
2019 CDP Climate Response for FY2018

Husky Energy

C0 Introduction

Introduction

(C0.1) Give a general description and introduction to your organization. (max 5,000 characters)

Husky Energy is an integrated energy company based in Calgary, Alberta and its common shares are publicly traded on the Toronto Stock Exchange under the symbol HSE. The Company operates in Canada, the United States and the Asia Pacific region with Upstream and Downstream business segments.

(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
01/01/2018	31/12/2018	Yes	2 years

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

Country/Region
Canada, United States, China and Indonesia

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

Currency
CAD (\$)

(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

Organizational activities: Chemicals

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Bulk organic chemicals

- Ethanol

Bulk inorganic chemicals

- Hydrogen
-

Organizational activities: Oil and Gas

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

Oil and gas value chain

- Upstream
- Downstream

Other divisions

- Carbon capture and storage/utilization

READER ADVISORIES

Forward-Looking Statements and Information

Certain statements in this document are forward-looking statements and information (collectively “forward-looking statements”), within the meaning of applicable Canadian securities legislation, Section 21E of the United States Securities Exchange Act of 1934, as amended, and Section 27A of the United States Securities Act of 1933, as amended. The forward-looking statements contained in this document are forward-looking and not historical facts.

Some of the forward-looking statements may be identified by statements that express, or involve discussions as to, expectations, beliefs, plans, objectives, assumptions or future events or performance (often, but not always, through the use of words or phrases such as “will likely result”, “are expected to”, “will continue”, “is anticipated”, “is targeting”, “estimated”, “intend”, “plan”, “projection”, “forecast”, “guidance”, “could”, “may”, “would”, “aim”, “vision”, “goals”, “objective”, “target”, “schedules” and “outlook”). In particular, forward-looking statements in this document include, but are not limited to, references to: the Company’s general strategic plans and growth strategies; anticipated increases to carbon-related payments; potential financial impacts and time horizons of identified risks; potential climate-related opportunities and their corresponding likelihood, time horizon, magnitude of impact, potential financial impact and the costs and strategies to realize the opportunities; methane reduction target and associated timeline; number of emissions reduction initiatives at various stages of development and their estimated annual CO₂e savings; estimated annual CO₂e savings, annual monetary savings, investment required, payback period and estimated lifetime of implemented emissions reduction initiatives; and a proposed investment in a hydrogen diluent reduction pilot project.

In addition, statements relating to “reserves” are deemed to be forward-looking statements as they involve the implied assessment based on certain estimates and assumptions that the reserves described can be profitably produced in the future. There are numerous uncertainties inherent in estimating quantities of reserves and in projecting future rates of production and the timing of development expenditures. The total amount or timing of actual future production may vary from reserve and production estimates.

Although the Company believes that the expectations reflected by the forward-looking statements presented in this document are reasonable, the Company’s forward-looking statements have been based on assumptions and factors concerning future events that may prove to be inaccurate. Those assumptions and factors are based on information currently available to the Company about itself and the businesses in which it operates. Information used in developing forward-looking statements has been acquired from various sources, including third party consultants, suppliers and regulators, among others.

Because actual results or outcomes could differ materially from those expressed in any forward-looking statements, investors should not place undue reliance on any such forward-looking statements. By their nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, which contribute to the possibility that the predicted outcomes will not occur. Some of these risks, uncertainties and other factors are similar to those faced by other oil and gas companies and some are unique to the Company.

The Company's Annual Information Form for the year ended December 31, 2018 and other documents filed with securities regulatory authorities (accessible through the SEDAR website www.sedar.com and the EDGAR website www.sec.gov) describe risks, material assumptions and other factors that could influence actual results and are incorporated herein by reference.

New factors emerge from time to time and it is not possible for management to predict all of such factors and to assess in advance the impact of each such factor on the Company's business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statement. The impact of any one factor on a particular forward-looking statement is not determinable with certainty as such factors are dependent upon other factors, and the Company's course of action would depend upon management's assessment of the future considering all information available to it at the relevant time. Any forward-looking statement speaks only as of the date on which such statement is made and, except as required by applicable securities laws, the Company undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events.

Disclosure of Oil and Gas Information

Unless otherwise indicated: (i) reserves estimates in this document have been prepared by internal qualified reserves evaluators in accordance with the Canadian Oil and Gas Evaluation Handbook, have an effective date of December 31 in the years indicated and represent the Company's working interest share before royalties; (ii) historical production volumes provided represent the Company's working interest share before royalties; and (iii) historical production volumes provided are for the year ended December 31, 2018.

The Company uses the term barrels of oil equivalent ("boe"), which is consistent with other oil and gas companies' disclosures, and is calculated on an energy equivalence basis applicable at the burner tip whereby one barrel of crude oil is equivalent to six thousand cubic feet of natural gas. The term boe is used to express the sum of the total company products in one unit that can be used for comparisons. Readers are cautioned that the term boe may be misleading, particularly if used in isolation. This measure is used for consistency with other oil and gas companies and does not represent value equivalency at the wellhead.

C1 Governance

Board oversight

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

Yes

(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 Chair of the Health, Safety and Environment (“HS&E”) Committee of the Board of Directors is responsible for the oversight of climate-related issues as part of the committee’s mandate to assist the Board by reviewing, reporting and making recommendations on the Corporation’s policies, management systems and programs with respect to HS&E issues. The Committee regularly reviews elements of Husky’s enterprise risk matrix, which includes climate change as a critical risk. The Committee is chaired by an independent director, meets at least semi-annually and advises and reports to the Co-Chairs of the Board and the Board on a regular basis as is responsibly appropriate.

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled - all meetings	<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>The Health, Safety and Environment (“HS&E”) Committee of the Board of Directors meets at least semi-annually with the mandate to assist the Board by reviewing, reporting and making recommendations on the Corporation’s policies, management systems and programs with respect to HS&E issues. Husky includes climate-related issues as part of its definition of HS&E. The Committee’s mandate lays out specific duties as follows:</p> <p>SPECIFIC DUTIES & RESPONSIBILITES</p> <p>The Committee will have the oversight responsibilities and specific duties as described below.</p> <ol style="list-style-type: none"> 1. Review, on a periodic basis, the Corporation’s HS&E policy, management systems and programs and any significant policy contraventions. 2. Review, on a periodic basis, the Corporation’s HS&E audit program and significant findings resulting from the program. 3. Review, on a periodic basis, compliance with governmental orders, conduct of litigation and other proceedings relating to HS&E matters.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
		<ol style="list-style-type: none"> 4. Review, on a periodic basis, actions and initiatives undertaken to mitigate HS&E risk and/or HS&E matters having the potential to affect the Corporation’s activities, plans, strategies or reputation. In addition, the Committee oversees the Corporation’s risk management framework and related processes in relation to HS&E matters. 5. Conduct a periodic review of the Corporation’s environmental remediation program. 6. Monitor, on a periodic basis, the relationship with regulatory authorities and others outside the Corporation (including joint venture partners, neighbouring property owners, stakeholders and shareholders) on HS&E issues. 7. Act in an advisory capacity to the Board. 8. Carry out such other responsibilities as the Board may, from time to time, set forth. 9. Advise and report to the Co-Chairs of the Board and the Board, relative to the duties and responsibilities set out above, from time to time, in such detail as is responsibly appropriate.

Management responsibility

(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 Operating Officer (COO)	Both assessing and managing climate-related risks and opportunities	Half-yearly
Executive Health, Safety and Environment Committee	Both assessing and managing climate-related risks and opportunities	Half-yearly

(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).

Climate-related issues are managed by the Executive Health, Safety and Environment Committee (EHSEC). It is the highest-level management committee, with a mandate to provide executive level oversight and strategic direction for all critical health, safety and environmental issues, including climate-related issues, as these have been identified as a critical risk in Husky's enterprise risk matrix. This committee consists of members of senior management (Vice-President and above), and is chaired by the Chief Operating Officer, who holds ultimate accountability for management of, and reporting on, climate-related issues to the Board. The EHSEC maintains elements of the enterprise risk matrix related to health, safety and environment, including climate-related risk. The enterprise risk matrix is maintained by the Risk and

Compliance Committee, which reports the matrix on a quarterly basis to the Audit Committee of the Board of Directors, at least semi-annually to the Health, Safety and Environment Committee of the Board of Directors, and annually to the Board of Directors.

Employee incentives

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

Yes

(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?	Types of incentives	Activity incentivized	Comment
All employees	Monetary reward	Efficiency project	Employees contributing to efficiency projects may set related individual goals for which they receive financial incentives as part of our performance management process.
Other: Individuals nominated for HS&E awards for major sustainability accomplishments.	Recognition (non-monetary)	Other: Recognition for specific projects that address climate change and other environmental issues through the CEO's Award of Excellence.	

C2 Risks and opportunities

Time horizons

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

Time horizon	From (years)	To (years)	Comment
Short-term	0	2	
Medium-term	2	5	
Long-term	5	15	

Management processes

(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.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

(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
Six-monthly or more frequently	> 6 years	Owners of risks identified on Husky's enterprise risk matrix review risks regularly. Risk owners are Vice President level or above. Updates on Husky's enterprise risk matrix are provided semi-annually to the Audit Committee of the Board of Directors, and (for health, safety or environment risks) to the Health, Safety and Environment Committee of the Board of Directors, and annually to the Board of Directors.

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

Husky uses a comprehensive greenhouse gas (GHG) management framework to identify and respond to climate-related risks and opportunities. A cornerstone of the framework is the Carbon Management Critical Competency Network (CMCC), a cross-departmental group that convenes representatives from across Husky's business units to share knowledge and develop guidance on carbon and climate issues.

Process scope:

Husky's GHG management framework manages reporting, regulatory compliance, emission forecasting and emission reduction strategies. It includes:

- An emission management system
- Inventories and quantification
- Reporting and verification
- Forecasting
- Reduction and compliance strategies
- Regulatory advocacy and policy development
- Financial impact assessment
- Corporate governance

The CMCC also provides corporate guidance and recommendations around the growing financial risks and value of carbon, and contributes information to the Executive Health, Safety and Environment Committee on a regular basis. This information is also incorporated into Husky's enterprise risk matrix, where climate-related risks are assessed alongside other critical risks to the Company. Risks deemed to have substantive financial impact to the company (greater than \$10,000,000) are highlighted for additional scrutiny.

The Carbon Management Regulatory Monitoring Committee monitors emerging regulations related to carbon, including carbon pricing, methane regulations, and clean fuel standards. The purpose of the group is to understand the cumulative impact of these emerging regulations, and to coordinate Husky's advocacy strategy to promote an outcome that achieves government objectives.

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

Risk type	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>Husky's GHG management framework includes an Environmental Performance Reporting System (EPRS) for inventory, quantification, reporting and verification of GHG emissions. The Corporate Responsibility business unit (Corporate Responsibility) with the Carbon Management Critical Competency Network and the Carbon Management Regulatory Monitoring Committee uses the outputs of EPRS to quantify and manage exposure to current regulatory risk. Husky has also included carbon pricing in its long-range planning and 2019 budgeting processes. For example, Husky's Sunrise and Tucker thermal facilities used current Alberta carbon pricing of \$30/tonne to forecast compliance obligations beyond 2018.</p>
Emerging regulation	Relevant, always included	<p>Corporate Responsibility with the Carbon Management Critical Competency Network and the Carbon Management Regulatory Monitoring Committee incorporates carbon costs in the Company's Long-Range Plan (LRP). Facility production and energy use forecasts provided by business units are entered into jurisdiction-specific models to quantify, forecast and manage exposure to risks associated with emerging regulation from the governments of Canadian and U.S. governments as well as provincial and state governments in jurisdictions where the Company operates." For example, Husky has evaluated the impact of the Government of Canada's proposed backstop carbon pricing on its Canadian operations due to the possibility of provincial policy changes that may negate Federal equivalency agreements in some jurisdictions where Husky operates.</p> <p>By estimating its current and projected future emissions and understanding forthcoming regulations that may impact its business, the Company determines the areas of its operations that may face future compliance obligations or additional costs from regulation. Husky's enterprise risk management program supports decision making via comprehensive and systematic identification and assessment of risks that could materially impact the results of the Company. It builds risk management and mitigation into strategic planning and operational processes for its business units. Husky has developed an enterprise risk matrix to identify risks to its people, the environment, its assets and its reputation, and to systematically mitigate these risks to an acceptable level.</p>
Technology	Relevant, always included	<p>Husky's GHG management framework includes a process for climate-related technology assessment, including new innovations that can reduce the Company's emissions intensity, and innovations that could disrupt Husky's business strategy. As new technologies are identified by subject matter experts across the Company, they are shared through the Carbon Management Critical Competency Network (CMCC) and as appropriate, are incorporated into regular updates to the Executive Health, Safety and Environment Committee and business unit leadership.</p> <p>Examples of risk from technological innovation that have been reviewed by the CMCC are the accelerating development of renewable energy infrastructure and electrification of the transportation sector. As part of its risk assessment process, Husky reviewed commonly accepted growth forecasts in these sectors to determine the impact to its short, medium and long-term strategy. Husky employed a Marginal Abatement Cost Curve (MACC) tool as part of a process to review technologies that might qualify for external funding and enhance business cases for technology risk mitigation.</p>
Legal	Relevant, always included	<p>Husky's Carbon Management Critical Competency Network (CMCC) includes representation from Husky's Legal group, which monitors developments in climate-related litigation that could impact Husky's business. As potential risks are identified, Husky evaluates its exposure to similar risks, and adjusts corporate policies, strategies and/or practices as deemed appropriate. For example, Husky's review of U.S. litigation against energy companies related to their public disclosure of climate-related risk, informed its public disclosure of climate-related risk.</p>

Risk type	Relevance & inclusion	Please explain
Market	Relevant, always included	<p>Husky's Carbon Management Critical Competency Network (CMCC) includes representation from Upstream and Downstream business units, as well as groups including Environment, Legal, Sustainability, Finance, and Government Relations. As climate-related risks associated with shifts in supply and demand for commodities are identified, they are evaluated and incorporated into regular reports to the Executive Health, Safety and Environment Committee and business unit leadership. For example, changes in lower-carbon and clean fuels regulations across Canada have the potential to change the market for Husky's fuel products sold in its 557 (2018 average) retail locations in North America. CMCC has supported Husky's assessment of these market risks and ensured that knowledge has been shared across the organization.</p>
Reputation	Relevant, always included	<p>Husky's Carbon Management Critical Competency Network (CMCC) includes representation from Husky's Corporate Affairs business unit, which manages the Husky reputation and brand. Climate-related impacts to reputation, resulting from changing consumer or community perceptions of Husky, or the broader Canadian energy system context, are evaluated and strategies are developed and incorporated into regular reports to the Executive Health, Safety and Environment Committee and business unit leadership.</p> <p>In 2018 the CMCC reviewed key messages regarding carbon risks and opportunities to promote consistency both internally and externally across multiple media, including web, intranet, participation in industry associations and direct engagement with regulators.</p>
Acute physical	Relevant, always included	<p>Event-driven, acute physical climate-related risks are identified as part of the hazardous operations planning process used by Husky. For example, Husky facilities such as well sites, pipeline infrastructure or retail stations that are exposed to flood risk incorporate mitigation measures as part of the design and engineering process, as well as response measures into their emergency response plans.</p>
Chronic physical	Relevant, always included	<p>Climate-related risks from longer-term shifts in climate patterns are incorporated into operational risk assessments that influence production and facilities planning processes. For example, Husky employs a water risk assessment process that highlights exposure to drought for facilities that require access to fresh-water supply for production operations. This risk assessment process has been incorporated into facility planning for thermal facilities relying on water from the North Saskatchewan River basin.</p>
Upstream	Relevant, always included	<p>As part of its regulatory risk assessment process, Husky identifies risks that may have a disproportionate impact on its suppliers and works with vendors to develop mitigation measures. For example, many of the Company's suppliers have been impacted by the Alberta carbon levy system. Husky has worked with its suppliers to ensure that a fair flow through of costs related to the levy are negotiated into its agreements.</p>
Downstream	Relevant, always included	<p>Regulatory, political and social barriers to pipeline projects in Canada are impacting the ability of many producers to access global pricing for oil and natural gas products. These risks are incorporated into Husky's economic planning for future investment decisions through pricing assumptions, forecasted apportionment availability, toll impacts and other relevant factors. Assessments of these risks as they relate to climate issues are coordinated through the Carbon Management Critical Competency Network and Carbon Management Regulatory Monitoring Committee as deemed relevant.</p>

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

Husky uses a comprehensive greenhouse gas (GHG) management framework to identify and respond to climate change risks and opportunities. The Carbon Management Critical Competency Network (CMCC) is a cornerstone of this framework and convenes representatives from across Husky to share knowledge and develop guidance on carbon and climate issues.

Process scope:

Husky's GHG management framework manages reporting, regulatory compliance, emission forecasting and emission reduction strategies. It includes:

- An emission management system
- Inventories and quantification
- Reporting and verification
- Forecasting
- Reduction strategies
- Regulatory advocacy and policy development
- Financial impact assessment
- Corporate governance

Risk Management Process:

By estimating its current and projected future emissions and understanding forthcoming regulations that may impact its business, the Company determines the areas of its operations that may face future compliance obligations or additional costs from regulation. Husky's enterprise risk management program supports decision-making via comprehensive and systematic identification and assessment of risks that could materially impact the results of the Company. It builds risk management and mitigation into strategic planning and operational processes for its business units through the adoption of standards and best practices. Husky has developed an enterprise risk matrix to identify risks to its people, the environment, its assets and its reputation, and to systematically mitigate these risks to an acceptable level. Husky applies its GHG management framework through the lifecycle of projects and uses general hazard assessment procedures to evaluate opportunities and risks at an asset level. The results of assessments are then incorporated into other asset planning processes.

Example:

To fully understand the impacts of new climate-related regulations, Husky employed the tools of its GHG management framework described above to quantify and assess the impacts, based on current and forecast emission profiles for regulated facilities. As regulations were being developed in multiple jurisdictions in Canada, cost impacts for proposed Provincial carbon pricing schemes were modelled and compared to Canadian Federal carbon pricing models (which would be applied if Provincial schemes were judged to be non-equivalent) to ensure the financial risks associated with all potential regulations that may be imposed in each Province were understood. Understanding the financial risks and potential compliance obligations under each jurisdictional regulation allowed for effective policy advocacy and continues to direct Husky's emissions management strategy. Compliance strategies that consider multiple potential policy outcomes are maintained at the facility level.

Opportunity Management Process:

Husky quantifies risks and opportunities and determines materiality based on standard economic models integrated with other aspects of an asset or business. Prioritization is determined based on quantified impact assessment. Impact categories considered include Health and Safety, Financial, Reputation, and Environmental.

Examples

In 2017, Husky developed a Marginal Abatement Cost Curve (MACC), which catalogues opportunities to use technology to reduce emissions from operations. It compares these opportunities in terms of relative economic performance and size of reductions achievable. The MACC facilitates knowledge transfer about these technologies amongst business units and the promotion of these technologies both internally (e.g. executive teams) and externally. The MACC also highlights opportunities that may be eligible for external funding.

Husky's Corporate Water Standard mandates water risk assessments for all our operations, and the development of management plans (on a prioritized basis). As part of this process Husky evaluates risks, including availability, reliability, and the potential for extreme weather events, and develops mitigation plans to minimize those risks. This process incorporates climate-related impacts on water risk. When evaluating water source options for our Sunrise project, this process led to the selection of process-affected water from an adjacent company's operations as the primary source, reducing potential capital and operating expenses relating to other, more remote or less stable water sources.

Risk disclosure

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

Table Notes

This table is too wide to display on a single landscape page. It is split into two tables for ease of navigation. Risks are continued on second part of table with Identifier Column.

Table 2.3a Part A

ID	Where in the value chain does the risk driver occur?	Risk type	Primary climate-related risk driver	Type of financial impact	Company- specific description	Time horizon	Likelihood	Magnitude of impact	Are you able to provide a potential financial impact figure?	Potential financial impact figure (currency)	Potential financial impact figure - minimum (currency)	Potential financial impact figure - maximum (currency)
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Risk1	Direct operations	Transition risk	Policy and legal: Increased pricing of GHG emissions	Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)	<p>Risk Description: To complement the Pan-Canadian Framework on Clean Growth and Climate Change launched in December 2016, the federal government published a Clean Fuel Standard (CFS) Regulatory Framework in December 2017 that aims to eliminate 30 million metric tonnes of GHG emissions by 2030 through 10-15% reductions in fuel carbon intensities. CFS consultations are ongoing and a regulatory proposal for the liquid fuel stream was released in July 2019.</p> <p>As of January 1, 2019, carbon pricing regulations have been enacted throughout Canada. Husky evaluates the costs associated with regulatory changes and incorporates carbon pricing in its Long-Range Plan. In B.C., annual fuel costs associated with a provincial levy anticipate incremental increases as part of the operating costs with current pricing at \$40/tonne CO₂e. Alberta is currently subject to the Carbon Competitiveness Incentive Regulation, which applies to facilities emitting over 100,000 tonnes CO₂e/year. The policy, which currently prices carbon emissions at \$30/tonne CO₂e, is subject to repeal by Alberta's United Conservative government.</p> <p>Possible emission and cost forecasts based on likely proposed policy as well as the federal Output Based Pricing System (federal OBPS) are reviewed with business unit management teams and are presented as alternate scenarios to Husky's Long-Range Plan. Saskatchewan has enacted an Output Based Performance Standard for facilities emitting over 25,000 tonnes CO₂e/year. The federal government has imposed a fuel levy in Saskatchewan as part of the federal Backstop. Pricing for both Saskatchewan systems follow the Federal pricing schedule of \$20/tonne CO₂e escalating by \$10/year until reaching \$50/tonne CO₂e in 2022. Manitoba and Ontario are part of the Federal OBPS and Federal fuel levy.</p>	Current	Virtually certain	Low	Yes, a single figure estimate	\$ 9,298,000	n/a	n/a
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ID	Where in the value chain does the risk driver occur?	Risk type	Primary climate-related risk driver	Type of financial impact	Company- specific description	Time horizon	Likelihood	Magnitude of impact	Are you able to provide a potential financial impact figure?	Potential financial impact figure (currency)	Potential financial impact figure - minimum (currency)	Potential financial impact figure - maximum (currency)
Risk2	Direct operations	Physical risk	Acute: Other	Reduced revenue from decreased production capacity	<p>Facilities exceeding 50,000 tonnes CO2e/year are subject to costs under the Federal pricing schedule. The province of Newfoundland and Labrador began pricing carbon emissions in 2017. In 2018, the regulations were adapted for pricing emissions from the offshore oil and gas sector. Pricing for the regulated emitters, over 25,000 tonnes/year, and a provincial fuel levy follow the Federal pricing schedule. As costs increase, the risks associated with new development are considered in the project economics. Energy efficiency and new technology are evaluated and considered as part of risk mitigation.</p> <p>Risk Description: Husky operates in some of the harshest environments in the world, including the offshore Atlantic region at the White Rose field. Climate change is expected to increase severe weather conditions, including winds, flooding, and variable temperatures that are contributing to the melting of northern ice and increased iceberg activity. The Company has a number of policies to protect people, equipment, and the environment in the event of extreme weather conditions and adverse ice conditions. Risk Effects: Icebergs and pack ice off the coast of Newfoundland and Labrador may affect Husky's offshore facilities, necessitating temporary operational shut downs, or potentially causing damage to equipment, spills, asset damage and human impacts.</p>	Current	Very unlikely	Medium	Yes, a single figure estimate	\$100,192,680	n/a	n/a

ID	Where in the value chain does the risk driver occur?	Risk type	Primary climate-related risk driver	Type of financial impact	Company- specific description	Time horizon	Likelihood	Magnitude of impact	Are you able to provide a potential financial impact figure?	Potential financial impact figure (currency)	Potential financial impact figure - minimum (currency)	Potential financial impact figure - maximum (currency)
Risk3	Direct operations	Transition risk	Market: Changing customer behavior	Market: Reduced demand for goods and/or services due to shift in consumer preferences	Risk Description: Societal and consumer pressure to reduce GHG emissions from the transportation sector could affect the composition of the basket of fuels available to the consumer as well as improved vehicle performance, as noted in the Canadian Fuels Association's "Fuels for Life" report. Risk Effects: Increased transportation fuel prices due to carbon pricing could result in increased demand for improved vehicle performance leading to increased fuel efficiency, which may reduce demand for gasoline and diesel at Husky's 557 (2018 average) retail locations in North America and/or demand for the Company's refined products.	Long-term	About as likely as not	Low	Yes, a single figure estimate	\$2,000,000		
Risk4	Direct operations	Physical risk	Acute: Increased severity of extreme weather events such as cyclones and floods	Reduced revenue from decreased production capacity	Risk Description: Where Husky has operations in flood prone areas, extreme weather events can expose the Company to increased risk of disruption to operations. Risk Effects: Flooding and extreme weather has the potential to disrupt operations in the field as well as at Husky's head office in Calgary. In June 2013, Calgary experienced a flood event that prevented access to the entire downtown core, including Husky's head office, for a week. In May of 2016, Husky shut down the Sunrise facility due to wildfires. The project was restarted in June. At the time, Sunrise was producing about 30,000 barrels per day of bitumen. Sunrise is 50% owned by JV partners, amounting to an approximate production loss net to Husky of 15,000 barrels per day during the outage.	Current	Likely		No, we do not have this figure			

Table 2.3a Part B

ID	Explanation of financial impact figure	Management method	Cost of management	Comment
Risk 1	<p>Husky makes carbon-related payments in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Newfoundland and Labrador. These payments totaled \$9,298,000 in 2018. This figure was calculated by aggregating total Ontario cap and trade credits purchased for fuel imports, Alberta fuel levy and Carbon Competitiveness Incentive Regulation, and B.C. carbon fees for Prince George Refinery and upstream assets. The Company's current financial exposure to fees associated with carbon emissions is approximately 0.04% of Husky's 2018 gross revenue before royalties and marketing and other income. With increased regulation, there will be increased costs associated with greenhouse gas emissions. Husky incorporates costs of existing and pending regulations in its Long-Range Plan to budget for carbon pricing impacts on an annual cycle and to inform internal stakeholders of future costs as well as mitigation opportunities.</p>	<p>Husky manages its exposure to uncertainty in new regulation through strategic investments that focus on positive return on investment (ROI), reduced operating costs and lower emissions intensity. Husky participates in direct and joint industry engagement with policy makers to stay abreast of emerging trends in regulation and advocate for regulatory certainty. During the past year, Husky has actively participated in the technical working group for the development of the Canadian Federal Output Based Pricing System and in the development of equivalent provincial programs in Newfoundland and Labrador, and Saskatchewan. Husky continues to engage the Saskatchewan government on their Methane Action Plan and on the development of the Technology Fund and Offset Frameworks to ensure emissions reduction targets set by the province are achieved. Husky continues to monitor the international and domestic efforts to address climate change, including developments through the UN Conference of Parties process and emerging regulations in the jurisdictions in which the Company operates. Performance improvement may be achieved through technology. Husky invests in technology and participates in industry knowledge-sharing initiatives that will help it drive operational improvements. The total cost of implementation for emissions reduction initiatives implemented in 2018 as per the projects listed in C4.3b was \$700,000.</p>	\$700,000	

ID	Explanation of financial impact figure	Management method	Cost of management	Comment
Risk 2	<p>The potential consequences of a severe weather or ice related event to Husky's offshore operations include possible production disruptions, spills, asset damage and human impacts. While this is mitigated through the methods described in this table, the potential production disruption from a two-month period of disconnection due to ice for the SeaRose Floating Production, Storage and Offloading (FPSO) vessel could result in \$100,192,680 in reduced revenues. This estimate is based on 2018 average daily production numbers of 17,400 boe (net equity share) and 2018 average gross revenue per barrel of \$95.97, as published in Husky's 2018 Annual Report. (17,400 boe x 60 days X \$95.97/boe = \$100,192,680)</p>	<p>Husky's Atlantic region business unit has a robust ice management program that uses a range of resources, including advanced detection, monitoring and management. Ice monitoring is facilitated through fixed-wing flight reconnaissance, satellite imagery processing and offshore supply vessel reconnaissance. Monitoring data is processed in georeferenced format and ice drift is predicted using established software developed by the National Research Council and the Canadian Ice Service. In 2018 Husky began working with Google to understand if existing iceberg trajectory predictions could be enhanced with data science, specifically creating machine learning models to improve our prediction of iceberg movement offshore Newfoundland. In 2018 Husky initiated a project with Lixar to create multiple supervised machine-learning models to predict the accuracy of forecasted wave heights and wind speeds for offshore Newfoundland.</p> <p>Supply vessels alter the trajectory of icebergs through various methods as needed. During ice season, Husky owned, operated and/or contracted offshore facilities are assigned ice observers, providing 24-hour coverage. Regular ice surveillance flights usually commence in February and continue throughout iceberg season. Husky maintains a series of ad-hoc relationships with contractors, providing for the quick mobilization of additional resources as required. The cost of the Company's ice monitoring and management activities was approximately \$6.2 million in 2018.</p>	\$6,221,000	

ID	Explanation of financial impact figure	Management method	Cost of management	Comment
Risk 3	<p>If Husky were to experience a 1.31% decrease in annual fuel sales, corresponding to the EIA's largest estimated decline in energy demand for any mode of transport (in MMB/d OE) through 2050 in its 2019 Annual Energy Outlook the scale of potential financial impacts to the Company are estimated at \$2 million per year based on 2018 refined products earnings of \$158 million. This figure is less than 0.06% of 2018 gross revenue. The Company has growth opportunities in enhanced oil production using CO2, and ethanol-blended fuels.</p>	<p>As regulations develop and markets for its products change, Husky continues to manage the risk through its Carbon Management Critical Competency Network and Carbon Regulatory Monitoring Committee. Through these methods, Husky monitors emerging regulations, advises management and lead officers of any developments, and advocates the Company's position with the regulators. Additionally, Husky's Executive Health, Safety, and Environment Committee reviews and approves compliance and emission reduction strategies, may establish performance targets, and allocates resources as appropriate. Through the application of Husky's Enterprise Risk Management program, the Company develops appropriate responses to changing regulations and markets as they materialize. This includes allocating resources as appropriate to growth opportunities in natural gas, enhanced oil production using CO2, and ethanol blended transportation fuels. Husky is currently reducing emissions through increased renewable fuel blending to address this risk. In 2018, the use of ethanol blended fuel helped prevent the emission of 70,000 tonnes of CO2e. Husky has integrated its Climate Change Management Framework into everyday business operations at a corporate-services level. There are no additional material costs to manage the risks described in this response at this time. If any of these risks are determined to be more pressing or impactful, a reassessment of management plans and costs will be performed.</p>	0	
Risk 4	<p>Husky's business continuity plan and processes resulted in no financial losses from the head office closure during the 2013 flood.</p>	<p>Readiness for potential emergencies is strengthened through exercises, established processes and Emergency Response Plans (ERPs) designed to guide a consistent and effective response to any event which could affect employees, contractors, the community, the environment and/or the Company's assets and reputation. Additionally, Husky develops contingency plans and measures to mitigate the impacts should a business-interrupting event occur. There is no additional cost of management for this beyond Husky's existing Emergency Response planning process.</p>	0	

Opportunity disclosure

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

Table Notes

This table is too wide to display on a single landscape page. It is split into two tables for ease of navigation. Risks are continued on second part of table with Identifier Column.

Table 2.4a Part A

Identifier	Where in the value chain does the opportunity occur? ?	Opportunity type	Primary climate-related opportunity driver	Type of financial impact	Company-specific description	Time horizon	Likelihood	Magnitude of impact	Are you able to provide a potential financial impact figure?	Potential financial impact figure (currency)	Potential financial impact figure - minimum (currency)	Potential financial impact figure - maximum (currency)
Opp1	Direct operations	Energy source	Use of supportive policy incentives	Reduced operational costs (e.g., through use of lowest cost abatement)	Opportunity Description: Husky has a number of CO2 sources whose emissions may be feasible to capture. These sources include ethanol plants, hydrogen plants and other post-combustion sources. However, presently there is no widespread infrastructure in place to transport captured CO2 for other uses. Regulations will influence the construction and operation of CO2 capture and transport infrastructure. Husky operates a pilot plant at Lashburn, Sask., capturing up to 30 tonnes a day of CO2e from once-through steam generators for use at the Lashburn EOR facility. Multiple low emission technologies are under consideration for future application at thermal projects. Opportunity Effects: The CO2 sources available for carbon capture will allow Husky to respond to regulatory changes influencing carbon capture and storage and provide for reduced operating costs.	Long-term	Likely	Low	Yes, a single figure estimate	\$4,700,000		

Identifier	Where in the value chain does the opportunity occur? ?	Opportunity type	Primary climate-related opportunity driver	Type of financial impact	Company-specific description	Time horizon	Likelihood	Magnitude of impact	Are you able to provide a potential financial impact figure?	Potential financial impact figure (currency)	Potential financial impact figure - minimum (currency)	Potential financial impact figure - maximum (currency)
Opp2	Direct operations	Resource efficiency	Use of more efficient modes of transport	Reduced operating costs (e.g., through efficiency gains and cost reductions)	In 2018, Husky continued to use its FuelTrax Fuel Management and Monitoring system to conserve fuel and reduce air emissions from its Atlantic operations. FuelTrax records fuel consumption from Offshore Supply Vessels (OSVs) and is designed to measure diesel consumption per second. As a result, this potentially improves fuel consumption and emissions on transits between port and the offshore field.	Current	Very likely	Low	Yes, a single figure estimate	\$1,500,000		
Opp3	Customer	Markets	Access to new markets	Increased revenue through access to new and emerging markets (e.g. partnerships with governments , development banks)	Opportunity Description: Husky may have an opportunity to provide low-carbon fuels to meet new market demand. Certain markets are assigning premium value to low-carbon transportation fuels and coal is being phased out in some jurisdictions and replaced by natural gas as the fuel of choice for power generation. Husky is well positioned to benefit from these trends in consumer behaviour as it has growth opportunities in natural gas production and ethanol-blended gasoline. The Company's Lloydminster Ethanol Plant currently provides low carbon intensity ethanol to the B.C. market to support blending requirements to meet the province's Renewable and Low Carbon Fuels Requirements Regulation. Husky is also considering options for CO2 capture and storage at its Minnedosa Ethanol Plant in Manitoba. Opportunity Effects: Increased consumer demand for low-carbon transportation fuels and natural gas could result in new revenue opportunities.	Current	Likely	Medium-low	Yes, a single figure estimate	\$10,260,000		

Identifier	Where in the value chain does the opportunity occur? ?	Opportunity type	Primary climate-related opportunity driver	Type of financial impact	Company-specific description	Time horizon	Likelihood	Magnitude of impact	Are you able to provide a potential financial impact figure?	Potential financial impact figure (currency)	Potential financial impact figure - minimum (currency)	Potential financial impact figure - maximum (currency)
Opp4	Direct operations	Resource efficiency	Use of more efficient production and distribution processes	Increased production capacity, resulting in increased revenues	Regulations may encourage research into the use of CO2 for enhanced oil recovery. Husky completed a project in 2012 which included capturing CO2 and injecting it into heavy oil reservoirs to assist with enhanced heavy oil recovery and continues to investigate additional capture technologies. Husky is developing this recovery method, which has not yet been applied commercially in the thin, shallow, viscous formations typical of heavy oil. Specifically, the Company is developing knowledge and methods on how to capture CO2 from its Lloydminster Ethanol Plant and other sources; and then purify, dehydrate and compress it before transporting it to heavy oil reservoirs located in proximity to the plant. The CO2 is injected into the reservoirs and used to enhance oil recovery. When the reservoirs are fully depleted, the CO2 can be stored in the reservoir.	Short Term	Very likely					

Table 2.4a Part B

ID	Explanation of financial impact figure	Strategy to realize opportunity	Cost to realize opportunity	Comment
Opp1	Husky is performing ongoing evaluations to assess the financial impact of this opportunity. Commodity prices of CO2 for EOR purposes can exceed \$100 per tonne when delivered to remote sites. For example, if CO2 can be captured at \$50 per tonne, it would represent \$4.7 million in savings, based on 2018 injection volumes of	Husky's Carbon Management Critical Competency Network and corporate carbon management experts advise business units on potential projects for CO2 capture that could support EOR or other markets. As part of this process, support has been provided to submit applications for research and development funding in this area. In addition, through participation in joint industry projects and conferences, Husky has stayed informed on developing technologies that could improve the feasibility of this opportunity. Through its test facility in Lashburn, Sask., Husky is currently implementing a CO2 capture program for an EOR pilot from once-through steam generators to evaluate technological and economic feasibility of large-scale technology adoption and opportunity exploitation. The initial pilot test facility began operation in 2015, capturing up to 30	\$20,000,000	

ID	Explanation of financial impact figure	Strategy to realize opportunity	Cost to realize opportunity	Comment
	CO2. (94,651 tonnes injected * \$50 / tonne savings = \$4.7MM)	tonnes a day of CO2e. The project cost approximately \$20 million, with \$6 million provided through external grants.		
Opp2	Husky has focused on responsible fuel management utilizing the FuelTrax fuel monitoring system to measure and compile real time operational consumption. These operational profiles have led to a reduction in fleet daily consumption from 16.1 m3/day in 2013 to entering 2019 at 11.2 m3/day, which translates to an estimated \$1,500,000 annual savings based on the 2018 average fuel price of \$841.5/m3. (4.9 m3/day savings * \$841.5/m3 average fuel price * 365 = \$1,500,000 annual savings)	Husky changed its offshore Atlantic fleet configuration in 2017. The Maersk Dispatcher and Atlantic Osprey were replaced with Atlantic Kingfisher and Skandi Vinland. The FuelTrax fuel monitoring system is operational on two vessels, the Green Pilot fuel monitoring system is operational on another and manual reporting is utilized on the remaining term charter vessel. Real-time recording of fuel burn has indicated areas where consumption can be reduced. This has resulted in a six-year average daily fleet fuel consumption reduction of 30%. The fuel management program is now part of normal operations so there is no additional cost to realize this opportunity at this time.	\$0	
Opp3	In 2018, Husky's low carbon intensity ethanol from the Lloydminster Ethanol plant received, on average, a premium of \$0.078 per litre on sales. Approximately 90% of the production at Lloydminster has a low carbon intensity, resulting in an additional \$10,260,000 in revenue above market pricing. (146,100,000 litres * 0.9 * \$0.078 = \$10,260,000).	Husky identifies and manages opportunities related to consumer behaviour through several mechanisms. The Company's enterprise risk matrix with mitigation strategies is reviewed by the Audit Committee quarterly and provided to the Board of Directors annually. Through the application of this risk matrix over time, the Company will be able to determine the appropriate response to changing markets as they develop. This includes allocating resources as appropriate to growth opportunities in natural gas, and ethanol-blended gasoline. For example, the Company's Lloydminster Ethanol Plant currently provides low-carbon intensity ethanol to the B.C. market. Husky has integrated its risk and opportunity identification processes into everyday business operations at a corporate services level. There are no additional material costs to identify and manage the opportunities described in this response at this time. If any of these opportunities are determined to warrant further study, a formal project sanctioning process would follow with the appropriate decision gates as needed. Costs would be refined at each of these gates.	\$0	
Opp4	If CO2 can be injected successfully and used for Enhanced Oil Recovery, it has potential to increase the recoverable reserves in several heavy oil assets over time.	Husky continues to pursue EOR development as part of its broader heavy oil business strategy. In 2017, Husky operated CO2 injection EOR pilot tests in five heavy oil pilot areas. The impact to oil production and ultimate oil recovery is being closely monitored. The results of these pilots will determine the commercial feasibility of a large-scale CO2 EOR project. In 2018, total operating and capital expenditure in Husky's Lloydminster area heavy oil cyclic solvent injection projects was \$29MM.	\$29,000,000	

Business impact assessment

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

Area	Impact	Description
Products and services	Impacted for some suppliers, facilities, or product lines	Current and emerging clean and renewable fuels regulations have affected costs and markets for blended fuels in Husky's Downstream business. The carbon intensity of The Company's ethanol production is favourable to many of its competitors which presents an opportunity under both clean fuel standards and renewable fuel standards that require a carbon intensity reduction (e.g. Ontario). In 2018, Husky's low carbon intensity ethanol from the Lloydminster Ethanol plant received, on average, a premium of \$0.078 per litre on sales. Approximately 90% of the production at Lloydminster has a low carbon intensity, resulting in an additional \$10,260,000 in revenue above market pricing.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Many of Husky's suppliers have been impacted by the Alberta carbon levy system. Husky has worked with its suppliers to ensure that a fair flow-through of costs related to the levy are negotiated into its agreements. To date, impacts have not been substantive (less than \$10 million).
Adaptation and mitigation activities	Impacted	Husky's Atlantic business unit has a robust ice management program. The program uses a range of resources, including a dedicated ice surveillance aircraft, and works with government agencies including Environment Canada, the Coast Guard and Canadian Ice Service. Regular ice surveillance flights usually commence in February, and continue until the threat has abated. Atlantic region operators employ a series of supply and support vessels to actively manage ice and icebergs. These vessels are equipped with a variety of ice management tools including towing ropes, towing nets and water cannons. This fleet has grown over time partly in response to changing ice conditions. Husky maintains a series of ad-hoc relationships with contractors, allowing for the quick mobilization of additional resources as required. The cost of the Company's ice monitoring and management activities were approximately \$6.2 million in 2018.
Investment in R&D	Impacted	As part of its efforts to improve the efficiency of getting its bitumen products to market, Husky has proposed a substantive (greater than \$10 million) investment in the HDR diluent reduction process that provides for significantly reduced diluent use in transmission pipelines.
Operations	Impacted	Husky makes carbon-related payments in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Newfoundland and Labrador. These payments totaled \$9,298,000 in 2018. This figure was calculated by aggregating total Ontario cap and trade credits purchased for fuel imports, Alberta fuel levy and Carbon Competitiveness Incentive Regulation, and B.C. carbon fees for the Prince George Refinery and upstream assets. The Company's current financial exposure to fees associated with carbon emissions is approximately 0.04% of Husky's 2018 gross revenue before royalties and marketing and other income. With increased regulation, there will be increased costs associated with greenhouse gas emissions. Husky incorporates costs of existing and pending regulations in the Long-Range Plan to adequately budget for carbon pricing impacts on an annual budgeting cycle and to inform internal stakeholders of future costs as well as mitigation opportunities.

Financial planning assessment

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

Area	Relevance	Description
Revenues	Impacted for some suppliers, facilities, or product lines	Husky participates in clean and renewable fuels programs in the U.S. and Canada. These programs mandate blending of renewable fuels into marketed fuels at various percentages, depending on jurisdiction. Markets for blendstocks or other compliance options can be volatile, and financial planning for compliance is an important part of mitigating these potentially substantive costs, particularly if Husky is unable to pass these costs on to customers. In 2018, Husky's low carbon intensity ethanol from the Lloydminster Ethanol plant received, on average, a premium of \$0.078 per litre on sales. Approximately 90% of the production at Lloydminster has a low carbon intensity, resulting in an additional \$10,260,000 in revenue above market pricing.
Operating costs	Impacted for some suppliers, facilities, or product lines	Husky makes carbon-related payments in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Newfoundland and Labrador. These payments totaled \$9,298,000 in 2018. This figure was calculated by aggregating total Ontario cap and trade credits purchased for fuel imports, Alberta fuel levy and Carbon Competitiveness Incentive Regulation, and B.C. carbon fees for the Prince George Refinery and upstream assets. The Company's current financial exposure to fees associated with carbon emissions is approximately 0.04% of Husky's 2018 gross revenue before royalties and marketing and other income, and 3% of total Canadian energy input costs. With increased regulation, there will be increased costs associated with greenhouse gas emissions. Husky incorporates costs of existing and pending regulations in the Long-Range Plan to adequately budget for carbon pricing impacts on an annual budgeting cycle and to inform internal stakeholders of future costs as well as mitigation opportunities.
Capital expenditures/ allocation	Impacted for some suppliers, facilities, or product lines	In making investment decisions, Husky considers both the cost and value of carbon. Project carbon costs are modelled based on current and emerging policies in any given jurisdiction. Regulatory focus on methane venting management in heavy oil operations has in part led to non-substantive investment in gas conservation infrastructure. In 2018, Husky invested approximately \$700,000 in gas compression to capture otherwise vented gases at heavy oil well sites, resulting in an estimated annual savings of greater than \$800,000.
Acquisitions and divestments	Impacted for some suppliers, facilities, or product lines	Husky has substantially completed a disposition program of legacy assets in Western Canada. Part of the process used to evaluate candidate assets for sale was exposure to regulatory risk. This program had a substantive impact on Husky's balance sheet. Altogether, approximately 52,000 boe/day of legacy assets have been sold since late 2015.
Access to capital	Impacted for some suppliers, facilities, or product lines	Securing early stage development funding for low emission technology and energy efficiency projects often requires additional policy incentives, including R&D support funding provided by provincial and federal agencies to successfully compete for internal capital. Husky's HDR diluent reduction technology project development has been awarded substantive (greater than \$10 million) financial support through provincial and federal technology R&D funding programs, aiding its current progress through to pilot plant construction.
Assets	Impacted for some suppliers, facilities, or product lines	Operating costs associated with developing reserves are factored into reserves valuation. These costs can have potentially substantive (greater than \$10 million) impacts and can be affected by market, regulatory and technical risks. In 2018, Husky's natural gas proved reserves were reduced by 10 bcf due to economic factors. Regulations aimed at reducing emissions intensity of production can impact current valuation of assets in relation to their emission intensity.

Area	Relevance	Description
Liabilities	Impacted for some suppliers, facilities, or product lines	Asset retirement planning can be impacted substantively by increased regulatory focus on venting from abandoned wells. While it is not anticipated that this would impact the total cost of retirement, it can affect the prioritization of projects for remediation and reclamation. In 2018, Husky's estimated total undiscounted inflation-adjusted asset retirement obligation was \$9.3 billion.

C3 Business strategy

Business strategy

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

Yes

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

Yes, qualitative and quantitative

(C-CH3.1b/C-OG3.1b) 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) Explain how climate-related issues are integrated into your business objectives and strategy.

i) Description of Internal Process for strategic GHG management:

Husky uses a GHG management framework to guide the process of integrating climate change into its business strategy. Elements of the GHG management framework that inform corporate business strategy include:

a. GHG Inventory and Quantification – Internal processes have been developed to collect and validate data for each Company business unit. Calculation methodologies follow federal, provincial and/or state guidelines for quantifying and reporting emissions using Husky's Environmental Performance Reporting System (EPRS). Corporate Responsibility communicates information requests and calculation results to business units annually.

b. GHG Reporting and Verification – Facilities with regulatory reporting and compliance obligations require more detailed communications plans. Corporate Responsibility, along with third-party verifiers as required, develop schedules for meetings, site visits and data validation requests. Results of third-party verification exercises are shared with the facilities to ensure continued awareness of data quality and to streamline reporting processes. Internal Audits are used to ensure completeness and accuracy of the GHG estimation and reporting systems. Facility managers approve GHG reports prior to their submission to regulatory agencies.

c. Emissions Reduction Strategy – Strategies for facilities with established emission reduction targets (Tucker and Sunrise) are evaluated in conjunction with long range planning and reporting. Opportunities for reductions are proposed and evaluated for feasibility. Any efficiency projects implemented during the previous year are evaluated for effectiveness. Emission forecasts based on projected production provide economic support that may be used to influence future facility design specifications or justify funding for projects to reduce emissions.

d. Regulatory Policy System – Corporate Responsibility is actively involved in organizations such as the Canadian Association of Petroleum Producers (CAPP), Canadian Fuels Association (CFA), IPIECA and Petroleum Technology Alliance of Canada (PTAC) to collaborate with industry peers to address issues related to climate change. Issues affecting Husky’s business units are communicated through appropriate means.

ii) Examples and description of aspects of climate change that influence business strategy:

During times of policy change, additional resources are strategically allocated as needed to proactively address regulatory compliance and uncertainty.

As part of its efforts to address regulatory change and stakeholder expectations in relation to climate change, Husky strives to reduce facility emissions through improving energy efficiency, minimizing fugitive emissions and mitigating flaring and venting. Emission reduction and energy efficiency opportunities are evaluated at the facility level. These projects enable Husky to manage emissions reduction obligations and aid in progress towards facility intensity targets at its Tucker and Sunrise thermal facilities. Husky pursues offsets as a means to reduce emissions at facilities where GHG reductions are not regulated.

Husky evaluates various ways to reduce the carbon intensity of its Upstream and Downstream operations. The Company uses a Marginal Abatement Cost Curve (MACC) to catalogue options, including the size of emissions reduction possible, as well economic performance. This provides for resource prioritization and reductions at the most efficient cost per-tonne of CO2e. The MACC also helps different areas of the Company share information about emission reduction options.

iii) Example of the most substantial business decision made related to climate change:

The most substantial business decision that Husky has made related to climate change continues to be investment in its CO2 Enhanced Oil Recovery program, driven in part by climate-related regulatory changes. Husky’s CO2 EOR program utilizes CO2 emissions captured at the Lloydminster Ethanol Plant, and the Pikes Peak South (formerly Lashburn) thermal project. This program lowers emissions intensity in the Company’s heavy oil business through carbon capture, while enhancing oil production, and creates opportunities for marketing lower carbon intensity products.

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
IEA Sustainable development scenario IEA CPS Nationally determined contributions (NDCs)	Husky has evaluated its operations in relation to emerging regulations that are based on international commitments. As part of its long-range planning process, the Company developed scenarios based on the assumed cost of carbon required to meet Canada’s Nationally Determined Contributions and tested development projects for sensitivity to these prices in the short to medium-term time horizons. These time horizons were chosen based on established guidelines for reserves evaluation. This process was applied to Husky’s Upstream and Downstream Canadian Operations. Results of this analysis were reported to senior management and the Board of Directors and factored into investment decisions.

C4 Targets and performance

Targets

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

Intensity target

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

Target reference number	Scope	% emissions in Scope	Targeted % reduction from base year	Metric	Base year	Start year	Normalized base year emissions covered by target (metric tons CO2e)	Target year	Is this a science-based target?	% of target achieved	Target status	Please explain	% change anticipated in absolute Scope 1+2 emissions	% change anticipated in absolute Scope 3 emissions
Int1	Scope 1	7.74%	8.53%	Metric tonnes CO2e per unit of production	2017	2018	739409	2018	No, and Husky does not anticipate setting one in the next two years	0	New	Husky's Tucker Thermal Project has a benchmark intensity target set by the province of Alberta under the Carbon Competitiveness Incentive Regulation (CCIR). To provide relevant information for the purposes of this question, the prescribed industry benchmark has been applied against an assumed base year of 2017. This allows for characterization of the target as a reduction against past facility emissions. The figure used in the "% change anticipated in absolute Scope 1+2 emissions" column is based on the anticipated change in absolute in-scope emissions that would have been observed if the target was 100% met, based on 2018 production numbers.	6.45%	0
Int2	Scope 1	16.52%	21.38%	Metric tonnes CO2e per unit of production	2017	2018	1580151	2018	No, and Husky does not anticipate setting one in the next two years	64%	New	Husky's Sunrise Energy Project has a benchmark intensity target set by the province of Alberta under the Carbon Competitiveness Incentive Regulation (CCIR). To provide relevant information for the purposes of this question, the prescribed industry benchmark has been applied against an assumed base year of 2017. This allows for characterization of the target as a reduction against past facility emissions. The figure used in the "% change anticipated in absolute Scope 1+2 emissions" column is based	2.21%	0

Target reference number	Scope	% emissions in Scope	Targeted % reduction from base year	Metric	Base year	Start year	Normalized base year emissions covered by target (metric tons CO2e)	Target year	Is this a science-based target?	% of target achieved	Target status	Please explain	% change anticipated in absolute Scope 1+2 emissions	% change anticipated in absolute Scope 3 emissions
												on the anticipated change in absolute in-scope emissions that would have been observed if the target was 100% met, based on 2018 production numbers.		

Other climate-related targets

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

Target	KPI – Metric numerator	KPI – Metric denominator (intensity targets only)	Base year	Start year	Target year	KPI in baseline year	KPI in target year	% achieved in reporting year	Target Status	Please explain	Part of emissions target	Is this target part of an overarching initiative?
Methane reduction target	40-45% of 2012 methane emissions expressed in tonnes CO2e	n/a	2012	2016	2025				Underway	Husky is aligning with national and provincial plans to reduce methane emissions by 40-45% of 2012 levels by 2025 as part of its general compliance strategy. In 2018 Husky's methane emissions were 1,908,000 tonnes CO2 equivalent.		No, it's not part of an overarching initiative

Emissions reduction initiatives

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

Stage of development	Number of initiatives	Total estimated annual CO2e savings in metric tons CO2e (only for rows marked *)
Under investigation	26	
To be implemented*	0	0

Stage of development	Number of initiatives	Total estimated annual CO2e savings in metric tons CO2e (only for rows marked *)
Implementation commenced*	6	13,000
Implemented*	3	27,900
Not to be implemented	0	

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

Initiative type	Description of initiative	Estimated annual CO2e savings (metric tons CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency, as specified in C0.4)	Investment required (unit currency, as specified in C0.4)	Payback period	Estimated lifetime of the initiative	Comment
Fugitive emissions reductions	Oil/natural gas methane leak capture/prevention	26,700	Scope 1	Mandatory	\$802,000	\$570,000	<1 year	3-5 years	Installation of compressors at heavy oil well sites that will capture otherwise vented produced gas. Estimated annual savings assumes \$30/tonne of avoided carbon costs.
Fugitive emissions reductions	Oil/natural gas methane leak capture/prevention	200	Scope 1	Voluntary	\$6,000	\$91,592.01	11-15 years	Ongoing	The conversion of a remote well site to solar powered instrument air driven pneumatic controls and equipment to address fugitive emissions. As this was a pilot initiative, further analysis is needed to determine opportunities for improvement and economic viability. Estimated annual savings assumes \$30/tonne of avoided carbon costs.
Energy efficiency: Processes	Process optimization	1,000	Scope 1	Mandatory	\$0	\$40,000.00	No payback	<1 year	We have installed 10 wireless acoustic transmitters (Emerson) to monitor the real time condition of eight steam traps and two blowdown valves at Sunrise CPF 1A. In addition to trap live status, we can monitor the 'lost energy cost' and 'emission lost' when a trap is in a blow through state. The cost includes wireless transmitters, gateway, software and configuration. Additional analysis is required to determine full economic value.

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

Method	Comment
Compliance with regulatory requirements/standards	
Employee engagement	
Financial optimization calculations	
Internal price on carbon	
Internal incentives/recognition programs	
Marginal abatement cost curve	
Partnering with governments on technology development	Husky has worked with Alberta Innovates to create the Husky CHOPS Methane Challenge as well as working with the Alberta Energy Regulator and the Saskatchewan Research Council to test enclosed combustors to improve regulations around minimum setback distances from other development (e.g. residences).

Low-carbon products

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

Yes

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation	Description of product/ Group of products	Are these low-carbon product(s) or do they enable avoided emissions?	Taxonomy, project, or methodology used to classify product(s) as low-carbon or to calculate avoided emissions	% revenue from low-carbon product(s) in the reporting year	Comment
Product	Ethanol	Low carbon product	Other: Natural Resources Canada's GHGenius model	1	Husky has 53 currently approved carbon intensities registered with the B.C. Ministry of Energy and Mines using the GHGenius model to calculate carbon intensities.
Group of products	Gasoline and diesel blends with renewable fuels	Avoided emissions	Other: Natural Resources Canada's GHGenius model	8.35	<p>Scope 1 GHG emissions from transportation fuel combustion were avoided by blending renewable alternatives to gasoline (ethanol) and renewable alternatives to diesel (Hydrogenation-Derived Renewable Diesel [HDRD] and biodiesel) into gasoline and diesel, respectively. Where possible, Husky blends up to 10% ethanol into all grades of gasoline. In 2018, this equated to an average 9.1% ethanol blend, which exceeded federal and provincial requirements at the point of blending (Canada Federal - 5%, BC - 5%, AB - 5%, SK - 7.5%, MB - 8.5%, ON - 5%). In 2018 the blending of ethanol into gasoline resulted in a reduction of 70,520 metric tonnes of CO2 relative to the 2007 baseline. (2007 is the Government of Canada baseline year that takes into account all industry emissions and the fuel offering of that year; it is integrated into the GHG model assumptions.) The most up-to-date version of National Resources Canada's (NRCan) GHGenius model was used to calculate the carbon intensities of Husky's fuel blends. The B.C. Renewable and Low Carbon Fuel Requirements Regulation's Emissions Calculation was used to determine emissions reductions. Emissions Reduction (tonnes) = (CI class x EER fuel - CI fuel) x EC fuel / 1,000,000, where CI class = the prescribed carbon intensity limit for the compliance period for the class of fuel of which the fuel is a part; EER fuel = the prescribed energy effectiveness ratio for that fuel in that class of fuel; CI fuel = the carbon intensity of the fuel (via GHGenius); EC fuel = the energy content of the fuel calculated in accordance with the regulations. Husky is not considering generating Certified Emission Reductions (CERs) or Emission Reduction Units (ERUs) within the framework of Clean Development Mechanism (CDM) or Joint Implementation (JI) of the United Nations Framework Convention on Climate Change (UNFCCC) at this time.</p> <p>For biodiesel and HDRD, the 2018 blend resulted in an average of 2.8% renewables for our Canadian supply of diesel to the market.</p> <p>In 2018, the blending of biodiesel and HDRD resulted in a reduction of 65,562 metric tonnes of CO2 relative to the 2007 baseline.</p> <p>Total emissions avoided through biofuel blending amounted to 136,081 metric tonnes of CO2 in 2018.</p>

Methane reduction efforts

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

Husky continues engagement with regulators in order to contribute to the development of voluntary and mandatory methane emission reduction programs to meet federal and provincial targets.

Husky has worked towards reducing methane emissions as per the following items:

- Increased understanding and focus on gas production (calculated via gas oil ratio or GOR) and the implications on emissions.
- Increased understanding and focus on gas management strategies.
- Developing an inventory of methane emitting equipment to inform where investment will have the largest impact in reducing methane emissions
- Developing new ways to reduce venting other than conventional conservation (pipeline and compressor).
- Added enclosed combustors as a gas management reduction tool. No significant impact to date, but step-change reductions are anticipated with regulatory change to address spacing issues
- Developing processes and tools to help focus on leading indicators to resolve potential vent issues before they become a regulatory concern.
- Partnering with external parties to sponsor the development of new technology to address methane emissions. A joint initiative with Alberta Innovates challenged entrepreneurs in two areas: measurement of methane and the capture and utilization of vented gas streams specifically in Cold Heavy Oil Produced with Sand (CHOPS).
- Piloting several technologies to reduce pneumatic venting at wellsites, including solar powered instrument air compressors, efficient enclosed combustion technology for intermittent and low volume venting, and electrification of previous pneumatically driven equipment on remote sites with solar and fuel cell technology.

Husky participates in PTAC committees which emphasize industry sharing of best practices learned with focus on methane.

In 2018, Husky installed compressors at heavy oil sites that will capture otherwise vented produced gas, generating an estimated savings of more than 26,000 tonnes CO₂e.

Leak detection and repair

(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) 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.

Husky meets or exceeds regulatory compliance requirements for monitoring and reporting to effectively address risk. Prescriptive programs are in place at Company facilities for leak detection and repair of fugitive emission sources. Alberta, Saskatchewan, and British Columbia regulations prioritize targeted facilities that are generally defined by licence type, size, throughput, or qualitative observations. Monitoring frequencies are generally flexible and variable with an annual baseline frequency. Methodologies used included infrared cameras, hand held gas detectors, soapy water investigations on point sources, toxic/organic vapour analyzers, photo ionization detector, ultrasound probe, third-party evaluation or other justifiable and defensible methods.

For example, Husky's LDAR program at its Canadian Downstream facilities includes the survey of the natural gas and refinery fuel gas lines to identify leaking equipment components, repair the leaks, re-monitor the repaired leak sources, and quantify and report fugitive methane emissions from equipment leaks. Husky conducts quarterly LDAR surveys of its Lloydminster thermal assets. These

surveys utilize infrared and ultrasonic detection to identify leaks in real time. Maintenance personnel accompany leak detection staff to perform repairs as leaks are discovered, wherever possible.

Flaring reduction efforts

(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.

Regulations in Alberta and Saskatchewan mandate both operational and economic evaluations that prioritize collection and conservation of produced gas over flaring. In addition, Husky engages in voluntary and collaborative efforts with government and industry organizations to reduce flaring through application of technology and sharing of knowledge and experience. Husky is also piloting closed combustors as an alternative to flaring, providing for a more controlled combustion of waste gases where gas conservation is not a viable solution. In Husky's Atlantic region business unit, Husky proposes targets for flaring volumes with the regulator and is then required to stay within those limits. These targets are approved for the period beginning April 1 and ending March 31 of the following year. For 2017-2018, the approved flare limit was 68.0 million m³ and Husky flared approximately 59.0 million m³, staying 13.2% below the target.

C5 Emissions methodology

Base year emissions

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

Scope	Base year start	Base year end	Base year emissions (metric tons CO2e)	Comment
Scope 1	01/01/2011	31/12/2011	9,484,000	Baseline adjusted for the acquisition of the Superior Refinery with partial year operations in 2018
Scope 2 (location-based)	01/01/2011	31/12/2011	1,943,000	Baseline adjusted for the acquisition of the Superior Refinery with partial year operations in 2018 as well as a methodology change for treatment of ethanol plant low pressure steam
Scope 2 (market-based)				Per CDP guidance, the location-based result has been used as a proxy since a market-based figure cannot be calculated

Emissions methodology

(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
 - IPIECA's Petroleum Industry Guidelines for reporting GHG emissions, 2003
 - ISO 14064-1
 - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
 - US EPA Climate Leaders: Indirect Emissions from Purchases/ Sales of Electricity and Steam
 - US EPA Climate Leaders: Direct Emissions from Stationary Combustion
 - US EPA Mandatory Greenhouse Gas Reporting Rule
 - Other, please specify
-

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

Environment and Climate Change Canada: Technical Guidance on Reporting Greenhouse Gas Emissions – 2017 Data - Facility Greenhouse Gas Emissions Reporting (March 2018); Western Climate Initiative: Quantification Method 2013 Addendum to Canadian Harmonization Version (December 20, 2013); Western Climate Initiative: Final Essential Requirements of Mandatory Reporting - 2011 Amendments for Harmonization of Reporting in Canadian Jurisdictions (December 21, 2011, as amended on February 10, 2012); and Western Climate Initiative: Final Essential Requirements of Mandatory Reporting - 2010 Amended for Canadian Harmonization (December 17, 2010).

C6 Emissions data

Scope 1 emissions data

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

Year	Gross global Scope 1 emissions (metric tons CO2e)	Comment
Reporting Year	10,265,000	
Past year 1 (2017)	10,975,000	Adjusted year 1 Superior Refinery Scope 1 CO2e to correct for double application of global warming potential to CH4 and N2O. Reduction of 205k tonnes.
Past year 2 (2016)	11,242,000	No change

Scope 2 emissions reporting

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

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure	We are reporting a Scope 2, market-based figure	Husky has adjusted its location-based emissions factors based on the most current (Updated April 2019) NIR values Husky uses green-e residual mix emissions factors for the regions where it has operations that acquire and consume electricity to report a Scope 2, market-based figure, per CDP guidance. These factors are significantly lower than the emissions factors generated from National Inventory Reporting and local electricity system operator data used to report location-based Scope 2 emissions, due to their large regional coverage.

Scope 2 emissions data

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

Year	Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
Reporting year	2,035,000	1,286,000	Electricity emissions factors for location-based Scope 2 accounting are taken from the 2019 Canadian National Inventory Report as submitted to the United Nations Framework Convention on Climate Change or supplied by grid operators where available. Market-based figures are calculated using green-e residual mix electricity emission factors as recommended by CDP.
Past year 1 (2017)	2,135,000		Updated NIR emission factor – reduction of 95k tonnes. Updated with improved data for first year operations at the Superior refinery – increase of 65k tonnes. Adjusted methodology for steam emissions at the Lloydminster Ethanol Plant – decrease of 56k tonnes. No restatement of market-based.
Past Year 2 (2016)	2,030,000		Updated NIR emission factor – reduction of 33k tonnes. Adjusted methodology for steam emissions at the Lloydminster Ethanol Plant – decrease of 65k tonnes. No restatement of market-based.

Exclusions

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

Yes

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

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why this source is excluded
Drilling and Completions Emissions from areas where not mandated.	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Drilling and completions operations emissions are only estimated and reported in jurisdictions where mandated, offshore Canada and China Drilling and Completions emissions are included.

Emissions from Husky owned and operated vehicles that are operated outside of specific large-emitting facilities	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Husky estimates that this is not a major emissions source at this time. Data is incorporated into relevant business units where available.
Emissions from some Husky-owned transportation fuels retail sites, i.e. bulk plants, travel centres, cardlocks and retail stations	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Husky includes retail site Scope 2 emissions data where available (primarily in Alberta and Saskatchewan). Based on sampling of those retail sites with available emissions data, Husky estimates that emissions from building heating and electricity consumption from sites where data is unavailable are immaterial when compared to the Company's total Scope 1 and Scope 2 emissions.

Scope 3 emissions data

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

Sources of Scope 3 emissions	Evaluation status	Metric tons CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Capital goods	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Upstream transportation and distribution	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Waste generated in operations	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Business travel	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and/ or oxidation of the products sold by Husky.
Employee commuting	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.

Sources of Scope 3 emissions	Evaluation status	Metric tons CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Upstream leased assets	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Downstream transportation and distribution	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Processing of sold products	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Use of sold products	Relevant, calculated	23,220,000	Emission factors are from EPA 40 CFR part 98 subpart MM regulation.	0	Data is only provided where there is a regulatory requirement to disclose emissions associated with use of sold product emissions. This includes only Husky's Downstream assets in the U.S and imported fuels into Ontario through July 3, 2018 when the previous Cap and Trade regulation expired.
End of life treatment of sold products	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Downstream leased assets	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Franchises	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.
Investments	Not relevant, explanation provided				This source of Scope 3 GHG emissions is not material when compared against the emissions related to the end-use combustion and / or oxidation of the products sold by Husky.

Emissions from biologically sequestered carbon

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

Yes

(C6.7a) Provide the emissions from biologically sequestered carbon relevant to your organization in metric tons CO₂.

Emissions from biologically sequestered carbon (metric tons CO ₂)	Comment
224,000	

Emissions intensities

(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	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change	Reason for change
0.000553	12,300,000	Unit total revenue	22,252,000,000	Location-based	22	Decreased	The oil price environment significantly improved in 2018 leading to improved revenues, more than offsetting the slight declines in production and throughput as detailed below. Gross global combined Scope 1 and 2 emissions decreased due to natural declines in Husky's conventional heavy oil production in Western Canada as well as reflecting projects or facilities that were offline during portions of 2018, including the SeaRose FPSO, the Superior Refinery, and the Lima Refinery. Emissions reduction projects, as listed in c4.3b, that were implemented in 2018 resulted in a decrease of 27,900 tonnes of Scope 1 CO ₂ e emissions.

Emissions intensities: Oil and gas

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

Unit of hydrocarbon category (denominator)	Metric tons CO ₂ e from hydrocarbon category per unit specified	% change from previous year	Direction of change	Reason for change	Comment
Thousand barrels of crude oil/ condensate	95.94	15	Increased	Increase in intensity for offshore oil production due to the SeaRose FPSO being offline in late 2018, offset by intensity decline for conventional oil due to natural declines in aging fields.	Tonnes per mboe
Thousand barrels of oil sands (includes bitumen and synthetic crude)	81.17	5	Decreased	Facilities coming on stream continue to normalize steam operations towards steady operating conditions.	
Million cubic feet of natural gas	3.37	7	Decreased	Production increase with minor increase in emissions	

Thousand barrels of refinery throughput	26.98	12	Decreased	Shut in of Superior refinery reduced both emissions and throughput. This was slightly offset slightly by an increase in Canadian Refining throughput accompanied by a smaller increase in related emissions as there were no major turnarounds in 2018
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(C-OG6.13) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

Oil and gas business division	Estimated total methane emitted expressed as % of natural gas production or throughput at given division	Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division	Comment
Upstream	0.141	0.598	
Downstream		0.021	Husky classifies all gas assets as upstream.

C7 Emissions breakdown

Scope 1 breakdown: GHGs

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

Yes

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

Greenhouse gas	Scope 1 emissions (metric tons in CO2e)	GWP Reference
CO2	8321000	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	1908000	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	36000	IPCC Fourth Assessment Report (AR4 - 100 year)

(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	Value Chain	Product	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Total gross Scope 1 GHG emissions (metric tons CO2e)	Comment
Combustion (excluding flaring)	Downstream	Oil	1802000	71	1811000	
Combustion (excluding flaring)	Upstream	Gas	342000	1000	374000	
Combustion (excluding flaring)	Upstream	Oil	4922000	2000	4992000	
Combustion (excluding flaring)	Other	Unable to disaggregate	44000	2	46000	Drilling & Completions offshore
Flaring	Downstream	Oil	150000	192	155000	
Flaring	Upstream	Gas	12000	67	14000	
Flaring	Upstream	Oil	175000	1000	201000	
Fugitives	Downstream	Oil	0	48	1200	
Fugitives	Upstream	Gas	19	3000	69000	
Fugitives	Upstream	Oil	13	4000	108000	

Process (feedstock) emissions	Downstream	Oil	304000	9	304000	
Venting	Downstream	Oil	325000	2000	380000	
Venting	Upstream	Gas	641	831	21000	
Venting	Upstream	Oil	134000	62000	1675000	
Other (please specify)	Upstream	Oil	786	0	822	On Site Transportation

Scope 1 breakdown: country

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Canada	8922000
United States of America	1335000
China	8000
Indonesia	0

Scope 1 breakdown: business breakdown

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

- By business division
 - By facility
 - By activity
-

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

Business division	Scope 1 emissions (metric tons CO2e)
Upstream	7500000
Downstream	2765000

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Sunrise Energy Project	1696000	57.24150	-111.06000
Lima Refinery	1206000	40.72132	-84.11410
Lloydminster Upgrader	1090000	53.26300	-109.94900

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Tucker Thermal Project	795000	54.34270	-110.32900
Bolney Thermal Project	465000	53.52700	-109.35700
Sea Rose FPSO	359000	46.72150	-48.13410
Pikes Peak South Thermal Project	264000	53.21062	-109.36700
Vawn Thermal Project	246000	53.11599	-108.64100
Edam East Thermal Project	225000	53.15615	-108.92100
Rush Lake Thermal Project	206000	53.11350	-108.99600
Pikes Peak Thermal Project	138000	53.27960	-109.37200
Prince George Refinery	131000	53.92680	-122.70300
Superior Refinery	128000	46.69055	-92.07095
Sandall Thermal Project	127000	53.40071	-109.43700
Edam West Thermal Project	121000	53.15613	-108.92063
Paradise Hill Thermal Project	113000	53.60230	-109.44800
Rainbow Lake Gas Plant	92000	58.45067	-119.23800
Lloydminster Refinery	89000	53.28850	-110.01800
Minnedosa Ethanol Plant	75000	50.25430	-99.84980
Rush Lake 2 Thermal Project	75000	53.11622	-108.98205
All other Husky Operated Facilities	2624000		

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

Activity	Scope 1 emissions (metric tons CO2e)
Canadian Refining and Upgrading	1319000
Conventional Oil	2148000
Drilling and Completions	46000
Ethanol Production	110000
Gas Production, Gathering and Processing	479000
Offshore Oil Production	359000
Thermal Oil Production	4470000
US Refining	1334000

Scope 1 breakdown: sector production activities

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

Sector production activity	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e*	Comment
Chemicals production activities**	110000	n/a	
Oil and gas production activities (upstream)**	7501000	n/a	
Oil and gas production activities (downstream)**	2654000	n/a	

*This column only appears for cement production activities

**This row only appears for the relevant sector

Scope 2 breakdown: country

(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	1247000	536000	2828000	0

United States of America	340500	303000	1463000	0
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Scope 2 breakdown: business breakdowns

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

- By facility
- By activity

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

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Sunrise Energy Project	202000	97000
Lima Refinery	315000	277000
Lloydminster Upgrader	211000	71000
Tucker Thermal Project	72000	34000
Bolney Thermal Project	54000	18000
SeaRose FPSO	0	0
Pikes Peak South Thermal Project	28000	9000

Vawn Thermal Project	25000	9000
Edam East Thermal Project	22000	7000
Rush Lake Thermal Project	23000	8000
Pikes Peak Thermal Project	15000	5000
Prince George Refinery	400	15000
Superior Refinery	25000	26000
Sandall Thermal Project	14000	5000
Edam West Thermal Plant	23000	8000
Paradise Hill Thermal Project	11000	4000
Rainbow Lake Gas Plant	158000	75000
Husky Lloydminster Refinery	54000	26000
Minnedosa Ethanol Plant	80	9000
All other Husky Operated Facilities	335000	136000

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Canadian Refining and Upgrading	340000	143000
Conventional Oil Production	156000	60000
U.S. Refining	340000	303000
Gas Production, Gathering, and Processing	228000	108000
Thermal Oil Production	488000	203000
Ethanol Production	35000	21000

Scope 2 breakdown: sector production activities

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

Sector production activity	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities*	35000	21000	

Sector production activity	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Oil and gas production activities (upstream)*	872000	372000	
Oil and gas production activities (downstream)*	681000	446000	

Emissions performance

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

Reason	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	Husky had no material energy consumption from renewable sources in 2018.

Reason	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Other emissions reduction activities	27900	Decreased	0.21	Emissions reduction projects implemented in 2018 resulted in a reduction of 27,900 tonnes CO2e as per the initiatives listed in C4.3b. $(27,900 \text{ tCo2e} / 13,110,000 = 0.21 \%)$
Change in output	875000	Decreased	6.674	The Superior Refinery was offline from April 2018. Along with the Lima Refinery turnaround, this resulted in declines of 600k tonnes. Natural declines in conventional oil production in 2017 resulted in reduction of 365k tonnes. These declines were offset by an increase of approximately 90k tonnes associated with increases in production from and addition of new thermal plants. $(875/13,110*100=6.641\%)$
Change in methodology	375000	Decreased	2.72	Decrease to 2017 Superior Scope 1 CO2e of 206k tonnes to correct error applying GWP. Reduction of 56k tonnes Scope 2 CO2e emissions for Lloydminster Ethanol Plant due to steam Methodology change. Reduction overall due to application of new NIR Scope 2 EFs (95k tonnes). $(206,000 + 56,000 +95,000) / 13,110,000 * 100 = 2.71\%$

(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

Energy spend

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

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

Energy-related activities

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

Activity	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	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

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

Activity	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	39906000	39906000
Consumption of purchased or acquired electricity	N/A	0	6128000	6128000
Consumption of purchased or acquired steam	N/A	0	1962000	1962000
Consumption of self-generated non-fuel renewable energy	N/A	0	N/A	0

Total energy consumption	N/A	0	47996000	47996000
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(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Activity	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	606000
Consumption of purchased or acquired electricity	N/A	229000
Consumption of purchased or acquired heat	N/A	
Consumption of purchased or acquired steam	N/A	92000
Consumption of purchased or acquired cooling	N/A	
Consumption of self-generated non-fuel renewable energy	N/A	
Total energy consumption	N/A	927000

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

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

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

Fuels	Heating value	Total MWh consumed by the organization	MWh consumed for self-generation of electricity	MWh consumed for self-generation of heat	MWh consumed for self-generation of steam	MWh consumed for self-generation of cooling	MWh consumed self-cogeneration or self-trigeneration	Comment
Natural gas	HHV	39417000	1087000	16382000	21948000	N/A	N/A	
Refinery gas	HHV	8269000	0	8269000	0	N/A	N/A	
Diesel	HHV	214000	0	214000	0	N/A	N/A	
Marine Gas Oil	HHV	51000	24000	27000	0	N/A	N/A	
Propane Liquid	HHV	45000	0	45000	0	N/A	N/A	

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

Fuel	Emission factor	Unit	Emission factor source	Comment
Natural gas	297	kg CO2e per MWh	This figure is a calculated average of all combustion emissions Husky has classified as Natural Gas. Emissions from natural gas combustion are calculated using analyzed gas samples that are assigned to emissions inventories at the equipment level.	Husky includes both marketable and non-marketable gas in its natural gas fuel category for the purposes of this response.
Refinery gas	106	kg CO2e per MWh	This figure is a calculated average of all combustion emissions Husky has classified as Refinery Gas. Emissions from refinery gas combustion are calculated using analyzed gas samples that are assigned to emissions inventories at the equipment level.	Husky includes all refinery gases that are not natural gas or propane as part of this fuel category for the purposes of this response.
Diesel	2688	kg CO2 per m3	API Compendium Table 4.1	
Marine gas oil	2615	kg CO2 per m3	US EPA AP42 Table 3.1-2a	
Propane	1500	kg CO2 per m3	US EPA AP42 Table 1.5-1	

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

Energy Carrier	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	1110000	1110000	0	0
Heat	24937000	24937000	0	0
Steam	21948000	21948000	0	0
Cooling	0	0	0	0

(C-CH8.2e) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Energy Carrier	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	0	0
Heat	681000	681000
Steam	246000	246000
Cooling	0	0

(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.

Basis for applying a low-carbon emission factor	Low-carbon technology type	Region of consumption of low-carbon electricity, heat, steam or cooling	MWh consumed associated with low-carbon electricity, heat, steam or cooling	Emission factor (in units of metric tons CO2e per MWh)	Comment
No purchases or generation of low-carbon electricity, heat, steam or cooling accounted with a low-carbon emission factor					

(C-CH8.3) Disclose details on your organization's consumption of feedstocks for chemical production activities.

Feedstocks	Total consumption	Total consumption unit	Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit	Heating value of feedstock, MWh per consumption unit	Heating value	Comment
Solid biomass	752,510.58	metric tons	Not applicable	Not applicable	Not applicable	

(C-CH8.3a) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

Feedstock source	Percentage of total chemical feedstock (%)
Oil	0
Natural Gas	0
Coal	0
Biomass	100
Waste	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9 Additional metrics

Oil and gas production

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

Hydrocarbon category	In-year net production	Comment
Crude oil and condensate, million barrels	25 mmbbls	Includes Light & Medium, and Heavy Crude Oil
Natural gas liquids, million barrels	8 mmbbls	Natural Gas Liquids includes Condensate in Husky's Annual Information Form
Oil sands, million barrels (includes bitumen and synthetic crude)	45 mmbbls	
Natural gas, billion cubic feet	185 Bcf	

Oil and gas reserves methodology

(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.

Husky's oil and gas reserves are estimated in accordance with the standards contained in the Canadian Oil and Gas Evaluation Handbook ("COGEH"), and the reserves data disclosed conforms with the requirements of National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities ("NI 51-101"). All of Husky's oil and gas reserves estimates are prepared by internal qualified reserves evaluation staff using a formalized process for determining, approving and booking reserves.

For the purposes of Husky's NI 51-101 reserves disclosure in this year's AIF, Sproule Associates Ltd. ("Sproule"), an independent firm of qualified reserves evaluators, was engaged to conduct a complete audit and review of 100% of Husky's oil and gas reserves estimates. Sproule issued an audit opinion stating that Husky's internally generated proved and probable reserves and net present values based on forecast and constant price assumptions are, in aggregate, reasonable, and have been prepared in accordance with generally accepted oil and gas engineering and evaluation practices as set out in the COGEH. Sproule has also this year executed the Form 51-101F2 attached as Appendix B to the AIF.

The Board of Directors has approved, on the recommendation of the Audit Committee, the content of Husky's disclosure of its reserves data and other oil and gas information. The reserves in C-OG9.2 are Husky's gross reserves, which are the working interest share of reserves before deduction of royalties and without including any royalty interests.

Oil and gas total reserves

(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
2,541	-	-	Total gross working interest Proved plus probable reserves. Resource base is not disclosed externally other than selected properties in the Investor Day. Disclosure requires descriptions, risks and uncertainties as detailed in the Investor Day Advisory.

Oil and gas reserves split

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

Hydrocarbon category	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)	Comment
Crude oil/ condensate/ Natural gas liquids	14		-	Possible reserves not disclosed. Resource base also not disclosed other than for selected properties in Investor Day presentation.
Natural gas	18		-	
Oil sands (includes bitumen and synthetic crude)	68		-	

Oil and gas split by development type

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

Development type	In-year net production (%)	Net proved reserves (1P) (%)	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)	Comment
Other: Light & Medium Crude Oil	10	8	8		-	Possible reserves are not disclosed.
Other: Heavy Crude Oil	12	4	3		-	
Other: Bitumen	41	60	68		-	
Other: Conventional Natural Gas	28	23	18		-	
<u>Other: Natural Gas Liquids</u>	8	5	3		-	

Comment: The information included in the response to C-OG9.2e is prepared directly from Husky's oil and gas reserves disclosure, dated February 26, 2019, in the Company's 2018 Annual Information Form, as filed on SEDAR and available on Husky's website "www.huskyenergy.com". Husky prepares reserves information in accordance with National Instrument 51 - 101 Standards of Disclosure for Oil and Gas Activities ("NI 51-101"). NI 51-101 has specific requirements for classifying oil and gas reserves by product type. The product types selected in response to this question are in accordance with NI 51-101. Husky does not publicly disclose contingent resources (which would require disclosure of additional items as set out in NI 51-101), accordingly, Husky has not disclosed information regarding contingent resources in the format requested by CDP.

Total refinery throughput

(C-CH9.3a) Provide details on your organization's chemical products.

Output product	Production (metric tons)	Capacity (metric tons)	Direct emissions intensity (metric tons CO2e per metric ton of product)	Electricity intensity (MWh per metric ton of product)	Steam intensity (MWh per metric ton of product)	Steam/ heat recovered (MWh per metric ton of product)	Comment
Ethanol	228000	205000	0.48	1.00	1.48		

(C-OG9.3a) Disclose your total refinery throughput capacity in the reporting year in thousand barrels per day.

Total refinery throughput capacity (Thousand barrels per day)
347.3

Feedstocks used in refinery

(C-OG9.3b) Disclose feedstocks processed in the reporting year in million barrels per year.

Feedstock	Throughput (Millions barrels)	Comment
Oil	126.76	Throughput information is from Husky's 2018 Annual Report. Information report is on a net equity basis. Canadian Refining and Upgrading throughput of 113.4 mbbbls/day U.S. Refining throughput of 233.9 mbbbls/day Total throughput of 347.3 mbbbls/day * 365 days / 1000 = 126.76 MMbbbls
Other feedstocks	1.46	Natural gas is used as feedstock for hydrogen production through steam methane reforming (SMR). Hydrogen is required for hydrotreating and hydrocracking as an integral part of the upgrading and refining operations. 8,763 MMscf total natural gas used as SMR feedstock at Husky Downstream facilities / 6,000 MMscf/MMBOE = 1.46 MMBOE
Total	128.22	MMBOE

Refinery products and net production

(C-OG9.3c) Are you able to break down your refinery products and net production?

No

Low-carbon investments: Coal / Electric utilities / Oil & gas

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

Investment start date	Investment end date	Investment area	Technology area	Investment maturity	Investment figure	Low-carbon investment percentage	Please explain
01/01/2018	31/12/2018	Services	Carbon capture, liquefaction and transportation to injection sites	Full/commercial-scale demonstration	\$4,228,703.13	81 - 100%	This investment represents operating expense to run a capture facility that extracts released CO2 from Husky's Lloydminster Ethanol fermentation facility
2016-01-01	2016-12-31	R&D	Other, please specify	Applied research and development	\$157,756.29	81 - 100%	Technology area: HDR technology development for partial upgrading to reduce diluent usage. Cash payment by Proponent after funding contributions
2017-01-01	2017-12-31	R&D	Other, please specify	Applied research and development	\$157,756.28	81 - 100%	Technology area: HDR partial upgrading grant funding received and deferred cash contribution
2018-01-01	2018-12-31	Property, Plant and Equipment	Other, please specify	Pilot demonstration	\$1,183,000.00	0 - 20%	Technology area: HDR partial upgrading: forecast equipment and products
2018-01-01	2018-12-31	Services	Other, please specify	Pilot demonstration	\$8,699,000.00	81 - 100%	Technology area: HDR partial upgrading: salaries, services, overhead, travel, other
2018-01-01	2018-12-31	Property, Plant and Equipment	Infrastructure	Large Scale Commercial Deployment	\$1,000,000	0 - 20%	Completed modifications to gas compression trains to increase total gas handling capacity for the SeaRose FPSO from approximately 5.0 MMSm3/d to 5.5 MMSm3/d. Increased gas injection capacity would reduce the amount of gas that would require flaring.

Breakeven price (US\$/BOE)

(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.

\$38

Transfers & sequestration of CO2 emissions

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

Yes

(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).

Transfer direction	CO2 transferred – reporting year (metric tons CO2)
CO2 transferred in	25,692
CO2 transferred out	0

(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)
CO2 used for enhanced oil recovery (EOR) or enhanced gas recovery (EGR)	94579	0	2008	640490

(C-OG9.8c) Provide clarification on any other relevant information pertaining to your activities related to transfer and sequestration of CO2. (Max 5,000 characters).

Husky injects CO2 into several reservoirs in the Lloydminster area of Saskatchewan for the purposes of enhanced oil recovery. While some CO2 is retained, this activity is cyclic and not designed to store CO2 in the formation. There is no assurance of long-term storage implied.

C10 Verification

Verification

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

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

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

Scope	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported emissions verified (%)
Scope 1	Annual process	Underway but not complete for reporting year – previous statement of process attached	Limited assurance	Husky 2018 ESG Report: Independent Limited Assurance Report	pp. 41 - 42	ISAE3000	100
Scope 2 location based	Annual process	Underway but not complete for reporting year – previous statement of process attached	Limited assurance	Husky 2018 ESG Report: Independent Limited Assurance Report	pp. 41 - 42	ISAE3000	100

Other verified data

(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?

Yes

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Progress against emissions reduction target	ISO14064-3	For facilities that are governed by the Alberta Carbon Competitiveness Incentive regulation, verification work is in relation to a baseline year for the purposes of evaluating progress towards emissions reduction obligations.

C11 Carbon pricing

Carbon pricing systems

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

- Alberta carbon tax
- BC carbon tax
- Ontario CaT
- Other ETS, please specify – Alberta CCIR

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

System name	% of Scope 1 emissions covered by the ETS	Period start date	Period end date	Allowances allocated	Allowances purchased	Verified emissions in metric tons CO ₂ e	Details of ownership	Comment
Other: Alberta CCIR	24.26%	01/01/2018	31/12/2018	2,110,238	379,923	2,490,161	Other, please specify (Operated and owned outright or jointly)	Husky's Sunrise and Tucker Thermal Facilities participate in the Alberta CCIR. Both facilities exceeded their output-based allocation limit in 2018 and used a combination of compliance fund and offset/EPC credit purchases.
ON CaT	0	01/01/2018	03/07/2018	0	69,473.00	69,473.00	Other, please specify (Operated and owned outright or jointly)	Husky purchased Ontario Cap and Trade allowances for fuel that was imported into the province for sale at its fuel outlets in 2018 until the expiry of the regulation as of July 3, 2018.

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

Pricing system	Period start date	Period end date	% of emissions covered by tax	Total cost of tax paid	Comment
Alberta Carbon Tax	01/01/2018	31/12/2018	0.98%	176000	
BC Carbon Tax	01/01/2018	31/12/2018	1.28%	1977000	

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

Husky seeks to reduce emissions at its facilities through improved energy and emissions management and offsets the balance of compliance obligations through the use of emissions performance credits, purchases of project-based carbon offsets, and purchases of Climate Change Emissions Management Fund credits. For example, the Sunrise Energy Project used credits generated at the Tucker Thermal Project to meet a portion of its compliance obligation in 2018.

Project-based carbon credits

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

Yes

(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	Project type	Project identification	Verified to which standard	Number of credits (metric tons CO2e)	Number of credits (metric tons CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
Credit origination	Methane avoidance	Cap-Op Energy Emission Reductions from Pneumatic Devices (Pool B)	<p>Other</p> <p>Project verified to Reasonable level assurance, ISO 14064-3 and the following standards:</p> <ul style="list-style-type: none"> - Climate Change and Emissions Management Act • Carbon Competitiveness Incentive Regulation (255/2017) • Standard for Greenhouse Gas Emission Offset Project Developers, Version 1.0, December 2017 • Standard for Verification, Version 1.0, December 2017 • Quantification Protocol for Greenhouse Gas Emission Reductions from Pneumatic Devices, Version 2.0, January 2017. Purpose: compliance mechanisms 	12440	12440	No	Compliance

Internal price on carbon

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

Yes

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

Objective for implementing an internal carbon price	GHG Scope	Application	Actual price(s) used (Currency /metric ton)	Variance of price(s) used	Type of internal carbon price	Impact & implication
<ul style="list-style-type: none"> • Navigate GHG regulations • Stakeholder expectations • Change internal behavior • Drive energy efficiency • Stress test investments 	Scope 1	Upstream and Downstream Canadian operations	50	Husky employs a geographically differentiated shadow price that is sensitive to the realistic pricing assumptions of each jurisdiction in which it operates. For Canada, this results in an evolutionary pricing model that is based on the proposed Pan-Canadian Climate Framework, which calls for annual escalating prices approaching \$50/tonne by 2022. The starting point for this pricing varies by province based on the carbon pricing regulations currently in place.	Shadow price	Husky uses an internal price on carbon to evaluate projects in jurisdictions where there is a regulatory compliance obligation for GHG emissions or where there is a reasonable expectation that additional material compliance obligations will be implemented in the near to mid-term. The Company considers both the cost and value of GHGs; for example, Husky places a value on CO2 as a means to enhance heavy oil production. Husky has evaluated investments in energy efficiency at the Sunrise and Tucker thermal facilities using internal carbon pricing in line with current and proposed regulations of \$30 per tonne, escalating to \$50 per tonne by 2022 to determine additional sensitivity for the projects.

C12 Engagement

Value chain engagement

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

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

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

Type of engagement	Details of engagement	% of suppliers by number	% total procurement spend (direct and indirect)	% Scope 3 emissions as reported in C6.5	Rationale for the coverage of your engagement	Impact of engagement, including measures of success	Comment
Compliance and onboarding	Included climate change in supplier selection/management mechanism	100% of new suppliers	4.7%	n/a	All new suppliers are required to answer a series of questions in the supplier pre-qualification and qualification questionnaire. In this questionnaire, suppliers are asked on whether they disclose their climate-related information specifically to CDP. They are also asked if they comply with all applicable environmental laws and regulations, which include climate-related regulations within their jurisdiction.	Impact: Suppliers become aware that Husky is interested in their climate risks disclosure. Measure of success: Getting new suppliers to complete the questionnaire.	100% of new suppliers contracted in 2018. 4.7% = new suppliers contracted in 2018, over 2018's total procurement spend.
Engagement & incentivization (changing supplier behavior)	Emissions reduction incentives	16.2%	55%	n/a	In 2016, Husky joined the SmartWay Transport Partnership. This collaboration is designed to help businesses reduce fuel costs while transporting goods in the cleanest, most efficient way possible. SmartWay works with freight carriers and shippers that are committed to benchmarking their operations, tracking their fuel consumption and improving their annual performance. While not all Husky suppliers are SmartWay members, as the program grows, Husky anticipates further fuel efficiency and cost improvements in the supply chain.	Impact: Husky's Canadian Products Marketing business unit participates to drive fuel cost reductions, contributing to improved efficiency, and engages on best practices in the freight supply chain. Measure of Success: Onboarding additional carriers. 49% of the total kilometers driven within Canadian Products Marketing's Downstream operations are SmartWay carriers.	16.2% = SmartWay-registered carriers for Canadian Products Marketing load (5 carriers out of 34 total) 55% = Total 2018 spend on these SmartWay carriers over total procurement spend on Canadian Products Marketing freight services.

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

Husky engages with its JV partners on large projects through JV committees that discuss numerous issues, including GHG emissions. Specifically, Husky and BP collaborate on GHG issues related to BP-Husky Refining LLC and the Sunrise Energy Project with the aim of achieving compliance strategy consensus. Husky prioritizes GHG engagement with value chain partners where there is a major risk posed by exposure to climate-related issues such as regulatory changes. Success is measured through financial indicators, including performance against carbon-related fee targets for facilities that fall under a regulatory scheme that includes a compliance cost for carbon emissions.

Public policy engagement

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

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

(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	Husky continues to directly engage with provincial and federal government agencies through pro-active outreach, as well as through input to industry associations representing broad industry consensus.	Husky supports efforts to price carbon in a way that is equitable for all GHG emitters and preserves industry competitiveness.
Regulation of methane emissions	Support	Husky continues to directly engage with provincial and federal government agencies through proactive outreach, as well as through input to industry associations representing broad industry consensus.	Husky supports incentives for early action on methane emission reductions that give industry the flexibility to manage reductions efficiently.
Other: Clean Fuel Standard	Support with major exceptions	Husky continues to directly engage with provincial and federal government agencies through pro-active outreach, as well as through input to industry associations representing broad industry consensus.	Husky supports efforts to reduce the carbon intensity of all fuels, including transportation fuels, provided regulators recognize the impact of overlapping carbon regulations on the refining sector and the market can pursue compliance through all types of fuel.
Other – Technology Fund and Offset Program Developments	Support	Husky continues to directly engage with provincial and federal government agencies through proactive outreach, as well as through input to industry associations representing broad industry consensus.	Husky supports development of provincial and federal technology funds and offsets programs to incentivise emissions reduction projects.

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

Yes

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you influenced, or are you attempting to influence the position?
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<p>Canadian Association of Petroleum Producers (CAPP)</p>	<p>Consistent</p>	<p>CAPP's climate change policy principles as shown at http://www.capp.ca/responsible-development/air-and-climate/climate-change CAPP's climate change policy principles are 1.Collaborative and Solutions-oriented (Given Canada's climate commitments and industry impacts, CAPP will proactively collaborate with governments and stakeholders towards appropriate policy solutions; Policy solutions need to be adaptive and carefully consider environmental, economic, and social outcomes.) 2.Efficient, effective and predictable (Climate policy should target reductions where they are most efficient and effective right across the entire energy value chain from production to end use and considering fairly all sectors and jurisdictions); Climate change policies should achieve emissions reductions at the least cost to Canadians, the economy and industry; Revenues from climate policy should be fully recycled back into the economy to incent innovation, assist transition or reduce other taxes and levies.) 3.Technology and innovation focused (Policy should incent technology and innovation to address climate change, and capture the opportunity to export solutions to the world; Considerable future emissions reductions will stem from improving the hydrocarbon energy sector, requiring continuing strong innovation and policy effort in these areas) 4.Globally competitive (Canada's climate policies must ensure our resource development is cost and carbon competitive with other jurisdictions, especially the U.S. as our largest trading partner; Canada's climate policy leadership should bring proportionate benefits to Canada, including ensuring we receive full value for Canadian energy products through effective access to global markets; Canada is highly dependent on the development and trade of its natural resources, and on its ability to attract foreign investment. Canada's climate policies must be designed to maintain our ability to raise global investment capital)</p>	<p>Husky participates in working groups within CAPP to inform the industry association's position relative to climate change policy in Canada.</p>
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Canadian Fuels Association (CFA)	Consistent	<p>CFA's policy position is presented at http://www.canadianfuels.ca/Issues-Policy/Policy-Positions/#Climate Climate Change / GHG Emission Reduction</p> <p>To address the risks of climate change, reducing GHG emissions has become an important global issue. Under the auspices of the Paris Agreement, virtually every country has committed to reduce their GHG emissions. For Canada, our collective efforts to achieve a sustainable, lower carbon future must be founded on three key actions:</p> <ul style="list-style-type: none"> • Explore, define and evaluate GHG emission-reduction pathways in collaboration with all stakeholders before targets are set. • Recognize Canada's productivity and competitiveness as core considerations in the development and implementation of a national GHG-reduction strategy. • Ensure that sound evidence and cost-benefit analyses drive decision-making and are transparently shared with citizens. <p>Climate policy has far reaching implications for citizens, business and society in general. Canadian Fuels Association and its members support policy approaches that minimize the overall cost to society of reducing climate risks. Broad-based carbon pricing mechanisms that are transparent, uniform and predictable are useful tools to send clear price signals across the economy that can effectively and efficiently reduce Canada's carbon footprint.</p>	Husky participates in working groups within CFA to inform the industry association's position relative to climate change policy in Canada.
Canadian Manufacturers	Consistent	CME's policy position on carbon taxation and revenue recycling is presented at: https://cme-mec.ca/blog/initiatives/balancing-environmental-sustainability-and-economic-growth/	Husky participates in working groups within CME to inform the industry

<p>and Exporters Association</p>	<p>CME calls for the revenue-neutral distribution of carbon pricing monies. Funds collected under the federal backstop system should be returned to the “person” (the company) to invest in projects that improve environmental performance and increase investment in emissions-reducing machinery, equipment and technologies. Their position is that the federal carbon pricing backstop system must be balanced and cannot compromise economic growth, industrial investment, or the global competitiveness of manufacturers. The system must be designed in such a way so that companies receive access to funds directly in proportion to how much they pay in carbon taxes or cap-and-trade expenses.</p> <p>Additionally, CME presents their position relative to the Clean Fuel Standard here: https://cme-mec.ca/blog/initiatives/balancing-environmental-sustainability-and-economic-growth/</p> <p>CME supports efforts to reduce GHG emissions intensity across Canada but is concerned about the impact the CFS will have on Canada’s business competitiveness. The CFS will add cost to doing business and will further discourage investment in Canada. CME calls on the on the federal government to: 1. Complete a comprehensive economic analysis and modelling exercise; and, 2. Exempt all manufacturing fuels from the CFS. The CFS must not result in carbon leakage –whereby companies simply shift their production to other jurisdictions with less stringent regulations, a loss of manufacturing jobs, a weaker economy, or a net increase in global GHG emissions.</p>	<p>association’s position relative to climate change policy in Canada.</p>
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(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

(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?

Key individuals in the business units and supporting service groups collaborate to align Husky's position through the Carbon Management Regulatory Monitoring Committee. The Company's climate change strategy is clearly communicated to policy makers either directly or through participation in industry association working groups within the jurisdictions where the Company operates. In 2018, Husky continued to support consistency in policy advocacy through the Company's Carbon Management Critical Competency Network, Carbon Management Regulatory Monitoring Committee and activity within the GHG management framework. Husky's Government Relations department works with the Carbon Management Critical Competency Network and Company representatives involved in policy engagement to ensure that policy advocacy activities are aligned.

Communications

(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	Status	Attach the document	Page/Section reference	Content elements	Comment
In voluntary sustainability report	Underway – previous year attached	ESG Report 2018	pp. 22	<ul style="list-style-type: none"> ● Governance ● Strategy ● Risks & Opportunities ● Emissions figures ● Other metrics 	
In mainstream reports	Complete	2018 AIF	Social and Environmental Considerations (pp. 43 – 46); Air and Climate Change, (pp. 50-54).	<ul style="list-style-type: none"> ● Governance ● Risks & Opportunities 	
In other regulatory filings	Complete			<ul style="list-style-type: none"> ● Emissions figures ● Emission targets 	

C14 Signoff

Signoff

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

Job title	Corresponding job category
Chief Operating Officer	Chief Operating Officer (COO)
