comment

We disclose 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

Page/Section reference

2020 ESG Datasheet; entire document

An error occurred when attempting to upload the document as supporting reference.

Please refer to the following webpage to view:

<https://www.tcenergy.com/siteassets/pdfs/sustainability/sustainability-report/2020/tc-esg-data-sheet.pdf>

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 alignment to GRI and SASB and complements the TCFD disclosures in our 2020 Report on Sustainability.

Where non-standard measures are required, we have disclosed in alignment with internal standards.

Our 2021 ESG Report is expected to be published October 2021 and will demonstrate continued alignment to TCFD, SASB and UN SDG standards.

Publication

In voluntary communications

Status

Underway – previous year attached

Attach the document

 tc-ros-tcf-d-alignment-table.pdf

Page/Section reference

2020 TCFD Alignment Table; entire document

The 2020 TCFD Alignment Table is also available online:

<https://www.tcenergy.com/siteassets/pdfs/sustainability/sustainability-report/2020/tc-ros-tcf-d-alignment-table.pdf>

Content elements

Governance

Strategy

Risks & opportunities

Comment

Our 2021 TCFD alignment table is expected to be published October 2021.

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:

- Report on Sustainability and downloadable performance data tables (2021 version publication date: October 2021)
- ESG Data Sheet (2021 version publication date: October 2021)
- GHG Emissions Reduction Plan (publication date: October 2021)
- TCFD Alignment Table (2021 version publication date: October 2021)
- SASB Alignment Table (2021 version publication date: October 2021)
- Materiality Assessment (<https://www.tcenergy.com/ma2020>)
- ESG Directory (<https://www.tcenergy.com/investors/esg/esg-directory/>)

The content and data included in this submission is aligned to content disclosed in our Report on Sustainability 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 2020 numbers. Where relevant, 2021 developments are reflected in the discussion and analysis however, for more information please refer to our 2020 Annual report and the most recent Quarterly Report to Shareholders, which can be found on our website, and on SEDAR (www.sedar.com) and EDGAR (www.sec.gov).

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 report.

Our forward-looking information in this document includes, but is not limited to, statements related to climate-related risks and opportunities, absolute and intensity based GHG emissions targets, planned capital expenditures , planned R&D investments, and how climate-change risks have informed our business strategy and financial planning.

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 develop, access or implement some or all of the technology necessary to efficiently and effectively achieve GHG emissions reductions, the commercial viability and scalability of GHG emission reduction strategies and related technology and products, the development and execution of implementing strategies to meet our GHG reduction targets and ambitions, 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. In addition, there are risks that the effect of actions taken by us in implementing targets, commitments and ambitions for sustainability may have a negative impact on our existing business, growth plans and future results from operations.

For additional information about the assumptions made, and the risks and uncertainties which could cause actual results to differ from the anticipated results, refer to the most recent Quarterly Report to Shareholders and Annual Report filed under TC Energy’s profile on SEDAR and with the U.S. Securities and Exchange Commission (SEC). 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