Module: Introduction

Page: Introduction

CC0.1 Introduction

Please give a general description and introduction to your organization.

With over 65 years of experience, TransCanada 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.

We operate in three core businesses – Natural Gas Pipelines, Liquids Pipelines and Energy. As a result of our acquisition of Columbia Pipeline Group, Inc. (CPG) on July 1, 2016 and the pending monetization of the U.S. Northeast power business, we have determined that a change in our operating segments is appropriate. Accordingly, we consider ourselves to be operating in the following segments: Canadian Natural Gas Pipelines, U.S. Natural Gas Pipelines, Mexico Natural Gas Pipelines, Liquids Pipelines and Energy. This provides information that is aligned with how management decisions about our business are made and how performance of our business is assessed. We also have a non-operational Corporate segment consisting of corporate and administrative functions that provide governance and other support to our operational business segments.

Our $88 billion portfolio of energy infrastructure assets meets the needs of people who rely on us to deliver their energy safely and reliably every day. We operate in seven Canadian provinces, 38 U.S. states and Mexico.

CC0.2 Reporting Year

Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year. Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Fri 01 Jan 2016 - Sat 31 Dec 2016

CC0.3 Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
Canada
United States of America
Mexico

CC0.4 Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

CAD ($)

CC0.6 Modules

As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.
If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below in CC0.6.

Further Information

Throughout this CDP Climate Change report, the terms, we, us, our, TC, the Company and TransCanada mean TransCanada Corporation and its subsidiaries. Abbreviations and acronyms that are not defined in the document are defined in the glossary on page 118 of the TransCanada 2016 Annual Report. All information is as of December 31, 2016 and all amounts are in Canadian dollars, unless noted otherwise. FORWARD-LOOKING INFORMATION We disclose forward-looking information to help current and potential investors understand management's assessment of our future plans and financial outlook, and our future prospects overall. Statements that are forward-looking are based on certain assumptions and on what we know and expect today and generally include words like anticipate, expect, believe, may, will, should, estimate or other similar words. Forward-looking statements in this CDP Climate Change include information about the following, among other things: • planned changes in our business including the divestiture of certain assets • our financial and operational performance, including the performance of our subsidiaries • expectations or projections about strategies and goals for growth and expansion • expected cash flows and future financing options available to us • expected dividend growth • expected costs for planned projects, including projects under construction, permitting and in development • expected schedules for planned projects (including anticipated construction and completion dates) • expected regulatory processes and outcomes • expected impact of regulatory outcomes • expected outcomes with respect to legal proceedings, including arbitration and insurance claims • expected capital expenditures and contractual obligations • expected operating and financial results • the expected impact of future accounting changes, commitments and contingent liabilities • expected industry, market and economic conditions. 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 CDP Climate Change. Our forward-looking information is based on the following key assumptions, and subject to the following risks and uncertainties: Assumptions • planned monetization of our U.S. Northeast power business • inflation rates, commodity prices and capacity prices • nature and scope of hedging • regulatory decisions and outcomes • the Canadian dollar to U.S. dollar exchange rate remains at or near current levels • interest rates • tax rates • planned and unplanned outages and the use of our pipeline and energy assets • integrity and reliability of our assets • access to capital markets • anticipated construction costs, schedules and completion dates. Risks and uncertainties • our ability to realize the anticipated benefits from the acquisition of Columbia Pipeline Group, Inc. (Columbia) • timing and execution of our planned asset sales • our ability to successfully implement our strategic initiatives • whether our strategic initiatives will yield the expected benefits • the operating performance of our pipeline and energy assets • amount of capacity sold and rates achieved in our pipeline businesses • the availability and price of energy commodities • the amount of capacity payments and revenues we receive from our energy business • regulatory decisions and outcomes • outcomes of legal proceedings, including arbitration and insurance claims • performance and credit risk of our counterparties • changes in market commodity prices • changes in the political environment • changes in environmental and other laws and regulations • competitive factors in the pipeline and energy sectors • construction and completion of capital projects • costs for labour, equipment and materials • access to capital markets • interest, tax and foreign exchange rates • weather • cyber security • technological developments • economic conditions in North America as well as globally. You can read more about these factors and others in reports we have filed with Canadian securities regulators and the SEC. Our CDP Climate Change response includes disclosure of risks and opportunities that are not “material” as that term is defined under applicable securities law and guidance. 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. FOR MORE INFORMATION See Supplementary information beginning on page 195 of our 2016 Annual Report for other consolidated financial information on TransCanada for the last five years. You can also find more information about TransCanada in our annual information form and other disclosure documents, which are available on SEDAR (www.sedar.com).

Module: Management

Page: CC1. Governance

CC1.1 Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a Please identify the position of the individual or name of the committee with this responsibility

i) Job title: Board of Directors and President and Chief Executive Officer (CEO)
ii) Position in corporate structure: The President and CEO is a member of TransCanada's Board of Directors. The President and CEO is responsible for our overall leadership and vision in developing with our Board of Directors our strategic direction, values and business plans. This includes overall responsibility for operating and growing our business while managing risk to create long-term sustainable value for our shareholders.

CC1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Corporate executive team	Monetary reward	Other: Risk reduction	All members of the executive leadership team were responsible for the corporate key performance areas (KPAs). One KPA was maximizing value of the existing asset base. Indicators for this KPA include but are not limited to risk reduction. Our executive leadership team is accountable for developing and implementing risk management plans and actions, and effective risk management is reflected in their compensation. Our main environmental risks include but are not limited to changing regulations and costs associated with our emissions of air pollutants and GHGs and conformance and compliance with corporate and regulatory policies and requirements and new regulations. Compliance includes certain assets covered by GHG emission programs such as carbon pricing with emissions reduction targets.

Further Information

Page: CC2. Strategy

CC2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	GHG related policies and regulations in all jurisdictions within which TransCanada operates or that are of strategic interest are monitored, assessed and communicated internally to inform our climate change risk and opportunity management strategy. This process focuses on Canada, the United States, Mexico and sub-national levels such as provinces, states and regions. We also regularly track global climate change policy and energy issues.	> 6 years	TransCanada has an internal, multi-disciplinary team that continuously refines the Company's strategy for managing climate change risks and opportunities. This group is responsible for monitoring, assessing and communicating the climate change policy and regulatory context over the near, medium and long-term. The team is responsible for providing updates to the Board and Executives on policy and asset risks. The HSE Committee of the Board of Directors (BOD) has Climate Change and Air Emissions as a standing agenda item, requiring policy and legislative updates by climate policy, commercial and GHG reporting advisors.

CC2.1b Please describe how your risk and opportunity identification processes are applied at both company and asset level

Company level risk and opportunity identification processes:
The Health, Safety and Environment (HSE) committee of TransCanada's Board of Directors (the Board) oversees operational risk, people and process safety, security of personnel and environmental risks, and monitors compliance with our HSE corporate policy through regular reporting from management. We have a management system that establishes a framework for managing HSE issues that is used to capture, organize, document, monitor and improve our related policies, programs and procedures. It follows a continuous improvement cycle organized into four key areas: planning, implementing, reporting and action.

Through implementing our Environment Program, we continually monitor our facilities to ensure compliance with all environmental requirements. We routinely monitor proposed changes in environmental (including climate change-related) policy, legislation and regulation, and where the risks are potentially large or uncertain, we comment on proposals independently or through industry associations. Early identification of issues allows the Company to develop strategies for understanding and mitigating impacts.

Asset level risk and opportunity identification processes:
TransCanada monitors and actively participates in climate change issue and policy developments through several avenues including but not limited to government meetings, industry association groups, multi-stakeholder policy forums, publications and consultant policy update reports who monitor regulatory developments. As these developments occur, an internal, multi-disciplinary team assesses the implications for the Company's assets. Certain operating segments have established personnel that are responsible for the risk management associated with GHG emissions for associated assets.

CC2.1c How do you prioritize the risks and opportunities identified?

Process: Risks are identified, categorized (strategic, financial, operational, stakeholder, etc.), assessed and quantified to determine their priority level. Our internal carbon price may be included as a factor within the risk quantification. In addition, on a regular basis we assess risks and opportunities from new or proposed regulations by modelling potential future conditions, using corporate information such as known or forecast emissions, market influences (demand/supply), energy pricing structures, etc. In cases where the materiality criterion is met, the risks for existing assets are outlined and communicated to the HSE Committee of the Board of Directors. In addition, risks that are material to our Company, as the term "material" is defined under applicable securities law

and guidance, are disclosed in our disclosure documents which are prepared and filed pursuant to applicable Canadian and U.S. Securities laws.

Example: For example, in 2016 Ontario was developing a cap and trade system which it intends to link with the California-Québec market. The proposed design elements of this system were modelled to determine impacts and risks posed to TransCanada's affected assets. Based on these risks, consideration was given to any necessary changes to our management of the affected assets.

CC2.1d Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2 Is climate change integrated into your business strategy?

Yes

CC2.2a Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

i) How strategy has been influenced (process for collecting and reporting information to influence strategy)

The process for collecting and reporting climate change-related information to influence strategy is through implementing our Environment Program. TransCanada continually monitors our facilities to ensure compliance with all environmental requirements, including GHG emission programs such as carbon pricing with emissions reduction targets. We routinely monitor proposed changes in environmental policy, legislation and regulation, and where the risks are potentially large or uncertain, we comment on proposals independently or through industry associations. Our facilities are subject to federal, state, provincial and local environmental statutes and regulations governing environmental protection, including air and GHG emissions. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We expect that, over time, most of our facilities will be subject to some form of regulation to manage GHG emissions.

ii) Example of how strategy has been influenced

An example of strategy influenced by climate change issues is in TransCanada's Energy business, which includes a portfolio of power generation assets in Canada and the U.S., and unregulated natural gas storage assets in Alberta. One component of the Energy business strategy is to pursue growth in contracted power infrastructure as electric systems move to become less carbon intensive and absorb growing amounts of intermittent renewable capacity. We have entered into a very significant agreement with the Ontario Independent Electricity System Operator (IESO) to extend the operating life of the Bruce Power nuclear facility to 2064. This agreement secures reliable, affordable, emission-less power for Ontario residents for many decades to come.

iii) Which aspects of climate change have influenced strategy

TransCanada's business strategy is informed by the risks and opportunities from climate change regulations, physical climate parameters and other climate-related developments such as uncertainty in social drivers. We own assets and have business interests in a number of regions where there are regulations to address industrial GHG emissions, including GHG pricing policies. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at achieving GHG emission reductions through direct or indirect means.

iv) How short term strategy has been influenced by climate change

TransCanada's short-term (current) strategy has been influenced by climate change. A key component of TransCanada's overall business strategy is to commercially develop and build new asset investment programs. TransCanada is well positioned to capture new opportunities in North America's electricity market with the transition away from coal-fired power in favour of renewable and gas-fired generation. Our investment in natural gas, nuclear, wind and solar generating facilities demonstrates our commitment to clean, sustainable energy.

v) How long term strategy has been influenced by climate change

TransCanada's long-term (10+ years) strategy has been influenced by climate change. We have committed to significant long-term investments to extend the life of Bruce Power to the end of 2064, as this important facility provides approximately 30 per cent of Ontario's power supply and is an integral part of the province's Long Term Energy Plan.

vi) Strategic advantage gain

TransCanada is building a competitive advantage by focusing on investing in low-carbon infrastructure that has and may continue to be a core element of our continued capital program. The growth in demand for power in North America coupled with an aging electrical infrastructure base and a societal preference for lower carbon intensive electricity production is expected to provide us with the opportunity to participate in new generation and other power infrastructure projects.

vii) Most substantial business decision influenced by climate change

The most substantial business decision during 2016 which was influenced by climate change was the continued advancement of our application for the Keystone XL pipeline project. Specifically, climate change aspects related to water, oil sands GHG emissions & regulatory risk influenced this business decision. The previous U.S. Administration denied a Presidential Permit for the Project on the basis that approval would undermine U.S. climate leadership and, therefore, would not serve the national interest. However, between 2008 and 2014, the State Department concluded five times that the Keystone XL Pipeline would not result in increased production and consumption of crude oil, and therefore would not significantly increase global GHG emissions. In March 2017, the U.S. Department of State issued a U.S. Presidential Permit authorizing construction of the U.S./Canada border crossing facilities of the Keystone XL pipeline. TransCanada is now in the process of seeking route approval in Nebraska.

CC2.2b Please explain why climate change is not integrated into your business strategy

CC2.2c Does your company use an internal price on carbon?

Yes

CC2.2d Please provide details and examples of how your company uses an internal price on carbon

i) Scope

Scope 1

ii) Rationale

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

iii) Actual price used

Up to C$80

iv) Variances in price over time and geographies

Our price varies over time and across geographies – for example, TransCanada is already regulated with carbon pricing in British Columbia, Alberta, Québec, California and the U.S. northeast Regional Greenhouse Gas Initiative (RGGI). The province of Ontario is developing a carbon price via a cap and trade system, launching January 1, 2017.

v) Responsibility for determining the price

TransCanada has an internal, multi-disciplinary team that continuously refines the Company's strategy for managing climate change risks and opportunities, including carbon price forecasts.

CC2.3 Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

CC2.3a On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Other: Pan-Canadian Framework on Clean Growth and Climate Change	Support with minor exceptions	TransCanada provided comments on the Government of Canada Pan-Canadian Framework on Clean Growth and Climate Change, which builds on the Vancouver Declaration on Clean Growth and Climate Change.	TransCanada agrees with the general direction of the Declaration, particularly our shared recognition of the need to address environmental objectives while ensuring the responsible development of the energy resources that North Americans need to fuel our everyday lives.
Regulation of methane emissions	Support with minor exceptions	TransCanada provided comments on the Government of Canada's outreach on its commitment to reduce methane emissions from the oil and gas sector by 40-45% below 2012 levels by 2025. TransCanada also participated in data gathering, analysis and communication via industry associations.	While the natural gas transmission sector supports the Government of Canada's goal to reduce methane emissions from the oil and gas sector, in light of the relatively small contribution of GHG emissions from pipeline operations, it is important that government policy in this arena appropriately balance the cost and burden on the industry of regulatory action designed to reduce emissions with the limited ability to affect further meaningful reductions.
Regulation of methane emissions	Support with minor exceptions	TransCanada and industry peers met with the U.S. Environmental Protection Agency to discuss their developing policy related to reducing methane emissions for equipment at natural gas transmission compressor stations and storage.	TransCanada recognizes stakeholder concerns related to increasing carbon emissions and the need for sensible public policy frameworks focused on managing emissions. We recognize that a unified North American response to climate change and air quality issues will ensure competitiveness and must be maintained or enhanced while working toward solutions to manage GHG and air emissions. TransCanada supports responsible government policies that manage GHG emissions while balancing other North American priorities, including social and economic wellbeing. TransCanada advocates for policies across North America that recognize the role that natural gas can play in mitigating GHG emissions.

CC2.3b Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Canadian Energy Pipelines Association (CEPA)	Consistent	For the last 10 years, the Canadian Energy Pipeline Association (CEPA) has participated in industry, government and other stakeholder forums that address the challenge of climate change in Canada. CEPA supports GHG emission regulations that include price certainty and achievable targets. CEPA endorses the idea of a technology fund as a compliance mechanism. If cap and trade is implemented, it must be harmonized across jurisdictions and ensure competitiveness between jurisdictions. CEPA believes that climate change policy should: Connect energy with the environment; Solve the energy challenges that impact North Americans; Encourage continued investment in activities that reduce environmental footprints and are consistent with the triple E bottom line; and, Be harmonized across jurisdictions within Canada, to an extent that is reasonable and practical.	TransCanada is an active participant in the development of public policy positions and contributes to the outcomes of meetings.
Interstate Natural Gas Association of America (INGAA)	Consistent	Climate change is an important issue. Increased use of natural gas is helping to combat climate change by lowering carbon dioxide emissions. While U.S. gas production is up 37 per cent since 1990, greenhouse gas emissions are down 17 per cent. Because natural gas is made of methane, a potent greenhouse gas, the natural gas industry is hard at work lowering those emissions. The natural gas pipeline industry is tackling methane emissions by “tightening up” its system. In the past 30 years, the industry has reduced the number of pipeline leaks by 94 percent through pipeline integrity and maintenance programs and continued investment in new pipeline facilities. That has prevented emission of 122 million metric tons of carbon dioxide-equivalent. That is like eliminating a yearlong 25 million car traffic jam, enough to wrap the earth three times. We are also looking for ways to reduce releases from compressor equipment by establishing industry guidelines with a particular focus on equipment with the largest-emissions profile. Natural gas has an important role in helping the nation become a larger user of renewable energy, like wind and solar in electric generation. It is the number one “back stop” to ensure we continue to have electricity even when the sun isn’t shining or the wind isn’t blowing.	TransCanada is an active participant in the development of public policy positions and contributes to the outcomes of meetings.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
American Petroleum Institute (API)	Consistent	Oil and natural gas take us down the street and around the world. They warm and cool our homes and businesses. They provide the ingredients for medicines, fertilizers, fabrics, plastics and other products that make life safer, easier and better. While we rely on them for most of our energy and will likely do so for years to come, as the Environmental Protection Agency (EPA) notes: “Scientists are certain that human activities are changing the composition of the atmosphere, and that increasing the concentration of greenhouse gases will change the planet’s climate. However, they are not sure by how much it will change, at what rate it will change, or what the exact effects will be.” Despite these uncertainties it is clear that climate change is a serious issue that requires research for solutions and effective policies that allow us to meet our energy needs while protecting the environment. That’s why oil and gas companies are working to reduce their greenhouse gas emissions. The oil and gas industry has also been implementing new emissions estimation and tracking tools to enable it to assess how well it is meeting the goals it has set for itself and report progress to the public. On other fronts, companies are reducing natural gas flaring to cut emissions (while also adding to energy supplies) and storing CO2 underground, where it can be safely held for thousands of years. This is just a small sample of industry efforts to be part of the solution in meeting this global challenge. We are already major contributors to the national effort to reduce greenhouse gas emissions, and are eager participants in developing the best science-based, transparent, and cost-effective policies to protect and expand our economic and environmental progress.	TransCanada is a participant in the development of public policy positions and contributes to the outcomes of meetings.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Canadian Electricity Association (CEA)	Consistent	The Canadian electricity industry is committed to taking action on climate change and improving environmental performance while maintaining a reliable and cost-effective supply of electricity. Electricity generators have already made gains in areas such as low-emission technologies, energy efficiency, emerging renewable power, and emission offsets. Currently, the electricity industry is working cooperatively with the federal government to find an equitable approach for emission reductions. Measures to address electricity sector GHG emissions and broader air issues must be designed, however, to address the diversity of technologies, fuel/generation sources, environmental pressures, political and socio-economic climates from region to region. Strategies adopted to address these issues generally adhere to a set of principles aimed at optimizing solutions: •Continued provision of safe, cost-effective, and reliable electricity; •Integrated management of GHGs and other air pollutant emissions (SO2, NOX, PM, Hg, and CO2); •Accommodation of full fuel/generation source diversity; •Consideration of regional differences, in electricity supply and demand as well as air quality issues; •Flexibility of implementation mechanisms, allowing a full array of market and other instruments; and •Consideration of GHG policies of the U.S., Canada's primary trading partner.	TransCanada is an active participant in the development of public policy positions and contributes to the outcomes of meetings.
International Emissions Trading Association (IETA)	Mixed	IETA is a non-profit business organization created in 1999 to serve businesses engaged in the new field of carbon markets. Our objective is to build international policy and market frameworks for reducing greenhouse gases at lowest cost.	TransCanada is a participant in the development of public policy positions and contributes to the outcomes of meetings.

CC2.3d Do you publicly disclose a list of all the research organizations that you fund?

No

CC2.3e Please provide details of the other engagement activities that you undertake

TransCanada is a participant in the Carbon Pricing Leadership Coalition (CPLC). The CPLC brings together leaders from across government bodies, the private sector and civil society to share experiences working with carbon pricing and to expand the evidence base for the most effective carbon pricing systems and policies. We see the CPLC as a leading multi-stakeholder initiative bringing together national and sub-national governments, the private sector and civil society to develop knowledge regarding carbon pricing and its effective and broad implementation to achieve economic, environmental and social goals. We look forward to the opportunity to share our experience, collaborate and learn from multi-stakeholder leaders in successful carbon pricing systems.

TransCanada is also a member of the Pipeline Research Council International (PRCI). PRCI is a global collaborative research development organization with membership from the world's leading pipeline companies, and the vendors, service providers, equipment manufacturers and other organizations supporting our industry. Research is planned and developed through Technical Committees. For example, the Integrity & Inspection Technical Committee which conducts research to improve the reliability of pipeline infrastructure and ensure the continuity of public service through the development and successful deployment of technologies associated with mechanical damage, pipeline integrity management, and associated inspection technologies. The Operations, &

Monitoring (SOM) Technical Committee research aims to improve the integrity of pipeline infrastructure and the continuity of public service through the development and successful deployment of technologies identify right-of-way threats, leak detection, and damage prevention.

CC2.3f What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

To implement, TransCanada uses an internal team to continuously refine the Company's activities which may influence climate policy. This group provides input and expertise as appropriate to inform policy response strategies and ensure consistency. The team includes members of corporate groups (e.g. climate policy and governance, GHG reporting, government relations, industry relations, legal, and regulatory services); representatives from business segments (e.g. commercial teams); and, external stakeholders (e.g. professional peers, industry associations, non-governmental organizations) all of whom are utilized, as appropriate, in response to policy developments in order to establish an understanding of policy and implications and to identify potential response strategies. The positions are reviewed, as appropriate, in an effort to ensure engagement is consistent.

CC2.3g Please explain why you do not engage with policy makers

Further Information

Regarding CC2.3a, these represent key examples rather than a comprehensive list of climate-related issues that TransCanada may engage upon policymakers. Regarding CC2.3c, TransCanada maintains multiple corporate association memberships across our lines of business. Participation in these organizations does not signify comprehensive support for all positions undertaken by the associations. For further information about our association memberships, please see TransCanada's Corporate Social Responsibility report available at www.transcanada.com.

Page: CC3. Targets and Initiatives

CC3.1 Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Absolute target
Intensity target

CC3.1a Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 1	1%	20%	2010	118352	2020	No, and we do not anticipate setting one in the next 2 years	Québec and California have GHG cap and trade programs linked under the Western Climate Initiative (WCI) GHG emissions market. In Québec, the Bécancour cogeneration plant is required to cover its GHG emissions. The Canadian Mainline natural gas pipeline facilities in Québec are also covered under this program.
Abs2	Scope 1					2020	No, and we do not anticipate setting one in the next 2 years	Québec and California have GHG cap and trade programs linked under the Western Climate Initiative (WCI) GHG emissions market. In California, TransCanada has costs associated with the cap and trade program from our power marketing activities.
Abs3	Scope 1	27.5%	10%	2009	2269667	2018	No, and we do not anticipate setting one in the next 2 years	U.S. northeastern states that are members of the Regional Greenhouse Gas Initiative (RGGI) have implemented a CO2 cap and trade program for electricity generators. This program applies to both the Ravenswood and Ocean State Power generation facilities. We expect to monetize our U.S. Northeast power business in the first half of 2017, subject to regulatory and other approvals.

CC3.1b Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int1	Scope 1	26.3%	15%	Metric tonnes CO2e per unit of production	2009	0.03720	2016	No, and we do not anticipate setting one in the next 2 years	Under the Specified Gas Emitters Regulation (SGER) in Alberta, established industrial facilities with GHG emissions above a certain threshold must reduce their emissions below an intensity baseline. The SGER program covers our natural gas pipelines in the province. The base year is an average of 2008-2009 annual emissions intensities.

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int2	Scope 1	11.7%	15%	Metric tonnes CO2e per unit of production	2007	0.06376	2016	No, and we do not anticipate setting one in the next 2 years	Under the Specified Gas Emitters Regulation (SGER) in Alberta, established industrial facilities with GHG emissions above a certain threshold must reduce their emissions below an intensity baseline. The SGER program covers our energy assets in the province. The base year is specific to each facility and varies from 2004-2007.

CC3.1c Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Increase	4.8	No change	0	Scope 2 & 3 emissions are excluded from the Specified Gas Emitters Regulation (SGER) intensity target. TransCanada's compliance strategy is confidential. Each commercial group at TransCanada determines the best options for meeting the target. The following are the options as outlined by the SGER: 1) Operational changes at the facility that result in emissions reductions; 2) Payment per tonne of CO2e into the Climate Change and Emissions Management Fund; 3) Use of Alberta-based offsets generated from projects not subject to the Regulation; 4) Use of Emission Performance Credits.
Int2	Decrease	44	No change	0	Scope 2 & 3 emissions are excluded from the Specified Gas Emitters Regulation (SGER) intensity target. TransCanada's compliance strategy is confidential. Each commercial group at TransCanada determines the best options for meeting the target. The following are the options as outlined by the SGER: 1) Operational changes at the facility that result in emissions reductions; 2) Payment per tonne of CO2e into the Climate Change and Emissions Management Fund; 3) Use of Alberta-based offsets generated from projects not subject to the Regulation; 4) Use of Emission Performance Credits.

CC3.1d Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment

CC3.1e For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1	100%	100%	TransCanada assets subject to the Québec cap and trade program have obtained the necessary compliance units and are in full compliance.
Abs2	100%	100%	TransCanada assets subject to the California cap and trade program have obtained the necessary compliance units and are in full compliance.
Abs3	100%	100%	TransCanada power assets subject to the Regional Greenhouse Gas Initiative (RGGI) have obtained the necessary allowances and are in full compliance.
Int1	100%	100%	TransCanada natural gas pipeline assets that are subject to Alberta's Specified Gas Emitters Regulation are in full compliance.
Int2	100%	100%	TransCanada power assets that are subject to Alberta's Specified Gas Emitters Regulation are in full compliance.

CC3.1f Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2 Do you classify any of your existing goods and/or services as low carbon products or do they enable a third party to avoid GHG emissions?

CC3.2a Please provide details of your products and/or services that you classify as low carbon products or that enable a third party to avoid GHG emissions

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment

CC3.3 Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes

CC3.3a Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	1	
To be implemented*	1	0
Implementation commenced*	0	0
Implemented*	4	1200000
Not to be implemented	0	

CC3.3b For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Process emissions reductions	Nature of Activity: Pull-Down Compressors Stage of Development: Implemented Description: A blowdown is the act of releasing natural gas from a section of pipeline so that pipeline maintenance can be done safely. Several valves are closed to isolate that section of the pipeline and then open a special blowdown valve to release any natural gas. Whenever possible, TransCanada will transport a piece of equipment, known as a "pull-down compressor," to the site of a blowdown. This machine is attached to the blowdown valve and instead of being released into the air most of the natural gas is pumped into another section of the pipeline. This reduces the amount of methane released into the atmosphere.	1200000	Scope 1	Voluntary	5680000	0	<1 year	Ongoing	TransCanada has built its fleet of pull-down compressors since the 1970s. The use of pull-down compressors avoids the release of natural gas into the atmosphere. The annual tCO2e savings from this avoided gas release are estimated. Average annual natural gas spot price in 2016 via Alberta Energy Regulator: Commodity Prices: Natural Gas Prices. Note that this is an assumption given TransCanada's extensive pipeline operations.

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Fugitive emissions reductions	Nature of Activity: Fugitive and Vented Methane Emissions Reduction Stage of Development: Implemented Description: TransCanada has rigorously managed fugitive emissions from its Canadian natural gas pipeline system for over a decade through a Fugitive Emissions Inspection and Leak Repair (FEILR) program. The FEILR program involves identifying leaks on pipeline and compressor station components (such as valves), setting priorities and conducting repairs. As part of this system-wide effort, TransCanada has been influential in the development and implementation of leak detection technologies for our industry.		Scope 1	Voluntary			<1 year	Ongoing	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Behavioral change	Nature of Activity: Hot tapping for in service pipeline connections Stage of Development: Implemented Description: Hot tapping is an alternative procedure that makes a new pipeline connection while the pipeline remains in service, flowing natural gas under pressure. The hot tap involves attaching a branch connection and valve on the outside of an operating pipeline, and then cutting out the pipeline wall within the branch and removing the wall section through the valve. Hot tapping avoids product loss, methane emissions and disruption of service to customers. While hot tapping is not a new practice, recent design improvements have reduced the complications and uncertainty operators might have experienced in the past. TransCanada uses hot tap procedures as often as possible on small jobs performed more often while larger taps (>12 inches) are made only a handful of times per year. By performing hot taps, TransCanada is able to reduce methane loss and costs to our shippers.		Scope 1	Voluntary				Ongoing	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Low carbon energy installation	Nature of Activity: Waste-Heat Recovery Units Stage of Development: Implemented Description: TransCanada provides access to the waste heat while a third party owns and operates the heat recovery facilities, independent from TransCanada's natural gas pipeline business. TransCanada continues to build on its demonstrated experience of power generation from waste heat recovery. TransCanada continues to pursue opportunities for third parties to develop, own and operate waste heat recovery units at other compressor stations.		Scope 1	Voluntary				Ongoing	
Behavioral change	Nature of Activity: Tracking Fugitive Emissions Data Stage of Development: To be implemented Description: TransCanada will be tracking Canadian Gas Operations fugitive emissions data at our pipeline valve sites, meter stations and compressor stations. This will enable field technicians to enter data online and with fewer steps. This should result in an improved ability to plan maintenance work and analyse pipeline data to ensure our gas is delivered in the most effective way to our customers.		Scope 1	Voluntary				Ongoing	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Process emissions reductions	Nature of Activity: Error in Variable Model (EVM) in Tuning Complex Pipeline Networks Stage of Development: Under investigation (Research and development) Description: Better determination of the condition of pipelines through the proposed EVM would aid in efficient operation of the system, and in proper scheduling of cleaning and pigging procedures to restore original condition of internal pipe surface. EVM would also be expected to lower energy consumption and provide higher efficiency (and throughput) in operating the system, therefore resulting in lower GHG emissions.		Scope 1	Voluntary				Ongoing	

CC3.3c What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	We own assets and have business interests in a number of regions where there are regulations to address industrial GHG emissions, including GHG pricing policies. We recorded $62 million of expenses under existing GHG pricing programs in 2016. Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at achieving GHG emission reductions through direct or indirect means. We actively monitor and submit comments to regulators as these new and evolving initiatives are undertaken. We expect that, over time, most of our facilities will be subject to some form of regulation to manage GHG emissions.
Dedicated budget for low carbon product R&D	TransCanada's Canadian natural gas and liquids pipeline assets have a dedicated budget for research and development. Technological innovation is critical to managing the complex and interrelated issues surrounding GHG and air emissions. With demand for low-emissions natural gas and electricity steadily climbing, the industry must continuously seek out new technologies to improve system and process efficiencies and limit the release of emissions. TransCanada continues to pursue new opportunities in technology that can improve the efficiencies of our systems, processes and facilities.

CC3.3d If you do not have any emissions reduction initiatives, please explain why not

Further Information

Numbers may not add up due to rounding.

Page: CC4. Communication

CC4.1 Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Status	Page/Section reference	Attach the document	Comment
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Pg. 94-95, 57, 101, 149, 155	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/2016_Annual_Report.pdf	TransCanada 2016 Annual Report
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Pg. 7, 16, 22	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/2016_TCC_AIF.pdf	TransCanada 2016 Annual Information Form
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Pg. 48	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/MIC_2017_Eng.pdf	TransCanada Management Information Circular February 28, 2017

Publication	Status	Page/Section reference	Attach the document	Comment
In voluntary communications	Complete	Whole document	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/TransCanada website climate change strategy.pdf	TransCanada Climate Change website
In voluntary communications	Underway - previous year attached	Pg. 55-58	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/TransCanada-2015-CSR-Report.pdf	Underway: TransCanada 2016 Corporate Social Responsibility (CSR) Report Attached: 2015 CSR Report
In voluntary communications	Complete	Whole document	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/We-care-about-climate-change.pdf	TransCanada Climate Change Fact Sheet (July 2016)
In voluntary communications	Underway - previous year attached	Pg. 7	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC4.1/TransCanada-2015-CSR-Report-Data-Sheet.pdf	Underway: TransCanada 2016 Corporate Social Responsibility (CSR) Report Data Sheet Attached: 2015 CSR Data Sheet

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1 Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation
Risks driven by changes in physical climate parameters
Risks driven by changes in other climate-related developments

CC5.1a Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	Other: carbon pricing Description: Across North America there are a variety of new and evolving initiatives in development at the federal, regional, state and provincial level aimed at achieving GHG emission reductions through direct or indirect means, including carbon pricing. How this may affect TransCanada: We own assets and have business interests in a number of regions where there are regulations to address industrial GHG emissions, including GHG pricing policies. TransCanada facilities are included in carbon pricing programs in California (cap and trade), the Northeast U.S. Regional Greenhouse Gas Initiative, British Columbia (carbon tax), Alberta (emissions trading scheme) and Québec (cap and trade).	Increased operational cost	1 to 3 years	Direct	Virtually certain	Low	TransCanada cannot estimate the potential financial implications of proposed GHG policies on our future consolidated results of operations, financial position or cash flows. Such legislation or regulation could materially increase our operating costs, require material capital expenditures or create additional requirements for permitting, which could delay proposed projects. For reference, we recorded $62 million of expenses under existing GHG pricing programs in 2016.	Action: Through implementing our Environment Program, we continually monitor our facilities to ensure compliance with all environmental requirements, including carbon pricing. We routinely monitor proposed changes in environmental policy, legislation and regulation, and where the risks are potentially large or uncertain, we comment on proposals independently or through industry associations. Case Study: Alberta continued to implement its Climate Leadership Plan in 2016. The province intends to transition from the current Specified Gas Emitters Regulation (SGER) to a carbon competitive system in January 2018. This system will use an output-based emission allocations approach for emissions-intensive, trade-exposed industries. TransCanada participated in a series of technical workshops related to this transition and the design of the new program.	TransCanada has an internal, multi-disciplinary team that continuously refines the Company's strategy for managing climate change risks and opportunities. This group is responsible for monitoring, assessing and communicating the climate change policy and regulatory context over the near, medium and long-term. Internal management is provided by corporate and business segment personnel with multiple duties and management costs are nominal.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	Description: In 2015, 195 nations including Canada, the U.S. and Mexico adopted the Paris Agreement, a global pact to fight climate change. The consensus agreement allows for continued momentum on climate change targets at the international level. Paris Agreement implementation is ongoing. How this may affect TransCanada: No direct implications for TransCanada are expected resulting from adoption of the Paris Agreement. However, TransCanada is aware and continues to track how this process and outcome may affect national, state, and provincial governments pushing forward new climate-related requirements which would directly affect TransCanada. The existing and potentially amended GHG reduction commitments could materially increase our operating costs if these international commitments result in new or amended federal U.S., Canadian or Mexican regulatory programs for GHGs.	Increased operational cost	1 to 3 years	Direct	More likely than not	Low	Due to the speculative outlook regarding the details of future GHG restrictions and compliance mechanisms, we cannot estimate the potential effect of new or proposed GHG policies on our operations, financial condition or consolidated results of operations. In addition, the instruments to implement GHG emissions from international accords vary, making it difficult to assess their implications. It is reasonably likely that such legislation or regulations could materially increase our operating costs, e.g. our cost of compliance by requiring us to install additional equipment and potentially purchase emission allowances/offset credits.	Action: Through implementing our Environment Program, we continually monitor our facilities to ensure compliance with all environmental requirements. We routinely monitor proposed changes in environmental policy, legislation and regulation, and where the risks are potentially large or uncertain, we comment on proposals independently or through industry associations. Case study: We expect that, over time, most of our facilities will be subject to some form of regulation to manage GHG emissions. Future legislative and regulatory programs could significantly restrict emissions of GHGs including methane across our operations.	TransCanada has an internal, multi-disciplinary team that continuously refines the Company's strategy for managing climate change risks and opportunities. This group is responsible for monitoring, assessing and communicating the climate change policy and regulatory context over the near, medium and long-term. Internal management is provided by corporate and business segment personnel with multiple duties and management costs are nominal.

CC5.1b Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other physical climate drivers	Description: Significant changes in temperature and other weather events have many effects on our business. How this may affect TransCanada: Ranging from the impact on demand, availability and commodity prices, to efficiency and output capability. Extreme temperature and weather can affect market demand for power and natural gas and can lead to significant price volatility. Extreme weather can also restrict the availability of natural gas and power if demand is higher than supply. Seasonal changes in temperature can reduce the efficiency of our natural gas-fired power plants, and the amount of power they produce. Variable wind speeds affect earnings from our wind assets, and sun-light hours and intensity affects earnings from our solar assets.	Reduction/disruption in production capacity	Up to 1 year	Direct	Likely	Low-medium	Business interruptions, including operational risks from natural disasters (e.g. significant changes in temperature and extreme weather events) could have an impact through a decrease in revenues, increase in operating costs or legal proceedings or other expenses all of which could reduce our earnings. Losses not covered by insurance could have an adverse effect on operations, cash flow and financial position. For example, in our Energy business segment, quarter-over-quarter revenues and net income are affected for reasons including but not limited to weather. Our Energy business segment generated $4,164 million in revenues in 2016.	Action: We have incident, emergency and crisis management systems to ensure an effective response to minimize further loss or injuries and to enhance our ability to resume operations. We also have a Business Continuity Program that determines critical business processes and develops resumption plans to ensure process continuity. We have comprehensive insurance to mitigate certain of these risks, but insurance does not cover all events in all circumstances. Case study: We have a set of procedures in place to manage our response to natural disasters which include catastrophic events such as forest fires, tornadoes, earthquakes, floods, volcanic eruptions and hurricanes. The procedures, which are included in our Emergency Management Program, are designed to help protect the health and safety of our employees, minimize risk to the public and limit any adverse impacts on the environment.	Costs of management are associated with asset specific teams that interpret, model and manage physical risks within the commercial and engineering and operations of each business segment.

CC5.1c Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Description: Our reputation and relationship with Indigenous communities and our stakeholders including other communities, landowners, governments and government agencies and environmental nongovernmental organizations is very important. How this may affect TransCanada: Decisions by Canadian and U.S. regulators can have a significant impact on the approval, construction, operation and financial performance of our liquids pipelines. Public opinion about crude oil development and production may also have an adverse impact on the regulatory process. In conjunction with this, there are some individuals and interest groups that are expressing their opposition to crude oil production by lobbying against the construction of liquids pipelines.	Increased operational cost	1 to 3 years	Direct	More likely than not	Medium	Indigenous communities and stakeholders can have a significant impact on our operations, infrastructure development and overall reputation. Notwithstanding the current economic conditions, we remain committed to advancing our portfolio of commercially secured projects to connect growing Canadian and U.S. crude oil supply to key markets, maximizing the value from our current operating assets, leveraging existing infrastructure and expanding across our liquids pipelines business value chain in the near term. With respect to capital spending, we spent a total of $0.8 billion in 2016 for our Liquids Pipelines, and expect to spend approximately $0.5 billion in 2017, primarily on the Grand Rapids, Northern Courier and White Spruce pipeline projects.	Action: Our Stakeholder Engagement Framework is our formal commitment to stakeholder engagement. Our four core values – safety, integrity, responsibility and collaboration – are at the heart of our commitment to stakeholder engagement, and guide us in our interactions with stakeholders. Additionally, our Indigenous Relations Program, including the Indigenous Relations Strategy and our Aboriginal Relations and Native American Relations Policies, guide our engagement with Indigenous communities. We also have specific stakeholder programs that set requirements, assess risks and ensure compliance with legal and policy requirements. Case study: Changing environmental requirements or revisions to current regulatory process may impact the timing to obtain permit approvals for our liquids pipelines. We manage these risks by continuously monitoring regulatory and government developments and decisions to determine their possible impact on our liquids pipelines business and by working closely with our stakeholders in the development and operation of the assets.	TransCanada does not incur direct costs associated with managing reputational risk. The Company invests in monitoring of issues and increasing the robustness of its stakeholder relations program to ensure that social risks are mitigated effectively. TransCanada devotes significant resources to monitoring and mitigating our reputation and relationships risks broadly as an organization and at the local level.

CC5.1d Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1ePlease explain why you do not consider your company to be exposed to inherent risks driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1 Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters
Opportunities driven by changes in other climate-related developments

CC6.1a Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	Description: The Government of Canada released the Pan-Canadian Framework on Clean Growth and Climate Change in 2016. According to the Framework, future actions will include but are not limited to expanding clean electricity systems, promoting inter-ties, ensuring a greater use of renewable energy, and reducing methane emissions from the oil and gas sector. How this may affect TransCanada: The future Canadian electricity sector supply mix will feature significant levels of renewables and gas-fired capacity. We have expertise in building, operating and investing in a diverse set of generation technologies. TransCanada is well positioned to capture new opportunities in North America's electricity market with the transition away from coal-fired power in favour of renewable and gas-fired generation.	Investment opportunities	1 to 3 years	Direct	Very likely	Low-medium	Efforts to transition to less carbon intensive forms of power generation are well aligned with our expertise in building and operating highly efficient natural gas-fired and renewable energy facilities. Our Energy business segment had $4,164 million in revenues in 2016 and is well positioned to capitalize on this opportunity. We have invested successfully in other jurisdictions that have similarly transitioned, including Ontario.	Action: Our investment in natural gas, nuclear, wind and solar generating facilities demonstrates our commitment to clean, sustainable energy. Case study: TransCanada advocates for North American legislation/regulations that recognize the role that natural gas can play in mitigating GHG emissions. We also continue to pursue additional opportunities for new power generation assets in our established market areas. For example, investment opportunities remain in the Canadian power market and are expected to begin with new wind projects and later with the need for gas-fired power capacity required to replace retiring coal-fired plants.	TransCanada's Energy business is a profit generating business. There is no net management cost.

CC6.1b Please describe your inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other physical climate opportunities	Description: Opportunities arising from physical impacts of climate change may include increased natural gas demand for electricity generation to meet higher demand on air conditioning and heating loads in certain regions if temperatures become warmer or cooler than historical norms. However, any opportunities may be lessened by energy and climate change policies that are put in place. Other opportunities include the potential for increased demand for clean electricity generation such as wind, solar, hydro and nuclear. The use of periodic power such as wind and solar may also stimulate the need for more gas-fired generation as in-fill power for when the wind and solar generation is not operating. How this may affect TransCanada: TransCanada anticipates an increased demand for natural gas due to changes in temperature extremes and further reliability during extreme weather events. TransCanada may also be impacted by a change in mean temperature, which may drive greater demand for electric generation needed for heating or cooling. This could result in greater demand for natural gas and power generation.	Other: Growth in existing business segments	1 to 3 years	Direct	More likely than not	Low	We expect supply and demand for natural gas to continue to grow, and we are well positioned to continue to capture a significant portion of that growth. Our Canadian, U.S. and Mexico natural gas pipelines generated $6,586 million in revenues in 2016 and are well positioned to capitalize on this opportunity.	Action: TransCanada evaluates how trends in weather and temperature may affect energy demand for natural gas. TransCanada uses an internal, proprietary analysis of risks and opportunities associated with supply, demand, flows and pricing of natural gas. TransCanada is managing this opportunity by identifying and investing in growth opportunities. Case study: This trend facilitates development such as the NGTL System in Alberta continuing its steady growth with new facilities being added to meet demand and new contracts. NGTL now gathers most of the gas production in the Western Canada Sedimentary Basin and transported approximately 11.3 Bcf/day in 2016, up from 11 Bcf/d in 2015.	TransCanada's natural gas business segments are a profit generating business. There is no net management cost.

CC6.1c Please describe your inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behavior	Description: Consumer demand behaviour changes potentially may result in an increased awareness of energy sources and may create increased demand for renewable and low-carbon energy sources. Governments in North America are developing long-term plans for limiting GHG emissions. These plans, combined with a shift in consumer attitude and demand for low emissions fuels, will require changes in energy supply and infrastructure. How this may affect TransCanada: The growth in demand for power in North America coupled with an aging electrical infrastructure base and a societal preference for lower carbon intensive electricity production is expected to provide us with the opportunity to participate in new generation and other power infrastructure projects, as well as connections to new and growing industrial, local distribution company, interconnect and electric power generation markets.	Other: Growth in existing business segments	1 to 3 years	Direct	More likely than not	Low	TransCanada sees additional opportunity to develop new low- and non-emitting energy sources as consumer behaviour changes and market conditions shift to reflect these behaviours. We will continue to own, control and develop approximately 7,050 MW of generation capacity powered by natural gas, nuclear, wind and solar upon closing of the U.S. Northeast power asset sales. For example, we have committed to significant long-term investments to extend the life of Bruce Power nuclear facility to the end of 2064, as this important facility provides approximately 30 per cent of Ontario's power supply and is an integral part of the province's Long Term Energy Plan. Bruce Power's revenues, reflecting our proportionate share, were $1,470 million in 2016.	Action: Our investment in natural gas, nuclear, wind and solar generating facilities demonstrates our commitment to clean, sustainable energy. Case study: For example, significant long-term investments to extend the life of Bruce Power secures reliable, affordable, emission-less power for Ontario residents for many decades to come, while providing a secure and stable market for Bruce Power for the remainder of its life. TransCanada has partial ownership but does not operate this nuclear facility.	TransCanada's Energy business is a profit generating business. There is no net management cost.

CC6.1d Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1 Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Thu 01 Jan 2015 - Thu 31 Dec 2015	13100000
Scope 2 (location-based)	Thu 01 Jan 2015 - Thu 31 Dec 2015	190000
Scope 2 (market-based)		

CC7.2 Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
Other

CC7.2a If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

TransCanada calculates its GHG emissions using a combination of methods required by various regulations in different jurisdictions. We report our emissions to British Columbia, Alberta, Ontario, Québec, Environment and Climate Change Canada, the U.S. Environmental Protection Agency, California, Oregon, Washington, the Regional Greenhouse Gas Initiative and Mexico’s Ministry of Environment and Natural Resources (SEMARNAT). These methods can include direct measurement and emission factors in conjunction with operating conditions.

More specifically, carbon dioxide emissions are calculated based on fuel gas measurements at pipeline and power generation facilities. Methane emissions from pipelines are calculated using field reports for blowdowns and an extensive in-house set of emission factors for calculating fugitive emissions. Nitrous oxide is calculated based on engine-specific emission factors.

CC7.3 Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
CO2	IPCC Second Assessment Report (SAR - 100 year)
CH4	IPCC Second Assessment Report (SAR - 100 year)
N2O	IPCC Second Assessment Report (SAR - 100 year)
CO2	IPCC Fifth Assessment Report (AR5 - 100 year)
CH4	IPCC Fifth Assessment Report (AR5 - 100 year)
N2O	IPCC Fifth Assessment Report (AR5 - 100 year)

CC7.4 Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: Methane (CH4) combustion factor at natural gas turbine	0.0086	Other: lb CH4 per million BTU	AP 42, Fifth Edition. Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources published by United States Environmental Protection Agency (EPA) January 1995 [Table 3.1-2a]]

Further Information

Numbers may not add up due to rounding. Regarding CC7.1, TransCanada acquired Columbia Pipeline Group, Inc. (Columbia) on July 1, 2016. Columbia's 2015 emissions are not represented in the base year emissions. Regarding CC7.4, TransCanada has supplied an example of an emission factor used in regulatory reporting.

Page: CC8. Emissions Data - (1 Jan 2016 - 31 Dec 2016)

CC8.1 Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Equity share

CC8.2 Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

16200000

CC8.3 Please describe your approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure		TransCanada is not reporting a Scope 2, market-based figure.

CC8.3a Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
350000		

CC8.4 Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

CC8.4a Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
Utility Electricity Consumption from Natural Gas Pipelines – U.S.	No emissions excluded	Emissions are not relevant	Emissions are not relevant	We are developing processes and procedures to potentially collect emissions data from these sources in the future.
Power assets – U.S.	No emissions excluded	Emissions are not relevant	Emissions are not relevant	We expect to monetize our U.S. Northeast power business in the first half of 2017, subject to regulatory and other approvals. Energy consumption from U.S. assets is included. It is expected that the indirect emissions would not be significant compared to our overall emissions profile.
Power Purchase Arrangements - Alberta	No emissions from this source	Emissions are not relevant	Emissions are not relevant	A power purchase arrangement (PPA) is a long-term contract for the purchase or sale of power on a predetermined basis. It does not include operation of the generating facility. TransCanada terminated its PPAs in March 2016.
Keystone Oil Pipeline – U.S. & Canada	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Our liquids pipelines are below applicable direct GHG reporting thresholds and it is expected that the direct emissions would not be significant compared to our overall emissions profile. Indirect GHG emissions are excluded from our CDP reporting boundary.
Oil Storage – U.S. & Canada	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	The Company's oil storage asset emissions have been estimated to be below applicable reporting thresholds and it is expected that the direct emissions from these assets would not be significant compared to our overall emissions profile.
Gas Storage – U.S. & Canada	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	The Company's gas storage asset emissions have been estimated to be below applicable reporting thresholds and it is expected that the direct emissions from these assets would not be significant compared to our overall emissions profile.
TransGas Natural Gas Pipeline System - Colombia	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	The Company holds an ownership interest in this pipeline. We do not have any plans to extend our voluntary reporting to this asset at this time and it is expected that the emissions from this pipeline would not be significant compared to our overall emissions profile.

CC8.5 Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 5% but less than or equal to 10%	Metering/ Measurement Constraints	Most of our Scope 1 emissions are covered by mandatory reporting requirements and are calculated using a combination of methods required by regulators in different jurisdictions. Emissions are estimated for vented and fugitive emissions and based on assumptions about operations using experienced staff with direct operational knowledge, including, for example, estimated fuel consumption.
Scope 2 (location-based)	More than 5% but less than or equal to 10%	Other: Combination of metering/measurement constraints and ongoing maturation of data processes	Scope 2 emissions are calculated based on accurate invoices for procured electric power. Assumptions include the completeness of the invoice process and grid average factors. We continue to develop processes and procedures to potentially collect emissions data from currently excluded sources to include them in the future.
Scope 2 (market-based)			

CC8.6 Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance process in place

CC8.6a Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/ section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/16 TC - Carseland Verification Report - FINAL.pdf	27	Alberta Specified Gas Emitters Regulation (SGER)	2
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/16 TC - MacKay River Verification Report - FINAL.pdf	28	Alberta Specified Gas Emitters Regulation (SGER)	5
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/16 TC - Redwater Verification Report - FINAL.pdf	28	Alberta Specified Gas Emitters Regulation (SGER)	1
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/16 TC - Bear Creek Verification Report - FINAL.pdf	29	Alberta Specified Gas Emitters Regulation (SGER)	1

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/ section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/16 TC - Alberta System Verification Report - FINAL.pdf	39	Alberta Specified Gas Emitters Regulation (SGER)	19
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/16 TCPL BC - Verification Package.pdf	2-5	Other: British Columbia Greenhouse Gas Reduction (Cap-and-Trade) Act Reporting Regulation, the British Columbia Reporting Regulation Guidance Document: Verification October 2012, Version 2.1 and the International Organization for Standardization ISO 14064-3:2006 Greenhouse Gases - Specification	2
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/VERREPRT TCÉ 2016.pdf	2-3	ISO14064-3	1
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.6a/VERREPRT TCPL 2016.pdf	2-3	ISO14064-3	1

CC8.6b Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emission Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7 Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

CC8.7a Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/ Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC8.7a/FINAL TCPL Assurance Letter Final.pdf	1-3	ISAE 3410	100

CC8.8 Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Other: Year on year change in emissions (Scope 2 and 3)	Changes in GHG inventory year over year from December 31, 2015 to December 31, 2016 for both Scope 2 and Scope 3 GHG emissions were assured. For further information about this limited assurance please see the verification statement uploaded with question CC8.7a.

CC8.9 Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

As defined in the GHG Protocol, a relevant GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users - both internal and external to the company. With this guidance, the relevance of GHG emissions to this disclosure has been defined as whether the emissions affect business decisions. Regarding CC8.6a, TransCanada obtains verification of Scope 1 emissions for additional facilities not listed here. For example, assets in Ontario are required to obtain verification as a part of direct GHG emissions reporting. These verifications are completed according to regulatory timelines and may not be complete prior to the CDP Climate Change report preparation and submission.

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC9.1 Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Canada	8600000
United States of America	7500000
Mexico	41000

CC9.2 Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division

CC9.2a Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Canadian Gas Pipelines	6100000
U.S. Gas Pipelines	2100000
Mexico Gas Pipelines	41000
Liquids Pipelines	0
Energy	7800000
Transportation Fuel	18000

CC9.2b Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)

CC9.2d Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)

Further Information

Numbers may not add up due to rounding. Regarding CC9.2a and our liquids pipelines Scope 1 emissions, there are very low GHG emissions from pumping operations. Pumping stations are mainly electrically-driven and therefore have no emissions from normal pumping operations. However, similarly to natural gas pipelines, there are auxiliary power units used during power outages which generate some GHG emissions. TransCanada's liquids pipelines are below applicable direct GHG reporting thresholds. Regarding CC9.2a and our transportation fuel Scope 1 emissions, this represents direct emissions associated with aviation fuel and TransCanada fleet vehicle fuel combustion. Emissions in this category represent aviation and fleet travel from all business segments and our Corporate division.

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC10.1 Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Canada	240000		3300000	1900000
United States of America	110000		12000000	
Mexico	1000		2200	

CC10.2 Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division

CC10.2a Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Canadian Gas Pipelines	240000	
U.S. Gas Pipelines	110000	
Mexico Gas Pipelines	1000	
Energy	7000	

CC10.2b Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

CC10.2c Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

Further Information

Numbers may not add up due to rounding. Regarding CC10.1a methodology; purchased and consumed electricity, heat, steam or cooling: energy consumption included in this table is a subset of the energy consumption described in CC11. Low carbon electricity, heat, steam or cooling is considered energy consumption in the form of electricity from the low-carbon grids in Québec, Ontario, Manitoba and British Columbia. Also regarding CC10.1a methodology; purchased and consumed electricity, heat, steam or cooling: energy consumption includes energy used to calculate Scope 2 and Scope 3 emissions sources, e.g. Scope 3: upstream leased assets.

Page: CC11. Energy

CC11.1 What percentage of your total operational spend in the reporting year was on energy?

More than 15% but less than or equal to 20%

CC11.2 Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Heat	0
Steam	0
Cooling	0

CC11.3 Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

87300000

CC11.3a Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Natural gas	86500000
Kerosene	4000
Crude oil	700000
Jet gasoline	9000

CC11.4 Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
Other	1900000		TransCanada partially or fully owns renewable electricity generation sources which are grid-connected. TransCanada power facilities consume self-generated electricity and electricity supplied from the grid. The MWh of consumed low-carbon electricity, heat, steam or cooling identified here represents TransCanada's electricity consumption from low-carbon electricity grids in British Columbia, Manitoba, Ontario and Québec.

CC11.5 Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
5000000		41000000	3500000		

Further Information

Numbers may not add up due to rounding. TransCanada power facilities consume self-generated electricity and electricity supplied from the grid.

Page: CC12. Emissions Performance

CC12.1 How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Increased

CC12.1a Please identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	9	Decrease	In 2016, approximately 1,200,000 tCO2e were reduced by our emissions reduction projects. Our total Scope 1+2 emissions in 2015 were 13,300,000 tCO2e. Therefore, we arrived at 9.0% via (1,200,000 / 13,300,000) * 100% = 9.0%. The description of these activities is outlined in question CC3.3b. These activities include the use of pull-down compressors.
Divestment			

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Acquisitions	4.8	Increase	Our most significant initiative in 2016 unfolded near the end of the first quarter when we announced the acquisition of Columbia for US$13 billion. The acquisition closed on July 1, 2016, adding 24,500 km (15,200 miles) of interstate natural gas pipelines between New York and the Gulf of Mexico to our already expansive network that now includes a broad footprint in the Marcellus and Utica shale gas plays. With the addition of Columbia's assets, TransCanada now transports 23 billion cubic feet per day (Bcf/d), or more than 25 per cent of North America's daily natural gas demand, and we are now the continent's largest natural gas storage provider. After the acquisition closed, assets previously managed under Columbia emitted approximately 630,000 tCO2e for Scope 1+2 emissions. TransCanada's total Scope 1+2 emissions in 2015 were 13,300,000 tCO2e. Therefore, we arrived at 4.8% via (630,000 / 13,300,000) * 100% = 4.8%.
Mergers			
Change in output			
Change in methodology			
Change in boundary	0.1	Increase	Demonstrating continuous improvement, TransCanada extended our reporting boundary to include electricity consumption from compressor units on our U.S. natural gas transmission pipeline system.
Change in physical operating conditions			
Unidentified			
Other		Increase	While our processes employ low-emissions fuels and technologies, the addition of new natural gas and liquids pipelines and expansion of our energy portfolio are expected to result in an increase in TransCanada's absolute GHG emissions.

CC12.1b Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

CC12.2 Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.0014	metric tonnes CO2e	12505000000	Location-based	23.2	Increase	Metric tonnes CO2e per unit of total revenue. TransCanada's 2016 revenue was $12,505 million and our Scope 1+2 emissions were 16,500,000 tCO2e (0.0014 t/$revenue). By comparison, TransCanada's 2015 revenue was $11,300 million and our Scope 1+2 emissions were 13,300,000 tCO2e (0.0012 t/$ revenue). The difference between 2015 and 2016 was an

Intensity figure	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
						increase of approximately 23.2%. Many factors influence this intensity value including TransCanada's increase in revenue between 2015 and 2016, acquisitions in 2016, continuous improvement in data used to calculate indirect GHG emissions and our GHG emissions reduction activities, including compliance with regulated GHG reduction targets.

CC12.3 Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.19	metric tonnes CO2e	megawatt hour (MWh)	41000000	Location-based	23.4	Increase	Metric tonnes CO2e per MWh produced. This metric is relevant to our Energy assets and measures Scope 1+2 emissions only from those facilities. The 2016 emissions intensity for power production was 0.19 tCO2e/MWh and in 2015 was 0.15 tCO2e/MWh. There is a 23.4% increase between 2015 and 2016. Note that many of TransCanada's electricity generating facilities also generate a heat product, which is not accounted for here. Therefore, an emissions intensity simply based on electricity generation is only partially representative of the Company's true emissions intensity.
991	metric tonnes CO2e	Other: Natural gas throughput (Bcf)	6400	Location-based		N/A	Metric tonnes CO2e per natural gas throughput (Bcf). This metric is relevant to our natural gas transmission pipelines in Canada and represents Scope 1+2 emissions only from those facilities. The natural gas throughput was 6,400 Bcf in 2016 while the natural gas pipeline Scope 1+2 emissions were 6,300,000 tCO2e which = 991 tCO2e/Bcf throughput. In previous years, TransCanada provided a single emissions intensity for all natural gas transmission pipeline assets. For 2016, emissions intensity will be provided based on business segment and therefore is not comparable to previous years. The relationship between natural gas transmission pipeline GHG emissions and the volume of gas transported is complex. The nature of a transmission network, such as a single, long-haul pipeline with few connections or points where gas is added and removed from the system, will have a different design (including operational equipment) and emissions profile than highly integrated networks with a large number of "branches" over a smaller geographic area. In addition, the amount of GHGs released during operation does not have a linear relationship to the volume of gas that is transported on the system. The utilization of compressor units and GHG emissions from combustion of natural gas are dictated by both the volume and distance of travel of gas being transported. As a result, comparing emissions intensities between natural gas transmission pipeline systems must consider of the type of pipeline network and the service that it is providing.

Intensity figure	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
293	metric tonnes CO2e	Other: Natural gas throughput (Bcf)	7900	Location-based		N/A	Metric tonnes CO2e per natural gas throughput (Bcf). This metric is relevant to our natural gas transmission pipelines in the U.S. and represents Scope 1+2 emissions only from those facilities. The natural gas throughput was 7,900 Bcf in 2016 while the natural gas pipeline Scope 1+2 emissions were 2,300,000 tCO2e which = 293 tCO2e/Bcf throughput. In previous years, TransCanada provided a single emissions intensity for all natural gas transmission pipeline assets. For 2016, emissions intensity will be provided based on business segment and therefore is not comparable to previous years. The relationship between natural gas transmission pipeline GHG emissions and the volume of gas transported is complex. The nature of a transmission network, such as a single, long-haul pipeline with few connections or points where gas is added and removed from the system, will have a different design (including operational equipment) and emissions profile than highly integrated networks with a large number of “branches” over a smaller geographic area. In addition, the amount of GHGs released during operation does not have a linear relationship to the volume of gas that is transported on the system. The utilization of compressor units and GHG emissions from combustion of natural gas are dictated by both the volume and distance of travel of gas being transported. As a result, comparing emissions intensities between natural gas transmission pipeline systems must consider of the type of pipeline network and the service that it is providing.

Intensity figure	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
136	metric tonnes CO2e	Other: Natural gas throughput (Bcf)	300	Location-based		N/A	Metric tonnes CO2e per natural gas throughput (Bcf). This metric is relevant to our natural gas transmission pipelines in Mexico and represents Scope 1+2 emissions only from those facilities. The natural gas throughput was 300 Bcf in 2016 while the natural gas pipeline Scope 1+2 emissions were 42,000 tCO2e which = 136 tCO2e/Bcf throughput. In previous years, TransCanada provided a single emissions intensity for all natural gas transmission pipeline assets. For 2016, emissions intensity will be provided based on business segment and therefore is not comparable to previous years. The relationship between natural gas transmission pipeline GHG emissions and the volume of gas transported is complex. The nature of a transmission network, such as a single, long-haul pipeline with few connections or points where gas is added and removed from the system, will have a different design (including operational equipment) and emissions profile than highly integrated networks with a large number of “branches” over a smaller geographic area. In addition, the amount of GHGs released during operation does not have a linear relationship to the volume of gas that is transported on the system. The utilization of compressor units and GHG emissions from combustion of natural gas are dictated by both the volume and distance of travel of gas being transported. As a result, comparing emissions intensities between natural gas transmission pipeline systems must consider of the type of pipeline network and the service that it is providing.

Further Information

Numbers may not add up due to rounding. Percentage change calculations used more precise (i.e. not rounded) values.

Page: CC13. Emissions Trading

CC13.1 Do you participate in any emissions trading schemes?

Yes

CC13.1a Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b What is your strategy for complying with the schemes in which you participate or anticipate participating?

We own assets and have business interests in a number of regions where there are regulations to address industrial GHG emissions, including GHG pricing policies such as emissions trading schemes.

Under the Specified Gas Emitters Regulation (SGER) in Alberta, established industrial facilities with GHG emissions above a certain threshold have to reduce their emissions below an intensity baseline. The SGER program covers our natural gas pipelines and energy assets, which included our Sundance and Sheerness PPAs up to March 7, 2016. Natural gas pipeline compliance costs are recovered through the tolls our customers pay. A portion of the compliance costs for our Energy assets are recovered through market pricing and hedging activities. We announced plans to terminate the Alberta PPAs in 2016 and the transfer to the Balancing Pool occurred on January 10, 2017.

Québec and California have GHG cap and trade programs linked under the Western Climate Initiative (WCI) GHG emissions market. In Québec, the Bécancour cogeneration plant is required to cover its GHG emissions. The government allocates free emission units for the majority of Bécancour's compliance requirements. The remaining requirements were met with GHG instruments purchased at auctions or secondary markets. The costs of these emissions units were recovered through commercial contracts. The Canadian Mainline natural gas pipeline facilities in Québec are also covered under this program and have purchased compliance instruments. In California, TransCanada has costs associated with the cap and trade program from our power marketing activities.

U.S. northeastern states that are members of the RGGI have implemented a CO2 cap and trade program for electricity generators. This program applies to both the Ravenswood and Ocean State Power generation facilities. We expect to monetize our U.S. Northeast power business in the first half of 2017, subject to regulatory and other approvals.

CC13.2 Has your organization originated any project-based carbon credits or purchased any within the reporting period?

Yes

CC13.2a Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance
Credit purchase	Biomass energy	Verdant Energy Limited - Dapp Power Electric Generation Facility	Other: Alberta Specified Gas Emitters Regulation – Offset System	25257	25257	No	Compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1 Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Not relevant, explanation provided		Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	Source is considered relevant only from an "Influence" relevance criterion. It is not from other criteria. Current TransCanada Scope 3 emissions inventory structure shows the category of emissions to not be a focus for GHG emissions management.
Capital goods	Not relevant, explanation provided		Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	Source is considered relevant from the potential "Size," "Influence," and "Risk" criteria. Current TransCanada Scope 3 emissions inventory structure shows the category of emissions to not be a focus for GHG emissions management.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	3200000	PURCHASED ELECTRICITY: Inputs: (1) Annual electricity consumption; (2) Asset ownership %; (3)% load received from grid when power plant is offline. Emission Factors: Canada/US/Mexico Electricity Feedstock Life Cycle CO2E Emission Factors (GREET provides feedstock emissions factors based on generation type. Electricity generation mix % is sourced from 'Canada's Energy Future 2016 - Energy Supply and Demand Projections to 2040 - An Energy Market assessment'.) Methodology: To calculate CO2E emissions for (1) Natural Gas and Pipelines - Electricity consumption was multiplied by Asset Ownership % and electricity feedstock life cycle CO2E emission factor; (2) Energy - Electricity consumption was multiplied by Asset Ownership %, Load % from grid and electricity feedstock life cycle CO2E emission factor. FUEL CONSUMPTION: Inputs: (1) Fuel consumption by business line and country; (2) Ownership % by country and asset. Emission Factors: (1) Lower Heating Value for Natural Gas (GREET1_2016); (2) Natural CO2E Gas Emission Factors for Stationary Fuels and Electricity Generation (GREET1_2016). Methodology: To calculate CO2E emissions for (1) Natural Gas and Oil Pipelines - Total Fuel Purchased was multiplied by Lower Heating Value for Natural Gas and Natural Gas CO2E Emission Factor for Stationary Fuel; (2) Energy - Total Fuel	100.00%	Source is considered relevant from all relevance criteria. Currently, it represents 99% of Scope 3 Emissions Results.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Purchased was multiplied by Ownership % and Natural Gas CO2E Emission Factor for Electricity Generation. TRANSMISSION AND DISTRIBUTION (T&D) LOSSES: Inputs: Natural Gas Pipelines and Energy Scope 2 CO2E emissions . Emission Factors: Electric T&D loss factor (GREET1_2016). Methodology: To calculate CO2E emissions, Scope 2 CO2E Emissions was multiplied by "[(1 / (1- T&D Loss Factor))-1]". AVIATION FUEL: Inputs: (1) Canada and US Annual total dollars spent on aviation fuel; (2) Estimated Fuel Price; (3) Bank of Canada closing exchange rate between US and Canadian dollars for Dec. 31st 2016. Emission Factors: (1) Lower heating value of Conventional Jet Fuel (GREET1_2016); (2) Jet Fuel Cycle CO2E Emission Factor (GREET1_2016). Methodology: To calculate CO2E emissions, Total Canadian dollars spent was multiplied by Estimated Fuel Price, Lower Heating Value of Conventional Jet Fuel and the Jet Fuel Cycle CO2E Emission Factor.		
Upstream transportation and distribution	Not relevant, calculated	9000	Inputs: The primary inputs for calculating emissions from Upstream Transportation and Distribution are (1) Distance travelled in kilometres by Canadian and US fleet; (2) Fleet leased percentage in Canada and the US; (3) Distance travelled in kilometres by rental vehicles, Extensity and expensed travel; and (4) Fuel consumption (City and Highway combined) of Chevrolet Silverado 2500 HD in km/L (Natural Resources Canada - vehicles.nrcan.gc.ca). Emission Factors: (1) Light-duty Gasoline Trucks CO2E Emission Factor (Environment Canada, National Inventory Report 1990 - 2014, Part 2, Table A6-12: Emission Factors for Energy Mobile Combustion Sources). Methodology: To calculate Total CO2E emissions by country and vehicle category, the Fleet Distance was multiplied by the Fleet Lease %, Fuel Consumption and the Gasoline Trucks CO2E Emission Factor.	100.00%	Source is considered relevant only from an "Influence" relevance criterion. Current TransCanada Scope 3 emissions inventory structure shows it to not be a focus for GHG emissions management.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Waste generated in operations	Not relevant, explanation provided		Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	Source is considered relevant only from a "Risk" relevance criterion. It is not from other criteria. Current TransCanada Scope 3 emissions inventory structure shows the category of emissions to not be a focus for GHG emissions management.
Business travel	Not relevant, calculated	8000	Assessment of emissions estimates are directly from the organization's supply chain partners (i.e., Carlson Wagonlit Travel). Assumptions in the use of the methodology follows industry standards (i.e., Carbon Neutral Protocol). Methodology: The following formula was used to calculate emissions from Business Travel by Carlson Wagonlit Travel - "(LEG_MILES * 1.609) * UPLIFT * FACTOR". The 'Uplift' and 'Factor' will vary depending on the following criteria - (1) KM; (2) Supplier code (supplier code related to itinerary); (3) Travel type; (4) travel class and (5)Effective_date.	100.00%	Source is considered relevant only from an "Influence" relevance criterion. Current TransCanada Scope 3 emissions inventory structure shows it to not be a focus for GHG emissions management.
Employee commuting	Not relevant, explanation provided		Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	Source is considered relevant only from an "Influence" relevance criterion. It is not from other criteria. Current TransCanada Scope 3 emissions inventory structure shows the category of emissions to not be a focus for GHG emissions management.
Upstream leased assets	Not relevant, calculated	16000	Inputs: The primary inputs for calculating emissions from Upstream Leased Assets are (1) TransCanada building electricity consumption in Canada and the US and; (2) Occupancy percentage in Canadian office buildings. Emission Factors: (1) Canada Electrical CO2E Emission Factor by Province (National Inventory Report Greenhouse Gas Sources and Sinks in Canada 1990-2014, Part 3) and; (2) US Electrical CO2E Emission Factor by eGRID subregion (USEPA, eGRID2014, https://www.epa.gov/energy/egrid). Methodology: To calculate CO2E Emissions in Canada from building electricity, the Building Electricity Consumption was multiplied by the Building Occupancy % and Province Specific Electrical CO2E Emission Factor. To calculate CO2E Emissions in the US from building electricity, the	100.00%	Source is considered relevant only from a "Influence" relevance criterion. Current TransCanada Scope 3 emissions inventory structure shows it to not be a focus for GHG emissions management.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Building Electricity Consumption was multiplied by the eGRID subregion specific Electrical CO2E Emission Factor		
Downstream transportation and distribution	Not relevant, explanation provided	0	Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	The emission source category does not apply to TransCanada. In the energy business line, TransCanada emissions associated with electricity sold (Transmissions and Distribution) are reported under scope 3 emissions, category 3 (i.e., Fuel and energy related activities not included in Scope 1 & Scope 2). In the pipelines transportation business line, TransCanada has Transportation Service Agreements which allows TransCanada systems to receive gas from the Customer at the Customer's Receipt Points; and deliver gas to the Customer at the Customer's Delivery Points. Emissions from natural gas pipeline transportation are included in TransCanada Scope 1 and 2 emissions inventory.
Processing of sold products	Not relevant, explanation provided	0	Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	The emission source category does not apply to TransCanada. TransCanada does not provide intermediate products for further processing. Electricity is produced to be sold to end users. Natural gas and oil are transported, and are not owned or sold.
Use of sold products	Not relevant, explanation provided		Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	Use of Sold Products emission source includes uncountable emissions sources such as use of electricity sold and may include use of natural gas and oil transported (not owned) by TransCanada. TransCanada recognizes that emissions from end use of natural gas drive the natural gas supply chain (cradle-to-grave) emissions estimates. TransCanada GHG

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					Inventory is focused on the assessment of emission sources where the organization can take action. On a supply chain basis, the emissions from electricity and natural gas end use make TransCanada Corporate direct emissions irrelevant. The exclusion of emissions from these sources is consistent with TransCanada organizational and structural boundaries.
End of life treatment of sold products	Not relevant, explanation provided	0	Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	The emission source category does not apply to TransCanada. TransCanada is an energy infrastructure organization. There is not end-of life for energy services or products.
Downstream leased assets	Not relevant, explanation provided	0	Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	The emission source category does not apply to TransCanada. Currently, TransCanada business structure does not have assets under this business approach.
Franchises	Not relevant, explanation provided	0	Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	The emission source category does not apply to TransCanada. Currently, TransCanada business structure does not have assets under this business approach.
Investments	Relevant, not yet calculated		Greenhouse Gas Protocol - Technical Guidance for Calculating Scope 3 Emissions	0.00%	Source is considered relevant from all relevance criterion. Emissions have not been calculated yet as the boundary definition approach (Capital Projects vs. Investments) has to be evaluated to identify the emission sources that apply to TransCanada Indirect Emissions Inventory.
Other (upstream)					
Other (downstream)					

CC14.2 Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

Third party verification or assurance process in place

CC14.2a Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/04/19304/Climate Change 2017/Shared Documents/Attachments/CC14.2a/FINAL TCPL Assurance Letter Final.pdf	1-3	ISAE 3410	100

CC14.3 Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Other: Multiple reasons	29	Increase	In 2015, fuel- and energy-related activities (not included in Scope 1 or 2) were approximately 2,500,000 tCO2e. Our 2016 emissions in this category were 3,200,000 tCO2e. This represents a 28.9% increase from 2015 to 2016. Many factors influence this value including TransCanada's acquisitions in 2016, which increased fuel- and energy-related consumption, and continuous improvement in data used to calculate indirect GHG emissions (e.g. inclusion of compressor unit electricity consumption from U.S. natural gas transmission pipeline assets).

CC14.4 Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our customers

CC14.4a Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

While we have not formalized a strategy to engage with elements of our value chain on GHG emissions and climate change strategies; TransCanada does engage with our customers with respect to the introduction of climate change policies such as GHG management or reduction programs.

For example, as Ontario developed and implements its cap and trade program, TransCanada representatives discussed implications and management strategies with some of our customers and value chain partners. Methods included verbal and in-person discussions related to the developing program. The prioritization of engagement with customers on climate change policies depends on the programs in development and relative potential impacts on TransCanada and our customers. Success is determined long-term as TransCanada

anticipates that most of our facilities will be subject to future regulations to manage industrial GHG emissions, and we have procedures in place to help ensure our compliance with these regulations.

CC14.4b To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement

CC14.4c Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Percentage change calculations used more precise (i.e. not rounded) values.

Module: Sign Off

Page: CC15. Sign Off

CC15.1 Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Russ Girling	President and Chief Executive Officer (CEO)	Chief Executive Officer (CEO)

Further Information