2022 ESG DATA SHEET

A Task Force on Climate-Related Financial Disclosures
and Sustainability Accounting Standards Board Report

TC Energy

Forward-looking information

This document 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, our anticipated capital program, the installation, adoption and integration of new technologies into our business, including those relating to renewables, hydrogen and carbon capture utilization and storage, statements regarding our future plans and prospects overall, including those relating to energy transition, expected scenario outcomes and our ability to maintain the value of existing assets, climate-related risks, climate-related opportunities, GHG emissions intensity targets, GHG emissions reduction targets, biodiversity and land capability targets, focus on safety and asset integrity, further integration of sustainability into strategy, decision-making, performance-tracking and assessment, R&D and innovation investments to enhance energy sector sustainability, strengthening local community, Indigenous group and employee resilience, fostering relationships with Indigenous groups, maintaining mutually beneficial partnerships with our landowners, fostering inclusion and diversity, and demonstrating the importance of mental health and psychological well-being, among other things.

Our forward-looking information is based on certain key assumptions and is subject to risks and uncertainties, including but not limited to: our ability to successfully implement our strategic priorities and whether they will yield the expected benefits, our ability to develop, access or implement some or all of the technology and infrastructure necessary to efficiently and effectively achieve GHG emissions targets and ambitions, the commercial viability and scalability of GHG emissions reduction strategies and related technology and products, the development and execution of implementing strategies to meet our sustainability commitments and GHG emissions 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, and inflationary pressure on, 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 environmental, social and governance (ESG) matters and COVID-19, competition in the businesses in which we operate, unexpected or unusual weather, acts of civil disobedience, cybersecurity and technological developments, ESG-related risks, the impact of energy transition on our business, 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. 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.

Table of contents

Land acknowledgement

Embedded in the lands on which TC Energy operates are the histories, cultures and traditions of Indigenous groups across North America. TC Energy thanks the original stewards of these lands – generations past, present and future – for sharing their homelands with us.

Environmental, social and governance reporting

This report and our related suite of publications represent TC Energy's ongoing commitment to the transparency and disclosure of environmental, social and governance (ESG) factors relevant to our business, our rightsholders and stakeholders. We remain accountable by engaging with all our stakeholders, addressing key topics and providing a balanced view of our performance. This publication is one element of our sustainability and ESG reporting. More information and data, including content that is aligned with global reporting frameworks, guidelines and standards, can be found in these documents:

- 2022 Report on Sustainability
- 2022 sustainability materiality assessment
- Reconciliation Action Plan
  - 2022 Reconciliation Action Plan Update
- GHG Emissions Reduction Plan
- 2022 CDP climate change questionnaire response
- ESG directory

This Data Sheet may contain forward-looking information, or forward-looking statements. Please refer to the forward-looking information statement on page 2. You can also find more information about TC Energy in our Annual Report, Management Information Circular (MIC) and Annual Information Form available on our website, EDGAR and SEDAR. Our website also hosts select corporate policies and other governance documents, including our *oversight and policies on lobbying, political contributions and corporate memberships* information sheet.

We are committed to delivering energy responsibly, being a good neighbour and a top employer. We are proud to be recognized by respected third-party agencies for multiple awards within our industry and in the community.

The terms "we", "us", "our" and "TC Energy" as used in this ESG Data Sheet refer collectively to TC Energy Corporation and its subsidiaries unless indicated otherwise.

Unless otherwise noted, all amounts are in Canadian dollars and all data reflects 2021 numbers. Where relevant, 2022 developments and values are included and described.

The information in this report has been closely reviewed by internal subject matter experts and senior leaders. As part of our practice to continually improve our reporting, we have obtained independent third-party limited assurance of select 2021 environmental and workforce diversity indicators, which are identified with the symbol ^ throughout this document. To read the third-party limited assurance statement, please refer to our ESG directory.

Invitation for feedback

We'd like to hear what you think about our ESG Data Sheet. Please send questions or comments to communications@tcenergy.com.

Our approach to sustainability

Our values

Our corporate values form the foundation of how we do business.

SAFETY
Do it right – Today's quality is tomorrow's safety

INNOVATION
Do things differently – Turn challenge into opportunity and ideas into creative solutions

INTEGRITY
Do the right thing and keep commitments to stakeholders

RESPONSIBILITY
Focus on what matters – Consider sustainability in everything we do

COLLABORATION
Play as one team – Find win-win outcomes for rightsholders and stakeholders

ESG reporting guidance

Recognizing the value of ESG reporting frameworks, standards and recommendations such as the Task Force on Climate-Related Financial Disclosure (TCFD), Sustainability Accounting Standards Board (SASB), United Nations Sustainable Development Goals (UN SDGs) and Global Reporting Initiative (GRI), this ESG Data Sheet demonstrates alignment to TCFD and SASB and complements the content in our 2022 Report on Sustainability. Where non-standard measures are required, we have disclosed in alignment with internal standards.

Our business

For more than 70 years, TC Energy has proudly operated pipelines, storage facilities and power generation plants that support life in Canada, the U.S. and Mexico.

Material topics[1]

To help us gauge the sustainability and ESG topics that are most relevant and of greatest importance[2] to our business and stakeholders, we regularly conduct materiality assessments. This helps inform both our sustainability-related targets and communications and our broader sustainability strategy.

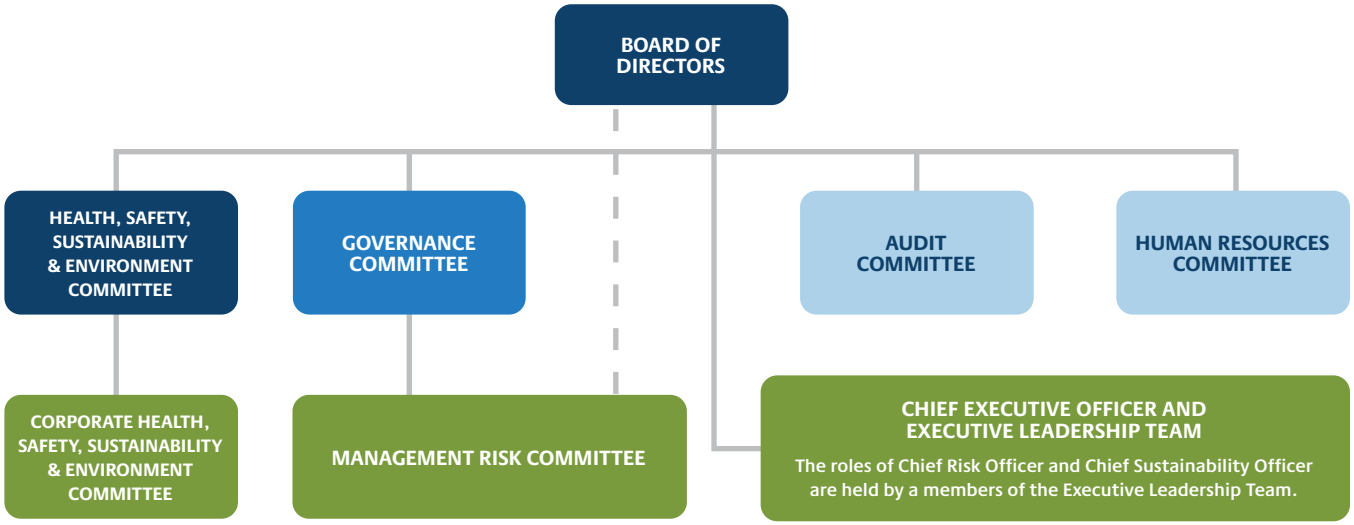
In 2022, building on the assessment completed in 2020, we undertook an extensive third-party facilitated ESG-focused internal and external stakeholder feedback exercise. We conducted surveys, interviews and in-depth workshops with more than 270 individuals representing the various stakeholder groups in jurisdictions in which TC Energy operates. The material topics identified remained generally consistent with our previous assessments. We appreciate these issues should not be viewed in isolation as they are increasingly interconnected and can often impact each other. As such, we will refresh our sustainability strategy, targets and communications in alignment to these topics.

[1] References and use of the terms "materiality," "material" and similar terms throughout this document are in the context of economic, environmental, social and governance topics. For ESG topics, materiality is based on definitions in referenced sustainability frameworks, standards and guidelines, and do not correspond to the concept of materiality under Canadian or U.S. securities laws.
[2] Sustainability materiality assessments are a moment-in-time snapshot of the current topics of importance.

TCFD climate-related governance

TC Energy's governance structure provides a framework for accountability, management and mitigation of the risks and opportunities facing the company, including on the topics of sustainability and ESG matters. The Board has oversight over our sustainability and ESG practices, with the primary accountabilities at the Board committee level. Management's sustainability governance framework includes the Chief Sustainability Officer (CSO) and a management-level Health, Safety, Sustainability and Environment (HSSE) Committee in addition to the activities described below. At TC Energy, sustainability includes ESG considerations and the financial health of the organization and means safely, reliably and economically meeting today's energy needs while finding responsible solutions for our energy future. Our 2022 MIC contains further details on our governance structure and characteristics, including board member competencies to oversee sustainability in operations and the role that each committee of the Board has in overseeing ESG matters.

Oversight structure for climate risks and opportunities



Legend

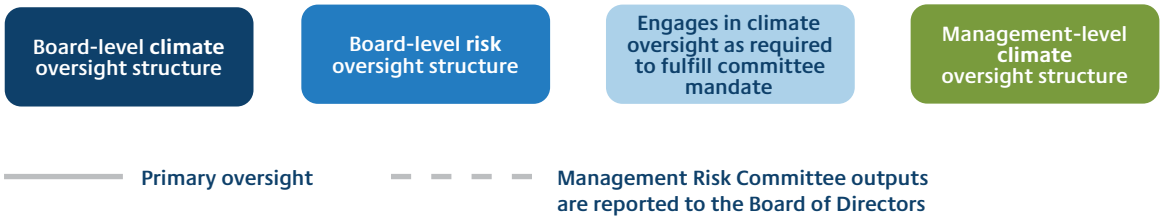


Figure 1: Oversight structure for climate risks and opportunities

Board oversight

Role	Sustainability accountabilities
Board of Directors[1]	The Board provides oversight and direction in the strategic planning process to ensure we have a robust strategy that supports TC Energy's vision of being North America's premier energy infrastructure company, now and in the future. In particular, the Board reviewed, discussed and approved the revised and extended five-year strategic plan in 2021 during our strategic planning cycle. This included an assessment of energy fundamentals, the competitive environment and the stakeholder landscape to identify opportunities and threats to our business strategy. This session informed our annual strategic priorities and executive performance measures. We also frequently test our strategy against a range of energy supply and demand outlooks to confirm our resilience. In addition, progress toward our GHG emissions reduction goal was incorporated in our strategic planning process in 2022. The Board and its committees are also responsible for risk oversight, including climate-related risks, and they oversee management systems and processes for identification, evaluation, prioritization, mitigation and monitoring of risk. Our directors have a broad range of experience and skills in risk management and, as a result, the Board is highly engaged and qualified to participate in a meaningful discussion of key business risks with management at Board and committee meetings. Candidates who are being nominated for the first time must have experience in industries similar to ours or experience in general business management or with corporations or organizations that are similar in size and scope. Potential candidates are recommended based on their qualifications and independence and how these qualities balance with the skill set of the current Board. This assessment helps the Board determine the best mix of skills and experience including operations, health, safety, sustainability and environment to guide our business operations and our long-term strategy.

[1] Our Corporate Governance Guidelines, Board of Directors Charter and the Charter for each committee can be found on our website.

Board oversight	Role	Sustainability accountabilities
	Health, Safety, Sustainability & Environment (HSSE) Committee	The HSSE Committee oversees operational risk, health, occupational and process safety, security of personnel, environmental and climate change-related risks and monitors development and implementation of systems, programs and policies relating to health, safety, sustainability, security and environmental matters (HSSE matters) through regular reporting from management. This includes reviewing the performance and activities of TC Energy HSSE matters including compliance with applicable and proposed legislation, conformance with industry standards and best practices. It also includes reviewing reports on proposed climate change-related laws and regulations and their potential impact on TC Energy. The HSSE Committee also monitors the performance of actions and initiatives undertaken by TC Energy to prevent, mitigate and manage risks related to HSSE matters, including climate change-related risks and opportunities and any critical incidents respecting our assets, operations, personnel and public safety. The Committee also reviews and monitors significant regulatory audit findings, orders, reports and/or recommendations issued by or to TC Energy related to HSSE matters, incidents or issues, together with management's response. The HSSE Committee typically has three to four 2.5-hour meetings each year, each of which includes a standing agenda item on 'sustainability' covering a range of topics. The HSSE Committee receives updates and reports on prevention, mitigation and management of risks related to HSSE matters, including climate change or business interruption risks that may adversely impact TC Energy.
	Governance Committee	The Governance Committee oversees the Enterprise Risk Management (ERM) program, policy and framework and meets with management annually to ensure there is proper Board and committee oversight according to the terms of their charters. The Governance Committee recommends, along with the respective committee (or executive) assigned responsibility for specific risks, any enhancements to our risk management program and policies to the Board. The Governance Committee 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.
	Audit Committee	The Audit Committee oversees management's role in managing financial risk, including market risk, counterparty credit risk and cyber security, and reviews climate change and sustainability inclusion in financial disclosure documents. The Audit committee also oversees compliance with legal and regulatory requirements.

	Role	Sustainability accountabilities
Management oversight	**Chief Executive Officer (CEO)**	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 CEO and ELT develop and implement TC Energy's strategy. Our CEO is also a member of the Board of Directors and the corresponding accountabilities also apply.
	Executive Leadership Team (ELT)[1]	The CEO and ELT develop and implement TC Energy's strategy. In addition, ELT members hold the roles outlined below including membership of applicable committees.
	Chief Sustainability Officer (CSO)	The CSO provides strategic leadership of sustainability-related issues such as climate change, energy and resource conservation, environmental stewardship, stakeholder issues and awareness at the highest level of TC Energy. The CSO is responsible for directing the coordination, communication and management of sustainability-related issues, including climate change, for TC Energy, particularly the intersection of risk, governance, environmental and social issues. The CSO, a member of the ELT, reports to the HSSE Committee of the Board on sustainability matters, including climate-related issues, as well as to the CEO and the rest of the ELT. The CSO role formalizes our commitment to sustainability by establishing a coordination role at the highest level of the organization, and communicates with management, shareholders, customers, employees and other stakeholders to address sustainability matters, including climate-related issues. As the CSO and Chief Risk Officer (CRO) roles are presently held by the same individual, there is alignment in the oversight of sustainability and enterprise risks.

[1] The current composition of our executive leadership team is on our website.

Role	Sustainability accountabilities
Chief Risk Officer (CRO)	The CRO centralizes a pragmatic approach to facilitating the annual enterprise risk assessment and management of the enterprise risk register. The CRO 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 CRO is responsible for ensuring 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 CRO also periodically reports enterprise risks and emerging risks to the Board and the Governance Committee and engages with the Board to obtain their insights for risk identification of enterprise risks.
Corporate HSSE Committee	The Corporate HSSE Committee, comprised of management representatives from various departments, recommends strategic priorities relating to HSSE matters to the CSO, 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 that are part of TC Energy's Operational Management System, TOMS (see page 20 for further details).
Management Risk Committee	Chaired by the CRO, the Management Risk Committee is comprised of the ELT and is accountable for the management of enterprise risks including climate-related risks and implementation of enterprise risk mitigation plans. In addition to their primary oversight by the Board of Directors Governance Committee, the outputs of the Management Risk Committee are also reported to the full Board of Directors.

Governance characteristics

We believe that effective corporate governance improves corporate performance and benefits all shareholders and rightsholders and that honesty and integrity are vital to ensuring strong corporate governance. The Board has formally adopted the corporate governance guidelines recommended by the Governance Committee. These guidelines address the structure and composition of the Board and its committees and clarify the responsibilities of the Board and management. Based on the current directorship, our governance characteristics are noted below.

Indicator	Unit	2017	2018	2019	2020	2021
Board of Directors						
Size of Board[1]	number	13	12	12	14	14
Independent directors	per cent	92	92	92	86	93
Women on Board	per cent	23	25	25	29	29
Board diversity policy[2]	Yes/No	Y + target of 30% women	Y + target of 30% women	Y + target of 30% women	Y + target of 30% women	Y + target of 30% women
Number of Board interlocks	number	0	0	1	1	0
External Board service limits for independent directors	number	4 public company boards in total	4 public company boards in total	4 public company boards in total	4 public company boards in total	4 public company boards in total
Average Director age	years	63	62	61	62	63
All committees independent[3]	Yes/No	Y	Y	Y	Y	Y
Annual Director elections	Yes/No	Y	Y	Y	Y	Y
Individual Director elections	Yes/No	Y	Y	Y	Y	Y
Majority voting policy	Yes/No	Y	Y	Y	Y	Y
Independent executive compensation consultant	Yes/No	Y	Y	Y	Y	Y
Clawback policy	Yes/No	Y	Y	Y	Y	Y
Double-trigger vesting on change of control	Yes/No	Y	Y	Y	Y	Y
Separate Chair and CEO	Yes/No	Y	Y	Y	Y	Y
Director retirement age	years	70	70	70	The earlier of a Director turning 73 years of age or attaining 15 years of service	The earlier of a Director turning 73 years of age or attaining 15 years of service.[4]
Director share ownership requirements	x retainer	4	4	4	4	4
Executive share ownership requirements	x base salary	5x CEO 2x other named executives	5x CEO 3x EVP 2x SVP 1x VP	5x CEO 3x EVP 2x SVP 1x VP	5x CEO 3x EVP 2x SVP 1x VP	5x CEO 3x EVP 2x SVP 1x VP
CEO share ownership post-retirement hold period	years	N/A	1	1	1	1
In-camera sessions at every Board and committee meeting	Yes/No	Y	Y	Y	Y	Y
Annual say on pay	Yes/No	Y	Y	Y	Y	Y
Code of business ethics	Yes/No	Y	Y	Y	Y	Y
Board, committee and Director evaluations annually	Yes/No	Y	Y	Y	Y	Y
Board orientation and education program	Yes/No	Y	Y	Y	Y	Y

[1] As of Dec. 31, 2021. See Management Information Circular and website for subsequent updates.
[2] Target achieved as of Apr. 29, 2022, with 33% women on the Board of Directors (4/12 members) and a subsequent Board appointment on Jun. 7, 2022 increased the representation to 38.5% women on the Board of Directors (5/13 members)
[3] Audit, Governance and HR committees are entirely independent and HSSE committee must be a majority independent.
[4] Notwithstanding age limits, a Director is eligible to serve a term of 5 years.

TCFD climate-related strategy

TC Energy is uniquely situated at the intersection of molecules and electrons. We expect our assets will play a key role in the energy transition by enabling new technologies to develop and flourish to help us and our customers achieve our combined targeted emission reductions. In support of this, in 2021, we progressed numerous energy transition growth initiatives, including opportunities in renewables, hydrogen and carbon capture utilization and storage (CCUS). Our liquids pipeline systems remain relevant given the strategic connection of low-cost fuel sources to high-demand centres.

In 2022, we further embedded ESG and energy transition goals into our corporate scorecard. We have increased the weighting for ESG measures including safety and sustainability. We include safety because for us, everything starts with safe operations, and safety is paramount to achieving every other goal. We have also explicitly added a metric for advancing key energy transition priorities. For 2022, our scorecard weightings are 25 per cent for ESG priorities, including safety, 50 per cent for delivering financial results, and 25 per cent for advancing other key strategic priorities, including growth and energy transition. These metrics have a direct impact on compensation for executives and employees.

Climate change presents potential financial impacts to TC Energy's business and strategy which are mitigated by strong governance and strategic planning. Key components of our strategy set out in our 2021 Annual Report (highlights most relevant to ESG considerations are below) support our ability to be competitive, responsible and innovative, enhance our value proposition for our shareholders and safely deliver the energy people need today and in the future.

Cultivate a focused portfolio of high-quality development and investment options

We assess opportunities to develop and acquire energy infrastructure that complements our existing portfolio, enhances future resilience under a changing energy mix and diversifies access to attractive supply and market regions within our risk preferences. We are well positioned to deliver decarbonization solutions through our world-class footprint that enables broad development of CCUS, hydrogen and renewable natural gas (RNG) in conjunction with traditional renewables.

We monitor trends specific to energy supply and demand fundamentals. In addition, we analyze how our portfolio performs under different energy mix scenarios considering the recommendations of the TCFD. These results contribute to the identification of opportunities that contribute to our resilience, strengthen our asset base and improve our diversification.

Maximize our competitive strengths

We continually seek to enhance our core competencies in safety, operational excellence, investment opportunity origination, project execution and stakeholder relations as well as key sustainability and ESG areas to ensure we deliver shareholder value. The use of a disciplined approach to capital allocation supports our ability to maximize value over the short, medium and long term.

Maximize the full-life value of our infrastructure assets and commercial positions

Maintaining safe, reliable operations and ensuring asset integrity, while minimizing environmental impacts, continues to be the foundation of our business.

Commercially develop and build new asset investment programs

Safety, executability, profitability and responsible ESG performance are fundamental to our investments.

Our existing extensive footprint offers significant in-corridor growth opportunities. This includes possible future opportunities to deploy low-emission infrastructure technologies such as renewables, hydrogen and carbon capture, which will help reduce the carbon footprint of our operations and those of our customers also supports the long-term value of our existing assets.

Climate-related risks and opportunities

A summary of the climate-related risks and opportunities that may affect our company are shown below. The tables describe potential risk events, financial impacts and the estimated timeframe and mitigation activities and controls related to the risks. These are a subset of the risks identified through our ERM program, which are regularly monitored and revised annually. The financial impact has been determined following our annual enterprise risk assessments where both risks to and opportunities from TC Energy strategy are considered.

The climate-related risks and opportunities listed below may not be material under securities laws. Information on the material risks for TC Energy can be found in the 2021 Annual Report and our most recent quarterly report, available on our website, SEDAR and EDGAR.

In addition to the summary of risks and opportunities arising from climate below, we are taking action through our 10 sustainability commitments and targets, as outlined in the climate-related metrics and targets section, our Report on Sustainability and GHG Emissions Reduction Plan.

Legend:

Low financial impact	Short term (S/T): 1-2 years
Medium financial impact	Medium term (M/T): 3-10 years
High financial impact	Long term (L/T): 11-20 years

Summary of climate-related risks

Risk definition	Potential financial impact	Mitigation measures and controls
Reputational risk		
Our operations and growth prospects require us to have strong relationships with rightsholders and stakeholders such as customers, Indigenous groups, landowners, communities, suppliers, investors, governments and government agencies, and non-governmental organizations.	S/T | M/T | L/T Inadequately managing expectations and concerns, including those related to ESG, can have a significant impact on our operations and projects, infrastructure development and overall reputation. It could also affect our ability to operate and grow.	Our core values – safety, responsibility, collaboration, integrity and innovation – guide us in building and maintaining our key relationships as well as our interactions with rightsholders and stakeholders. We are proud of the strong relationships we have built with stakeholders and rightsholders across North America, and we are continuously seeking ways to strengthen these relationships. Beyond our core values, we have specific stakeholder programs and policies that shape our interactions, clarify expectations, assess risks and facilitate mutually beneficial outcomes. Our most recent Report on Sustainability includes details on our specific commitments related to safety, Indigenous groups, landowners and workplace inclusion and diversity. Specific rightsholder and stakeholder programs and policies shape our interactions, clarify expectations, assess risks and facilitate mutually beneficial outcomes. In addition to our annual sustainability reporting, the central hubs to access comprehensive climate change and ESG communications are our ESG directory and the Sustainability page on our website.

Summary of climate-related risks (continued)

Risk definition	Potential financial impact	Mitigation measures and controls
Policy and legal risk		
Our ability to construct and operate energy infrastructure requires regulatory approvals and is dependent on evolving policies and regulations by government authorities. This includes changes in regulation that may affect timing of our projects and operations and affect the financial performance of our assets.	**S/T** | **M/T** | **L/T** Higher operating costs or capital expenditures due to complying with new or more stringent regulations. Adverse impacts on competitive geographic and business positions could result in the inability to meet our growth targets through missed or lost organic, greenfield and brownfield opportunities. Financial impacts of denied or delayed projects could include lost development costs, loss of investor confidence and potential legal costs from litigation. For example, delayed or unfavourable regulatory and policy decisions could also adversely impact construction through higher costs, extended in-service dates, anticipated revenues, and the opportunity to further invest in our systems. 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 regulatory requirements and initiatives aimed at reducing GHG emissions that could affect our business.	We monitor regulatory and government developments and decisions to analyze the possible impact on our businesses. We build scenario analysis into our strategic outlook and work closely with our rightsholders and stakeholders in the development and operation of our assets. We identify emerging risks and signposts, including customer, regulatory and government decisions, as well as innovative technology development, and report on our management of these risks quarterly through the ERM program to the Board. We also use this information to inform our capital allocation strategy and adapt to changing market conditions.

Summary of climate-related risks (continued)

Risk definition	Potential financial impact	Mitigation measures and controls
Technology risk		
To be competitive, we must offer integral energy infrastructure services in supply and demand areas and in forms of energy that are attractive to customers. This includes energy evolution opportunities such as energy efficiency, electrification, renewable and alternative energy sources, batteries and other energy storage, and low-carbon infrastructure to support RNG, carbon capture and sequestration and hydrogen, along with traditional energy sources.	S/T | M/T | L/T 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. 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. In addition, 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.	We have a diverse portfolio of assets and use portfolio management to divest non-strategic assets, effectively rotating capital while adhering to our 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. Our longstanding pipeline research and development program aims to assess and mitigate technology risks and potential opportunities (please refer to the summary of climate-related opportunities table). Established in 2021, our dedicated energy transition team's mandate includes assessing relevant technologies for implications and opportunities to support business resiliency irrespective of the pace or direction of energy transition and our Technology & Innovation Management Office (TIMO) drives solutions to pipeline management and operational challenges through research and development.
Market risk		
We require substantial amounts of capital in the form of debt and equity to finance our portfolio of growth projects and maturing debt obligations at costs that are sufficiently lower than the returns on our investments. Emerging decarbonization policies could affect North American energy consumption patterns and preferences, affecting long-term energy supply and demand trajectories.	S/T | M/T | L/T Significant deterioration in market conditions for an extended period of time and changes in investor and lender sentiment could affect our ability to access capital at a competitive cost, which could negatively impact our ability to deliver an attractive return on our investments or inhibit our growth. Extreme temperature and weather can also affect market demand for power and natural gas and can lead to significant price volatility with tangible bottom line implications to our business.	We operate within our financial means and risk tolerances, maintain a diverse array of funding levers and also use portfolio management as an important component of our financing program. In addition, we have candid and proactive engagement with the investment community, including credit rating agencies, with the objective of hearing their feedback and keeping them apprised of developments in our business and factually communicating our prospects, risks and challenges as well as ESG-related updates. We also conduct research around the evolving ESG preferences of our investors and financial partners which we consider in our decision-making. Our capital allocation decision-making process considers our GHG targets and other ESG priorities. We conduct analyses to identify resilient supply sources as part of our energy fundamentals and strategic development reviews.

Summary of climate-related risks (continued)

Risk definition	Potential financial impact	Mitigation measures and controls
Physical risk		
As a leading energy infrastructure company in North America, our assets could be impacted by significant temperature or weather events and our business may be impacted by market risks, as noted above. Seasonal changes in temperature can also reduce the efficiency and production of our natural gas-fired power plants.	**S/T** | **M/T** | **L/T** Business interruption caused by physical changes to our environment could result in a minimal financial impact for our pipeline assets given toll and contractual structures and may result in an increase to operational costs, legal proceedings or regulatory actions, or other expenses, all of which could reduce our earnings.	As part of our strategic planning process, we conduct scenario analysis to evaluate the resilience of our asset portfolio over a range of potential supply and demand outcomes. We conduct comprehensive risk assessments including the evaluation of acute physical climate impacts to our assets through our ERM program to ensure leadership has visibility to the broader perspective, and that treatments are applied in a holistic and consistent manner. In addition, our engineering standards, used to design and construct our assets, are also regularly reviewed to ensure assets continue to be designed and operated to withstand the potential impacts of climate change. Our engineering standards are also regularly reviewed to ensure assets continue to be designed and operated to withstand the potential impacts of climate change. If an event did occur, then our Emergency Management Program (within TOMS) would manage our response to natural disasters, which include catastrophic events such as forest fires, tornadoes, earthquakes, floods, volcanic eruptions and hurricanes. We also have a comprehensive insurance program to mitigate a certain portion of these risks, but insurance does not cover all events in all circumstances. We also have a comprehensive insurance program to mitigate a certain portion of these risks, but insurance does not cover all events in all circumstances.

Summary of climate-related opportunities

Opportunity definition	Potential positive financial impact	Realization measures
Technology opportunities		
Technological innovation is critical to managing the complex and interrelated issues surrounding GHG emissions. Taking advantage of the opportunities posed by technological development is closely integrated with mitigating its risks, as described above.	S/T | M/T | L/T The inherent financial risks associated with technological developments also offers financial opportunities. We will not compromise our commitment to being thoughtful, deliberate and disciplined in every investment decision we make.	We have expertise across the energy spectrum including in pipelines and power generation (e.g., natural gas, wind, solar, hydro and nuclear). We are taking advantage of the vast opportunities that energy transition technology development provides, including investing in a world-scale carbon transportation and sequestration system, seeking wind, solar and battery storage capacity to power parts of our pipeline network and launching a carbon-free power product in Alberta. We also have dedicated resources to advance and study opportunities including pumped storage, hydrogen, carbon capture and other innovations.
Market opportunity: diverse energy sources		
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. We are uniquely positioned to capture energy transition opportunities through a variety of future scenarios, building on our existing experience and assets. 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.	S/T | M/T | L/T We are confident that our future opportunity set, combined with our capabilities, will continue to deliver superior risk-adjusted total shareholder returns well into the future. Whatever pace it takes, the energy transition ahead will require expertise and billions of investment dollars. We have both.	While the types of energy we deliver may change, how we continue to invest and grow will be very familiar. We continue to watch for signposts and test the resiliency of our asset base against various energy outlooks (see below) and maintain adherence to our tried-and-tested risk tolerances. Our strategy and energy transition teams collaborate with our business units to assess how the pace, scale and types of energy system shifts may potentially introduce business opportunities.

Summary of climate-related opportunities (continued)

Opportunity definition	Potential positive financial impact	Realization measures
Market opportunity: natural gas and electrification		
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, including through exporting liquefied natural gas (LNG).	S/T | M/T | L/T As of Dec. 31, 2021, our $24 billion secured capital program is 78 per cent natural gas pipeline projects and 18 per cent power and storage projects. This includes $4.4 billion towards refurbishing Bruce Power which supplies ~30 per cent of Ontario's power market with emission-less electricity.	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. Key focus areas in 2021 include the continued execution of our existing capital program that includes 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. We will also continue to pursue the next wave of growth opportunities.
Policy opportunities		
Effective policy development is an opportunity for government and industry to partner in driving timely, cost-effective emissions reductions. Current and emerging climate-related regulations are also an opportunity to facilitate meaningful emissions reductions and support market-based policies to promote industry innovation.	S/T | M/T | L/T 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.	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. We support transparent climate change policies that promote sustainable and economically responsible natural resource development. Our dedicated public policy and advocacy team mandates include ensuring we present policy proposals that build positive outcomes for our business, rightsholders and stakeholders, including governments.

Climate-related scenarios

Our vision is to be the premier energy infrastructure company in North America now and in the future, focused on transporting and delivering the energy people need every day. Our goal is to develop and build a platform that will enable us to prosper irrespective of the pace and direction energy transition takes. To deliver this vision, our five-year strategic plan was presented to the Board for review, discussion and approval in 2021.

We recognize that future energy systems will evolve and we continue to evaluate the resilience of our asset portfolio over a range of potential energy supply and demand outcomes, also known as scenario analysis, as part of our strategic planning cycle. 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.

We monitor the pace and magnitude of energy transition through various signposts and look for material shifts that pose threats or create opportunities. We evaluate climate-related scenarios to 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 assumptions about future trends, including the impact of climate policies on the energy mix, the rate of technological change for energy systems and supply and demand changes for oil and gas (both domestic and global). Since scenarios offer alternative outlooks for the energy future but do not describe what will or should happen, we do not assign probabilities to the scenarios and investors should not rely on them to make investment decisions.

In recent years, the global energy market has experienced extreme volatility. While the impacts of the COVID-19 pandemic have yet to completely unfold, recent geopolitical and rising energy inflationary pressures have added to the changing energy supply and demand dynamics.

Scenario overview

In 2021, we analyzed the impact on our company under two scenarios:

- **Primary Scenario** - looked at evolutionary change in technologies, efficiencies, environmental policies and an intense fuel competition for new opportunities. The energy transition accelerates but moves along different paths, at varying speeds, in distinct markets.
- **Accelerated Transition Scenario** - looked at the resilience of our portfolio in an accelerated energy transition scenario that sustains global temperature rise to below 2°C by 2050. The drivers of this scenario consider strong demand for governments to see clean energy and climate change mitigation actions as strategic imperatives and concerted efforts by neighboring jurisdictions.

The differentiating factors between this range of scenarios are the pace of change, the role of consumer choice and behaviours, the role of government and the private sector, the impact of geopolitical cooperation and the differentiated long-term economic effects on select markets as a result of the global pandemic.

Scenario outcomes

TC Energy's portfolio remains resilient over the long term across a full range of considered scenarios. Supported by our positioning in the lowest cost gas basins and outlook for strengthening support of North American liquefied natural gas (LNG) growth, our asset base continues to support our business strategy in both the Primary Scenario and Accelerated Transition Scenario. We remain observant of the future dependence on LNG exports as North American demand for gas-fired generation could decline post 2030. Existing Canadian oil sands production remains resilient, but future growth could 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, is not materially impacted in either scenario.

The need for new forms of clean energy is expected to generate investment opportunities in the future. New growth prospects include either leveraging our existing assets (e.g. for hydrogen or RNG) 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, thus enhancing the resiliency of our businesses.

Bringing it all together, 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.

TC Energy operates 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 three major lines of business provide diversification as the energy future unfolds, allowing us to allocate capital to various opportunities across the energy infrastructure sector, within our risk preferences, as signposts indicate.

TCFD climate-related risk management

Enterprise risk management

Risk management is integral to successfully operating our business. Our strategy is to ensure our risks and related exposures are aligned with our business objectives and risk tolerance. Recognizing many risks are interrelated and should be managed across the enterprise, we manage risk through a centralized ERM process that identifies and assesses key enterprise risks, including ESG-related risks, that have the potential to materially impact TC Energy's ability to meet or support its business, operational or strategic objectives. The purpose of the ERM program is to address risks to, or yelding from, the execution of our strategy, as well as enabling practices that allow us to identify and monitor emerging risks, including climate-related risks. Specifically, the ERM program provides a framework outlining an end-to-end process for risk identification, analysis, evaluation, mitigation, ongoing monitoring and reporting to the Board, CEO and executive leadership team (ELT). The core ERM principles are in alignment with international standards and guidelines, such as ISO 31000, the Committee of Sponsoring Organizations (COSO) and TCFD. Further details are outlined in the TC Energy ERM Policy.

Our Board of Directors' Governance Committee oversees our ERM activities and ensures adequate Board oversight of our risk management policies, programs and practices. Other Board committees oversee specific classifications of risk:

- the Human Resources Committee oversees executive resourcing, organizational capabilities and compensation risk to ensure human and labour policies and remuneration practices align with our overall business strategy.
- the HSSE Committee oversees operational, health, safety, sustainability, including climate-related and environmental risk.
- the Audit Committee oversees management's role in managing financial risk, including market risk, counterparty credit risk and cyber security.

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 climate-related risks.

Chaired by the CRO, the Management Risk Committee is comprised of the ELT and is accountable for the management of enterprise risks including climate-related risks and implementation of enterprise risk mitigation plans. These teams continuously review the company's activities and provide expertise to inform policy response strategies and ensure consistency. The liaison network includes business and corporate functions to ensure risks from across the organization are identified, shared, discussed and treatments are coordinated, where necessary. Risks, including those associated with climate, are monitored and escalated to MRC through ERM program to ensure our ELT has visibility on the broader perspective and treatments are applied in a holistic and consistent manner.

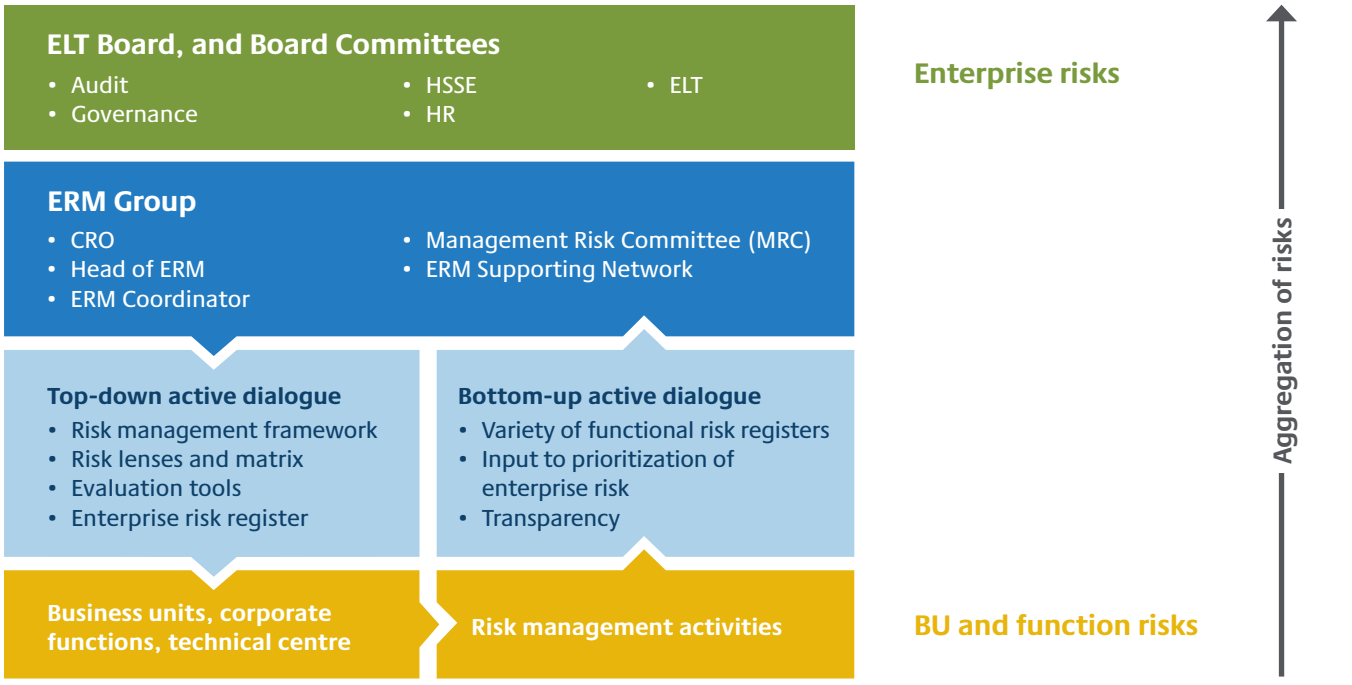


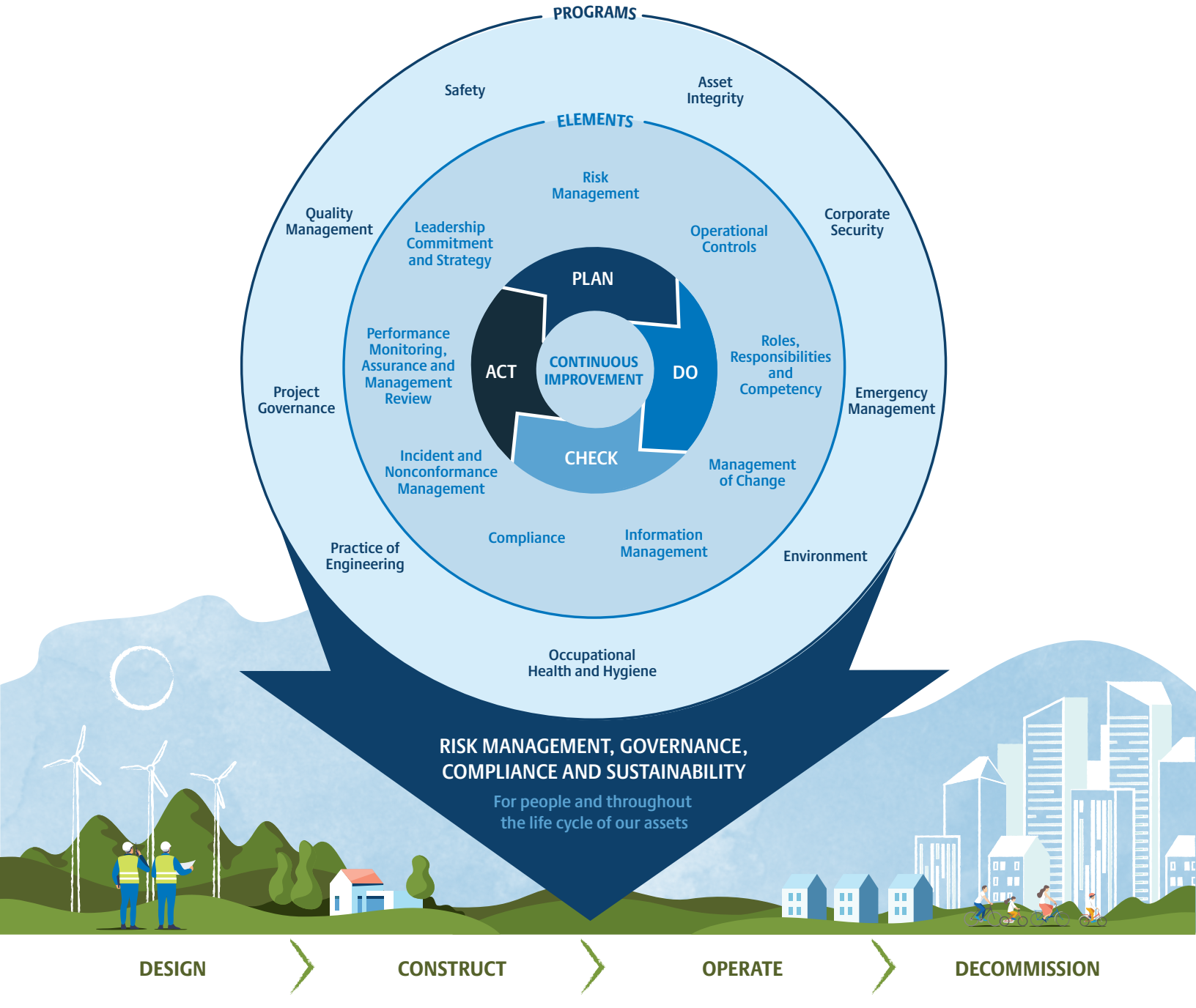
Figure 2: TC Energy's Enterprise Risk Management Framework

TC Energy's Operational Management System

TOMS is our overarching management system that enables operational excellence through a structured set of requirements and processes to manage risk and continually improve through the plan, do, check, act cycle. It is modelled after international standards, including the ISO standard for environmental management systems, ISO 14001 and the Occupational Health and Safety Assessment Series. TOMS aligns to industry best practices and standards and incorporates applicable regulatory requirements. It applies across the organization and throughout the asset life cycle, including design, construction, operation and decommissioning, to ensure the integrity of our physical assets and the safety and security of the public, our personnel and the protection of the environment.

Under TOMS, elements provide standardized requirements for business activities including risk management. These requirements drive our approach to identify, analyze, evaluate, monitor and communicate risks and implement barriers for the asset life cycle, including climate-related risks. Operational risks are communicated annually through the corporate ERM process.

Under TOMS, mandated programs set requirements to manage specific risk areas including asset integrity, safety, health and industrial hygiene, emergency management and environment. These requirements for our day-to-day work protect our people, our workplace and assets, the communities we work in, and the environment.



Climate-related metrics and targets

In 2020, we published 10 commitments describing our path to continuously driving toward a more sustainable organization, aligned to the UN SDGs. In 2021, we set ambitious targets for every commitment to measure and demonstrate our progress. Below we have included a description of our progress on climate-related targets and metrics. For a full list of our sustainability targets, please refer to our 2022 Report on Sustainability.

Metrics	Targets	2021 Performance
GHG emissions intensity reduction from our operations	30% by 2030	On track
Position to achieve zero emissions from our operations on a net basis	By 2050	On track

For more information on our commitment to embracing the energy transition, see the 2022 Report on Sustainability.

For planning purposes, progress is measured relative to a 2019 baseline year, adjusted for material changes in our asset portfolio and quantified on an operational control boundary.[1]

We are making progress towards our goals to reduce the GHG emissions intensity of operations by 30 per cent by 2030 and to position ourselves to achieve net-zero emissions from our operations by 2050. We are doing this through the identification and implementation of a suite of abatement opportunities aligned to the five focus areas outlined in our GHG Emissions Reduction Plan. As our plan continues to progress and our performance is monitored, we will provide further details through periodic progress updates.

Reducing emissions in quantity and intensity throughout our operations is no small feat. In early 2021, we established a dedicated team to chart our path forward and determine measures to ensure accountability to our stakeholders. This team conducted detailed review and analysis to set ambitious and meaningful GHG emissions reduction targets. This review included assessing our emissions profile and evaluating future opportunities presented by emerging low-carbon fuels and infrastructure. As a result of this effort, we are confident we have made informed decisions about Scope 1 and Scope 2 targets and associated action plan. We believe today's energy industry must play a proactive role to enable change and support the advancement of a lower-carbon economy. At the same time, we must make sure that a growing population continues to have the energy required to maintain quality of life – transportation, health care, agriculture, education and economic prosperity all depend on access to safe, reliable, affordable energy.

There are still many unknowns about how a global energy transition may unfold. To succeed, the energy transition will require policy, regulatory and technology enablers. We will adapt and respond as these factors change over the life of our plan and ensure that our reporting is appropriate to communicate the progress towards our goals.

[1] Values in the GHG emissions performance data tables on page 26 are reported on an equity share and operational control boundary.

Performance data

About our ESG performance data

Our goal is to address the information needs of our stakeholders by providing clear and useful ESG data.

- ESG data represents the period of Jan. 1 to Dec. 31, 2021, or status as of Dec. 31, 2021, whichever is applicable, unless otherwise noted.
- Performance data is included for the five years ending Dec. 31, 2021, as available.
- ESG data reported in the performance data tables reflect all assets that we operate, unless otherwise noted. Operational control is defined as the authority to introduce and implement operating policies at the facility. Data reflects 100 per cent for facilities where TC Energy, or one of its subsidiaries, has operational control regardless of percentage of financial ownership. GHG emissions are reported both on an equity share and operational control approach, defined in alignment with the World Resources Institute and the World Business Council for Sustainable Development GHG Protocol.
- Full listings of the assets we operate are contained in the 2021 Annual Report, on page 34 for our natural gas assets, page 55 for our liquids pipelines assets and page 65 for our power and storage assets.
- Financial data is reported in Canadian dollars. Foreign currencies are converted based on the average exchange rates published in our 2021 Annual Report (1.25 U.S. to Canadian dollars).
- Footnotes provide additional contextualization information on 2021 data boundaries, definitions and methodology where applicable. Further discussion is also contained in the 2022 Report on Sustainability. Data exclusions or additions are noted throughout the report.
- Totals may not add up due to rounding.

The indicators reported in our performance data tables reflect both external reporting frameworks and the interests of our stakeholders. Where we add indicators to align with new sustainability targets, for example, it may not be reasonable to calculate historical data points.

Where historical data for a directly comparable scope is not available, this has been indicated as ‘N/A’.

Operational overview

With over 70 years of experience, TC Energy is a leader in the responsible development and reliable operation of North American energy infrastructure including natural gas and liquids pipelines, power generation and natural gas storage facilities.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Operational overview							
Natural gas transmission network	kilometres	91,900	92,600	93,250	93,421	93,294	
Natural gas pipeline throughput	billion cubic feet	N/A	N/A	14.933	14,684[1]	17,096[2]	
Liquids pipeline network	kilometres	4,874	4,874	4,900	4,946	4,856	
Liquids pipeline throughput[3]	million barrels	N/A	N/A	433	409	392	
Power							
Number of power facilities	number	11	9	7	7	7	
Power generation capacity	megawatt	6,100	5,200	4,197	4,197	4,258	
Net power generation	megawatt hour	N/A	29,003,004	25,888,462	24,060,721	24,283,977	
Storage							
Natural gas storage capacity	billion cubic feet	653	653	653	653	653	
Total natural gas volume injected and withdrawn	billion cubic feet	N/A	58	54	115	133	
Liquids storage capacity	barrels	N/A	N/A	Over 6.5 million	Approximately 7 million	Approximately 7 million	

[1] The 2020 natural gas pipeline throughput has been revised herein as a result of a correction and update to the 2020 natural gas pipeline throughput; Canada value.
[2] The increase in natural gas pipeline throughput is mainly attributable to an increase in equity ownership of U.S. natural gas pipelines and a ~4% increased throughput for U.S. natural gas assets.
[3] This indicator represents the net standard volume (NSV) receipt volume inventory for the Liquids Pipelines business segment pipelines and tank terminals, across Canada and the U.S.

Finding solutions that protect our planet

GHG emissions

Commitment: Embracing the energy transition

UN SDGs:

As an energy infrastructure company, we recognize our role in the larger energy system, including the ongoing management of our own GHG emissions. We are committed to managing our GHG emissions, reducing our GHG emissions intensity and continuing to integrate climate considerations into our overall business strategy.

With this in mind, we acknowledge there has been an overall increase in absolute emissions since our 2019 baseline year. This is due in part to fluctuating energy demands, increased power generation and throughput and expanded ownership of select pipeline systems. We continue to implement technological enhancements as we work towards our 2030 commitment.

TC Energy quantifies GHG emissions following the methodologies prescribed by various regulations in the different jurisdictions in which we operate. We report our emissions to British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Québec, Environment and Climate Change Canada (ECCC), the U.S. Environmental Protection Agency (EPA), California, Oregon, Maryland, Washington, and Mexico's Ministry of Environment and Natural Resources. These methods can include, but are not limited to, direct measurement, use of emissions factors in conjunction with activity data and mass balance. Quantification for voluntary reporting is done on an equity share and operational control boundary and aligns to GHG Protocol Guidance[1]. We report greenhouse gases emitted to the atmosphere before accounting for offsets, credits, or other similar mechanisms that have reduced or compensated for emissions.

For increased transparency, GHG emissions reported include those considered below reporting thresholds under regulatory reporting regimes. Please refer to our climate-related targets section and GHG Emissions Reduction Plan for more information on our 2019 GHG emissions baseline.

Scope 1 GHG emissions

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Absolute Scope 1 GHG Emissions							
Equity share approach							
Total Scope 1 GHG emissions [2,3]	thousand tonnes CO_2e	**12,500**	**13,749**	**16,262**	**16,438**	**19,352**	SASB EM-MD-110a.1
Breakdown by operating segment							
Scope 1 GHG emissions: natural gas pipelines	thousand tonnes CO_2e	8,700	10,699	14,202	14,551	**17,132**	
Scope 1 GHG emissions: Canadian natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	6,979	6,437	**7,267**[4]	
Scope 1 GHG emissions: U.S. natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	7,145[5]	8,018[5]	**9,785**[4]	
Scope 1 GHG emissions: Mexico natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	78	96	**80**[6]	
Scope 1 GHG emissions: liquids pipelines	thousand tonnes CO_2e	0	1	0[7]	0[7]	**0**	
Scope 1 GHG emissions: power and storage	thousand tonnes CO_2e	3,800	3,015	2,025	1,853	**2,189**	
Scope 1 GHG emissions: power	thousand tonnes CO_2e	N/A	N/A	2,005[8]	1,840	**2,177**[9]	
Scope 1 GHG emissions: storage	thousand tonnes CO_2e	N/A	N/A	20	13	**13**	
Scope 1 GHG emissions: corporate[10]	thousand tonnes CO_2e	62	34	34	33	**30**	
Breakdown by source[11]							
Scope 1 GHG emissions: stationary combustion	thousand tonnes CO_2e	N/A	12,285	12,287	12,635	**15,429**	
Scope 1 GHG emissions: venting	thousand tonnes CO_2e	N/A	969	1,785[12]	1,530[12]	**1,709**	
Scope 1 GHG emissions: fugitive	thousand tonnes CO_2e	N/A	449	2,130[13]	2,220[13]	**2,153**	
Scope 1 GHG emissions: flaring	thousand tonnes CO_2e	N/A	12	22	16	**27**[14]	
Scope 1 GHG emissions: transportation[10]	thousand tonnes CO_2e	N/A	34	34	33	**30**	

1 In the interest of increased transparency, starting with the current Data Sheet, TC Energy reports GHG emissions data on both an equity share and operational control approach in order to illustrate the difference in GHG emission footprint between the two organizational boundaries of reporting. The equity share reporting boundary best reflects TC Energy's corporate GHG emission footprint in relation to the percentage of ownership held across our operated and non-operated assets and more closely aligns with our financial performance results. The operational control boundary data represents the GHG emission footprint from assets that are operated by TC Energy and therefore are under TC Energy's operational practices.

2 Approximately 80 per cent of our total Scope 1 emissions are associated with stationary combustion sources at our natural gas pipeline assets. The most significant changes in our Scope 1 GHG emissions profile between 2020 and 2021 are due to increases in throughput and production resulting in increased energy and fuel consumption in 2021.

3 TC Energy increased its equity interest ownership in several U.S. pipeline assets. This change in equity interest resulted in a higher proportion of the operational emissions from these assets being attributed to and reported by TC Energy in 2021 than in previous years. Emission variances as a result of changes in equity interest do not necessarily indicate changes in the operational emission profile of the assets.

4 Increased fuel combustion and vented emissions contributed to the increased emissions between 2020 and 2021.

5 2019 and 2020 GHG emissions were recalculated to align with the updated methodology for corporate GHG reporting, which considers the inclusion of emission sources that are beyond the regulatory reporting.

6 The demand for compression was lower in 2021 as compared to 2020, resulting in lower emissions at our Mexico natural gas pipeline assets.

7 The 2019 and 2020 emissions were recalculated to account for the November 2021 divestiture of the Northern Courier assets.

8 The 2019 emissions were recalculated to account for the April 2020 divestitures of Halton Hills, Portlands Energy and Napanee power facilities.

9 The increase in Scope 1 emissions in 2021 are attributable to increased operations relative to previous year.

10 Scope 1 GHG emissions related to transportation sources (aviation and vehicles) are reported under our Corporate operating segment.

11 Emissions by source category do not total the reported total Scope 1 GHG emissions as certain negligible emission sources have not been broken out to individual GHG constituents.

12 2019 and 2020 vented emissions were recalculated to include additional sources of emissions beyond the regulatory reporting requirements from our U.S. natural gas pipeline assets. Increased equity in U.S. assets in 2021 influenced an increase in vented emissions relative to previous years.

13 2019 and 2020 fugitive emissions were recalculated to include additional sources of emissions beyond the regulatory reporting requirements from our U.S. natural gas pipeline assets.

14 Increased flaring emissions in 2021 are attributable to increased use of temporary flares on our Canadian natural gas pipeline to mitigate vented emissions from construction and planned maintenance activities.

Scope 1 GHG emissions continued

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Additional							
Scope 1 (direct) methane emissions	thousand tonnes CO_2e	N/A	1,467	3,963	3,804	3,917	SASB EM-MD-110a.1
Portion of Scope 1 GHG emissions covered by reduction regulations[10]	per cent	N/A	72	59	50	49	SASB EM-MD-110a.1
Operational control approach[1]							
Total Scope 1 GHG emissions[2]	thousand tonnes CO_2e	**N/A**	**N/A**	**18,284**	**18,172**	19,888[3^]	
Breakdown by operating segment							
Scope 1 GHG emissions: natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	16,228	16,289	17,671	
Scope 1 GHG emissions: Canadian natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	6,983	6,446	7,280[4]	
Scope 1 GHG emissions: U.S. natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	9,167	9,745	10,308[4]	
Scope 1 GHG emissions: Mexico natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	78	98	83[5]	
Scope 1 GHG emissions: liquids pipelines	thousand tonnes CO_2e	N/A	N/A	1	1	0	
Scope 1 GHG emissions: power and storage	thousand tonnes CO_2e	N/A	N/A	2,021	1,849	2,186	
Scope 1 GHG emissions: power	thousand tonnes CO_2e	N/A	N/A	2,002	1,837	2,173[6]	
Scope 1 GHG emissions: storage	thousand tonnes CO_2e	N/A	N/A	20	13	13	
Scope 1 GHG emissions: corporate[7]	thousand tonnes CO_2e	N/A	N/A	34	33	30	
Breakdown by source[8]							
Scope 1 GHG emissions: stationary combustion[2]	thousand tonnes CO_2e	N/A	N/A	14,117	14,190	15,935	
Scope 1 GHG emissions: venting	thousand tonnes CO_2e	N/A	N/A	1,952	1,678	1,745	
Scope 1 GHG emissions: fugitive	thousand tonnes CO_2e	N/A	N/A	2,158	2,254	2,151	
Scope 1 GHG emissions: flaring	thousand tonnes CO_2e	N/A	N/A	22	16	27[9]	
Scope 1 GHG emissions: transportation[7]	thousand tonnes CO_2e	N/A	N/A	34	33	30	
Additional							
Scope 1 (direct) methane emissions	thousand tonnes CO_2e	N/A	N/A	4,161	3,989	3,959	SASB EM-MD-110a.1
Portion of Scope 1 GHG emissions covered by reduction regulations[10]	per cent	N/A	N/A	49	46	48	SASB EM-MD-110a.1

[1] Emissions data has previously only been reported on an equity share approach in the Report on Sustainability and ESG Data Sheet. In the interest of clarity and transparency, emissions data is reported, for the first time this year, on both an equity share and operational control approach. Operational control represents a new organizational reporting boundary.
[2] Approximately 80 per cent of our total Scope 1 emissions are associated with stationary combustion sources at our natural gas pipeline assets. The most significant changes in our Scope 1 GHG emissions profile between 2020 and 2021 are due to increases in throughput and production resulting in increased energy and fuel consumption in 2021.
[3] TC Energy has obtained independent limited assurance of operational control boundary Scope 1 emissions for the year ended December 31, 2021.
[4] Increased fuel combustion and vented emissions contributed to the increased emissions between 2020 and 2021.
[5] The demand for compression was lower in 2021 as compared to 2020, resulting in lower emissions at our Mexico natural gas pipeline assets.
[6] The increase in Scope 1 emissions in 2021 are attributable to increased operations relative to previous year.
[7] Scope 1 GHG emissions related to transportation sources (aviation and vehicles) are reported under our Corporate operating segment.
[8] Emissions by source category do not total the reported total Scope 1 GHG emissions as certain negligible emission sources have not been broken out to individual GHG constituents.
[9] Increased flaring emissions in 2021 are attributable to increased use of temporary flares on our Canadian natural gas pipeline to mitigate vented emissions from construction and planned maintenance activities.
[10] This indicator represents the portion of total Scope 1 emissions covered by reduction regulations based on provincial, state or federal GHG policies. Methodology used to determine this indicator is based on the inclusion of Scope 1 GHG emissions from all sources associated with natural gas pipelines and Power and Energy Solutions (previously our Power and Storage business segment) assets that are regulated under GHG reduction-based regulations in Canada. Asset emissions covered under legislation such as the Canadian federal Fuel Charge are not included in the emission reduction regulation coverage.

Scope 2 GHG emissions

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Absolute Scope 2 GHG emissions							
Equity share approach							
Total Scope 2 GHG emissions	thousand tonnes CO_2e	**344**	**2,343**	**2,066**	**1,949**	**2,081**	
Breakdown by operating segment							
Scope 2 GHG emissions: natural gas pipelines	thousand tonnes CO_2e	335	430	313	333	**277**[1]	
Scope 2 GHG emissions: Canadian natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	101	92	**79**	
Scope 2 GHG emissions: U.S. natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	210	238	**196**	
Scope 2 GHG emissions: Mexico natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	2	2	**2**	
Scope 2 GHG emissions: liquids pipelines	thousand tonnes CO_2e	N/A	1,874	1,660[2]	1,485[2]	**1,659**[3]	
Scope 2 GHG emissions: power and storage	thousand tonnes CO_2e	9	40	94	131	**145**	
Scope 2 GHG emissions: power[4]	thousand tonnes CO_2e	N/A	N/A	72	87	**104**[3]	
Scope 2 GHG emissions: storage	thousand tonnes CO_2e	N/A	N/A	21	44	**41**	
Operational control approach[5]							
Total Scope 2 GHG emissions	thousand tonnes CO_2e	**N/A**	**N/A**	**2,132**	**1,996**	**2,104**[6^]	
Breakdown by operating segment							
Scope 2 GHG emissions: natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	360	363	**294**[1]	
Scope 2 GHG emissions: Canadian natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	101	92	**79**	
Scope 2 GHG emissions: U.S. natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	257	269	**213**	
Scope 2 GHG emissions: Mexico natural gas pipelines	thousand tonnes CO_2e	N/A	N/A	2	2	**2**	
Scope 2 GHG emissions: liquids pipelines	thousand tonnes CO_2e	N/A	N/A	1,681	1,505	**1,668**[3]	
Scope 2 GHG emissions: power and storage	thousand tonnes CO_2e	N/A	N/A	91	128	**142**	
Scope 2 GHG emissions: power	thousand tonnes CO_2e	N/A	N/A	69	84	**101**[4]	
Scope 2 GHG emissions: storage	thousand tonnes CO_2e	N/A	N/A	21	44	**41**	

[1] Although power consumption across our Canada and U.S. natural gas pipeline assets was relatively static year-over- year, the location-based methodology for quantification of Scope 2 emissions indicates a generalized improvement towards greening of grid power across most our operational footprint, resulting in lower emissions.
[2] The 2019 and 2020 emissions were recalculated to account for the November 2021 divestiture of the Northern Courier assets.
[3] Increased emissions in 2021 are attributable to increased power consumption relative to previous year.
[4] Scope 2 emissions now includes the import of "net" consumed heat in addition to the electricity consumption that was historically reported. Further adjustments to the Scope 2 methodology were made to represent the emissions attributed to the actual electricity consumed on site and now excludes power that is imported to site but is largely flow-through power to service the receiving customer.
[5] Emissions data has previously only been reported on an equity share approach in the Report on Sustainability and ESG Data Sheet. In the interest of clarity and transparency, emissions data is reported, for the first time this year, on both an equity share and operational control approach. Operational control represents a new organizational reporting boundary.
[6] TC Energy has obtained independent limited assurance of operational control boundary Scope 2 emissions for the year ended Dec. 31, 2021.

Scope 3 GHG emissions

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Absolute Scope 3 GHG emissions							
Total Scope 3 GHG emissions[1]	thousand tonnes CO_2e	**N/A**	**3,026**	**3,136**	**2,688**	3,178[2]	
Breakdown by Scope 3 category							
Fuel- and energy-related activities (category 3)	thousand tonnes CO_2e	N/A	2,985	3,062	2,598	**3,115**	
Waste generated in operations (category 5)[3]	thousand tonnes CO_2e	N/A	N/A	50	75	**49**[4]	
Business travel (category 6)	thousand tonnes CO_2e	N/A	11	12	5	**4**	
Upstream leased assets (category 8)[5]	thousand tonnes CO_2e	N/A	31	13	11	**10**	

1 Scope 3 GHG emissions cover 15 categories of emissions and of these, TC Energy reports on four relevant categories (fuel- and energy-related activities, business travel, waste generated in operations and upstream leased assets). Fuel- and energy-related activities emissions relate to fuel supplied for combustion during operational (combustions) activities that are not included in our Scope 1 or Scope 2 emissions.
2 Increases from the previous year are largely attributed to increased fuel consumption across most of the operational footprint.
3 TC Energy has estimated Scope 3 emissions associated with waste using the spend-based method from the GHG Protocol Scope 3 Guidance and the emission factors within the Quantis Suite Scope 3 Evaluator.
4 Waste related expenditures in 2021 were down relative to 2020 operations.
5 TC Energy does not own or operate our corporate offices; emissions associated with operation of those leased spaces are included as Scope 3 emissions.

Scope 1 and 2 GHG emissions intensities

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Scope 1 and 2 GHG emissions intensities[1]							
Equity share approach[2]							
GHG emissions intensity: Canada natural gas pipelines[3,4]	Scope 1+2 tonnes CO_2e / throughput Bcf	779	895	891[5]	874[5]	909	
GHG emissions intensity: U.S. natural gas pipelines[3,4]	Scope 1+2 tonnes CO_2e / throughput Bcf	280	291	1,117[6]	1,229[6]	1,176	
GHG emissions intensity: Mexico natural gas pipelines[3,4]	Scope 1+2 tonnes CO_2e / throughput Bcf	145	211	197	198	155	
GHG emissions intensity: Canada and U.S. liquids pipelines[7,8]	Scope 1+2 tonnes CO_2e / receipt volume NSV bbls	N/A	N/A	0.0038	0.0036	0.0042	
GHG emissions intensity: power[7,9]	Scope 1+2 tonnes CO_2e / net generation MWh	0.1182	0.1036	0.0800	0.0800	0.0940	
GHG emissions intensity: storage	Scope 1 +2 tonnes CO_2e / total volume injected + withdrawn Bcf	N/A	858	768	492	404	
Operational control approach[10]							
GHG emissions intensity: total corporate[11]	Scope 1+2 kg CO_2e / GJ	**N/A**	**N/A**	**0.96**	**0.96**	1.00[12]^	
GHG emissions intensity: Canada natural gas pipelines[3]	Scope 1+2 tonnes CO_2e / throughput Bcf	N/A	N/A	879	863	899	
GHG emissions intensity: U.S. natural gas pipelines[3]	Scope 1+2 tonnes CO_2e / throughput Bcf	N/A	N/A	1,073	1,129	1,144	
GHG emissions intensity: Mexico natural gas pipelines[3]	Scope 1+2 tonnes CO_2e / throughput Bcf	N/A	N/A	185	166	128	
GHG emissions intensity: liquids pipelines[7,8]	Scope 1+2 tonnes CO_2e / receipt volume NSV bbls	N/A	N/A	0.0380	0.0036	0.0042	
GHG emissions intensity: power[7,9]	Scope 1+2 tonnes CO_2e / net generation MWh	N/A	N/A	0.5807	0.5833	0.5947	
GHG emissions intensity: storage	Scope 1+2 tonnes CO_2e / total volume injected + withdrawn Bcf	N/A	N/A	768	492	404	

1 Business segment emission intensities are not directly comparable to the corporate emissions intensity value without the conversion of production and throughput metrics to a common unit of measure, GJ.
2 Emission intensity calculations for equity share is based on Net to TC Energy Scope 1 and Scope 2 emissions divided by net production or throughput metrics. Net values are based on total gross multiplied by percent ownership as of Dec. 31, 2021.
3 TC Energy's calculated GHG emission intensities for our natural gas business segments are based on a throughput denominator. Throughput volumes from the Natural Gas Pipelines are based on physical or nominated delivery volumes from each pipeline system.
4 The gross throughput volumes from each pipeline system are normalized to equity share reporting methodology based on the percentage of ownership held by TC Energy as indicated in the 2021 Annual Report.
5 The 2019 and 2020 GHG emissions intensity for Canada natural gas pipelines has been restated from the previously published values as throughput volumes from select pipeline systems within Canada were recalculated to align year-over-year methodologies.
6 The 2019 and 2020 GHG emissions intensity for U.S. natural gas pipelines has been restated from previously published values as Scope 1 GHG emissions were recalculated to align with the updated methodology for corporate GHG reporting, which considers the inclusion of emission sources that are beyond the regulatory reporting requirements.
7 Data reported has been normalized to exclude divestitures, as applicable.
8 The GHG emission intensity indicator for Liquids Pipelines business unit represents the net standard volume (NSV) receipt volumes on the pipeline systems and select tank terminals across Canada and the U.S.
9 Many of TC Energy's power generation assets generate both electricity and useful heat. Intensity calculations do not account for this useful heat generated in the denominator and therefore represent only a conservative estimation of emissions intensity for power generation.
10 Emission intensity calculations for operational control is based on gross Scope 1 and Scope 2 emissions from assets operated by TC Energy divided by gross production or throughput metrics of those operated assets. Assets partially owned but not operated by TC Energy are excluded from the Scope 1, Scope 2, and production/throughput calculations to determine the emission intensity.
11 TC Energy's corporate emissions intensity is based on an operational control reporting boundary. The various throughput and production data is normalized to an energy equivalency to calculate this corporate intensity value.
12 TC Energy has obtained independent limited assurance of this indicator for the year ended Dec. 31, 2021.

Air emissions

Commitment: Embracing the energy transition

UN SDGs:

Protecting our shared air quality is important to TC Energy. Our assets are subject to federal, state, provincial and local environmental statutes and regulations governing environmental protection including air emissions and we work to reduce these emissions through a variety of approaches including operational optimization.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Air quality[1,2]							
Nitrogen oxide (NO_x)	metric tonnes	12,889	14,247	45,099	40,421	38,620	GRI 305-7 SASB EM-MD-120a.1
Sulfur oxide (SO_x)	metric tonnes	N/A	N/A	74	98	159[3]	GRI 305-7 SASB EM-MD-120a.1
Volatile organic compounds (VOCs)	metric tonnes	54	21	1,544	1,528	1,556	GRI 305-7 SASB EM-MD-120a.1
Particulate matter 10 micrometers (PM_{10})	metric tonnes	18	22	675	686	726	GRI 305-7 SASB EM-MD-120a.1

[1] Air quality emissions data is calculated based on regulatory requirements in jurisdictions where we operate. The data reported within includes emissions at, or above, regulatory reporting thresholds.
[2] 2017 and 2018 emissions data is limited to our Canadian operations. 2019 emissions data onwards reflects all operated assets, including our U.S. and Mexico operations.
[3] The reported quantity of SOx emissions increased over the prior year as a result of increased operational activity and enhanced sampling of a waste gas stream that makes up a small portion of the fuel used to generate useful energy at a cogeneration facility.

Ecological impacts

Commitment: Leaving the environment as we found it

UN SDGs:

Maintaining safe, reliable operations and ensuring asset integrity, while minimizing environmental impacts, continues to be the foundation of our business and how we interact with the environment is as important to our communities as it is to us. Guided by our Environment Principles, we conserve and protect the land and ecosystems throughout the life of our projects and beyond. We also recognize our interactions with water aren't just about the water we use, but are also about how we ensure our activities don't impact the water quality around our projects and operations.

Commitment: Focus on landowner relationships

UN SDGs:

This reflects our ongoing commitment to restore the land that is disturbed as we construct and maintain the assets needed to deliver energy. This restoration process begins soon after construction activities are completed and progresses over multiple years, reflecting the natural pace of vegetation growth in the surrounding ecosystem. Our experts follow a systematic process with multiple steps to assess, design, implement, monitor, evaluate and adjust; assisting landowners if issues are identified during monitoring.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Biodiversity[1]							
Acreage of land (owned, leased and/or operated) within areas of protected conservation status or endangered species habitat	acres	N/A	N/A	N/A	47,717	56,543	SASB EM-MD-160a.2
Total land owned, leased and/or operated	acres	N/A	N/A	N/A	378,888	380,286	
Percentage land owned, leased and/or operated within areas of protected conservation status or endangered species habitat	per cent	N/A	N/A	N/A	13	15	SASB EM-MD-160a.2
Land capability							
Cumulative total of disturbed land[2]	acres	N/A	N/A	N/A	4,503	11,236	SASB EM-MD-160a.3
Land restoration completed[3]	acres	N/A	N/A	N/A	2,449	8,224	SASB EM-MD-160a.3
Percentage of disturbed area restored within five years[4]	per cent	N/A	N/A	N/A	100	99	
Percentage of disturbances to sensitive habitat restored or offset within five years	per cent	N/A	N/A	N/A	N/A	100	
Percentage of disturbances to private lands restored within five years	per cent	N/A	N/A	N/A	N/A	99	
Water							
Water withdrawal: fresh surface water	million cubic metres	N/A	N/A	N/A	2.96	2.05	
Water withdrawal: fresh groundwater	million cubic metres	N/A	N/A	N/A	0.00	0.00	
Water withdrawal: municipal/utility	million cubic metres	N/A	N/A	N/A	0.39	0.27	
Water discharge	million cubic metres	N/A	N/A	N/A	0.14	0.16	
Water consumption[5]	million cubic metres	4.50	2.20	5.10	3.20	2.16	SASB IF-EU-140a.1
Waste							
Hazardous waste generated[6]	metric tonnes	N/A	N/A	N/A	10,129	13,157	GRI 306-3

1 Our biodiversity indicator currently reflects most of the land TC Energy owns, leases and/or operates that is associated with our pipeline rights-of-way, compressor stations, meter stations, pump stations and power plants in Canada, Mexico and the U.S. This footprint also includes abandoned assets. The footprint does not include temporary workspaces or proposed projects. Valve sites are assumed to be contained within right-of-way footprint. TC Energy considers land to be an area of protected conservation status or endangered species habitat if it is identified as such in one or more of the publicly available datasets we use. While not an exact match, in 2021 we selected multiple publicly available datasets that included conservation status and habitat information that most closely aligned to the intent of SASB indicator EM-MD-160a.2. This year, for critical habitat in Canada and the U.S., we identified critical habitat for endangered species, which more closely aligns to the SASB indicator.

2 The cumulative total of disturbed land currently includes land disturbed by gas pipeline and maintenance projects across Canada, the U.S. and Mexico and a liquids pipeline project in Canada that underwent post-construction reclamation monitoring in 2021 to determine restoration success. These indicators include sensitive habitat, as defined in footnote 1, and private lands. The cumulative total of disturbed lands includes land disturbed from projects constructed in preceding years that have not yet achieved restoration and that are being monitored annually for restoration status. We do not include operating facilities that are above ground (fenced and graveled sites) in our disturbed lands or restoration reporting until they undergo decommissioning and abandonment. Projects are typically monitored annually following final clean-up after construction is completed, for five years, or until restoration has been achieved. This year we excluded several gas projects in our Mexico business unit because we were unable to access our right-of-way due to unforeseen circumstances. Without access, and despite our best efforts, we were unable to monitor these projects for restoration success. We are working with the appropriate agencies in Mexico to ensure we meet our commitments for restoration. We do not have a specific start date to begin monitoring activities again but remain committed to maintaining compliance and restoring these lands to their equivalent land capability.

3 Restoration is defined as the process of returning disturbed land to equivalent land capability, which is the ability of the land to support various land uses similar to the ability that existed prior to disturbance. This includes ensuring stable, non-hazardous, non-erodible soil conditions and seeding or enabling the re-establishment of vegetation, as appropriate and in accordance with applicable regulatory requirements and permit conditions. Includes previously disturbed land that achieved restoration during 2021. This includes projects in years one through to five being monitored for restoration success.

4 While the cumulative total of land disturbed and restored in acres reflects 2021 data, the percentage of land restored has been defined using a five year timeframe to better reflect the longer-term nature of our restoration activities. While much of the land is restored in the first two to three years following construction, we achieved 99 per cent restoration for land that is in the fifth year of monitoring following construction.

5 Water consumption volume reflects management's best estimate. TC Energy considers water consumed unless it is discharged to the same source at equal or higher quality. The volume reported includes water used during hydrostatic testing of pipelines and liquids storage tanks and water used for power asset operations (excluding once-through cooling water). Water used during construction or operational activities (e.g. for dust control on access roads, construction of winter access or to assist in hydrovac operations) is excluded. In 2021, there was an increase in water consumption for pipeline hydrotests from the previous year while there was a decrease in water consumption on our power assets. This accounts for the overall decrease in water consumption.

6 We have chosen to focus reporting on the generation of hazardous wastes for 2020 onward. Most of TC Energy's hazardous wastes consist of recyclable hydrocarbons from our storage operations, recovered from the natural gas in our gas pipelines or used lube oils and glycols from turbines, pumps and engines. Any hazardous wastes that cannot be recovered or recycled are disposed of at licensed, secure disposal facilities. 2021 data includes operations, project and remediation waste for TC Energy operated assets across Canada, the U.S. and Mexico. Requirements for tracking and reporting of waste as well as the waste classifications and types themselves vary by jurisdiction. TC Energy also relies on multiple third-party vendors and/or government databases for tracking of hazardous waste. Internal subject matter experts familiar with our waste streams review and reconcile waste data often using assumptions and/or estimations to consolidate the data into a single, corporate-wide value.

Asset integrity and process safety

Commitment: Zero is Real

UN SDGs:

Our pipeline and power and storage assets are some of the most technologically advanced in the industry. One way we manage the safety of these assets is through integrity and preventative maintenance programs.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Pipeline inspection							
Percentage of natural gas pipelines inspected[1]	per cent	18	16	20	24	**26**	SASB EM-MD-540a.2
Percentage of liquids pipelines inspected[1,2]	per cent	140	159	125	202	**58**	SASB EM-MD-540a.2
Number of in-line inspections[1]	number	277	279	313	323	**288**	
Length of in-line inspections[1]	kilometre	21,914	22,091	24,890	30,895	**23,019**	
Completed integrity digs	number	936	1,133	846	865	**841**	
Investment in integrity programs							
Investment in pipeline integrity programs[3]	dollars (billions)	1.1	1.3	1.3	1.5	**1.4**	

[1] The pipeline integrity inspection program will vary to some degree from year-to-year based on several factors, which include performing inspections based on our annual system wide risk assessments of our pipeline system as well performing the prescribed regulatory inspections. The intervals for regulatory inspections vary depending on the regulatory jurisdiction.
[2] Values over 100 % indicate that some pipeline sections were inspected multiple times using different technologies.
[3] Pipeline integrity spending will fluctuate based on the results of annual risk assessments conducted on our pipeline systems and evaluations of information obtained from recent inspections, incidents and maintenance activities.

Asset integrity and process safety incidents

Commitment: Zero is Real

UN SDGs:

We believe Zero is real, and today—for us—Zero means: ***All harm, loss and incidents are preventable.***

In line with this commitment, we believe that expanding our voluntary reporting to include incidents across our diverse asset base, beyond our pipelines, is the right thing to do. We have chosen to report on Tier 1 and Tier 2 process safety incidents, guided by CSA Z260 - an industry-wide standard. To support transparency against previously disclosed targets we have retained the significant process safety incidents indicator, which is specific to TC Energy.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Process safety incidents							
Significant process safety incidents[1]	number	N/A	N/A	4	0	0	
Tier 1 process safety incidents[2]	number	N/A	N/A	N/A	14	5	
Tier 2 process safety incidents[3]	number	N/A	N/A	N/A	22	11	
Reportable gas releases							
Number of reportable gas releases[4]	number	37	37	50	69	59	
Volume of reportable gas releases[5]	cubic metres	4,538,083	2,222,034	6,383,452	16,771,363	5,121,426	
Hydrocarbon spills							
Number of hydrocarbon spills[6]	number	N/A	N/A	4	9	2	SASB EM-MD-160a.4
Volume of hydrocarbon spills[7]	bbl	N/A	N/A	4,847	750	5	SASB EM-MD-160a.4
Volume of hydrocarbon spills: in unusually sensitive areas[8]	bbl	N/A	N/A	0	0	0	SASB EM-MD-160a.4
Volume of hydrocarbon recovered[9]	bbl	N/A	N/A	4,847	690	5	SASB EM-MD-160a.4
Third-party incidents							
One Calls per 1,000 km of right-of-way[10]	number	5,810	6,620	5,820	4,790	4,865	
Unauthorized pipeline encroachments per 1,000 km of right-of-way[11]	number	3.93	3.42	4.64	2.36	3.53	
Unauthorized excavations per 1,000 km of right-of-way[12]	number	1.68	1.46	1.90	1.56	1.31	

1 Significant process safety incidents are defined by TC Energy as unplanned or uncontrolled spills or releases that result in major consequences to people or the environment. They are a subset of Tier 1 process safety incidents. In evaluating the severity of the incident, we also consider the potential risk of legal, financial or reputational impacts to our company.

2 Tier 1 process safety incidents are unplanned or uncontrolled releases that result in either greater consequences and/or higher release volumes. These incidents may result in a serious injury to a person, an officially declared community evacuation or shelter in place order, a fire or an explosion. Our reporting of Tier 1 incidents is guided by CSA Z260, an industry wide standard.

3 Tier 2 process safety incidents are unplanned or uncontrolled releases with lesser consequences. These incidents may result in a recordable injury to a person, a fire or explosion that can be contained and extinguished with little to no damage, or localized environmental damage. Our reporting of Tier 2 incidents is guided by CSA Z260, an industry wide standard.

4 A reportable release is defined as one that is reportable to an external agency or authority, such as a federal, provincial or state regulator. Thresholds for reporting of gas releases are lower in the U.S. than Canada with respect to the cost of damage to operators and/or adjacent facilities. In the U.S., a release resulting in damages of $50,000 to the operator is considered a reportable release. In Canada, a release resulting in damages of $50,000 is below the reporting threshold for a reportable release.

5 Reporting thresholds are variable depending on jurisdiction and therefore releases are not wholly comparable by jurisdiction or year over year.

6 Hydrocarbon spills are defined as an unintentional release of liquid hydrocarbons, in excess of one barrel, to the environment and that is reportable to an authority. Releases from the company's operating assets (e.g., pipeline, storage tank, process facility) are included in this disclosure while releases from construction equipment and vehicles are excluded.

7 Hydrocarbon spill volume represents the total estimated amount spilled that reached the environment and is not reduced by the amount of such hydrocarbon subsequently recovered, evaporated or otherwise lost.

8 An unusually sensitive area (USA) in this metric means a drinking water or ecological resource area that is unusually sensitive to environmental damage from a hazardous liquid pipeline release.

9 The volume of spill recovered represents the spilled hydrocarbons removed from the environment through short-term spill response activities, excluding amounts recovered during longer term remediation at spill sites and amounts that evaporated, burned or were dispersed.

10 Local One Call centres field requests to have all underground utilities located and marked free of charge, prior to any commercial or residential project involving digging. These requests are received via telephone or online. Historical data for One Calls per 1,000 km of right-of-way were previously reported per kilometer. Data from 2017-2020 have been reissued to accurately reflect the indicator definition of One Calls per 1,000 km of right-of-way.

11 TC Energy defines unauthorized encroachments as those that include activities carried out without authorization from local One Call centres.

12 TC Energy defines unauthorized excavations as those that include more serious activities than other encroachments, with greater potential to cause impact or exposure that would result in a need to repair an underground facility.

Emergency preparedness and response

Commitment: Zero is Real

UN SDGs:

Emergency preparedness is the foundation that supports our response activities. Preparedness includes hazard identification, risk assessments, response plans, training programs, exercises and public awareness elements of emergency management that considers the needs of TC Energy, its employees and the community at large as well as regulatory and legislative requirements.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Emergency preparedness and response exercises							
Total exercises completed	number	172	196	192	171	211	
Annual field exercises	number	23	26	28	12	19	
Tabletop exercises	number	137	159	146	151	159	
Equipment deployment exercises	number	12	11	8	0[1]	10	
Additional exercises	number	0	0	10	8	23	
Emergency preparedness and response training							
First responder training[2]	number	253	510	747	1,429	1,999	
Incident Command System training[3]	number	2,548	3,387	4,797	4,321	4,107	

[1] Equipment deployment exercises are required on a three-year cycle and involve the physical deployment of spill response equipment and a large personnel response. In 2020 it was determined that these exercises would not be held to ensure the safety of employees, the public and to follow federal, state and local health guidelines in place due to COVID-19, with no compliance impacts.

[2] Personnel that could be the first on the scene of an emergency event are profiled to complete the First Responder Training course. This is a specialized training course on how to assess, respond and activate the emergency management system in an emergency event as the first company representative on site.

[3] The Incident Command System (ICS) is a standardized on-site management system designed to enable effective and efficient emergency response. This system is used across North America and is the standard response system within multiple industries and public safety response organizations.

Finding solutions to create shared prosperity

A thriving economy

[Commitment: Strengthening community resilience]

[Commitment: Enhancing energy sector sustainability with technology]

UN SDGs:

UN SDGs:

We're proud of the role we've played in empowering businesses and families for more than 70 years and we know the world's appetite for safe, reliable and affordable energy continues to grow. The crux of our challenge in a changing energy landscape is to safely deliver the energy the world needs in an economically, environmentally and socially responsible manner. We are well positioned to deliver on that challenge by investing in a balanced and sustainable energy future.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Direct economic value generated and distributed							
Direct economic value generated	dollars (billions)	13,449	13,679	13,255	12,999	13,387	GRI 201-1
Economic value distributed: operating costs	dollars (millions)	N/A	2,088	2,262	2,213	2,467	GRI 201-1
Economic value distributed: employee wages and benefits	dollars (millions)	N/A	1,505	1,651	1,665	1,631	GRI 201-1
Economic value distributed: payments to providers of capital	dollars (millions)	3,952	4,308	4,439	5,643	5,779	GRI 201-1
Economic value distributed: payments to government	dollars (millions)	816	907	1,437	1,205	1,282	GRI 201-1
Economic value distributed: payments to governments in Canada	dollars (millions)	N/A	429	466	555	438	
Economic value distributed: payments to governments in the U.S.	dollars (millions)	N/A	533	1,217	625	758	
Economic value distributed: payments to governments in Mexico	dollars (millions)	N/A	23	45	25	86	
Economic value distributed: community investments	dollars (millions)	15	24	30	29	23	GRI 201-1
Economic value retained	dollars (millions)	4,760	4,847	3,436	2,244	2,204	GRI 201-1
Technology and innovation spend							
R&D program spend	dollars (millions)	N/A	N/A	N/A	7	10[1]	
Capital and operating optimization and revenue opportunities achieved[2]	dollars (millions)	N/A	N/A	13	23	47	
Political contributions							
Political contributions made by TC Energy Corporation in Canada[3]	dollars	22,500	5,150	6,000	5,000	0	GRI 415-1
Political contributions made by TC Energy U.S. subsidiaries[4]	dollars	19,463	84,240	0	0	243,180	GRI 415-1
Political contributions made by TC PAC, a separate segregated fund in the U.S.[5]	dollars	392,753	274,495	270,270	387,750	300,812	GRI 415-1
Competitive behaviour							
Total monetary losses that relate to violations of regulations governing competitive behaviours[6]	dollars	N/A	N/A	641,000	0	0	SASB EM-MD-520a.1
Significant environmental fines[5]							
Number of significant environmental fines[7]	number	0	2	0	2	2	GRI 307-1
Value of significant environmental fines[8]	dollars	0	175,942	0	253,429	916,421	GRI 307-1

[1] The 2021 spend of $9.6 million includes $2.4 million of corporate membership fees paid to associations with a research and/or technology focus; however, this similar amount for 2020 was included separate from the TIMO R&D Program spend.

[2] This optimization indicator includes cost avoidance, savings and incremental revenue gains realized within the reporting period for two specific programs. Our Canadian Natural Gas Pipelines business unit has an optimization initiative that leverages data and algorithms to identify operational issues and optimize maintenance, balancing cost, reliability, integrity and commercial needs. Another initiative is driving a systematic approach to improve efficiencies across our U.S. Natural Gas Pipelines business unit. Additionally, similar initiatives may be made in the future and would be reported accordingly.

[3] Political contributions by corporations are not permitted in most jurisdictions in Canada. Corporate political contributions are permissible in Saskatchewan; however, TC Energy did not make any contributions in that province in 2021 due to the COVID-19 pandemic and event cancellations.

[4] Political contributions in the U.S. were made by U.S. subsidiaries of TC Energy or the TC PAC. Variance from 2018 onwards reflects the shift away from U.S. subsidiary contributions in favor of making political contributions through the TC PAC. This was due in part to leaders requesting a uniform contribution policy across the various state jurisdictions in which we operate.

[5] The TransCanada USA Services Inc. Political Action Committee (TC PAC) is a separate segregated fund (SSF) established under U.S. federal election law by TransCanada USA Services Inc., a U.S. subsidiary of TC Energy. The TC PAC is funded solely through contributions from U.S. employees. In many cases, amounts such as receipts, disbursements and cash on hand differ from what we report internally to what is found on FEC. This is because the FEC also records disbursements that include bank fees, registration fees and voided checks from the prior year. The 2021 value has been reissued to align with current best available data and reflects a U.S./Canada foreign exchange rate of 1.25 as per the 2021 Annual Report. The PAC is directed entirely out of the United States, by U.S. residents.

[6] The total amount of monetary losses incurred during the reporting period as a result of legal proceedings associated with alleged breaches of regulations governing competitive behaviour.

[7] A significant environmental fine is a fine or penalty of >$5,000 that is paid to a regulatory agency within the reporting year. In some cases, the year the fine was paid may differ from the year the fine was issued.

[8] Columbia Gas Transmission received a draft Consent Order from the WV DEP in February 2020 on the Mountaineer Xpress Project. The Consent Order was finalized in 2021 and a fine of $670,031 USD was issued in October 2021. Columbia Gas Transmission received a Consent Order from the WV DEP in September 2021 on the Mountaineer Xpress Project. A fine was issued to the company of $51,560 USD. Currency converted to CAD based on 1.25 exchange rate as of Dec. 31, 2021 as per Annual Report.

Supplier diversity

Commitment: Strengthening community resilience

UN SDGs:

Our Supplier Diversity program enhances opportunities for diverse, local and Indigenous communities to participate in our projects and operations. The result is mutually beneficial for both our company and our stakeholders as it expands our access to competitive, innovative, qualified suppliers and creates economic benefits for businesses and individuals. This contributes directly to our sustainability commitments through the use of a supply chain that exemplifies our corporate values.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Supplier diversity[1]							
Tier 1 diverse spend[2]	dollars (millions)	N/A	N/A	N/A	300.8	529.9	
Canadian diverse spend: Tier 1[3]	dollars (millions)	N/A	N/A	N/A	201.1	409.4	
Canadian Indigenous spend: Tier 1[4]	dollars (millions)	17.7	8.6	70.0	189.4	398.5	
U.S. diverse spend: Tier 1[5]	dollars (millions)	N/A	N/A	N/A	99.7	120.5	
U.S. Native American spend: Tier 1	dollars (millions)	0.04	9.5	5.0	5.9	3.8	
Tier 2 diverse spend[6]	dollars (millions)	N/A	N/A	N/A	705.5	906.5	
Canadian diverse spend: Tier 2[3]	dollars (millions)	N/A	N/A	N/A	566.4	840.3	
Canadian Indigenous spend: Tier 2[4]	dollars (millions)	57.8	151.0	380.0	503.0	700.7	
U.S. diverse spend: Tier 2[5]	dollars (millions)	N/A	N/A	N/A	98.5	66.1	
U.S. Native American spend: Tier 2	dollars (millions)	0.01	9.5	2.0	27.4	4.1[7]	

1 While we plan to expand our supplier diversity program to Mexico, including Indigenous suppliers, this is still underway and data is not yet available.
2 Tier 1 spend represents a classification of expenditure data that TC Energy spends directly with prime suppliers and/or general contractors and is directly linked to contractual agreement(s) or purchases.
3 Our diverse spend in Canada includes spend with suppliers who self-identify as Indigenous, visible minorities, women, LGBTQ and/or veterans.
4 Coastal GasLink (CGL) started construction in January 2019. CGL has targets to increase Indigenous spend and saw construction ramp up in 2020 which was continued through 2021. Additionally, there was significant capital project activity in Canada Gas Regulated Projects in 2021.
5 Our diverse spend in the U.S. includes spend with suppliers who self-identify as Native American, Asian-American, Hispanic-American, African-American, women and/or veterans.
6 Tier 2 spend represents expenditures that TC Energy's prime suppliers and/or general contractors spend for services and/or products that directly support TC Energy's business needs. Indirect expenditures may consist of labour, subcontractors, materials and/or expense spend.
7 Decrease is due to the cancellation of Keystone XL in 2021.

Thriving communities

[Commitment: Strengthening community resilience]

UN SDGs:

For more than 70 years, we have worked hard to earn and maintain relationships and uphold our reputation as being a good neighbour, a trusted community partner and an employer of choice. Investing and giving back to communities where we operate has long been a part of that effort. We believe that when we develop and nurture lasting relationships and give back to the communities where we live and work, we will build a stronger future together.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Community investment							
Direct community investment[1]	dollars (millions)	15.1	23.9	29.7	29.1	23.8	GRI 201-1
Indirect community investment[2]	dollars (millions)	N/A	1.8	2.5	3.2	2.8	
Total community investment	dollars (millions)	N/A	25.7	32.1	32.3	26.5	
Community investment directed towards the environment[3]	dollars (millions)	N/A	N/A	N/A	1.0	2.3	
Total community investments as a percentage of pre-tax profits[4]	per cent	N/A	0.5	0.6	0.6	0.6	
External resources leveraged[5]	dollars (millions)	N/A	1.9	2.0	2.7	1.8	
Total value of investment in the community[6]	dollars (millions)	17.0	27.6	34.1	35.0	28.3	
Employee giving & volunteering							
Workforce donations[7]	dollars (millions)	0.9	1.0	1.1	1.6	1.4	
Total corporate donations through the workforce giving program[8]	dollars (millions)	N/A	1.9	2.1	3.9	2.9	
Total volunteer hours logged by employees and contractors	hours	14,736	25,695	36,583	22,567	24,186	
Volunteer hours logged during paid time	hours	2,908	4,438	7,324	1,413	1,714	
Volunteer hours logged during unpaid time	hours	11,828	21,257	29,258	21,154	22,471	
Overall participation in workforce giving program	per cent	N/A	N/A	N/A	84	55	
Local community engagement plans							
Percentage of operations with local community engagement, impact assessments and development programs	per cent	100	100	100	100	100	GRI 413-1

1 Project-related community investment activity was lower than previous years across Canada, the U.S. and Mexico based on project activity.
2 This includes in-kind giving, the value of volunteer hours during paid work time and program management costs.
3 TC Energy is focusing on increasing its environmental spend across Canada, the U.S. and Mexico and on building partnerships that have a positive environmental impact on species and habitats at risk.
4 The total value of TC Energy's community investments as a percentage of revenue. This number can vary depending on how the business performs. The value reported was calculated based on TC Energy's pre-tax profit before taking into account the 2021 Keystone XL asset impairment charge taken on in Q1 2021, related to the formal suspension of Keystone XL.
5 External resources leveraged include community contributions from outside sources that can be directly linked to our involvement such as employee donations and time volunteered during non-working hours or funds matched from governments or other partners.
6 The total value of TC Energy's investments in the community. This includes cash investments, in-kind giving, volunteering during paid working hours, program management costs and community contributions from outside sources that can be directly linked to our involvement.
7 The decrease in donations is an expected result after coming out of the initial pandemic year (2020) which is considered to be an outlier year due to the COVID-19 pandemic and our workforce's heightened use of Empower to provide relief that was unmatched in previous years. This year's results are more aligned with our historic rates but still show an overall increase as a result of the momentum gained in 2020.
8 Total corporate donations through our workforce giving program includes company matching donations, Dollars for Doers, donation credits from TC Energy and corporate donations from Empower directly to causes.

Finding solutions that empower people

Workforce demographics

Commitment: Fostering inclusion and diversity

UN SDGs:

We are committed to building an inclusive and diverse workforce for our 7,000+ employees across Canada, the U.S. and Mexico. Across our footprint, we also support the communities in which we live and work – providing opportunity, purchasing from local businesses and suppliers and partnering with communities to help them be vibrant, prosperous and resilient.

We continually look for opportunities to ensure we are well positioned to continue to meet the needs of our customers and safely deliver the energy millions of North Americans rely on every day, now and in the future. In 2021, we offered a Voluntary Retirement Program to proactively and thoughtfully plan for the workforce demographic changes that we are anticipating. Applying for the program was voluntary and at the discretion of those individuals who were eligible.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Workforce demographics							
Core workforce							
Total	number	**6,771**	**7,094**	**7,387**	**7,358**	7,083	**GRI 102-8**
Canada	number	3,390	3,550	3,728	3,677	3,587	GRI 102-8
U.S.	number	3,112	3,269	3,344	3,355	2,993	GRI 102-8
Mexico	number	269	275	315	326	503	GRI 102-8
Employees represented by independent trade union or covered by collective bargaining agreements	per cent	5	5	5	5	4	GRI 102-41
Leadership[1]							
Total	number	**817**	**864**	**910**	**936**	944	
Executive leadership team	number	9	10	10	9	9	
Contractor workforce							
Total	number	**3,252**	**4,348**	**3,211**	**3,515**	3,466	**GRI 102-8**
Canada	number	1,757	2,190	2,037	2,223	2,409	GRI 102-8
U.S.	number	958	1,744	901	1,081	1,057	GRI 102-8
Mexico	number	537	414	273	211	0[2]	GRI 102-8
New hires (core workforce)							
Total	number	**751**	**899**	**886**	**663**	884	**GRI 401-1**
Canada	number	281	402	417	364	336	GRI 401-1
U.S.	number	385	428	387	257	326	GRI 401-1
Mexico	number	85	69	82	42	222[2]	GRI 401-1
Women	per cent	26	31	29	32	32	GRI 401-1
Core workforce turnover							
Overall turnover rate	per cent	15	7	8	10	16	
Canada	per cent	8	6	7	11	11	GRI 401-1
U.S.	per cent	21	7	9	8	22[3]	GRI 401-1
Mexico	per cent	10	10	15	9	10	GRI 401-1
Women	per cent	12	8	8	9	16[3]	GRI 401-1
Men	per cent	15	7	8	10	14	GRI 401-1
Voluntary turnover rate[4]	per cent	4	5	5	4	11[3]	GRI 401-1
Involuntary turnover rate[5]	per cent	11	2	3	6	5	GRI 401-1

[1] Our leadership includes core workforce employees classified as leaders and above.
[2] Due to Mexico labour reform in 2021, we converted our contractors to core employees.
[3] Increase is due to Voluntary Retirement Program.
[4] Voluntary turnover includes employees who retired or resigned from employment at TC Energy.
[5] Involuntary turnover includes divestitures, severances, discharges and layoffs.

Workforce diversity

Commitment: Fostering inclusion and diversity

UN SDGs:

We believe our workforce should reflect the communities in which we live and work. From head office to our field operations, we actively seek out a wide range of candidates for all positions because diverse backgrounds, opinions and skills strengthen our teams, drive innovation and enhance a performance culture. We actively strive to promote a culture of inclusion, where there is sense of belonging, we have a respectful workplace and encourage employees to reach their full potential.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Inclusion and diversity[1]							
Gender							
Women; core workforce	per cent	28	28	28	29	30	GRI 405-1
Women; contractor workforce	per cent	27	23	26	26	24	GRI 405-1
Women; leadership	per cent	26	27	28	30	32	GRI 405-1
Women; leadership positions in our corporate locations[2]	per cent	N/A	32	34	34	36[3]^	GRI 405-1
Visible minorities in leadership							
Visible minorities in leadership positions across our Canadian and U.S. workforce	per cent	N/A	12	13	13	14	GRI 405-1
Protected groups by jurisdiction							
Canadian core workforce							
Women	per cent	36	37	37	38	38	GRI 405-1
Indigenous[3]	per cent	2	3	2	3	3	GRI 405-1
Persons with disabilities	per cent	3	3	3	3	3	GRI 405-1
Visible minorities[4]	per cent	22	21	21	23	24	GRI 405-1
U.S. core workforce							
Women	per cent	19	19	19	19	19	GRI 405-1
Minorities[5]	per cent	13	13	13	14	14	GRI 405-1
Individuals with disabilities	per cent	2	3	3	3	2	GRI 405-1
Veterans	per cent	6	6	6	6	5	GRI 405-1
Mexican core workforce							
Women	per cent	28	30	27	28	31	GRI 405-1
Inclusion and diversity training							
Leaders and employees trained on how to recognize and mitigate unconscious bias and how to create and sustain an inclusive workplace	per cent	N/A	N/A	N/A	58	99	

1 Diversity data is categorized by protected groups as defined by regional compliance requirements: in Canada under the Employment Equity Act and in the U.S. as a condition of the Office of Federal Contract Compliance Programs. There are no such compliance requirements in Mexico, however, we track and voluntarily report Mexico gender workforce representation.
2 Leadership positions in our corporate locations of Calgary, Houston, Charleston and Mexico City.
3 TC Energy has obtained independent limited assurance of this indicator for the year ended December 31, 2021.
4 In Canada, Indigenous groups are reported separately from visible minorities.
5 In the U.S., American Indians and Alaska Natives are included in minorities reporting.

Occupational safety, health and industrial hygiene

Commitment: Zero is Real

UN SDGs:

Our commitment to safety isn't just a mantra – it's how we work 24/7, 365 days a year. By reinforcing a disciplined set of rules and providing rigorous training, we aim to ensure all employees and contractors make it home safely every day.

Indicator	Unit	2017	2018	2019	2020	2021	Related framework indicator ID
Core workforce							
Employee fatalities[1]	number	1	0	0	1	1	GRI 403-9
Employee recordable case rate[2]	recordable cases per 200,000 hours worked	0.59	0.58	0.42	0.50	0.49	GRI 403-9
Employee away-from-work case rate[3]	away from work cases per 200,000 hours worked	0.19	0.16	0.10	0.07	0.20	GRI 403-9
Employee high potential incident rate[4]	high potential incidents per 200,000 hours worked	0.16	0.42	0.30	0.29	0.35	GRI 403-9
Employee vehicle incident frequency[5]	vehicle incidents per 1,000,000 km driven	2.07	1.84	1.94	1.55	1.57	
Contractor workforce							
Contractor fatalities[1]	number	0	0	0	0	0	GRI 403-9
Contractor recordable case rate[2]	recordable cases per 200,000 hours worked	0.95	0.99	1.13	0.64	0.87	GRI 403-9
Contractor away-from-work case rate[3]	away from work cases per 200,000 hours worked	0.10	0.15	0.11	0.09	0.15	GRI 403-9
Contractor high potential incident rate[4]	high potential incidents per 200,000 hours worked	0.55	0.93	0.74	0.60	0.68	GRI 403-9
Contractor vehicle incident frequency[5]	vehicle incidents per 1,000,000 km driven	2.45	2.41	1.80	1.38	1.31	
Employee absences							
Casual absence rate[6]	average number of days absent per employee per year	1.89	1.84	1.81	1.40	0.99	
Short-term disability absence rate[7]	average number of days absent per employee per year	2.51	2.15	2.27	2.20	2.66	
Workers compensation absence rate[8]	average number of days absent per employee per year	0.09	0.07	0.05	0.03	0.03	
Total employee absence rate[9]	average number of days absent per employee per year	4.49	4.06	4.13	3.63	3.68	

[1] ESG Data Sheet is timebound from Jan. 1, 2021 to Dec. 31, 2021, including one employee fatality. Note that 2022 Report on Sustainability references two fatalities; one employee in 2021 and one contractor in 2022.

[2] TC Energy defines total recordable case rate as the number of recordable cases related to a common exposure base of 200,000 hours (100 full-time employees). Recordable cases are all work-related deaths and illnesses, and those work-related injuries that result in a loss of consciousness, restriction of work or motion, transfer to another job or require medical treatment beyond first aid.

[3] TC Energy defines away-from-work case rate as an incident resulting in an injury or illness that prevents an employee from returning to work on the next scheduled shift. The number of away-from-work cases, where the employee would have worked but could not because of an occupational injury or illness, is related to a common exposure base of 200,000 hours (100 full-time workers).

[4] TC Energy defines high potential incidents as incidents with a high potential to result in a serious, debilitating injury to the worker related to a common exposure base of 200,000 hours (100 full-time employees). Examples of high potential incidents include, but are not limited to, high-speed vehicle incidents, vehicle rollovers, high-voltage or high-pressure incidents, injuries to the head and falls from heights.

[5] TC Energy defines vehicle incident frequency rate as the number of recordable vehicle incidents related to a common exposure base of 1,000,000 km driven. A recordable vehicle incident is any incident (regardless of fault) involving a fleet, rental motor vehicle, or a personal vehicle being used for TC Energy business which results in an injury to any person or damage to any vehicle or property, unless the vehicle was safely and properly parked at the time of the incident.

[6] On Aug. 1, 2021, TC Energy updated the definition of casual absence to when an employee is unfit for work for up to five consecutive work shifts due to a non-work related illness or injury. Previously, TC Energy defined casual absence as when an employee was unable to work for up to 36 continuous work hours.

[7] On Aug. 1, 2021, TC Energy updated the definition of short-term disability (STD) as a medical absence lasting longer than five consecutive work shifts away from work due to a non-occupational illness or injury. Previously, TC Energy defined short-term disability absences as a medical absence lasting more than 36 consecutive hours away from work. Short-term disability is a company-funded income continuance program from which qualifying employees can derive income replacement for a non-work-related illness or injury from the first day to 26 weeks of absence.

[8] TC Energy defines Workers' Compensation Board (WCB) absences as a work-related illness or injury requiring medical aid and/or medical absence of more than a day, involving a provincial or state company-sponsored income replacement program operated through the various provincial or state workers' compensation boards or U.S. insurance carriers.

[9] TC Energy defines the average number of days absent per employee as the sum of the casual absence rate, STD absence rate and WCB absence rate.

Table of alignment with the TCFD recommendations

Recognizing the value of environmental, social and governance (ESG) reporting frameworks such as the Task Force on Climate-Related Financial Disclosure (TCFD), the concordance table shown below demonstrates the relationship between TC Energy's sustainability reporting and *Implementing the Recommendations of the Task Force on Climate-Related Financial Disclosures Final Report (October 2021).*

Topic and recommended content	Select TC Energy material
Governance	
a) Describe the Board's oversight of climate-related risks and opportunities	2022 ESG Data Sheet; governance, page 5 2021 Annual Report; page 96 2022 Management Information Circular; page 47-49, 64, 66, 71 2021 Annual Information Form; page 21-22 CEO Terms of Reference Board of Directors Terms of Refence 2022 CDP climate change questionnaire response; C1.1b
b) Describe management's role in assessing and managing climate-related risks and opportunities	2022 ESG Data Sheet; governance, page 5 2021 Annual Report; page 96 2022 Management Information Circular; page 47-48, 64 2022 CDP climate change questionnaire response; C1.2, C1.2a
Strategy	
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term	2022 ESG Data Sheet; strategy – risks and opportunities table, page 13 2021 Annual Report; page 7, 94 2022 Management Information Circular; page 71 2021 Annual Information Form; page 21-22 2022 CDP climate change questionnaire response; C2.1a, C2.3, C2.3a, C2.4, C2.4a
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning	2022 ESG Data Sheet; strategy, page 12 2021 Annual Report; page 94 2022 CDP climate change questionnaire response; C2.3a, C2.4a, C3.1, C3.2b, C3.3, C3.4
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, include a 2°C or lower scenario	2021 ESG Data Sheet; strategy – climate-related energy scenario analysis, page 19 2021 Annual Report; page 17, 94, 98, 102, 186 2022 CDP climate change questionnaire response; C3.2, C3.2a, C3.2b
Risk management	
a) Describe the organization's processes for identifying and assessing climate-related risks	2022 ESG Data Sheet; risk management - ERM, page 20 2021 Annual Report; page 94 2022 Management Information Circular; page 47-48, 64 2021 Annual Information Form; page 21-22 2022 CDP climate change questionnaire response; C2.1, C2.2, C2.2a
b) Describe the organization's processes for managing climate-related risks	2022 ESG Data Sheet; risk management - TOMS, page 21 2021 Annual Report; page 94 2022 Management Information Circular; page 47-48 2022 CDP climate change questionnaire response; C2.1, C2.2
c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	2022 ESG Data Sheet; risk management - ERM, page 20 2021 Annual Report; page 94, 98 2022 Management Information Circular; page 47-48 2022 CDP climate change questionnaire response; C2.1, C2.2
Metrics and targets	
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	2022 ESG Data Sheet; performance data tables, page 26 2022 ESG Data Sheet; climate-related metrics and targets, page 22 2021 Annual Report; page 94 2022 CDP climate change questionnaire response; C4.2, C4.2a, C4.2b, C9.1 GHG Emissions Reduction Plan
b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions and the related risks	2022 ESG Data Sheet; performance data tables, page 26 2022 CDP climate change questionnaire response; Section 6, Section 7
c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	2022 Report on Sustainability; Embracing the energy transition commitment and targets, page 16 2021 Annual Report; page 94 2022 Management Information Circular; page 6, 65 2022 CDP climate change questionnaire response; Section 4 GHG Emissions Reduction Plan

Table of alignment with the SASB standards

Recognizing the value of environmental, social and governance (ESG) reporting standards such as the Sustainability Accounting Standards Board (SASB), the concordance table shown below demonstrates the relationship between TC Energy's sustainability reporting and the SASB Oil & Gas - Midstream industry standard (October 2018). For a limited number of metrics, non-standard measures are required and we have disclosed similar indicators in alignment with internal standards.

Topic and accounting metric	Indicator ID	Select TC Energy material
Greenhouse gas emissions		
Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations	EM-MD-110a.1	2022 ESG Data Sheet; performance data tables, page 26 2022 CDP climate change questionnaire response; C6.1, C-OG6.12, C-OG6.13, C7.1a
Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	EM-MD-110a.2	2022 Report on Sustainability; embracing the energy transition commitment and targets, page 16 2022 ESG Data Sheet; strategy, page 12 2022 CDP climate change questionnaire response; C4 GHG Emissions Reduction Plan
Air quality		
Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs) and (4) particulate matter (PM_{10})	EM-MD-120a.1	2022 ESG Data Sheet; performance data tables, page 36
Ecological impacts		
Description of environmental management policies and practices for active operations	EM-MD-160a.1	2021 Annual Report; environmental risk, compliance and liabilities, page 97 TCEnergy.com; Commitment Statement, Environment principles 2022 Report on Sustainability, integrating sustainability, page 28 2022 ESG Data Sheet; TOMS, page 21 2022 CDP climate change questionnaire response; C15.4, C15.6
Percentage of land owned, leased and/or operated within areas of protected conservation status or endangered species habitat	EM-MD-160a.2	2022 ESG Data Sheet; performance data tables, page 38
Terrestrial acreage disturbed, percentage of impacted area restored	EM-MD-160a.3	2022 ESG Data Sheet; performance data tables, page 38
Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume in unusually sensitive areas (USAs) and volume recovered	EM-MD-160a.4	2022 ESG Data Sheet; performance data tables, page 42
Competitive behaviour		
Total amount of monetary losses as a result of legal proceedings associated with federal pipeline and storage regulations	EM-MD-520a.1	2022 ESG Data Sheet; performance data tables, page 46 *Note: TC Energy interprets this indicator as representing the total amount of monetary losses incurred during the reporting period as a result of legal proceedings associated with alleged breaches of regulations governing competitive behaviour.*
Operational safety, emergency preparedness & response		
Number of reportable pipeline incidents, percentage significant	EM-MD-540a.1	Please note this indicator requests information on pipeline incidents only. To transparently communicate integrity incidents related to our diverse asset base, including our power and storage facilities, we have chosen to publicly report on Tier 1 and Tier 2 process safety incidents guided by industry standard CSA Z260. TC Energy believes this approach is congruent with the intent of SASB EM-MD-540a.1 to promote increased, comparable reporting of integrity incidents. Tier 1 and Tier 2 process safety incidents are reported in our 2022 ESG Data Sheet. 2022 ESG Data Sheet; performance data tables, page 42
Percentage of (1) natural gas and (2) hazardous liquid pipelines inspected	EM-MD-540a.2	2022 ESG Data Sheet; performance data tables, page 40
Number of (1) accidents releases and (2) non-accident releases (NARs) from rail transportation	EM-MD-540a.3	Not applicable to TC Energy's operations.
Discussion of management systems used to integrate a culture of safety and emergency preparedness throughout the value chain and throughout project life cycles	EM-MD-540a.4	2022 Report on Sustainability; Zero is real commitment and targets, page 20 2022 Report on Sustainability; mental health and psychological safety commitment and targets, page 38 TCEnergy.com; Commitment Statement
Activity metric		
Total metric ton kilometers of: (1) natural gas, (2) crude oil and (3) refined petroleum products transported, by mode of transport	EM-MD-000.A	2022 ESG Data Sheet; performance data tables, page 24 *Note: TC Energy does not report activity in these units.*

Table of alignment with the United Nations Sustainable Development Goals

We support the United Nations Sustainable Development Goals (UN SDGs) and have identified the SDGs that are most relevant to our business and where we can make our greatest contributions. These global goals serve as a framework to orient our sustainability commitments, targets and progress. We consider it essential to cooperate with other organizations, to align our efforts behind UN SDG 17.

Commitment	UN SDG
Finding solutions that protect our planet	
Embracing the energy transition 2022 Report on Sustainability; page 16 2022 ESG Data Sheet; page 26	UN SDG 3 – Good Health and Well-being UN SDG 7 – Affordable and Clean Energy UN SDG 13 – Climate Action UN SDG 17 – Partnerships for the Goals
Leaving the environment as we found it 2022 Report on Sustainability; page 18 2022 ESG Data Sheet; page 38	UN SDG 3 – Good Health and Well-being UN SDG 6 – Clean Water and Sanitation UN SDG 12 – Responsible Consumption and Production UN SDG 15 – Life on Land UN SDG 17 – Partnerships for the Goals
Zero is real 2022 Report on Sustainability; page 20 2022 ESG Data Sheet; page 40	UN SDG 3 – Good Health and Well-being UN SDG 8 – Decent Work and Economic Growth UN SDG 13 – Climate Action
Finding solutions to create shared prosperity	
Strengthening community resilience 2022 Report on Sustainability; page 24 2022 ESG Data Sheet; page 46	UN SDG 3 – Good Health and Well-being UN SDG 4 – Quality Education UN SDG 10 – Reduced Inequalities UN SDG 12 – Responsible Consumption and Production UN SDG 17 – Partnerships for the Goals
Integrating sustainability 2022 Report on Sustainability page 28	UN SDG 12 – Responsible Consumption and Production UN SDG 16 – Peace, Justice and Strong Institutions
Enhancing energy sector sustainability with technology 2022 Report on Sustainability; page 26 2022 ESG Data Sheet; page 46	UN SDG 7 – Affordable and Clean Energy UN SDG 9 – Industry, Innovation and Infrastructure UN SDG 17 – Partnerships for the Goals
Finding solutions that empower people	
Fostering relationships with Indigenous groups 2022 Report on Sustainability; page 32	UN SDG 4 – Quality Education UN SDG 10 – Reduced Inequalities UN SDG 11 – Sustainable Cities and Communities UN SDG 17 – Partnerships for the Goals
Focus on landowner relationships 2022 Report on Sustainability; page 35 2022 ESG Data Sheet; page 38	UN SDG 15 – Life on Land UN SDG 17 – Partnerships for the Goals
Fostering inclusion and diversity 2022 Report on Sustainability; page 36 2022 ESG Data Sheet; page 52	UN SDG 4 – Quality Education UN SDG 5 – Gender Equality UN SDG 8 – Decent Work and Economic Growth UN SDG 17 – Partnerships for the Goals
Focus on mental health 2022 Report on Sustainability; page 38	UN SDG 3 – Good Health and Well-being UN SDG 4 – Quality Education

WE WANT TO HEAR FROM YOU!

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