

C0. Introduction

C0.1

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

Keyera is one of the largest independent natural gas and natural gas liquids midstream businesses in western Canada. Our operating businesses provide a range of gathering, processing, fractionation, storage, transportation and marketing services to the oil and gas industry. As a midstream business, Keyera is focused on providing essential services to producers and delivering natural gas liquids, related specification products and iso-octane to key markets across North America. We provide these services through our two integrated business lines: the Gathering and Processing Unit and the Liquids Business Unit. The Liquids Business Unit consists of the Liquids Infrastructure and Marketing segments.

The majority of Keyera's operations and facilities are located in Alberta, Canada; however, we also have operations and conduct business in other jurisdictions including Texas (Hull Terminal) and Oklahoma (Oklahoma Liquids Terminal and Wildhorse Terminal). Keyera ships products to customers across North America.

Keyera's vision is to be the North American leader in delivering midstream energy solutions. In support of this vision, Keyera has maintained a consistent commitment to its value-driven strategy of delivering steady growth supported by sustainable, competitive energy facilities. As part of this strategy, Keyera:

- focuses on operational safety;
- strives to provide reliable midstream services at a competitive price;
- pursues opportunities to increase throughput at its existing facilities;
- invests in expansion and optimization opportunities to meet its customer needs and complement its service offerings;
- Balance environmental protection, social responsibility and economic growth
- selectively pursues acquisitions;
- builds on the interconnectivity of its infrastructure and its integrated business model; and
- maintains a conservative capital structure.

Since 1998, Keyera has developed a reputation as an expert in operating complex energy processing facilities safely and responsibly, and in a manner that demonstrates respect for our employees and the communities we call home. Keyera recognizes environmental protection, social responsibility and economic growth are essential to the success of our business. Keyera recognizes the importance of responsible environmental stewardship and has made significant investments in infrastructure to improve efficiencies and enhance environmental performance. We are committed to continuing our record of conducting our business ethically, safely and in an environmentally and financially responsible manner.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2018	December 31 2018	No	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

- Canada
- United States of America

C0.4

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

CAD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-OG0.7

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

Row 1

Oil and gas value chain

- Upstream
- Midstream
- Chemicals

Other divisions

- Grid electricity supply from gas
- Carbon capture and storage/utilization

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual(s)	Please explain
Board-level committee	The Health, Safety and Environment (HSE) Board Committee is responsible for overseeing Keyera's environmental and regulatory performance, including matters related to climate change. One of the Committee's primary responsibilities is oversight for greenhouse gas and emissions management, reporting and strategy. The purpose of the HSE Committee is to assist the Board of Directors in fulfilling its responsibilities in relation to environmental, health and safety matters. In addition to the oversight provided by the HSE Committee, the Board receives quarterly reports from management and the HSE Committee with respect to environmental and regulatory performance (including emissions and climate change matters), and has reviewed the impact of regulatory change on Keyera's GHG and emissions performance. The Board also considers climate-related issues as part of certain strategy discussions.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Setting performance objectives</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>HEALTH, SAFETY AND ENVIRONMENT BOARD COMMITTEE The Board's HSE Committee receives a report from Keyera's Climate Change and Emissions Steering (CCES) Committee on Keyera's climate-related performance and strategy at its Q1 meeting. This report included an update on recent regulatory developments, an analysis of the implications for Keyera, comparative scenario analysis with respect to the greenhouse gas emissions performance of certain of Keyera facilities relative to other similar facilities, and an update on reduction programs. Highlights of the report are shared with the full Board of Directors. In Q3, the HSE Committee completes a risk assessment review, which includes climate-related risks and mitigation measures. BOARD: The Board receives quarterly reports which include updates on Keyera's climate-related performance and associated risks and financial implications. Climate-related expenditures are integrated into Keyera's annual budgeting process which is reviewed and approved by the Board annually in Q4. Major initiatives and expenditures require Board approval - the HSE Committee and the Board are updated on initiatives related to emissions. Climate-related performance objectives are based on regulatory targets and compliance (including compliance costs) and must be approved by both the HSE Committee and the Board. They are updated are part of the quarterly regulatory reporting. The Board also considers climate-related matters as part of its overall assessment and evaluation of Keyera's strategy.</p>

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Managing climate-related risks and opportunities	Quarterly
Other, please specify (Climate Change & Emissions Committee (CCES))	Both assessing and managing climate-related risks and opportunities	Quarterly
Other, please specify (Emissions Reductions Task Group)	Both assessing and managing climate-related risks and opportunities	Quarterly
Other C-Suite Officer, please specify (Senior VP, General Counsel & Corporate Secretary)	Managing climate-related risks and opportunities	Quarterly

C1.2a

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

Chief Executive Officer

The Chief Executive Officer is ultimately responsible for climate related matters and reporting to the HSE Committee of the Board and the full Board about climate-related performance, risks and opportunities. Keyera's Climate Change and Emissions Strategy Committee reports through the Executive Team, including the CEO.

Senior VP, General Counsel & Corporate Secretary

The Senior VP, General Counsel and Corporate Secretary is responsible to liaise with Executive Management Team and Board of Directors on Climate Change and Emissions matters. This role provides overall direction for the CCES and is accountable for performance and outcomes of the CCES.

Climate Change and Emissions Strategy Committee

The mandate of the Climate Change and Emissions Strategy Committee (CCES) is to provide strategic guidance to Keyera with respect to climate change and emissions matters. It is focused on expanding collaboration across Keyera's organization and operations to identify key emission risks and opportunities for our business, as well as defining appropriate strategies to deliver desired business outcomes on an ongoing basis. In fulfilling this mandate, the CCES Committee is responsible for:

- Identifying and implementing cost-effective emission intensity reduction initiatives in operations
- Identifying and adopting economically viable conservation and energy efficient technologies
- Identifying and implementing business opportunities associated with the shift to a lower-carbon economy (eg. new business lines, carbon markets and trading, possible incentives and grants etc.
- Identifying appropriate opportunities for investment in technology and innovation to reduce emissions
- Including climate change impact analysis into project development and screening processes
- Ensuring the monitoring of the regulatory environment, analyzing regulatory impacts on Keyera's business and operations and sharing that information throughout the organization
- Recommending appropriate measures to achieve and maintain regulatory compliance with respect to emissions
- Supporting life cycle planning (including climate change related matters) for our assets
- Supporting Keyera disclosure obligations with respect to emissions and climate change reporting and providing direction with respect to additional "voluntary" reporting that may be considered
- Enhancing corporate governance with direction and management approach where needed
- Promoting broader information sharing, awareness and education about climate change matters
- Encouraging employees, contractors and consultants to identify and bring forward opportunities that will contribute to Keyera's goals
- Identifying opportunities to engage with other stakeholders, associations, governments, regulators

Emissions Reductions Opportunity Task Group

The CCES Committee has established an Emissions Reductions Opportunity (ERO) task group to assist in fulfilling its mandate. The ERO reports to the CCES Committee and has a mandate to identify, evaluate and support the implementation of emissions reduction opportunities (GHG, Methane, NOx, Benzene, etc). The criteria that guide the ERO task group in evaluating projects and opportunities include increasing efficiencies and reducing compliance costs. The task group also assist in defining and developing business processes to support and ensure management of Committee reduction strategies.

The ERO initial deliverables include identifying, evaluating and prioritizing emissions reductions projects, and liaising with the field engineers and operations on applicability of potential projects. The task group also recommends to the CCES funding structure for project evaluation. The initial focus of the committee is towards reducing emissions at operating sites. Other areas of business will be incorporated over time (e.g. new energy generation, etc.).

C1.3

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

Yes

C1.3a

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

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Recognition (non-monetary)

Activity incentivized

Energy reduction project

Comment

Employee-driven initiatives are highlighted internally via the company intranet and externally through the company website. For example, we recently did an internal video about an operational team that came up with a more cost-effective and environmentally friendly solution to drill salt caverns.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	2	
Medium-term	2	5	
Long-term	6	100	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

A specific climate change risk identification, assessment, and management process

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

The Environmental and Regulatory group monitors the environmental and regulatory climate on a day-to-day basis. The group reviews policies, practices and procedures, applicable legislation, regulatory requirements, industry standards, and trends. Regular updates are provided to Keyera's asset management and business development teams to assist with their management strategies.

The Climate Change and Emissions Steering (CCES) Committee was established to analyze data, review policy developments, identify risks, assess performance and set the overall direction for Keyera's approach to climate change and emissions matters. With regards to identifying and assessing climate-related matters, the CCES Committee is responsible for:

- Ensuring the monitoring of the regulatory environment, and analyzing regulatory impacts
- Identifying cost-effective emission intensity reduction initiatives
- Identifying and assessing economically viable conservation and energy efficient technologies and innovations
- Identifying and assessing business opportunities associated with the shift to a lower-carbon economy (eg. new business lines, carbon markets and trading, possible

incentives and grants etc.)

- Including climate change impact analysis into project development and screening processes

This Committee meets quarterly and includes interdisciplinary representation from senior management to facilitate a coordinated approach to contribute to a long-term, holistic perspective on Keyera's business and operations. Risks, opportunities and assessments are regularly shared with the Executive team, as well as shared with impacted teams internally. .

Board-Involved Identification and Assessments

In addition, the HSE Board Committee assesses significant operational risks and exposures and provides guidance in mitigating those risks and/or taking advantage of opportunities. A greenhouse gas report is presented at least annually to the HSE Committee (and updated quarterly as applicable) summarizing emission performance, highlighting emission reduction initiatives and funding opportunities. The Committee also receives Keyera's risk matrix, prepared by management, reviewing environmental and operation risks and associated mitigation strategies. The HSE Committee completes a formal risk assessment review in Q3 of every year, which includes an analysis of climate-related risk. The risk assessment is then reported to the Board of Directors.

Risk Identification as part of Operational Excellence

Since 2015, Keyera has also been developing an Operational Excellence program for risk identification, assessment and mitigation for the life-cycle of its operations, which will support Keyera's approach to identifying risks and opportunities with respect of climate change and emissions matters. Risk and opportunities are prioritized based on Keyera's strategic planning processes, including its overall corporate planning process and the development of its asset strategies. High impact items are defined first which are often associated with regulatory compliance (current and prospective). Items can further be categorized by examining resources available for allocation to various risks or opportunities.

Project-specific Identification and Assessments

Keyera undertakes technical analyses of potential projects/technology that have the potential to reduce emissions for both existing and new builds or acquisitions. Key drivers such as cost and effectiveness are analyzed in order to facilitate these reviews and ultimately to prepare a business justification case for projects. In addition, Keyera's operations teams and engineering teams are expected to identify operational efficiencies and emissions reductions. The Emissions Reduction Opportunity (ERO) Task Group drives this identification process within the operations, and then works with operations and field engineering to assess and prioritize the opportunities.

Other Identification and Assessments

In addition, Keyera teams monitors industry trends, including new technology, government policy, governance best practices. Keyera participates in CAPP's (Canadian Association of Petroleum Producers) climate-related groups and meetings, including committees and forums related to air, clean fuel standards and greenhouse gas management. Keyera also conducts a reputation risk assessment every three years, which includes an internal assessment of different risks, including those related to climate.

We also encourage employees to help identify opportunities to improve our environmental performance. In the spring 2019, we conducted an environmental stewardship survey with all employees soliciting ideas.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Current provincial, federal and local emission-related regulation is considered as part of climate-related risk assessments, including the cost of compliance, cost of reporting and capital costs associated with meeting compliance requirements. Compliance with regulations and compliance costs associated with the regulation are evaluated throughout our operations. This could have an impact to our cost of service we can provide our customers and the way in which we operate our facilities.
Emerging regulation	Relevant, always included	Analysis of potential regulation change and potential impacts of changes are considered within risk assessments. Carbon emission regulation changes could have an impact to our cost of service we can provide our customers, the demand for the commodities we market, how we operate our facilities, equipment selection for new projects, planning for other investment decisions and evaluation of business opportunities/risks. Power costs are a large component of the operating costs at many of Keyera's facilities (particularly in the Liquids Business Unit). Keyera is closely monitoring developments in this regard and is developing an overall power strategy.
Technology	Relevant, sometimes included	Keyera analyzes the potential for new technology, such as emissions reducing technology or different fuel sources, in current facilities and future development. Technology is sometimes considered in project specific risk assessments, but is not always included as currently we are not seeing technology limitations preventing us from meeting our climate related performance objectives.
Legal	Relevant, sometimes included	For companies in the oil and gas sector liability risk could increase, with potential financial consequences. This risk is not always included as Keyera is not likely to be a direct target of climate related litigation.
Market	Relevant, sometimes included	Our business development team consider the risks of consumer preference changes and volatile product pricing within their assessments and marketing strategies. The market risks we face include decreased demand for our diluent and propane as well as decrease in the need for our gas processing services.
Reputation	Relevant, sometimes included	Keyera conducts a reputation risk assessment every three years, which includes an internal assessment of different risks, including those related to climate. The reputational risk to the Oil and Gas sector general is seen as high and Keyera may be affected by this overall industry-wide reputational risk. However, the direct risk the Keyera is viewed as being lower. Keyera has identified the need to be transparent about our emissions and climate related risk management as part of its reputational risk management strategy.
Acute physical	Relevant, sometimes included	While most of our facilities are in areas that are not/rarely impacted by acute weather events, there is the potential for acute physical risks at our US facilities and some of our facilities within forested areas. These risks are considered as part of facility management and insurance decisions. Risks could include damage or outages to our facilities and/or pipelines, the need to change operating parameters based on extreme weather variations as well as interruptions in getting our products to market from extreme weather events.
Chronic physical	Relevant, sometimes included	Chronic physical risks including longer-term changes like changes in temperature and precipitation, land degradation, and sea level rise are sometimes including in our climate related risk assessments as part of our infrastructure design. Keyera considers the impact that temperature changes could have on the demand for our products within our marketing and business risk assessments.
Upstream	Relevant, always included	Transition risks including upstream risks are always included in our climate related risk assessments. Compliance with regulations and compliance costs associated with the regulation are evaluated throughout our operations. While Keyera has only very limited upstream operations, to the extent our customers are affected, our business may be affected, including reduced demand for the services we offer. Oil and gas producers could very likely be impacted by climate-related regulation, reputation and consumer preference changes. This is considered in our business risk assessments.
Downstream	Relevant, sometimes included	Transition risks including downstream risk are always included in our climate related risk assessments. Compliance with future regulations and compliance costs associated with the regulation are evaluated through out our operations and business planning. This could have an impact to our cost of service we can provide our customers and demand for the commodities we market. We also consider consumer preference changes as part of macrolevel risk assessments.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

The Climate Change and Emissions Steering Committee (CCES) was established to drive the proactive management of climate-related risks and opportunities. The CCES Committee reviews assessments and sets the overall direction for Keyera's approach to climate change and emissions matters, including making recommendations on Keyera's business and operational strategy. This Committee meets regularly and includes interdisciplinary representation from senior management facilitating a coordinated approach to contribute to a long-term, holistic perspective on Keyera's business and operations.

Operations Management

The CCES Committee and the Emissions Reduction Opportunity Task Group ensure measures are taken to mitigate risk, as well as drive the process for selecting, budgeting and executing on priority opportunities. Climate-related management includes:

- Anticipating regulatory impacts on Keyera's business and making operational changes as necessary
- Assessing economically viable conservation and energy efficient technologies
- Liaise with the field engineers and operations on applicability of potential projects
- Managing process and budget for executing on pilots and initiatives

At an asset level, emissions at each of Keyera's major facilities are estimated on a quarterly basis and reviewed by the asset team and senior management against annual targets. The gap between compliance targets and performance is managed as required. By improving operational efficiency Keyera aims to reduce annual emissions and accumulate credits to offset future emissions if necessary. Climate change considerations have influenced decisions with respect to equipment selection and modifications at several Keyera facilities, as well as the adoption of operational controls. Keyera is currently pursuing initiatives to sequester carbon (reducing the total carbon released into the atmosphere), as well as initiatives designed to reduce emissions. By implementing operational efficiencies, Keyera not only reduced emissions intensity, but facilities are also able to more efficiently process products and maximize capacity. These efficiencies reduce potential compliance costs as well as also allow Keyera to offer customers lower average throughput costs.

Keyera works with industry and regulators on opportunities to increase throughput at existing facilities, in order to reduce the proliferation of less efficient facilities. While these strategies may result in incremental emissions at Keyera's facilities, the overall effect of this strategy is intended to reduce emissions associated with area developments.

Keyera continues to evolve its approach to integrating climate change and emissions considerations into equipment selection for capital projects as well as overall planning

for long term facility development.

Business Development Management

Climate change impact analysis, including regulatory impacts and physical impacts, are incorporated into project development and screening processes as we consider investments, new projects and acquisitions. We conduct life cycle planning (including climate change related matters) for our assets, and this could lead to reinvestment or divestment.

Marketing Management

From a marketing perspective, Keyera considers climate-related risks and opportunities as part of our short-term and long-term marketing strategies. Marketing teams look at forecasts, shifting consumer preferences and anticipated commodity prices and execute strategies designed to reduce the impact of climate-related pricing swings. Our Marketing teams explore business opportunities associated with the shift to a lower-carbon economy (eg. new business lines, carbon markets and trading, possible incentives and grants etc.).

Corporate-related Management

The CCES Committee and the business also manages climate-related issues in the following ways:

- Ensures proper regulatory disclosure obligations reporting
- Develops regulatory climate-related strategies for short term and long term
- Enhances corporate governance where needed
- Promotes broader information sharing, awareness and education about climate change matters
- Shares information with investors and other stakeholders about our emissions reduction strategies and initiatives
- Encourages employees, contractors and consultants to identify and bring forward opportunities
- Identifies opportunities to engage with other stakeholders, associations, governments, regulators etc. in support of the desired

Further to the activities overseen by the CCES Committee, operations and marketing, Keyera's executive management team meets weekly to discuss risks and opportunities across all of Keyera's business lines, including environmental risks and opportunities. The HSE Board Committee is ultimately responsible for reviewing Keyera's performance and risks related to climate. Climate-related risks and opportunities are considered as part of certain Board-level strategy sessions.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

While the carbon levy in Alberta has been repealed and no longer applies to Keyera facilities, there is uncertainty on how a federal carbon pricing would be implemented. Changes would have an impact on managing current operations and investigating opportunities to expand operations in the Alberta.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Keyera is closely monitoring and evaluating potential regulation changes, but uncertainty around carbon levies in Canada makes it impossible to predict the precise financial impact. Keyera is closely monitoring and providing input into regulatory developments in this area. There may also be indirect financial impacts if investment or activity in the Western Canadian Sedimentary Basin is reduced due to the carbon levy framework.

Management method

In Alberta, carbon costs will be included fees paid by producers, but Keyera aims to minimize these costs to remain competitive. Keyera regularly monitors the regulatory environment and seeks methods to reduce emissions.

Cost of management**Comment**

Keyera continues to investigate ways to reduce emissions and maximizing plant efficiency in order to reduce current and potential compliance costs.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Enhanced emissions-reporting obligations

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Effective January 1, 2019, the threshold for reporting emissions at a facility level has been lowered from 50,000 tonnes per year for Alberta reporting purposes to 10,000 tonnes per year. As this threshold lowered, the number of Keyera facilities captured under the GHG guidelines increased, as did the reporting cost. The Alberta governments' increased requirements around methane and benzene reporting has also increased the reporting burden for Keyera and its facilities.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

When the threshold was lowered, the number of facilities captured under the GHG guidelines increased, increasing the cost of reporting. Time put into reporting greenhouse gas emissions to government bodies is split between employees and consultants for a cost of approximately \$500,000 in 2017. This dollar amount is expected to increase, however the actual financial impact of this reporting change has not yet been confirmed. As it relates to methane regulation, the reporting burden is expected to be immaterial, though there could be an indirect financial impact relating to the development of our plants.

Management method

Facilities are closely monitored to assess when/if they hit the 10,000 tonne limit so data collection can begin early. Efforts are also made to reduce emissions to avoid costs from emissions and to offset any costs that are incurred.

Cost of management**Comment****Identifier**

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Other

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Federal GHG Policy: Canada has agreed to meet international targets for GHG emissions. Following the Paris Summit in late 2015, Canada committed to a 30% reduction in emissions from 2005 levels by 2030. The impact of these reductions and how these reductions will be assigned to various industry groups remains a potential risk. There is a significant amount of uncertainty on how provincial and federal governments will approach these commitments and the financial impact different approaches could have on Keyera and the industry as a whole. With regards to new methane regulations, actual costs are currently being evaluated by an interdisciplinary team, but are not currently expected to be material. Recent provincial regulation changes have also increased the reporting burden for Keyera and its facilities.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The Canadian federal government has proposed a regulatory framework that would apply minimum carbon pricing expectations on provinces that do not adopt their own comparable carbon pricing. There is uncertainty and risk that the provincial equivalencies are not accepted and/or that multiple different regulatory requirements may need to be met, which could have a financial impact that is not possible to quantify. Keyera will be investing to manage the NOx emissions of its engine fleet and believes it will be able to achieve its targets in a cost-effective manner. Actual costs are currently being evaluated by an interdisciplinary team, but are not currently expected to be material.

Management method

Keyera is monitoring the situation and actively engaged with the federal and provincial governments through the Canadian Association of Petroleum Producers (CAPP). Keyera is already taking steps to reduce emissions and continues to build internal awareness of the changing regulatory landscape to build understanding of the impact of these potential changes and make more informed operational, business, and financial decisions in the future.

Cost of management**Comment**

The costs of managing this risk are captured under the other risks in this question and the financial implications. Keyera's emission reduction efforts would help mitigate this risk as well.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact

Reduced revenues from lower sales/output

Company- specific description

End uses of some of our products are temperature based and warmer temperatures could potentially result in reduced use. But volatile temperatures will equal volatile pricing affecting demand in both cold and hot extremes making the market unpredictable. Extreme temperatures could also affect the operating parameters of our facilities.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Due to the volatility and unpredictability of prices, we are unable to predict an absolute value with certainty. Our strategy is designed to reduce the impact of these swings, although ideally, the losses are minimal.

Management method

In order to mitigate risk against volatile product pricing Keyera has created a diverse hedging portfolio in order to counteract these swings. Keyera also maintains inventory based on seasonal demands and expectations.

Cost of management**Comment**

Specific information regarding the cost of managing the hedging portfolio is currently unavailable.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Rising mean temperatures

Type of financial impact

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

Increase in average temperature could affect drilling activity and product transportation. Warmer temperatures would likely result in a longer breakup in the summer limiting access to areas in muskeg due to excess thawing. This would also limit our ability to transport product by truck. End uses of some of our products are also temperature based, in some instances warmer temperatures could result in reduced demand (e.g. for heating); while in some instances such a shift could result in increased demand (e.g. for cooling).

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Keyera's long term business strategy is consistent with the measures that would be required to mitigate this risk so there are no financial implications directly tied to this risk as the cost associated with this risk is captured in daily operations.

Management method

Keyera owns facilities that are geographically strategic to ensure transportation to and from the facilities is as reliable as possible. The company has also invested in infrastructure, such as adding more rail terminals and utilizing pipelines as much as possible, as a way to facilitate more reliable transportation.

Cost of management**Comment**

The cost of managing this risk is difficult to ascertain given the multiple dimensions and differential impacts on different aspects of our business.

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Supply chain

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Shifts in consumer preferences

Type of financial impact

Reduced revenue from decreased demand for goods/services

Company- specific description

Negative public perceptions of the oil and gas industry receive considerable attention. If more consumers choose lower carbon economic options, there could be a risk to Keyera's business even though natural gas is a less carbon-intensive fuel compared to other hydrocarbons. Overall, changing end-user preferences could result in demand for fossil fuels, in general, declining as renewable energy sources are sought out as an alternative.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

As a shift to less carbon-intensive hydrocarbons occurs such as using natural gas as opposed to coal, Keyera could potentially have an increased demand for goods and services. But it is also likely that as the demand for coal decreases and the demand for natural gas increases, the demand for natural gas would decrease as the demand for renewable energy increases. Given the multiple variables at play, it is not possible to accurately predict the financial impact at this time.

Management method

Keyera offers a wide array of products not solely tied to burning fossil fuels. A number of our products are used in chemical manufacturing and Keyera is also engaged in the iso-octane market, a gasoline additive designed to reduce car emissions. Certain products processed and marketed by Keyera are cleaner alternatives to other fossil fuels such as coal. However, if demand for fossil fuel-based energy decreases, Keyera may need to continue to broaden our customer base with a diversified portfolio of products and services.

Cost of management**Comment**

The cost of diversifying Keyera's portfolio would be captured under business development services. Specific information for speculative projects, contracts and services is currently unavailable.

Identifier

Risk 7

Where in the value chain does the risk driver occur?

Investment chain

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Stigmatization of sector

Type of financial impact

Reduction in capital availability

Company- specific description

Some investors are moving away from investing in the oil and gas sector, this could impact Keyera in terms of access to capital.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The predicted financial impact of this risk to Keyera is very difficult to measure.

Management method

Keyera is managing this risk by putting efforts towards: 1) Exploring and implementing technology that improves the emission efficiency of our operations and reduced our environmental impact 2) Tracking and publicly disclosing our environmental and emission performance 3) Educating investors on Keyera's business and environmental initiatives 4) Working with industry groups to improve the industry's overall environmental performance and better communicate the industry's efforts towards reducing emissions.

Cost of management**Comment**

Identifier

Risk 8

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Technology: Costs to transition to lower emissions technology

Type of financial impact

Costs to adopt/deploy new practices and processes

Company- specific description

Keyera continues to explore the use of new technology to improve the efficiency of our operations. Operational groups, facilities and engineers are requested to bring forward ideas to Keyera's Emissions Reduction Opportunities (ERO) Task Group on an annual basis. The ERO is responsible for working with operations and field engineering to explore emission reduction technologies for existing and future facilities, reporting into the Climate Change and Emissions Strategy Committee. In addition, Keyera conducted environmental stewardship survey of employees in spring of 2019 and asked employees for their ideas on how Keyera could improve corporately and operationally. Some of the ideas brought forward were technological and the team is exploring the viability of some of these ideas.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

As technological applications can be of varying size, cost and effectiveness, and Keyera is constantly reviewed different options, it is very difficult to provide a financial impact at this time.

Management method

Operational, facility and engineering teams are requested to bring forward ideas, at which point the ERO reviewed and considers these ideas based on viability, effectiveness and cost.

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

Yes

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

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Type of financial impact

Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company-specific description

Keyera is exploring the use of more efficient technology at our facilities, as well as using cleaner burning fuels. In doing so, we are better able to improve our environmental performance, meet regulations, reduce tax burden and apply for incentives. For example, Keyera is currently using cogeneration at the its Minnehik Buck Lake Gas Plant and Waste Heat Recovery at its Rimbey Gas Plant, and we are exploring using similar higher efficiency technologies at other plants.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The financial impact is influenced by the technology chosen (of varying cost to implement and effectiveness/fuel savings), as well as the regulatory environment (cost of compliance, carbon pricing, credits, etc). Each technology would be assessed on a project by project basis.

Strategy to realize opportunity

Keyera is working to realize this opportunity by: 1) Tracking fuel use internally in order to identify areas for more efficiency which will reduce operational costs and therefore costs to our customers. 2) Asking operational and engineering teams to bring forward ideas to the Emissions Reduction Opportunity (ERO) task group. These ideas are then assessed and explored further 3) Establishing budgets for efficiency improvement initiatives 4) Monitoring and applying for grants and programs that support efficiency improvements 5) Working with industry groups to identify and explore technology

Cost to realize opportunity**Comment****Identifier**

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact

Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon

Company-specific description

As the price on carbon increases and becomes all encompassing, natural gas is a less carbon-intensive alternative to other fossil fuels and costs would be lower for purchasers choosing our product over other more emission-intensive products.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Due to the unpredictable nature of market prices for natural gas, if demand increases, it is difficult to estimate if lower pricing will counteract this increase, resulting in relatively static financial implications.

Strategy to realize opportunity

Keyera has strategically positioned facilities to offer a high quality product on demand. Keyera also maintains inventory to meet seasonal demand as necessary. Being strategically positioned to offer a high quality product on demand is an essential part of Keyera's business strategy meaning this cost is captured under regular business operations.

Cost to realize opportunity**Comment****Identifier**

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact

Reduced operational costs (e.g., through use of lowest cost abatement)

Company-specific description

As Alberta moves to phase out of coal, demand for less carbon-intensive hydrocarbons, such as natural gas, could increase.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

As supply and demand for coal decreases, natural gas will be one of the available alternatives. Increased demand for natural gas could increase sales and revenue for Keyera.

Strategy to realize opportunity

Keyera has strategically positioned facilities to offer high-quality products on demand. Keyera also seeks out opportunities for capital projects that would allow for increased capacity and delivery as demand increases for our product.

Cost to realize opportunity**Comment****Identifier**

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Shift toward decentralized energy generation

Type of financial impact

Reduced operational costs (e.g., through use of lowest cost abatement)

Company-specific description

Keyera is continuing to explore generating its own electricity at some of our facilities, including evaluating installing solar and cogeneration units at other facilities. For example, the cogeneration facilities at Minnehik Buck Lake Gas Plant and Wapati allow us to produce our own electricity.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Managing our own energy generation reduces our energy costs and helps protect Keyera from price swings. We currently only analyse the financial impact on a project by project basis.

Strategy to realize opportunity

Operation teams are monitoring the cost-benefit of current electricity generation facilities and exploring the viability to implementing electricity generation technology at other facilities.

Cost to realize opportunity

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Not yet impacted	Carbon costs are typically included in the fees paid by our producer customers, but Keyera aims to minimize these costs in order to remain competitive. Our industry could start to see the impacts of consumer preferences (increase demand from consumers moving away from coal and increased use of natural gas as well as decrease demand as consumers move away from fossil fuels). These changes have not yet impacted Keyera, but this could continue to evolve over the short and long-term.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Carbon costs will also be included fees paid by producers, but Keyera aims to minimize these costs in order to remain competitive. The Canadian regulatory environment, commodity prices and the general reputation of the oil and gas sector has affected some Albertan producers, impacting our supply in some cases. While this has not been material to Keyera at this point, we could see more impacts as the regulatory and market evolves over the medium-to-long term. As part of our emission reduction efforts, we look to partner with suppliers that can offer products and services that achieve our environmental objectives at a cost that also allows us to meet our financial objectives. To date, Keyera has not changed its supply chain processes as part of this effort.
Adaptation and mitigation activities	Impacted	Keyera is closely monitoring the amount of emissions being produced by our all our plants and is investigating ways to reduce the amount of emissions. Maximizing plant efficiency has been the main priority, which has not required significant capital investment. In some instances, Keyera has invested capital in projects that achieve emission reduction and economic objectives, however, the incremental capital incurred for these projects (compared to alternatives) has not been material to date. Keyera evaluates such projects based on environmental and economic returns. We anticipate that Keyera will make more investments in technology as the regulatory environment becomes more stringent.
Investment in R&D	Not yet impacted	At this point, Keyera is using established technology in our mitigation activities, and other than tracking performance of these technologies, we have not made any significant investments in R&D and we do not have plans to do so in the near-term.
Operations	Impacted	Keyera is closely monitoring the amount of emissions being produced by our all our plants and is investigating ways to reduce the amount of emissions. Maximizing plant efficiency has been the main priority, which has not required significant capital investment. In some instances, Keyera has invested capital in projects that achieve emission reduction and economic objectives, however, the incremental capital incurred for these projects (compared to alternatives) has not been material to date. Keyera evaluates such projects based on environmental and economic returns. We anticipate that Keyera will make more investments in technology as the regulatory environment becomes more stringent.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted for some suppliers, facilities, or product lines	As climate-related regulatory expectations have increased, Keyera has experienced increased costs of reporting and meeting on compliance, which has impacted our revenue. These costs are considered in our budgeting and financial process. Time put into reporting greenhouse gas emissions to government bodies is split between employees and consultants for a cost of approximately \$500,000 in 2017.
Operating costs	Impacted for some suppliers, facilities, or product lines	The cost of implementing technology and compliance costs are factored into operational financial planning.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	Keyera has invested some capital to support emissions reduction (and has made equipment or process decisions in its capital projects that incorporate lower emission alternatives), but these have not resulted in a material increase in capital expenditures. Keyera is currently evaluating stand-alone emissions mitigation projects for short term implementation.
Acquisitions and divestments	Impacted	All potential acquisitions and divestments have GHG included in the economic evaluation.
Access to capital	Not impacted	While access to capital has not yet been impacted, Keyera is monitoring this risk and anticipates it will be an increasing factor of consideration in medium and long-term financial planning.
Assets	Impacted	Keyera monitors the GHG costs of assets, and may make changes (invest in technology, divest) if necessary.
Liabilities	Not impacted	
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

No, but we anticipate doing so in the next two years

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

No, we do not have a low-carbon transition plan

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Keyera is committed to responsible environmental stewardship as an integral part of our business. We assess, monitor, and evaluate the impact of our activities on the environment and to take steps to mitigate our footprint as appropriate.

Keyera believes successful management of its emission intensities, energy consumption and overall carbon footprint will contribute to its ability to derive maximum value from its assets and investment activities, while minimizing potential risks and liabilities in a cost-effective manner.

Among the most substantive business decisions Keyera has made to integrate climate-related issues into our business is the establishment of the Climate Change and Emissions Strategy (CCES) Committee. The Committee provides strategic guidance with respect to climate change and emissions matters. It is focused on expanding collaboration across our organization and operations to identify key emission risks and opportunities for our business and is responsible for developing Keyera's climate change strategy. The CCES Committee, with support from the Emissions Reductions Opportunity Task Group, drives and provides direction to operational strategy. The CCES Committee also provides strategic guidance on a corporate-level and identifies appropriate strategies to deliver desired business outcomes on an ongoing basis. This Committee also communicates with internal and external stakeholders to help in determining what direction our environmental strategy will take and what opportunities exist.

The CCES Committee reports to Keyera's executive management team about risks, opportunities, performance objectives and climate change strategy. This information helps guide the executive in incorporating climate-related issues into their business strategies.

At a Board-level, the Board HSE Committee has oversight of Keyera's environmental performance, including greenhouse gas emissions. They review Keyera's performance on a quarterly basis, including monitoring risks and performance trends. Current and prospective regulations impacting strategy on both a short term (1 - 5 years) and long term basis (5+ years) and the regulatory environment are monitored closely to ensure measures are taken to mitigate risk. This process is overseen by the HSE Committee of the Board of Directors and is reported to the Board of Directors. Climate-related performance objectives are based on regulatory targets and compliance (including compliance costs) and must be approved by both the HSE Committee and the Board. They are updated as part of the quarterly regulatory reporting.

The HSE Board Committee also conducts a risk assessment in Q3, which is then shared with the Board of Directors. Risk assessments, regulatory assessments, market scans, environmental scans, reputational analysis – all of which have climate-related elements – are all considered as part of the Board of Directors' strategy sessions.

Ensuring compliance with environmental regulations is a main driver towards Keyera's climate change strategy. Keyera constantly seeks out ways to improve operational and environmental efficiencies. Keyera's overall business strategy includes the identification of opportunities to improve its GHG performance through equipment modifications and pursuit of operational efficiencies.

Keyera's short term strategy (1-5 years) currently involves monitoring Keyera's Large Final Emitters (LFEs), evaluating proposed regulatory changes, evaluating external pressures for change and identifying internal opportunities that will achieve corporate objectives (including reducing emissions). Each year as part of the budgeting process, emission targets for each of Keyera's LFE facilities are analyzed and discussed.

In addition to the above, Keyera's strategy also involves seeking out appropriate partnerships with third parties who have a mandate to pursue and invest in environmental initiatives. Further, charitable giving to organizations with a focus on environmental initiatives is one of the pillars of Keyera's community investment strategy.

C3.1g

(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?

Keyera's current focus and resources in on current regulations, emerging regulations, and emissions management. We anticipate moving toward climate-related scenario analysis in the next 2 years.

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

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

Target reference number

Int 1

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

4.31

Targeted % reduction from base year

0

Metric

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

89158

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

100

Target status

Expired

Please explain

The Alberta Carbon Competitive Incentive Regulation (CCIR) uses an output based allocation system and is a calculated emission benchmark using a 2015 industry Alberta Gas Processing Index plus assigned transition allowances. Keyera's target is to achieve less than government assigned output based benchmark for each facility in the CCIR system. For this Intensity target, "base year emissions covered by target (metric tons CO2e)" was assigned the output based benchmark (OBA) for 7 facilities in 2018. A new regulatory scope 1 target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Target reference number

Int 2

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

7.3

Targeted % reduction from base year

0

Metric

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

130198

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

100

Target status

Expired

Please explain

A new regulatory scope 1 target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Target reference number

Int 3

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

24.17

Targeted % reduction from base year

0

Metric

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

305234

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

0

Target status

Expired

Please explain

A new regulatory scope 1 target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Target reference number

Int 4

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

5.19

Targeted % reduction from base year

0

Metric

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

42306

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

0

Target status

Expired

Please explain

A new regulatory scope 1 target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Target reference number

Int 5

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

11.86

Targeted % reduction from base year**Metric**

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

201303

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

100

Target status

Expired

Please explain

A new scope 1 regulatory target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Target reference number

Int 6

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

0.52

Targeted % reduction from base year

0

Metric

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

6210

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

0

Target status

Expired

Please explain

A new regulatory scope 1 target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

Target reference number

Int 7

Scope

Other, please specify (Scope 1 Regulatory Target)

% emissions in Scope

18.82

Targeted % reduction from base year

0

Metric

Other, please specify (Output based allocation (OBA) assigned benchmark (tCO2e))

Base year

2018

Start year

2018

Normalized base year emissions covered by target (metric tons CO2e)

288787

Target year

2018

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

0

Target status

Expired

Please explain

A new regulatory scope 1 target will be in place for 2019.

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

C-OG4.2a

(C-OG4.2a) If you do not have a methane-specific emissions reduction target for your oil and gas activities or do not incorporate methane into your target(s) reported in C4.2 please explain why not and forecast how your methane emissions will change over the next five years.

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	19	
To be implemented*	1	650
Implementation commenced*	1	15000
Implemented*	1	3614
Not to be implemented	1	

C4.3b

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

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Stack top temperature reduction fuel gas savings)

Estimated annual CO2e savings (metric tonnes CO2e)

3614

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

108400

Investment required (unit currency – as specified in C0.4)

0

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	<ul style="list-style-type: none"> • Keyera's has an Emissions Reduction Opportunity Task Group with a mandate to focus on the identification, evaluation and implementation of emission reduction opportunities. • Keyera is currently executing its strategy to reduce Nitrogen Oxides ("NOx") emissions associated with its engine fleet through a multi-phased execution plan. Based on initial testing, a combination of modifications to certain engines and changes in operating parameters, will be used as part of Keyera's plan to meet a yearly fleet average compliance target of 8 g/kWh by 2021. • Keyera has also kicked off initial testing on its heaters and boilers in order develop a plan to meet NOx emission reduction targets for this equipment by 2026. • Acid gas injection (a form of carbon sequestration) at several plants. • Installation of a waste heat recovery system at two of our facilities . • Retrofit to install a REMVue Air-Fuel Controller at one of our facilities to reduce natural gas use and emissions.

C4.5

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

No

C-OG4.6

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

Given the nature of our operations, methane emissions do not form a significant part of our operations. We will meet regulatory requirements but do not anticipate it will require any material change in our operations or any material expenditures.

COG4.7

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

Yes

C-OG4.7a

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

IR Camera are used as part of our LDAR program with a Frequency of once per year and our Gas Processing facilities and Chemical Facility and once every 3 years at field batteries and compressor stations. All frequencies will increase to meet the new AER and ECCC requirements in 2020.

C-OG4.8

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

Keyera's gas processing facilities have a target of less than 0.5% flaring of total inlet. As part of meeting this target, we evaluate our operating practices and apply learnings from flaring events.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

January 1 2005

Base year end

December 31 2005

Base year emissions (metric tons CO2e)

1151054

Comment

Scope 2 (location-based)

Base year start

January 1 2005

Base year end

December 31 2005

Base year emissions (metric tons CO2e)

161129

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

Canadian Association of Petroleum Producers, Calculating Greenhouse Gas Emissions, 2003

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

1581779

Start date

January 1 2018

End date

December 31 2018

Comment

This includes all Keyera Business Units.

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

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

Comment

C6.3

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

Reporting year

Scope 2, location-based

457708

Scope 2, market-based (if applicable)

<Not Applicable>

Start date

January 1 2018

End date

December 31 2018

Comment

This includes all Keyera Business Units.

C6.4

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

No

C6.5

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

Purchased goods and services

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Capital goods

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

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

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Upstream transportation and distribution

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Waste generated in operations

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Business travel

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Employee commuting

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Upstream leased assets

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Downstream transportation and distribution

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Processing of sold products

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Use of sold products

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

End of life treatment of sold products

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Downstream leased assets

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

No Franchises.

Investments

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Other (upstream)

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Other (downstream)

Evaluation status

Not evaluated

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

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

Intensity figure

0.004449

Metric numerator (Gross global combined Scope 1 and 2 emissions)

2039487

Metric denominator

unit total revenue

Metric denominator: Unit total

458441000

Scope 2 figure used

Location-based

% change from previous year

0.94

Direction of change

Increased

Reason for change

Nominal change in revenue emission intensity as both revenue (~2 % decrease) and Gross global combined Scope 1 and 2 emissions (~1% decrease) Year-over-year (YoY)

Intensity figure

1965

Metric numerator (Gross global combined Scope 1 and 2 emissions)

2039487

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

1038

Scope 2 figure used

Location-based

% change from previous year

16.25

Direction of change

Decreased

Reason for change

Change in FTE carbon intensity caused primarily FTE (~13% increase) and Gross global combined Scope 1 and 2 emissions (~1% decrease) YoY.

C-OG6.12

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

Unit of hydrocarbon category (denominator)

Other, please specify (Keyera Canada Midstream Direct Carbon Intensity (tCO2e/m3OE))

Metric tons CO2e from hydrocarbon category per unit specified

0.07

% change from previous year

6

Direction of change

Decreased

Reason for change

This direct carbon intensity does not include production or emissions from Keyera's Alberta EnviroFuels facility because it is a chemical production facility.

Comment

Unit of hydrocarbon category (denominator)

Other, please specify (Keyera Alberta EnviroFuels Direct Carbon Intensity (tCO2E/tonnesOE))

Metric tons CO2e from hydrocarbon category per unit specified

0.67

% change from previous year

Direction of change

<Not Applicable>

Reason for change

A direct carbon intensity for Keyera Alberta EnviroFuels facility was not reported last year.

Comment

C-OG6.13

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

Oil and gas business division

Upstream

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

0.04

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

0.05

Comment

• Total Methane over Gas Dispositions to non-Operated Facilities in m3OE • Total Methane over Total Hydrocarbon Dispositions to Non-Operated Facilities in m3OE (Ethane, propane, butane, pentanes+, NGL mix, & sulfur, condensate disp. & oil disp.) This for Keyera Canada Midstream Business Unit and does not include US operations.

Oil and gas business division

Chemicals

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

7.17

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

Comment

Keyera Alberta EnviroFuels facility - Total Methane over Total chemical production in m3 (Pentane & Isooctane)

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	1504831	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	64982	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	11965	IPCC Fourth Assessment Report (AR4 - 100 year)

C-OG7.1b

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

Emissions category

Fugitives

Value chain

Upstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

245

Gross Scope 1 methane emissions (metric tons CH4)

883

Total gross Scope 1 emissions (metric tons CO2e)

22312

Comment

Emissions category

Venting

Value chain

Upstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

125407

Gross Scope 1 methane emissions (metric tons CH4)

145

Total gross Scope 1 emissions (metric tons CO2e)

129026

Comment

Emissions category

Flaring

Value chain

Upstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

38048

Gross Scope 1 methane emissions (metric tons CH4)

161

Total gross Scope 1 emissions (metric tons CO2e)

42105

Comment

Emissions category

Combustion (excluding flaring)

Value chain

Upstream

Product

Gas

Gross Scope 1 CO2 emissions (metric tons CO2)

1339732

Gross Scope 1 methane emissions (metric tons CH4)

1410

Total gross Scope 1 emissions (metric tons CO2e)

1386906

Comment

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Canada	1581776
United States of America	3

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Keyera Canada Midstream Operations	1284134
Keyera Alberta EnviroFuels Facility (Chemical Production)	297642
Keyera USA	3

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

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

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility generation activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)		<Not Applicable>	We are a midstream company.
Oil and gas production activities (downstream)		<Not Applicable>	We are a midstream company.
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Canada	456410		507122	
United States of America	1299		2716	

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Keyera Canada Midstream Operations	377261	
Keyera Alberta EnviroFuels Facility (Chemical Production)	79149	
Keyera USA	1299	

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)			We are a midstream company.
Oil and gas production activities (downstream)			We are a midstream company.
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption		<Not Applicable >		
Other emissions reduction activities		<Not Applicable >		
Divestment		<Not Applicable >		
Acquisitions		<Not Applicable >		
Mergers		<Not Applicable >		
Change in output		<Not Applicable >		
Change in methodology		<Not Applicable >		
Change in boundary		<Not Applicable >		
Change in physical operating conditions	16198	Decreased	0.79	Operations and emissions vary depending on incoming gas composition (carbon content)in the midstream industry; however Keyera converted the Strachan facility from sour to sweet operations, which YoY had lower emissions.
Unidentified		<Not Applicable >		
Other		<Not Applicable >		

C7.9b

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

Location-based

C8. Energy

C8.1

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

More than 10% but less than or equal to 15%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)		7477245	7477245
Consumption of purchased or acquired electricity	<Not Applicable>		509838	509838
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>		<Not Applicable>	
Total energy consumption	<Not Applicable>		7987082	7987082

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

7473142

MWh fuel consumed for self-generation of electricity

44701

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

The natural gas fuel consumed does not include natural gas fuel purchased from utility providers to heat offices etc at both Keyera Canada midstream and US Terminals, but does include natural gas fuel consumed at Alberta Envirofuels Chemical facility. Minnehik-Buck Lake Cogen - MWh natural gas consumed for self-generation of both electricity and heat.

Fuels (excluding feedstocks)

Propane Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

2586

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

989

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

528

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Diesel

Emission factor
2804

Unit
kg CO2e per m3

Emission factor source
EC (2018). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2016. Environment Canada.

Comment

Motor Gasoline

Emission factor
2315

Unit
kg CO2e per m3

Emission factor source
EC (2018). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2016. Environment Canada.

Comment

Natural Gas

Emission factor
2125.39729

Unit
kg CO2 per m3

Emission factor source
Emission Factor (kg/E3m3) = Default Factor x Calculated HHV/37.9787 and dependent on gas composition at each facility. Emission factors are calculated following the methodology outlined in ACCO's Quantification Methodologies for the Carbon Competitiveness Incentive Regulation and the Specified Gas Reporting Regulation, Version 1.1, November 2018. The reference natural gas emission factor provided was quantified for Keyera's Rimbey facility and is a sample representation only. Please note: Cell range will not allow emission factor of 2125.39729 kg/E3m3. Appropriate units are kg/E3m3.

Comment

Propane Gas

Emission factor
1548

Unit
kg CO2e per m3

Emission factor source
EC (2018). National Inventory Report. Greenhouse Gas Sources and Sinks in Canada: 1990 - 2016. Environment Canada.

Comment

C8.2e

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	11576			
Heat	10386	10386		
Steam				
Cooling				

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

C9. Additional metrics

C9.1

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

C-OG9.2a

(C-OG9.2a) Disclose your net liquid and gas hydrocarbon production (total of subsidiaries and equity-accounted entities).

	In-year net production	Comment
Crude oil and condensate, million barrels	11.34	Total disposition to non-operated facilities for oil and condensate in 2018.
Natural gas liquids, million barrels	55.51	Total sum of Ethane, Propane, Butane, Pentane Plus, & NGL Mix Spec in 2018.
Oil sands, million barrels (includes bitumen and synthetic crude)		
Natural gas, billion cubic feet	377.98	Total gas disposition to non-operated facilities in 2018.

C-OG9.2b

(C-OG9.2b) Explain which listing requirements or other methodologies you use to report reserves data. If your organization cannot provide data due to legal restrictions on reporting reserves figures in certain countries, please explain this.

C-OG9.2c

(C-OG9.2c) Disclose your estimated total net reserves and resource base (million boe), including the total associated with subsidiaries and equity-accounted entities.

	Estimated total net proved + probable reserves (2P) (million BOE)	Estimated total net proved + probable + possible reserves (3P) (million BOE)	Estimated net total resource base (million BOE)	Comment
Row 1				

C-OG9.2d

(C-OG9.2d) Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.

	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)	Comment
Crude oil / condensate / Natural gas liquids				
Natural gas				
Oil sands (includes bitumen and synthetic crude)				

C-OG9.2e

(C-OG9.2e) Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.

C-OG9.3e

(C-OG9.3e) Please disclose your chemicals production in the reporting year in thousand metric tons.

Product	Production, Thousand metric tons	Capacity, Thousand metric tons
High value chemicals (Steam cracking)	523.01	

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

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

C-OG9.7

(C-OG9.7) Disclose the breakeven price (US\$/BOE) required for cash neutrality during the reporting year, i.e. where cash flow from operations covers CAPEX and dividends paid/ share buybacks.

C-OG9.8

(C-OG9.8) Is your organization involved in the sequestration of CO2?

Yes

C-OG9.8a

(C-OG9.8a) Provide, in metric tons CO2, gross masses of CO2 transferred in and out of the reporting organization (as defined by the consolidation basis).

	CO2 transferred – reporting year (metric tons CO2)
CO2 transferred in	
CO2 transferred out	

C-OG9.8b

(C-OG9.8b) Provide gross masses of CO2 injected and stored for the purposes of CCS during the reporting year according to the injection and storage pathway.

Injection and storage pathway	Injected CO2 (metric tons CO2)	Percentage of injected CO2 intended for long-term (>100 year) storage	Year in which injection began	Cumulative CO2 injected and stored (metric tons CO2)
Acid gas injection (CO2 and H2S co-injected into a production reservoir)	54634	100	January 1 1996	949547

C-OG9.8c

(C-OG9.8c) Provide clarification on any other relevant information pertaining to your activities related to transfer and sequestration of CO2.

C10. Verification

C10.1

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

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

C10.1a

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

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

09 - MBL - Statement of Verification 2018 CCIR Report_2019 04 30.pdf
Verification Report_Keyera Nevis - 2018 CCIR Report_2019 04 01.pdf
Verification Report_Keyera Rimbey - 2018 CCIR Report_2019 03 28.pdf
Verification Report_Keyera Strachan - 2018 CCIR Report_2019 04 01.pdf
Verification Report_KFS - 2018 CCIR Report_2019 04 01.pdf
Facility Reverification Follow Up - CR17_Keyera Envirofuels (Rev2).pdf
Verification Report_Keyera Brazeau - 2018 CCIR Report_2019 04 01.pdf

Page/ section reference

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

72

C10.2

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

No, we do not verify any other climate-related information reported in our CDP disclosure

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

Alberta carbon tax

Other ETS, please specify (Alberta Carbon Competitiveness Incentive Regulation)

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

72

Period start date

January 1 2018

Period end date

December 31 2018

Allowances allocated

1063198

Allowances purchased

127911

Verified emissions in metric tons CO₂e

1141651

Details of ownership

Facilities we own and operate

Comment

The Alberta Carbon Competitive Incentive Regulation (CCIR) uses an output based allocation system and is a calculated emission benchmark using a 2015 industry Alberta Gas Processing Index plus transition allowances. Allowances allocated is the total calculated output based allocation emissions assigned to the 7 Keyera facilities that were regulated or opted in to the CCIR program in 2018. Allowances purchased is the total purchased and retired emissions under the Emissions Performance Credit (EPC) Registry operated by CSA Group in partnership with the Government of Alberta for 2018.

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

Alberta carbon tax

Period start date

January 1 2018

Period end date

December 31 2018

% of emissions covered by tax

0.05

Total cost of tax paid

12166.53

Comment

Alberta Carbon Levy is calculated from fuel use from facilities not regulated under the Alberta CCIR program.

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

The Alberta Carbon Competitiveness Incentive Regulation (CCIR) output based emissions method is applicable for 2018 and 2019 operating years, but starting 2020 the new provincial government is replacing the CCIR program with a Technology Innovation and Emission Reduction (TIER) system. Compliance is achieved with through a combination of efforts, including but not limited to close monitoring of our emissions performance and sharing that information with operations and business personnel, pursuing opportunities to cost-effectively maximize efficiencies and/or reduce emissions intensities, effectively managing the credits we have earned, purchasing credits when necessary. Keyera is closely monitoring the development of the TIER system, including the expected form of benchmark, forecast carbon pricing, forecast throughput at Keyera's large final emitters, the relative performance of Keyera's facilities compared to other similar facilities based on available historical data, and expected future emissions performance of Keyera facilities, Keyera believes it is well positioned to comply with the new TIER framework that the Alberta government is continuing the develop.

C11.2

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

Yes

C11.2a

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

Credit origination or credit purchase

Credit purchase

Project type

Other, please specify (Emissions Performance Credit (EPC) Registry operated by CSA Group in partnership with the Government of Alberta.)

Project identification

Verified to which standard

Other, please specify (ISO 14064-3 Standard)

Number of credits (metric tonnes CO2e)

45070

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

Credits cancelled

Yes

Purpose, e.g. compliance

Compliance

Credit origination or credit purchase

Credit origination

Project type

Other, please specify (Emissions Performance Credit (EPC) Registry operated by CSA Group in partnership with the Government of Alberta.)

Project identification

Verified to which standard

Other, please specify (ISO 14064-3 Standard)

Number of credits (metric tonnes CO2e)

49457

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

Credits cancelled

No

Purpose, e.g. compliance

Compliance

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Drive energy efficiency
Stress test investments
Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

The carbon price is used to help calculate reduction opportunities; to assist in project economic evaluations as well as acquisition and disposition economic evaluations ; as a consideration in operating practices and efficiency gains; and to assess compliance and associated compliance costs.

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

50

Variance of price(s) used

2017: \$20 2019 -2020 : \$30 2021: \$40 2022: \$50

Type of internal carbon price

Implicit price

Impact & implication

C12. Engagement

C12.1

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

Yes, other partners in the value chain

C12.1c

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

Keyera shares information on performance and compliance with our owner partners at our large facilities and engages with them on decisions on the use of credits. We also share climate-related information with some of our gas processing customers.

Keyera seeks out appropriate partnerships with third parties who have a mandate to pursue and invest in environmental initiatives. This might include technology companies or academia, charitable organizations as well as industry partners.

Keyera participates in CAPP's (Canadian Association of Petroleum Producers) climate-related groups and meetings, including committees and forums related to air, clean fuel standards and greenhouse gas management. As part of these groups and at times independently, Keyera engages with municipal, provincial and federal governments. For example, Keyera presented to the Government of Alberta Climate Change Office about possible impacts the Carbon Competitiveness Incentive Regulation would have on the iso-octane and natural gas sectors.

C12.3

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

Direct engagement with policy makers

Trade associations

Other

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Carbon tax	Support with major exceptions	Attend round table discussions and one on one meetings on the development of the Alberta CCIR.	Support carbon pricing that minimizes market distortion and carbon leakage; and that does not impair the competitiveness of the WCSB

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

No

C12.3e

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

Keyera has used a lobbyist to support our engagement strategy. We also fund a resource advocacy organization called Canada Action.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

The contact for engagement is the chair of our Climate Change Emissions Strategy Committee (CCESC). Under current processes, the Chair of the CCESC and SVP, General Counsel are consulted on Keyera's external communication related to our climate change strategy. Core regulatory disclosures, including on climate change matters, are also reviewed by Keyera's Disclosure Committee (which includes representation from the Senior management team and IR).

C12.4

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

Publication

In mainstream reports

Status

Complete

Attach the document

AIF 2018 2019 FINAL.pdf

Page/Section reference

p. 37 - Environmental Programs p. 42 - Greenhouse Gas and Emissions Regulations

Content elements

Governance

Strategy

Risks & opportunities

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

Page/Section reference

GHG and Emission Page on Keyera.com: <http://www.keyera.com/titanweb/keyera/webcms.nsf/AllDoc/6954761B80A2694F8725838300471E6C?OpenDocument#.XT9WY3dFx9A>

Content elements

Governance

Strategy

Risks & opportunities

Comment

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

*Please note: Keyera's 2019 submission has the most accurate numbers and up-to-date information. As such, all metric comparisons between 2018 and 2017 operating years are based on current information. Readers are advised not to compare numbers disclosed in previous CDP reports to the 2019 CDP submission as Keyera revised disclosure based the following business units:

- Keyera Canada Midstream Operations
- Keyera Alberta EnviroFuels Facility (Chemical Production)
- Keyera USA

2017 Operating Year Data Update:

- C6.1 2017 Scope 1 CO2E Emission Direct Emissions: 1,674,218 tCO2E
- C6.3 2017 Scope 2 CO2E Emission Indirect Emissions: 381,466 tCO2E
- 2017 Crude oil and condensate: 18.36 million barrels
- 2017 Natural gas: 367.21 billion cubic feet
- 2017 Natural gas liquids: 49.79 million barrels
- 2017 AEF Chemical Production: 115.65 MT

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms