

Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

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

MEG is an energy company focused on sustainable in situ thermal oil production in the southern Athabasca region of Alberta, Canada. MEG is actively developing innovative enhanced oil recovery projects that utilize SAGD extraction methods to improve the responsible economic recovery of oil as well as lower carbon emissions. MEG transports and sells thermal oil (known as Access Western Blend (AWB) to customers throughout North America and internationally. MEG owns a 100% working interest in over 400 square miles of mineral leases. In the GLJ Report, which is dated effective December 31, 2020, GLJ estimated that the leases it had evaluated contained approximately 2.0 billion barrels of gross proved plus probable reserves at the Christina Lake Project, where MEG has regulatory approval in place for 210,000 bbls/d of production. At a design steam oil ratio (SOR) of 2.4, MEG has developed oil processing capacity of approximately 100,000 bbls/d at its Christina Lake central plant facility, prior to any impact from scheduled maintenance activity or outages, through the phased construction of the Christina Lake Project (described below) as well as several low-cost debottlenecking and expansion projects and the application of its proprietary reservoir technologies. The typical average annual production decline rate at the Christina Lake Project is approximately 10% to 15% and at the current production of approximately 90,000bbls/d, MEG has a proved plus probable (2P) reserve life index of approximately 60 years. MEG has been able to realize production growth at the Christina Lake Project while minimizing GHG emissions intensity through the application of its proprietary technologies. Specifically, MEG's eMSAGP technology reduces the amount of steam required to produce a barrel of bitumen. Furthermore, MEG continues testing of its proprietary eMVAPEX technology at the Christina Lake Project, which involves the targeted injection of light hydrocarbons in replacement of steam. The Corporation also uses cogeneration, also known as combined heat and power generation, to create steam and power from a single heat source. The application of eMSAGP and cogeneration have enabled MEG to lower its GHG emission intensity more than 20% below the in situ industry volume weighted average calculated based on data



reported to Environment Canada, the Alberta Energy Regulator, and the Alberta Electric System Operator. By applying the eMSAGP process to significant portions of the Christina Lake Project, MEG achieved an average steam oil ratio of 2.32 in 2020 compared to the in-situ industry volume weighted average of 3.1. MEG delivers its production to market via a long-term transportation services agreement on the Access Pipeline which connects to the Edmonton, Alberta sales hub and via additional pipelines, storage facilities and rail infrastructure to transport, store and sell AWB to customers in high value markets. MEG has contracted for 100,000 bbls/d of transportation capacity on the Flanagan South and Seaway pipeline systems providing pipeline transportation directly to U.S. Gulf Coast refineries and export terminals. Additionally, MEG is a shipper on the Trans Mountain Expansion Project which, when in service, will provide MEG with 20,000 bbls/d of committed access to Canada’s West Coast. MEG has also contracted oil storage capacity of 2.8 million barrels in Alberta and strategic locations in the U.S., with marine export capacity at select U.S. Gulf Coast terminals. This combination of pipeline access, storage capacity and marine export capability, along with rail loading capacity at the Bruderheim Terminal, advances MEG’s strategy of having long-term and reliable market access to world oil prices for its production.

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2020	December 31, 2020	No

C0.3

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

Canada

C0.4

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

CAD



C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-OG0.7

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

Row 1

Oil and gas value chain

Upstream

Other divisions

Grid electricity supply from gas

C1. Governance

C1.1

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

Yes

C1.1a

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



Position of individual(s)	Please explain
Board-level committee	<p>The Board of Directors (Board) is responsible for overall stewardship and oversight of the Corporation and activities of management. The Board is responsible for the oversight of climate-related issues impacting the Corporation, including overseeing processes to identify, assess and manage climate risks and opportunities, developing the Corporations approach to governance issues, principles, practices and disclosure; overseeing and monitoring of metrics and targets to assess and manage climate risk and opportunities; and reviewing ESG disclosures. The Board delegates responsibility for certain ESG matters to the four Board committees from time to time based on mandate and expertise: Governance and Nominating Committee (GNC), Audit Committee, Human Capital and Compensation Committee (HCCC), and Health, Safety and Environment and Reserves Committee (HSERC). The HSERC Board committee is responsible for overseeing the implementation of policies and procedures to monitor and mitigate environmental risks, including climate change. The HSERC manages information on climate-related issues and makes recommendations to the Board regarding strategies to mitigate climate related risks. Examples of actions taken include review and approval of continued strategic investments in MEG’s proprietary eMSAGP and eMVAPEX technologies. The Board and HSERC committee are updated by the CEO, COO and representatives of the ESG and Environment Health & Safety (EH&S) Committees quarterly on GHG performance, climate strategy, advancement of emissions reducing technology solutions, climate policy developments (including carbon pricing) and other climate-related topics as applicable. The Human Capital and Compensation Committee (HCCC) assists the Board to ensure that climate matters are reflected in compensation policies and guidelines as well as the Corporations corporate goals and objectives related to compensation. 2020 significant climate-related decisions: In 2020, the Board committed to supporting the Paris Agreement and approved a goal of reaching net zero GHG emissions by 2050. In 2020, the Board also approved the 2021 Corporate Performance Scorecard and CEO objectives, including 3.5% of our Scorecard linked to a GHG emissions performance metric and 4.0% to emissions reducing technology development.</p>

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain



<p>Scheduled – all meetings</p>	<p>Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>The Board of Directors (Board) is responsible for the overall stewardship of and for overseeing the conduct of the Corporation and activities of management who are responsible for the day-to-day conduct of the business. Under their mandate, the Board is responsible to oversee environmental, social and governance (ESG) issues, including (a) overseeing and monitoring management processes relating to the identification, assessment and management of ESG risks and opportunities, including climate-related issues, emissions, air and water impacts, and land and wildlife management, (b) developing the Corporation's approach to corporate governance issues, principles, practices and disclosure; (c) approving and monitoring a code of business conduct and ethics for directors, officers, employees and contractors; (d) overseeing and monitoring of metrics and targets used by the Corporation to assess and manage ESG risk and opportunities; and (e) reviewing the Corporation's ESG reporting on ESG matters. The Board delegates responsibility for certain ESG matters to the four Board committees from time to time based on mandate and expertise: Governance and Nominating Committee (GNC), Audit Committee, Human Capital and Compensation Committee (HCCC), and Health, Safety and Environment and Reserves Committee (HSERC). For example, the Compensation Committee assists the Board to ensure that ESG matters are reflected in the Corporation's compensation policies and guidelines as well as the Corporation's corporate goals and objectives related to compensation. The HSERC assists the board in fulfilling its stewardship with respect to ensuring compliance and applicable laws pertaining to environment including climate change and GHG, and reviewing and supervising MEG's policies and procedures designed to mitigate climate risks and liabilities. The HSERC committee is updated by the CEO, COO and representatives of the ESG and EH&S Committees quarterly on our GHG performance, climate strategy, advancement of emissions reducing technology solutions, climate policy developments (including carbon pricing mechanism) and other climate-related topics as applicable. In 2020, the Board committed to supporting the Paris Agreement and approved MEG's long-term goal of reaching net zero GHG emissions (Scope 1 and Scope 2) by 2050. In addition, in 2020, the Board approved the annual Corporate Performance Scorecard and CEO objectives for 2021 which include climate performance and strategy metrics. In 2021, 3.5%</p>
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		of our Corporate Performance Scorecard is linked to a GHG emissions performance metric and 4.0% to emissions reducing technology development. Other examples of actions taken include review and approval of continued strategic investments in MEG’s proprietary eMSAGP and eMVAPEX technologies.
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C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Quarterly
Safety, Health, Environment and Quality committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Other, please specify Executive ESG Committee	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

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

Our management team is responsible for executing corporate strategy including the assessment and management of climate-related risk and opportunities, with the ultimate responsibility in management resting with the CEO. The CEO, subject to the direction of the Board of Directors (Board), is responsible for the general supervision and control over business affairs of the Corporation including managing the Corporation’s ESG priorities, policies, procedures and practices, including climate change and reports to the full Board on the company’s ongoing climate performance and status of climate initiatives quarterly. The CEO is supported by two committees as outlined below.

The Executive ESG committee (ESG Committee) assists the CEO in assessing and managing climate-related risks and opportunities and providing guidance on climate change strategy and disclosure. It is comprised of senior leadership including the CEO, CFO, COO, VP Production, Operations &



Engineering, Senior VP Legal & General Counsel, and VP Human Resources. The ESG committee provides guidance and oversight with respect to ESG strategy, priorities and corporate disclosure, and is responsible for embedding ESG into our practices and behaviours. This includes climate-related issues. Meetings are held at least quarterly to discuss policies, practices and disclosure, current and emerging trends and regulations, the identification, assessment and management of risks and opportunities, and metrics and targets in order to advance strategy. The specific duties of the Committee include (a) assist the CEO in setting MEG's general strategy with respect to ESG matters, (b) consider and recommend policies, practices and disclosures; (c) oversee MEG's reporting and disclosure with respect to ESG; (d) assist the CEO in overseeing internal and external communications regarding MEG's position on to ESG; (e) monitor and keep the CEO apprised of current and emerging ESG matters that may affect the business, operations, performance or public image of MEG or are otherwise pertinent to MEG and its stakeholders, and to make recommendations with respect to polices, practices and disclosure regarding such matters; (f) assist the CEO in the identification, assessment and management of ESG-related risk and opportunities, including climate-related. In 2020, the work of the ESG Committee included identifying and approving our ESG priorities, approving the ESG disclosure and performance enhancements, and most notably evaluating 2030 and 2050 climate targets and potential technological developments. In 2020, the ESG Committee oversaw and validated our first ESG Materiality Assessment, focused on climate change disclosure improvements, and enhanced climate-related financial disclosure aligned with the TCFD recommendations.

The Corporate Environment, Health & Safety (EH&S Committee) is responsible for the implementation and functioning of the climate change program and reports quarterly to the HSERC committee of the Board and communicates learnings across MEG to drive continuous improvement. It consists of senior, interdisciplinary subject matter experts from across MEG including: Health and Safety, Environment and Regulatory, Operations, Projects, Reservoir & Production Engineering, Drilling and Completions, Enterprise Services, Human Resources and Marketing. The EH&S Committee ensures proper due diligence in the development, implementation and functioning of EH&S and security programs. Meetings are held monthly where potential issues, trends, enhancement opportunities, and performance against objectives and targets are discussed. Its primary function is to assist MEG in carrying out its responsibilities by reviewing, reporting and making recommendations on MEG's policies, management systems and programs with respect to EH&S and exercising due diligence in ensuring such policies, systems and programs are implemented and functioning properly. With regards to climate, the EH&S committee is responsible for the implementation and functioning of the climate change program. Climate-related topics addressed by the EH&S committee include GHG emissions performance, methane management, flaring activities, electricity trends, equipment efficiency, as well as climate policy and regulatory change. In 2020 and early 2021, the EH&S Committee put additional focus on outreach and understanding of existing and anticipated changes to climate policy in an effort to evaluate how our business can adapt in the face of changing regulations, and further informing our climate strategy. The EH&S Committee outreach activities included the implementation of the Technology Innovation and Emission Reduction Regulation, review of the draft Clean Fuels Regulation, proposed changes to the federal Output Based Pricing System and other external engagements focused on examining the role of sectoral policy.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction project Emissions reduction target Company performance against a climate-related sustainability index	The corporation has adopted CEO objectives which are fully transparent to both employees and shareholders. The purpose of the objectives is to set and ensure alignment on the strategic objectives across the organization. The individual performance weighting contributes 20% of the CEO's short-term incentive compensation. The 2020 CEO's objectives related to climate change, include setting 2030 and 2050 carbon goals, advancing multiple technology solutions, improving scores from ratings agencies, and to proactively anticipate and influence industry response to external events and influences to align with the best interest of MEG. The 2021 objectives include: continuing to advance all aspects of ESG, including CO2 technology solutions, 2030 and 2050 targets, alignment with TCFD, 2021 ESG report and sustainable finance options. A portion of the CEO's annual incentives are also linked to environmental performance indicators including the management of climate-related issues as identified in the Corporate Performance Scorecard. In 2020, 4.0% of our Corporate Performance Scorecard is linked to a GHG emissions performance metric and 5.0% to setting GHG goals, advancing technology solutions to achieve net zero emissions and funding a carbon capture initiative.
Corporate executive team	Monetary reward	Emissions reduction project	A portion of the corporate executive teams' annual incentives are linked to environmental performance indicators including the management of climate-related issues. Both performance



		Emissions reduction target Company performance against a climate-related sustainability index	and strategic indicators reflect the corporations continued focused ESG priorities and initiatives, including supporting the organization’s climate strategy. ESG indicators made-up greater than 35% of our Corporate Performance Scorecard in each of 2020. In 2020, 4.0% of our Corporate Performance Scorecard is linked to a GHG emissions performance metric (which is an increase over 2% in 2019) and 5.0% to setting GHG goals, advancing technology solutions to achieve net zero emissions and funding a carbon capture initiative.
All employees	Monetary reward	Emissions reduction project Emissions reduction target Company performance against a climate-related sustainability index	A portion of employee annual incentives are linked to environmental performance indicators including the management of climate-related issues. Both performance and strategic indicators reflect the corporations continued focused ESG priorities and initiatives, including supporting the organization’s climate strategy. ESG indicators made-up greater than 35% of our Corporate Performance Scorecard in 2020. In 2020, 4.0% of our Corporate Performance Scorecard is linked to a GHG emissions performance metric (which is an increase over 2% in 2019) and 5.0% to setting GHG goals, advancing technology solutions to achieve net zero emissions and funding a carbon capture initiative.
All employees	Non-monetary reward	Emissions reduction project Emissions reduction target Company performance against a climate-related sustainability index	MEG is committed to continuously improving our environmental, health and safety performance. This commitment is reinforced in our corporate Environmental Health and Safety (EHS) policy and employee evaluations. Employees are recognized for exceptional performance through internal articles published on MEG’s corporate intranet site.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes



C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	1	2	The short term horizon in MEG's strategic planning is 1 to 2 years. In the context of climate, this time frame aligns with the review cycle of greenhouse gas regulations.
Medium-term	2	5	The medium term horizon includes MEG's strategic planning time frame.
Long-term	5	30	The long term horizon considers MEG's reserve life and the Government of Canada (GOC) commitment to develop a plan to a achieve net-zero emissions by 2050 which is in line with recent research from the IPCC which suggests the commitments made under the Paris Agreement must go beyond 2030 emission reductions to limit the extent of warming global temperatures and limit warming to 1.5°C. This would require human caused emissions to reach net zero around 2050, and MEG's aspirational goal to achieve net zero GHG emissions around this time frame.

C2.1b

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

MEG defines substantive financial and strategic impact as a risk, that if materialized, has the potential to materially negatively impact the enterprise value of the corporation. Enterprise value could be negatively impacted by reduced forecast free cash flow or higher cost of capital due to increased risk in the business, higher costs, or reduced revenue among other factors. Financial and strategic risks with the ability to impact value by 5% or more are considered material. Climate change and related risks are rated moderate to serious, meaning that the combination of one or more impacts could result in a value impact of up to 15%, unmitigated. Investment in mitigation activity is required to reduce risk to less than 5% potential value impact.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

The Board is responsible for a) understanding the principal risks of the Corporation's business and confirming that systems are in place that effectively monitor and manage those risks with a view to a long-term viability of the Corporation, b) overseeing the Corporation's enterprise risk management (ERM) program, including its design and structure and assessment of its effectiveness, c) overseeing the Corporations principal risks directly or, where the Board determines it to be appropriate, delegating the oversight of certain individual risks to a committee of the Board, and d) approving management's approach to ERM and its mitigation practices, including the identification, assessment and mitigation of principal risks, and satisfying itself as to the effective oversight of risk management of individual risks by the Board or its committees through periodic reports from the committee chair or management as appropriate. The Health, Safety and Environment and Reserves Committee (HSERC) provides direction and oversight of climate related matters including climate-related risk. The senior leadership team is accountable for the management of climate-related risk and delegating management of specific risks throughout the organization. Continuous improvement is integral to MEG's compliance and Environment, Health & Safety (EHS) management system. As such, climate change risks, opportunities and mitigation strategies are monitored continuously and reported monthly to MEG's corporate EH&S Committee and quarterly to the Board of Directors and HSERC. Potentially material climate change risks are communicated to shareholders in MEG's Annual Information Form (AIF)

and other continuous disclosure documents publicly available on the System for Electronic Document Analysis and Retrieval (SEDAR), the filing system for Canadian Securities Administrators.

MEG uses value-driven Enterprise Risk Management (ERM) philosophy to identify key strategic risks. ERM is integrated into strategic planning, business planning, operating practices, marketing, compliance monitoring, operating performance measurement and facility design. MEG's entire leadership team is engaged in evaluation and ranking of risk areas across the organization. Risks identified in MEG's assessments are tracked in a Corporate Risk Register and evaluated based on impact severity and likelihood of occurrence, based on the current and potential future operating conditions and business or political environment. Impact severity considers: financial impact to enterprise value and free cash flow, operational impact, environmental, safety, regulatory and reputational impact. Likelihood is ranked from remote to frequent. An overall Risk Rating is obtained by considering both impact severity and probability. Risks with a risk rating of 'low' are monitored by routine procedures and operations. Risks with a risk rating of 'catastrophic' require immediate risk treatment and mitigation plans. MEG uses a risk matrix based on likelihood and impact severity to identify and assess potential risks. MEG defines substantive financial and strategic impact as a risk, that if materialized, has the potential to materially negatively impact the value of the corporation. Strategic risk with the ability to impact value by 5% or more are considered material. Climate change and related risks are rated moderate to serious or having the ability to impact value by up to 15%, unmitigated. Investment in mitigation is required to reduce risks to less than 5% potential value impact.

MEG has also established a cross functional management team (EH&S Committee) to examine GHG operational performance and identify risks and areas of opportunity for efficiency improvement. Recommendations inform operational capital investments, operating strategy as well as overall corporate strategy development. Opportunities identified and assessed by this team include production technology enhancements, operational efficiency projects (including Capital projects), carbon capture and storage opportunities as well as value-added downstream technologies. The ERM process also identifies how the company currently mitigates risk and how it plans to mitigate risk in the future; including additional resource required. Canada.

A case study of how our process has been used for a transition risk has been our response to climate regulation. Operating in Alberta, MEG is subject to the TIER regulation as a large emitter which includes facility-specific benchmarks and sector based high-performance benchmarks. The stringency of the benchmark will increase annually beginning in 2021 until the high-performance benchmark is met. The situation is the increasing cost of regulatory compliance for GHG emissions. The potential impacts of this risk include financial impact to enterprise value and free cash flow. The task was to identify possible mitigations to reduce compliance costs associated with the regulation which prompted MEG to consider possible investments in technologies to reduce GHG. The ERM process helped drive the introduction of several technological strategies to enhance bitumen recovery which also improve GHG performance. These include utilization of infill wells, non-condensable gas



(NCG) injection to maintain reservoir pressure and the application of solvent injection on selected wells. MEG continued to advance these bitumen recovery technologies including eMSAGP and the continued testing its eMVAPEX technology. MEG has also identified opportunities to obtain funding for the eMVAPEX pilot in part through government grants received. As a result of the application of MEG proprietary technologies and optimizations MEG has achieved a companywide SOR of 2.32 in 2020 and performed better than the TIER facility specific benchmark.

A case study of how our process has been used for physical climate risks has been for the risk of wildfire. MEG operates in Alberta where in 2016 the Fort McMurray wildfires caused significant loss and impacted production at oil and gas facilities. Climate change could increase the frequency of these events by increasing the frequency and severity of extreme temperatures. Wildfire could cause damage to MEG’s infrastructure, impact accessibility to MEG’s properties and cause interruptions to production. MEG has utilized data from the latest IPCC Fifth Assessment Report (AR5) to update a climate change assessment with recent climate trend comparisons locally and projections of changes in temperature, precipitation and other extreme events that could be expected out to 2080. MEG has identified the risk of wildfires in the ERM and identified mitigations through engineering design and operational procedures. An example of a mitigative action taken is MEG implements a Fire Smart program and a lightning strike detection system. As a result, we are better prepared to protect infrastructure from wildfire hazards.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Current GHG emission regulations are identified, assessed, and captured in the corporate risk register, included in corporate budgets if applicable as well as corporate strategy decisions. MEG considers international, federal, and provincial regulations. Many GHG emission regulations are designed to increase in stringency over time so as to achieve jurisdictional goals and targets. MEG regularly assesses and monitors emissions performance of its development plans to understand potential current and future financial implications. MEG has introduced a number of strategies including enhanced bitumen recovery technologies. In addition, our Christina Lake Project generates electricity and steam through the use of cogeneration. On June 21, 2018 the federal GHG Pollution Pricing Act (GGPPA) came into force which includes: a fuel charge and an output-based pricing system for industrial facilities. On December 6, 2019 the federal government confirmed equivalency with the GOA’s TIER under the Emissions Management and Climate Resilience Act. TIER came into



		<p>force January 1, 2020 replacing the CCIR. It includes facility-specific benchmarks and sector based high-performance benchmarks. The stringency of the benchmark will increase annually beginning in 2021 until the high-performance benchmark is met. MEG will continue to implement its bitumen recovery enhancement strategies and monitor the outcomes and implications for MEG under TIER. The fuel charge under Part 1 of the GGPPA came into force in Alberta on January 1, 2020 after the Government of Alberta adopted the Carbon Tax Repeal Act in 2019. MEG's exposure to Part 1 of the GGPPA is minimal as all facility operating emissions are regulated under the TIER Regulation. Further, the TIER Regulation received federal equivalency with Part 2 of the GGPPA in December 2019 eliminating the risk of duplicative regulation and/or pricing.</p>
<p>Emerging regulation</p>	<p>Relevant, always included</p>	<p>Changes to the political landscape and regulatory regimes can lead to emerging regulations. There will likely be some financial impact of emerging GHG regulation on most oil sands industry participant, however the extent of the impact is not always known. In 2019, MEG experienced uncertainty regarding the ultimate GHG emission regulatory regime that will be applicable to MEG in 2020. Effective January 1, 2020, both provincial and federal methane regulations came into force in Alberta. These two regulations have a significant amount of duplication in the targeted source types and management approaches. In 2019, equivalency between the two regulations had not been reached and both remained in effect. In response, MEG had taken measures to ensure compliance with both sets of regulations in 2020 including enhancements to the fugitive emissions leak detection and repair and equipment retrofits. On June 6, 2020 the Government of Canada published the Order Declaring that the Provisions of the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) Do Not Apply in Alberta in the Canada Gazette. This preliminary agreement on methane reduction regulations would permit the federal methane regulations to stand down in Alberta; however, a finalized agreement has not yet been reached at time of this submission. In the absence of a future agreement, it is anticipated that the cost of meeting the federal methane requirements will be higher than the costs of meeting Alberta's requirements alone. To mitigate this risk, a multidisciplinary team regularly monitors climate policy developments and emerging regulations for potential operational and financial impacts. Findings are communicated monthly to the corporate EH&S Committee and at least quarterly to the Board and applicable Board Committees to be factored into corporate strategy and planning. MEG actively consults with the federal and provincial governments/regulators on policy and regulatory issues and provides input into new and existing legislation in order to properly reflect a balanced approach to sustainable development. MEG consulted on the new AER methane requirements and TIER regulation.</p>



Technology	Relevant, always included	<p>MEG considers transitional risks associated with a global transition to a less carbon-intensive economy. MEG competes with the global petroleum producers as well as with other industries (alternative energy suppliers) in supplying energy, fuel, and related products to consumers. Technological advancements and innovations can impact the demand for MEG's products (including bitumen and electricity) by potentially improving the price and availability of alternative energy supplies and improving the carbon performance of petroleum competitors. MEG continuously monitors the supply and demand parameters of its products as well as opportunities for technological advancement and innovation. Due to its low-decline, low cost structure and high-quality asset, MEG is well positioned and continuously working towards being the last ethically, environmentally, and economically produced barrel of oil and intends to be a leader in the carbon energy future. The transition to a less carbon-intensive economy is creating technological development opportunities to improve emissions intensities. MEG has introduced a number of technological strategies to enhance bitumen recovery including utilization of infill wells, non-condensable gas (NCG) injection to maintain reservoir pressure and the application of solvent injection on selected wells. MEG continues to advance its bitumen recovery technologies including eMSAGP and the continued testing its eMVAPEX technology. eMVAPEX, if proven successful through expanded pilot operations, will further enhance MEG's growth potential by reducing capital requirements, while minimizing environmental impacts to land, air and water including a decrease in GHG emission intensity. The eMVAPEX pilot is funded in part through government grants received from Alberta Innovates, Natural Resources Canada, Emissions Reduction Alberta, and Sustainable Development Technology Canada. MEG is committed to continue the advancement of its climate strategy, focusing on technological development and innovation. This is demonstrated in the 2020 CEO objectives which include the advancement of multiple technology solutions and in the corporate performance scorecard which includes a strategic goal for a carbon capture initiative and 2030 and 2050 carbon goals.</p>
Legal	Relevant, always included	<p>MEG's corporate risk assessment process has identified the potential for climate-related legal risks. This includes the failure to comply with GHG legislation and regulations which may result in the imposition of significant fines and penalties. For example, under the Climate Change and Emissions Act, a person who is guilty of an offence is liable to a fine of up to \$1,000,000 in the case of a corporation. MEG mitigates this risk by tracking its performance in regard to current regulation and regularly monitors climate policy developments and emerging regulations. Performance and potential operational and financial impacts from climate policy developments and emerging regulations are communicated monthly to the Corporate EHS Committee and quarterly to the Board of Directors. MEG has also identified climate-related legal risks including the risk of climate-related litigation, against MEG's directors and officers, for example potential litigation with respect to misleading and incomplete disclosure with respect to climate change. Such claims may be material or may be indeterminate, may affect</p>



		<p>the financial condition or results of operations, or may cause MEG to incur significant expenses or devote significant resources in defence of any litigation. MEG protects its officers and directors against such litigation with insurance, which also covers securities claims against the organization.</p>
Market	Relevant, always included	<p>The availability of pipeline capacity and other transportation and storage facilities for MEG’s bitumen could affect MEG’s operating results. MEG’s corporate risk register identifies that reputational climate-related risks can impact this availability. In terms of reputational risk, the development of the Alberta oil sands has received considerable attention on environmental and social impacts including climate change and GHG emissions. The influence of anti-fossil fuels activists (with a focus on oil sands) has negatively affected the expansion of Western Canadian pipeline capacity increasing competition for market access. In addition, future legislation or policies that limit the purchase of bitumen produced from the oil sands may be adopted by jurisdictions further limiting markets for MEG’s products. In terms of physical risk, potential increases in extreme weather events may impede operation of pipelines, storage infrastructure as well as refineries. Marketing risks are mitigated by utilizing a network of pipelines, rail, and storage facilities to optimize market access for the transport and sale of bitumen to current and emerging crude oil market throughout North America and internationally. The transportation network includes transportation capacity on the Flanagan South and Seaway pipeline systems providing pipeline transportation directly to U.S. Gulf Coast refineries and export terminals, the Trans Mountain Expansion Project providing access to Canada’s West Coast, rail transloading capacity and storage capacity in Alberta and strategic locations in the U.S. with marine export capacity with certain U.S. Gulf Coast terminals. This combination of pipeline access, rail and storage capacity and marine export capacity advances MEG’s strategy of having long-term, broadening, and reliable market access to world oil prices.</p>
Reputation	Relevant, always included	<p>Reputational impacts which include the potential loss of stakeholder or shareholder trust are included in MEG’s risk assessment. Development of the Alberta oil sands has received considerable attention on the subjects of environmental and social impacts including climate change and GHG emissions. The influence of anti-fossil fuels activists (with a focus on oil sands) targeting equity and debt investors, lenders and insurers and changes in consumer behaviour may result in policies which reduce support for or investment in the Alberta oil sands sector. In addition, evolving decarbonization policies of institutional investors, lenders and insurers could affect the Corporation’s ability to access capital pools. Certain insurance companies have taken actions or announced policies to limit available coverage for companies which derive some or all of their revenue from the oil sands sector. As a result of these policies, premiums, and deductibles for some or all of the Corporation’s insurance policies could increase substantially. In some instances, coverage may become unavailable or available only for reduced amounts of coverage. As a result, the Corporation may not be able to extend or renew existing policies, or procure other desirable insurance coverage, either on commercially reasonable terms, or at all. Negative</p>

		<p>consequences which could arise as a result of changes to the current regulatory environment include, but are not limited to, changes in environmental and emissions regulation of current and future projects by governmental authorities, which could result in changes to facility design and operating requirements, potentially increasing the cost of construction, operation and abandonment. In addition, legislation or policies that limit the purchase of crude oil or bitumen produced from the oil sands may be adopted in domestic and/or foreign jurisdictions, which, in turn, may limit the world market for this crude oil, reduce its price and may result in stranded assets or an inability to further develop oil resources. MEG is committed to further integrate ESG practices throughout the business including advancing its climate change strategy, continue to monitor and manage risks and drive more impactful disclosure to continue working towards being the last ethically, environmentally, and economically produced barrel of oil.</p>
Acute physical	Relevant, always included	<p>Climate change may introduce new acute physical risks including fires, lightning, earthquakes, extreme cold weather or extreme weather events such as storms. These may cause damage to MEG’s infrastructure, impact accessibility to MEG’s properties and cause interruptions to production. These are identified in the ERM process and cannot be controlled; therefore, these risks are mitigated through engineering design and operational procedures. For example, MEG implements a Fire Smart program to protect infrastructure from wildfire hazards and conditions equipment against other extreme weather events. MEG assesses hazards such as trees that could potentially strike infrastructure such as power lines as a result of weather conditions and has a trouble tree program in place. MEG’s facilities are located in a geographical area that is not prone to significant weather events such as hurricanes or flooding. The area does experience extreme weather temperatures and MEG’s facilities are designed to handle these extreme temperatures and standards are in place to ensure worker health and safety and reliability, therefore the potential impact of these risks is low. MEG has updated the previous climate change assessments with more recent data and modelling information from the latest Intergovernmental Panel on Climate Change’s (IPCC) Fifth Assessment Report (AR5). The assessment update provided more recent climate trend comparisons locally and projections of changes in temperature, precipitation and other extreme events that could be expected out to 2050 and 2080. The intent of the revision was to support design reviews and develop mitigations (if necessary) to minimize the impacts of potential changes in environmental extremes.</p>
Chronic physical	Relevant, always included	<p>Climate change may introduce new chronic physical risks including changes to seasonal weather patterns including changes in temperature extremes and precipitation patterns. These may cause damage to MEG’s infrastructure, impact accessibility to MEG’s properties and cause interruptions to production. These are identified in the ERM process and cannot be controlled; therefore, these risks are mitigated through engineering design and operational procedures. The design of MEG’s facilities ensure that storm water run-off facilities have sufficient capacity to manage potential increase in flows and</p>



		<p>storm events and were designed to handle 1 in 100-year 24-hour rainfall events. MEG also has an extensive environmental monitoring program in place for water and wetlands that will identify trends and support appropriate adaption of operating practices and facilities which includes wetland and culvert monitoring to ensure unobstructed flow of surface water across site infrastructure and prevents flooding. MEG's facilities are located in a geographical area that is not prone to significant weather events such as hurricanes or flooding. The area does experience extreme weather temperatures and MEG's facilities are designed to handle these extreme temperatures and standards are in place to ensure worker health and safety and reliability. Therefore, the potential impact of these risks is low. MEG has updated the previous climate change assessments with more recent data and modelling information from the latest Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5). The assessment update provided more recent climate trend comparisons locally and projections of changes in temperature, precipitation and other extreme events that could be expected out to 2050 and 2080. The intent of the revision was to support design reviews and develop mitigations (if necessary) to minimize the impacts of potential changes in environmental extremes.</p>
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C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

In 2020 MEG's operational GHG emissions were regulated under the Government of Alberta's Technology Innovation and Emissions Reduction Regulation ("TIER Regulation"). TIER includes facility-specific benchmarks and sector based high-performance benchmarks. The stringency of the benchmark will increase annually beginning in 2021 until the high-performance benchmark is met. Under current Alberta policy, the carbon price is also set to increase from \$30/tonne in 2020 to \$40/tonne in 2021. The federal government has signalled that carbon pricing will likely increase from \$50/tonne in 2022 by \$15/year to reach \$170/tonne in 2030. Alberta will need to maintain equivalency with Federal climate policy including the price of carbon. In each year, all else equal, compliance costs for MEG would expect to increase and target intensity is lowered and cost per tonne increases. As such, current GHG emissions regulations, including forecast increase annually in the price of carbon, are identified, assessed, and captured in the corporate risk register, included in corporate budgets if applicable as well as corporate strategy decisions. We regularly assess and monitor emissions performance of our development plans in order to understand the potential current and future financial implication of regulations and carbon price. Measures are taken to reduce emissions to lessen the impact of increasing stringency and carbon pricing of current regulations. Incrementally, further increases in the stringency of GHG regulations over time, so as to achieve jurisdictional goals and targets, may be implemented. may include strengthened GHG emissions performance benchmarks and rising carbon prices. This could continue impact compliance costs and impact cost competitiveness due to increased direct (operating) costs. Failure to comply with GHG legislation and regulations may also result in the imposition of significant fines and penalties.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

2,000,000

Potential financial impact figure – maximum (currency)

4,000,000

Explanation of financial impact figure

The potential financial impact figure estimates potential increased annual indirect (operating) costs of compliance to current carbon pricing mechanisms in the short-term horizon. It assumes projected annual emissions and the current performance benchmark under Alberta TIER regulation to forecast a carbon compliance deficit and uses 2021 carbon pricing of \$40/tonne.

Cost of response to risk

2,228,000

Description of response and explanation of cost calculation

We have a long history of reducing the GHG intensity of our production and we are proud of the significant progress we have made to date. With cogeneration, energy efficiency and proprietary reservoir technology advancements that reduce SOR, we decrease our bitumen GHG intensity by approximately 20% below the in-situ industry average. A key pillar of our climate change strategy to manage this risk includes the advancement of innovative technology through investment in research and development, and through collaboration. Our strategy includes identifying and implementing carbon efficiencies and assessing opportunities to decarbonize which will reduce forecast regulatory compliance costs in years to come as well as achieving our carbon reduction targets. We actively engage with stakeholders to assess and bring low carbon technology opportunities to fruition including through the Oil Sands Pathways to Net Zero initiative. We have committed to support global and national objectives to address climate change, in particular the goal of the Paris and have set a target to achieve net zero GHG emissions (scope 1 and scope 2) by 2050 in support of these objectives, as well as a mid-term target of a 30% reduction in bitumen GHG emissions intensity (scope 1 and scope 2) from 2013 levels by 2030. The estimated cost of the work undertaken under to support this plan is:

This cost includes: \$28,000 process tank emissions, \$100,000 fugitive emissions management, \$2,100,000 CO2 storage feasibility study; such costs are partly offset by government grants.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Physical risks from climate change can include event driven (acute) natural events. Our only facility, CLRP, is located in the southern Athabasca region of Alberta, Canada, an area that experiences a wide range of temperature extremes (-40°C to +40°C). Severe weather patterns or catastrophic weather events such as wildfires, extreme cold weather, storms or flooding also occur in this area and have the potential to damage our facility, infrastructure or impact accessibility to MEG's properties (via road or air) resulting in material interruptions to production. A specific example of a physical climate risks is the risk of wildfire. MEG operates in Alberta where in 2016 the Fort McMurray wildfires caused significant loss and impacted production at oil and gas facilities. Climate change has the potential to increase the frequency of these events by increasing the frequency and severity of extreme temperatures. Wildfire could cause damage to MEG's infrastructure, camp or facility, impact accessibility to MEG's properties and cause interruptions to production.

Time horizon



Long-term

Likelihood

Exceptionally unlikely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

400,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Estimated financial impact includes costs of business interruptions and damage to facility associated with acute events-based risk, unmitigated by insurance coverage. Assumes a material plant outage (> 1 month) to deal with damage caused by natural event which results in lost revenue due to loss production based on 2021 average commodity price environment (~\$150,000,000 assuming total loss of production for one month / partially loss thereafter for additional 1 – 2 months) and cost for deal with potential damage

Cost of response to risk

3,000,000

Description of response and explanation of cost calculation

Impacts of extreme weather events or catastrophic events such as wildfires are identified in the ERM process. Consideration of acute physical risks is incorporated into engineering design of facilities and supporting infrastructure, including importantly, the segregation of phases of production, and the risks are further mitigated through appropriate maintenance and operational procedures. In order to understand this risk

further, MEG has updated the previous climate change assessment completed in 2008 with more recent data and modelling information from the latest Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5). The assessment update provided more recent climate trend comparisons locally and projections of changes in temperature, precipitation and other extreme events that could be expected out to 2050 and 2080. The intent of the revision was to support design reviews and develop mitigations (if necessary) to minimize the impacts of potential changes in environmental extremes. Significant mitigation measures are already in place. For example, MEG manages wildfire risk through the implementation of a Fire Smart program which protects infrastructure from fire hazards and has in place an Emergency Response Place (ERP) which includes a wildfire supplement. The ERP monitors, classifies and communicates wildfire risk as well as outlines wildfire season preparation and evacuation. MEG also purchases property and business interruption insurance which would protect MEG against a severe weather event that causes damage to the facility resulting in prolonged shut down. It also protects against shutdowns in critical infrastructure (e.g. damage to Access pipeline as a result of severe weather). As a result, we are better prepared to protect infrastructure from wildfire hazards or other physical acute climate risks. The cost of response to risk is a portion of total insurance costs. As climate change data is understood, additional investment in the plant to protect against severe weather may be required.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Increased direct costs

Company-specific description



Our only facility, CLRP, is located in the southern Athabasca region of Alberta, Canada, an area that experiences a wide range of temperature extremes (-40°C to +40°C). This geographical area is not prone to many significant weather events such as hurricanes, however weather impacts MEG's operations year-round - with periods of wet conditions, ice, and dry conditions with risk of fire. Climate change may increase the severity and/or frequency of these weather extremes or increase the variability in weather patterns. The impact of variable weather could include significant on-going maintenance; if weather patterns were to become increasingly variable, additional maintenance or capital expenditure would likely be required. For example, the potential for a chronic increase in storm water run-off volumes may require additional investment to ensure the facility and supporting infrastructure can manage additional water volumes. The potential risk of freezing events which occur when our operations are affected by a drop in temperature could result in an increased number of process safety events and impact operational results. The frequency of freezing events may potentially increase into the future.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

5,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Estimated annual cost associated with increased maintenance requirements as a result of changes in precipitation or other weather patterns. Costs would be split between capital and operating costs depending on frequency of required work.

Cost of response to risk

2,000,000

Description of response and explanation of cost calculation

Impacts of seasonal weather patterns are identified in the ERM process and mitigated through engineering design, appropriate maintenance, and operating procedures. For example, the design of MEG's facilities ensure that storm water run-off facilities have sufficient capacity to manage potential increase in flows and storm events and were designed to handle 1 in 100-year 24-hour rainfall events. MEG also has an extensive environmental monitoring program in place for water and wetlands that will identify trends and support appropriate adaption of operating practices and facilities which includes wetland and culvert monitoring to ensure unobstructed flow of surface water across site infrastructure and prevents flooding. MEG has a Process Safety Management (PSM) program which also identifies and manages impacts from seasonal weather patterns, such as temperature. For example, a formal winterization program dedicated to monitoring and improving our freeze event performance, which is tracked by the freeze event rate KPI. This KPI has seen year-over-year improvement with a 70% reduction in the freeze event rate since 2016. MEG continues to investigate the root cause of any freezing event to determine if any further action can help improve performance. The potential for freezing events has been mitigated through the modification of heat trace controller configuration, more rigorous preventative maintenance at fall inspection, installing a dedicated heat trace server and improvements to the Engineering Design and Construction Execution processes. In order to better understand and manage future potential physical risks, MEG has updated the previous climate change assessment completed in 2008 with more recent data and modelling information from the latest Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5). The assessment update provided more recent climate trend comparisons locally and projections of changes in temperature, precipitation and other extreme events that could be expected out to 2050 and 2080. The intent of the revision was to support design reviews and develop mitigations (if necessary) to minimize the impacts of potential changes in environmental extremes. Cost of response: As described above, MEG consistently invests to protect its operations from weather related risks. As climate change data is understood, additional investment in the facility to protect against severe weather may be required.

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

In 2020, MEG operations were subject to the Technology Innovation and Emissions Reduction (TIER) Regulation. The TIER Regulation was effective in Alberta starting January 1, 2020 and is Alberta's industrial greenhouse gas emissions pricing regulation and emissions trading system. Facilities regulated under TIER must reduce emissions to meet facility specific benchmarks or a high-performance benchmark. The



regulation prescribes facility-specific benchmarks based on historical facility performance. As of January 1, 2020, a 10% emission intensity reduction requirement will apply and will continue to increase in stringency by 1% per year. Facilities that reduce emissions below the benchmark can generate emissions performance credits which can be used to offset future costs or monetized. The compliance options for facilities that exceed their benchmark remain unchanged from those established under the CCIR therefore an opportunity continues to exist for MEG to earn emissions performance credits by reducing emissions below the benchmark through continuing to seek innovative operational efficiencies, reduce fuel usage and ultimately reduce operational costs. Specifically, MEG uses cogeneration and its proprietary eMSAGP and eMVAPEX processes to reduce steam requirements for production, thus reducing the energy intensity and carbon intensity of its production process.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,400,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

In 2020, Christina Lake Project was able to generate a surplus of emission performance credits partially through efficiency gains realized from eMSAGP and eMVAPEX from respective baseline performance and cogeneration. The potential financial impact is calculated as the value of the emission performance credits realized in 2020, using the 2020 carbon price of \$30/tonne.

Cost to realize opportunity

11,000,000

Strategy to realize opportunity and explanation of cost calculation

Our corporate strategy addresses both business risks and opportunities arising from climate change. This includes the need to reduce GHG emissions to meet regulatory requirements and provide low-carbon energy. We have a long history of reducing our GHG intensity and have made significant progress to date. With cogeneration, energy efficiency and proprietary reservoir technology advancements that reduce SOR, we decrease our bitumen GHG intensity by approximately 20% below the in situ industry average. One key pillars of our climate change strategy is to manage this risk include is the advancement of innovative technology to reduce carbon intensity of production and advance carbon capture through investment in research and development, and through collaboration. Part of this strategy includes a significant focus on optimizing steam generation to reduce greenhouse gas emissions and reduce fuel use. An important metric for this purpose is Steam-Oil Ratio (SOR), the quantity of steam used to produce a barrel of oil. SOR is a key measure of efficiency for SAGD projects, with a lower SOR indicating that steam is more efficiently utilized. By decreasing the amount of steam used, MEG is able to reduce per barrel water and fuel requirements which results in lower GHG intensity and more economic projects. With the SAGD industry average SOR is about 3 to 3.5, eMSAGP and eMVAPEX have enabled MEG to achieve a companywide SOR of 2.32 in 2020. In 2020, CLRP was able to generate emission performance credits partially through efficiency gains realized from the expansion of propriety innovative technology including eMSAGP and eMVAPEX as well as cogeneration from respective baseline performance. The potential financial impact is calculated as the value of the emission performance credits realized in 2020. Technology continues to drive efficiency gains, resulting in cost and environmental performance improvements. Explanation of cost to realize opportunity: the 2020 annual capital program allocated \$11 million to eMVAPEX before adjusting for \$9 million from government grants.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues resulting from increased production capacity

Company-specific description

The transition to a less carbon-intensive economy is creating technological development opportunities to improve emissions intensities. MEG has introduced a number of technological strategies to enhance bitumen recovery including utilization of infill wells, non-condensable gas (NCG) injection to maintain reservoir pressure and the application of solvent injection on selected wells. MEG continues to advance its bitumen recovery technologies including eMSAGP and the continued testing its eMVAPEX technology. This proprietary technology, if proven commercial through pilot operations, will further enable MEG to add production without increasing aggregate carbon emissions, reducing GHG emission intensity. Development of this technology has been partially funded through government grants received from Alberta Innovates, Natural Resources Canada, Emissions Reduction Alberta, and Sustainable Development Technology Canada.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Technology development is still underway and commercial scale implications are considered financially sensitive due to the proprietary nature of the technology.

Cost to realize opportunity

11,000,000

Strategy to realize opportunity and explanation of cost calculation

MEG manages the potential cost impact associated with changes to GHG legislation by investing in reservoir enhancement technologies. One of these projects is eMVAPEX. MEG continued testing its proprietary eMVAPEX technology. A modification of its eMSAGP technology, eMVAPEX has the potential to further decrease MEG's steam-oil ratio (SOR) beyond what eMSAGP can achieve, and further reduce GHG emissions intensities. SOR is a key measure of efficiency for SAGD projects, with a lower SOR indicating that the steam is more efficiently utilized. By decreasing the amount of steam used, MEG is able to reduce per barrel fuel requirements which results in lower GHG emissions intensity. MEG has been granted funding from Alberta Innovates, Natural Resources Canada, Emissions Reductions Alberta, and Sustainable Development Technology Canada for continued eMVAPEX work. The potential financial impact is the total amount of funding for the continued advancement of the eMVAPEX pilot. This opportunity supports MEG strategy to produce bitumen efficiently. The application of MEG proprietary

technology eMSAGP has enabled MEG to reduce its companywide SOR to 2.32 for 2020. The 2020 annual capital program allocated \$11million to eMVAPEx growth capital which was partly funded by \$9 million from government grants.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Climate legislation is driving the demand for low carbon energy generation creating a demand for our cogeneration produced electricity and potential for future increase and expansion. In 2015, the Government of Alberta introduced the Climate Leadership Plan to reduce carbon emissions which included a phase out of coal-generated electricity within the province by 2030. The electricity transition within the province outlines the need for approximately two-thirds of the replacement capacity to be comprised of natural gas generation. MEG has significant cogeneration capacity (provided through natural gas) that is positioned to benefit from the transitional power market in Alberta. Incrementally, MEG could continue to expand its cogeneration capacity if it expands production capacity and further increase revenues by selling electricity into the grid to meet demand for lower carbon electricity in Alberta.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

45,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact is calculated as the power sales price x power sales in 2020 as reported in the 2020 Annual Report.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Cogeneration is the process of recovering waste heat from electricity generation to efficiently produce steam. MEG operates two cogeneration facilities at its CLRP facility. Cogeneration uses natural gas more efficiently than standalone steam generators or single-cycle gas turbine generators. The steam generated from cogeneration is used for SAGD bitumen recovery and electricity to power the plant site, with excess power sold to Alberta's power grid. The electricity provided to the power grid has a lower carbon footprint than the provincial average, helping to reduce total GHG intensity for provincial consumers. The use of cogeneration reduces the net greenhouse gas intensity of MEG's oil and provides a stable source of baseload power as coal-fired generation is phased out in Alberta. Reducing electrical power production below the



electricity performance standard enables MEG to earn emissions performance credits that can offset costs. No additional investment in cogeneration were made in 2020.

Comment

C3. Business Strategy

C3.1

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

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization’s low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
<p>IEA Sustainable development scenario Other, please specify IEA STEPS</p>	<p>We are in the process of completing our first climate scenario analysis. To date, we have selected two IEA scenarios to form the basis of our analysis, Stated Policies Scenario (STEPS) and Sustainable Development Scenario (SDS). IEA scenarios are being utilized because they are commonly used, well documented and aligned with TCFD recommendations for climate scenario analysis. STEPS is being used as a base case because it reflects the potential impact to existing policy frameworks and currently announced policy intentions. It provides a detailed sense of the direction in which existing policy frameworks and today’s policy ambitions would take the energy sector out to 2040 for which MEG can test our financial viability, strategy and business model resilience.</p> <p>The IEA’s SDS scenario is being used because it outlines a major transformation of the global energy system and it is aligned with the Paris Agreement. Given MEG’s support of the Paris Agreement and our target to achieve net zero emissions by 2050, the SDS scenario provides a scenario to test the long term financial viability, strategy and business model resilience that holds the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels. Given the design of our facility and the location in which we operate and the objectives of our first climate scenario analysis, we are focusing on transition risks including policy and legal, technology and market risks.</p> <p>Important time horizons for the purposes of MEG’s ongoing climate scenario analysis are present day to 2025, 2026 to 2030 and 2030 to 2050. Present day to 2025 is relevant as we assess and implement near-term strategies based on current economics and certainties around the regulatory regime in working towards our target to achieve a 30% reduction in (scope 1 and scope 2) bitumen GHG intensity from 2013 levels by 2030. The 2025 to 2030 timeframe is relevant as we continue to evaluate and progress our target to achieve a 30% GHG intensity reduction and path to net zero, recognizing that certain emissions reduction initiatives such as carbon capture and sequestration will take longer to design and implement, will be influenced by emerging climate policies and will require government and industry collaboration to accelerate adoption. 2030 to 2050 is relevant as, in support of the Paris Agreement, we have a target to achieve net zero (scope 1 and 2) GHG emissions by 2050 and we recognize the evolving energy transition will have a long term influence on our strategy and business model resilience.</p>



	MEG operates a single project referred to as the Christina Lake Regional Project (CLRP). All of our bitumen and electricity production, proved, and probable reserves and scope 1 and 2 emissions are associated with CLRP. As such, the climate scenario analysis being conducted is focused on this project and the financial viability and business model resilience of that asset in consideration of policy, technology, and market risks.
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C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Potential climate related risks and opportunities including the changing climate regulatory landscape and a growing shift to low-carbon energy as well as opportunities for technological innovation and efficiency improvements (as reported in C2.3a Risks and Opportunities) have influenced MEG’s strategy to optimize steam generation to reduce greenhouse gas emissions associated with bitumen production through advancements in reservoir recovery technologies and through design and operation of its facilities. The strategy is to provide a lower GHG intensity barrel of bitumen (product) to market. MEG is focused on reducing its steam-oil ratio (SOR) which is a key measure of efficiency for in-situ thermal projects, with a lower SOR indicating that steam is more efficiently utilized. By decreasing the amount of steam used, MEG is able to reduce per barrel water and fuel requirements which results in lower greenhouse gas emissions intensity and more economic projects. Long-term strategies to reduce SOR include the introduction of a number of technologies to enhance bitumen recovery including infill wells, non-condensable gas (NCG) injection to maintain reservoir pressure and the application of solvent injection on selected wells. The most substantial strategic decision of this strategy has been the development and implementation of MEG’s patented proprietary eMSAGP technology. eMSAGP has been deployed at Phase 1, Phase 2 and Phase 2B assets and has enabled MEG to reduce companywide SOR to 2.32 for 2020 (in comparison to a 3 to 3.5 industry average). This technology allows MEG to provide a lower GHG emission intensity production to market. The magnitude of this identified opportunity is considered to be significant and the affects are anticipated to be realized in the

		short term timescale and beyond. MEG is continually monitoring the climate regulatory landscape including carbon pricing signals to evaluate potential future technology development.
Supply chain and/or value chain	Yes	The availability of pipeline capacity and other transportation and storage facilities for MEG’s bitumen could affect MEG’s operating results. MEG is aware that physical climate risks, such as increases in extreme weather events may impede operation of pipelines, storage infrastructure as well as refineries, impacting MEG’s ability to bring product to market. This is incorporated into MEG’s long-term market strategy. Marketing risks are mitigated by utilizing a network of pipelines, rail and storage facilities to optimize market access for the transport and sale of bitumen to current and emerging crude oil market throughout North America and internationally. The transportation network includes transportation capacity on the Flanagan South and Seaway pipeline systems providing pipeline transportation directly to U.S. Gulf Coast refineries and export terminals, the Trans Mountain Expansion Project providing access to Canada’s West Coast, rail transloading capacity and storage capacity in Alberta and strategic locations in the U.S. with marine export capacity with certain U.S. Gulf Coast terminals. This combination of pipeline access, rail and storage capacity and marine export capacity advances MEG’s strategy of having long-term, broadening and reliable market access to world oil prices. The potential impact of climate related risks and opportunities on MEG’s supply chain has also impacted MEG’s strategy. Access to highline power generated through cogeneration has allowed MEG to provide electricity to remote areas surrounding our facility to support our drilling program. In the past, drilling would have been powered with diesel engines. Now, with electricity from cogeneration, we have equivalent power capabilities with an approximate 60% reduction in emissions related to drilling activities. This strategic decision reduces exposure to potential carbon pricing for fuels such as diesel.
Investment in R&D	Yes	Potential climate related risks and opportunities including the changing climate regulatory landscape and a growing shift to low-carbon energy as well as opportunities for technological innovation and efficiency improvements (as reported in C2.3a Risks and Opportunities) have influenced MEG’s strategy to invest in R&D and innovation in reservoir recovery technologies. An important aspect of this strategy is the development and implementation of our patented and proprietary eMSAGP technology which can reduce our SOR, and GHG emissions and water use intensities while maintaining or improving oil recovery. eMSAGP involves drilling additional production wells between SAGD well pairs, injecting a non-condensable gas to maintain reservoir pressure, like natural gas, into the reservoir, and

		<p>reducing steam injection. The resulting overall SOR for eMSAGP is approximately 25% less than SAGD. By applying the eMSAGP process to significant portions of the operation, we have achieved an average SOR of 2.32 in 2020 at its Christina Lake Project compared to the in situ industry average of 3.1. This technology allows MEG to provide a lower GHG emission intensity production to market. The magnitude of this identified opportunity is considered to be significant and the affects are anticipated to be realized in the short term timescale and beyond. We have further reduced the SOR through advanced solvent injection technology by piloting enhanced Modified Vapour Extraction (eMVAPEX). MEG has been granted funding from Alberta Innovates and Natural Resources Canada for continued testing and expansions of eMVAPEX. And in 2020 MEG allocated \$11 million to continue testing of eMVAPEX. The magnitude of this identified opportunity has the potential to be significant with a medium to long term timescale. MEG expects to continue investing in technology to advance the economic and environmental sustainability of its business. MEG is continually monitoring the climate regulatory landscape including carbon pricing signals to evaluate potential future technology development including CCS.</p>
Operations	Yes	<p>As part of the growing shift to low-carbon energy, in 2015 the Government of Alberta introduced the Climate Leadership Plan to reduce carbon emissions including a phase out of coal-generated electricity in the province by 2030. The electricity transition within the province outlines the need for approximately two-thirds of the replacement capacity to be natural gas generation. This climate opportunity influenced MEG to use industrial cogeneration technology, one key element in our energy management strategy. The natural gas turbines generate electricity that is used in our operations, with surplus power sold into the Alberta electricity grid. The heat from the turbine is recovered by a heat recovery steam generator for use in the thermal heavy oil recovery process, resulting in more efficient use of natural gas and a thermal efficiency of 86%. Our power has an emission intensity roughly 40% that of coal. We exported over 70% of our total generated power onto the provincial power grid amounting to just above 1% of the total Alberta grid demand in 2020. Revenue from the sale of surplus power helps offset our energy costs and the electricity provided to the power grid has a lower GHG footprint than the provincial average, helping to reduce total GHG intensity for provincial consumers. The use of cogeneration also reduces the net GHG intensity of our oil, helping MEG exceed emissions regulations and generate carbon credits, and add value and support the changing electricity market structure. The magnitude of</p>

		<p>impact is anticipated to be moderate with a short –term and beyond timescale. Cogeneration provides a stable source of baseload power as coal-fired generation is phased out in Alberta. On January 1, 2019 the Government of Alberta enacted mandated curtailment of crude oil and bitumen production which limited MEG’s production output. These rules were enacted primarily to address record high differentials between West Texas Intermediate (WTI) oil prices and Canadian heavy oil prices and forced MEG to adapt its production strategy to remain within monthly production volume allocations. In doing so careful consideration was given to minimize the potential climate-related costs by maintaining a focus on efficient operations while balancing output to avoid excessive fluctuations in steam to oil ratio impacting emissions intensity</p>
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C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets Liabilities	<p>Revenues: The impact of climate risk has contributed to political activism and delays in the development of pipeline infrastructure; this has led to significant volatility in pricing realized in the Alberta market and in 2019, resulted in curtailment in production volumes mandated by the provincial government. MEG’s financial planning includes scenario analysis of various pricing scenarios and infrastructure development and includes financial management of the risk associated with price volatility, including active financial risk management contracts. Curtailment resulted in substantial changes to MEG’s financial planning including the deferral of certain in progress capital projects, given the inability to grow production (and revenue) in 2019. Curtailment also influenced financial planning for risk management of MEG’s revenues.</p> <p>Direct Costs: MEG’s financial planning includes a forecast of the direct costs associated with climate change, namely regulatory costs associated with current regulations around GHG compliance and the cost of carbon. Sensitivities are also conducted with respect to a range of potential future regulatory outcomes. MEG’s business plan continues to focus on implementation of technology that reduce SOR, energy cost and GHG emissions, including the application of eMSAGP. Planning assumes that such technologies will continue to be applied across future developments, providing economic and</p>



		<p>climate change benefits. On-going changes in regulatory environment, including introduction of curtailment in 2019, as discussed above, can impact MEG’s ability to optimize SOR performance and MEG’s forecasts with respect to direct carbon costs. MEG conducts sensitivity analysis with respect to cost of carbon and climate change and the regulatory landscape has created an opportunity for MEG to improve its oil production performance. MEG’s reservoir technologies, including eMSAGP, have helped reduce the capital intensities required for future growth by as much as half. The application of eMSAGP to the Phase 2B producing wells costs significantly less than the capital intensity required to complete large scale projects. This technology reduced GHG intensity as well as capital intensity. Future growth capital allocates resources to the further the expansion of eMSAGP. The magnitude of this identified opportunity is considered to be significant and the effects are anticipated to be realized in the short term timescale and beyond.</p> <p>Capital expenditures/Capital allocation: The climate change regulatory landscape has created an opportunity for MEG to improve its oil production performance. MEG has incorporated the cost of carbon in calculating the return on capital investments. MEG’s reservoir technologies, including eMSAGP, have helped reduce the capital intensities required for future growth by as much as half. The application of eMSAGP to the Phase 2B producing wells costs significantly less than the capital intensity required to complete large scale projects. This technology reduced GHG intensity as well as capital intensity, which provided additional incentives for this technology. Future growth capital allocates resources to the further the expansion of eMSAGP. The magnitude of this identified opportunity is considered to be significant and the effects are anticipated to be realized in the short term timescale and beyond. Inclusion of cost of carbon in financial evaluations is a long-term measure and the price will be updated if and when regulations change.</p> <p>Acquisitions and divestments: From a financial planning perspective, environmental performance, climate change impacts and carbon costs are key elements considered in any evaluation of acquisitions.</p> <p>Access to capital: MEG’s development plan and related analysis undertaken as part of our financial planning process is focused on reducing MEG’s reliance on external capital markets, in part, because climate change activism has impacted access to capital and increased cost of external financing. MEG is focused on reducing debt, outstanding and funding capital within cash flow. MEG’s balance sheet management strategies are conservative, ensuing continuing access to debt capital markets. To combat capital market risks, MEG has increased its public disclosure with respect to its comprehensive efforts to manage all ESG performance including climate change measures. Where possible, the climate</p>
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		<p>change regulatory landscape has created an opportunity for MEG to invest in R&D and innovation in reservoir technologies. MEG has been granted funding from Alberta Innovates, Natural Resources Canada, Emissions Reductions Alberta, and Sustainable Development Technology Canada for continued eMVAPEX work. Future growth capital allocates resources to the expansion of eMVAPEX. These grants help to offset investment. The magnitude of this identified opportunity is considered to be low and the effects are anticipated to be realized in the short term timescale.</p> <p>Assets: Climate regulations are considered in the development timeframe of new assets such as the May River and Surmont projects. In 2019, MEG elected to defer the development of Surmont, given market conditions, reducing total probable reserves. The magnitude is anticipated to be low with a medium-term timescale.</p> <p>Liabilities: MEG uses progressive reclamation plans to minimize the footprint of disturbance and return the land to a state of equivalent capability. Physical risks from climate change including event driven or longer-term shifts in climate patterns. Principal factors which could affect MEG's reclamation plans could include fires and seasonal weather patterns. Fires can impact revegetation activities and success; higher rainfall events can cause erosion issues and shorter winter seasons can impact accessibility to sites. MEG participates in working groups including the Faster Forests program by Canada's Oil Sands Innovation Alliance, the Industrial Footprint Reduction Options Group and the Regional Industry Caribou Collaboration. MEG encourages innovation and application of industry leading oil sands construction, reclamation and restoration best management practices. The magnitude of this risk is anticipated to be low with a timescale of short to long term may be expected.</p>
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C3.4a

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

No additional information.

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

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

Target reference number

Int 1

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Intensity metric

Other, please specify

metric tons CO₂e per m³ of bitumen

Base year

2013



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

0.415

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

100

Target year

2020

Targeted reduction from base year (%)

10

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

0.3735

% change anticipated in absolute Scope 1+2 emissions

-11.42

% change anticipated in absolute Scope 3 emissions

0

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

0.366

% of target achieved [auto-calculated]

118.0722891566

Target status in reporting year

Achieved

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Target ambition

Please explain (including target coverage)

This target corresponds to that established under the Technology Innovation and Emission Reduction Regulation based on facility specific performance from a 2013-2015 baseline. The target covers all Scope 1 and Scope 2 emissions company-wide.

C4.2

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

Target(s) to reduce methane emissions
Net-zero target(s)

C4.2b

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

Target reference number

Oth 1

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)



Methane reduction target

Other, please specify

Fugitive Gas Release in E3m3

Target denominator (intensity targets only)

Base year

2019

Figure or percentage in base year

79

Target year

2020

Figure or percentage in target year

79

Figure or percentage in reporting year

76

% of target achieved [auto-calculated]

Target status in reporting year

Achieved

Is this target part of an emissions target?

Yes, this target is encompassed within Int1 and Int2

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This target was established to support MEG's ongoing efforts to reduce GHG emissions and control the unintentional release of methane to the atmosphere. In 2020, resources were directed specifically towards improving this target through a Methane Task Force focused on improving the performance of production and process tank pressure relieving valves. This is an absolute reduction target to demonstrate year over year continuous improvement. The figure is the volume of Fugitive Gas Released in e3m3.

In MEG's operations, methane primarily results from releases of fugitive and vent emissions which account for less than 0.5% of total facility emissions. Fugitive emissions are captured in the intensity target referenced in CC4.1b and 4.2b which includes all associated methane emissions. In addition, the Int1 target reported in C4.1b capture methane emissions from combustion while the target reported in 4.2b is focused specifically on fugitive sources. Due to the small contribution of methane (from fugitives and venting) to MEG's total scope 1 GHG emissions, MEG includes the methane target in the overall intensity target. MEG recognizes that reducing methane emissions is an important aspect of addressing climate change. MEG has implemented a fugitive emissions management plan for managing fugitive emissions from equipment leaks, a primary source of methane emissions. The plan utilizes several inspection techniques including comprehensive leak surveys, permanent instrument monitoring, and targeted monthly and quarterly monitoring. This has proven to be an effective approach to managing methane as it has consistently comprised less than 1% of total releases. Leaks are documented, tracked and repaired. In addition, MEG's only operating CLRP facility is subject to gas conservation requirements, which means overall venting and flaring is virtually eliminated in normal operating conditions and only flaring or venting only results when it is necessary to maintain safe plant operations. As a result of MEG's continued focus on methane reductions in operations we anticipate a continued decrease in the next 5 years or a potential plateau as the full effectiveness of the fugitive management program is realized.

Target reference number

Oth 2

Year target was set

2019

Target coverage

Company-wide



Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Methane reduction target

Other, please specify

Vent gas volume in E3m3 per month

Target denominator (intensity targets only)

Base year

2019

Figure or percentage in base year

2.1

Target year

2020

Figure or percentage in target year

15

Figure or percentage in reporting year

2.5

% of target achieved [auto-calculated]

3.1007751938

Target status in reporting year

Achieved

Is this target part of an emissions target?

Yes, this target is encompassed within Int1

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This target was established to support MEG's ongoing efforts to reduce GHG emissions and limit routine and non-routine venting of methane to the atmosphere. In 2020, resources were directed specifically towards improving this target through a Methane Task Force focused on process optimization and process tank pressure relieving valves. This is an absolute limit on monthly vent volumes.

In MEG's operations, methane primarily results from releases of fugitive and venting emissions which account for less than 0.5% of total facility emissions. Venting emissions are captured in the intensity target referenced in CC4.1b and 4.2b which includes all associated methane emissions. In addition, the Int1 target reported in C4.1b capture methane emissions from combustion while the target reported in 4.2b is focused specifically on venting sources. Due to the small contribution of methane (from fugitives and venting) to MEG's total scope 1 GHG emissions, MEG includes the methane target in the overall intensity target. MEG recognizes that reducing methane emissions is an important aspect of addressing climate change. MEG's only operating CLRP facility is subject to gas conservation requirements, which means overall venting and flaring is virtually eliminated in normal operating conditions and flaring or venting only results when it is necessary to maintain safe plant operations.

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Company-wide

Absolute/intensity emission target(s) linked to this net-zero target



Int1

Target year for achieving net zero

2050

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Please explain (including target coverage)

In 2020, the Board committed to supporting the Paris Agreement and approved MEG’s long-term goal of reaching net zero GHG emissions (Scope 1 and Scope 2) by 2050. This target covers 100% of our Scope 1 and Scope 2 emissions.

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	3	
To be implemented*	1	355
Implementation commenced*	1	10,000
Implemented*	2	3,600
Not to be implemented	0	

C4.3b

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

Initiative category & Initiative type

Fugitive emissions reductions
Oil/natural gas methane leak capture/prevention

Estimated annual CO₂e savings (metric tonnes CO₂e)

3,245

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

129,800

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

100,000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Other, please specify

Other, please specify

Other - Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

355

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

14,200

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

28,000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	One driver for emissions reduction activities and projects are year over year reductions our operations are subject to. As of January 1, 2020, MEG's Christina Lake Regional Project is subject to Alberta's TIER regulation, which has facility-specific benchmarks and sector based high-performance benchmarks. This target is also a component of our Corporate Performance Scorecard in reflecting the integration of emissions reduction activities into executive and employee compensation.
Dedicated budget for energy efficiency	MEG has budgeted for future carbon compliance costs associated with Alberta's TIER requirements. MEG also carries annual budget to support investigation of emissions reduction opportunities, including joint industry partnerships.
Internal price on carbon	MEG uses an internal price of carbon set at \$30/tonne CO2e in 2020 and escalating to \$170/tonne CO2e in alignment with the pricing structure announced by the Canadian Federal government out to 2030.
Partnering with governments on technology development	MEG has been granted funding from Alberta Innovates, Natural Resources Canada, Emissions Reductions Alberta, and Sustainable Development Technology Canada for continued eMVAPEX work.

C4.5

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

Yes

C4.5a

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



Level of aggregation

Product

Description of product/Group of products

Electrical power

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

CCIR co-generation calculation methodology.

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

2

Comment

The Christina Lake Regional Project co-generation facility uses natural gas more efficiently and produces two products: electricity and steam for oil production. The low-intensity electricity that we generate offsets the high-intensity coal-fired power prevalent on the Alberta power grid. Approximately 70% of electricity generated is sold to the Alberta power grid. Calculating emission reductions for co-generation under the CCIR aligns with the Quantification Methodologies for the Carbon Competitiveness Incentive Regulation and the Specified Gas Reporting Regulation methodology document.

C-OG4.6

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

In our operations, methane primarily results from the release of fugitive emissions, and to a smaller degree, venting. We proactively manage methane emissions through facility design, flare and vent controls, and fugitive emissions programs. A cross-functional team meets regularly to implement our methane management program and identify reduction opportunities. Our operational focus on minimizing the release of methane is further supported

by annual methane reduction targets adopted in 2019 in line with Alberta's methane emissions reduction framework, which aims to reduce methane emissions by 45% by 2025 through progressive reduction measures. Our approach includes the following design controls: 1. We operate a gas-conserving facility by design, where all produced gas is recycled as fuel gas for steam generation and reservoir co-injection. In 2020, we conserved greater than 99.5% of produced gas. 2. Our flare and vapour recovery system are used to control the release of process gases that would otherwise be vented to atmosphere. 3. Process valve set points are monitored and carefully configured to maintain safe operations, while limiting over-pressuring events that can result in releases to atmosphere. In addition to the design controls listed above, we have implemented a fugitive emissions management plan (FEMP) which utilizes several inspection techniques, including comprehensive survey leak detection with Optical Gas Imaging (OGI) conducted three times annually, permanent instrument monitoring, and targeted monthly and quarterly monitoring. All identified leaks are consolidated in a central tracking system, where they are analysed to identify trends and inform pro-active methane reduction planning decisions. Most leaks are corrected at the time of identification. If they cannot be completed upon identification, a device repair or replacement program is arranged within 30 days. With the execution of this program, we have continuously reduced fugitive emissions year over year. We are evaluating alternative detection technologies such as drone surveys that can provide an aerial enhancement to identifying leaking equipment. We have focused on reducing emission from process tanks, which are located at our production facility to store fluids, such as bitumen and diluent. The tanks are operated under pressure to manage the volume throughput and are blanketed with sweet natural gas for the purpose of process control and process safety management. Under normal operating conditions, all tank vapours are captured and returned to the fuel system. In the rare event that a tank experiences a sudden pressure increase, a safety device will lift, allowing the excess pressure to temporarily relieve as a vent; however, in some situations the device may fail to reseal properly, resulting in a continued fugitive release. In 2017, we recognized an opportunity to improve the management of these releases and focused efforts on improving detection and evaluating reliable replacement seals. As a result, we reduced the emission contribution associated with fugitive tank releases by more than 80% over the past five years.

C-OG4.7

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

Yes

C-OG4.7a

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

Reducing methane emissions is an important aspect of addressing climate change. We have implemented a fugitive emissions management plan for managing fugitive emissions from equipment leaks, a primary source of methane emissions at MEG. The plan includes Comprehensive survey leak detection with Optical Gas Imaging (OGI) is conducted three times annually, along with permanent instrument monitoring, and targeted monthly and quarterly monitoring and targets the full facility and well pads. All identified leaks are consolidated in a central tracking system, where they are analysed to identify trends and inform pro-active methane reduction planning decisions. Through MEG's FEMP, leaks are documented, tracked and repaired. A device repair or replacement program is arranged within 30 days of any identified leak, excluding minor leaks requiring major production outage. We have also begun to evaluate alternative detection technologies such as drone surveys that can provide an aerial enhancement to identifying leaking equipment. Based on the consolidated survey results, we prioritize retrofitting and replacing pressure relief devices based on trends such as recurring leaks. An engineering review of any chronic leakers is performed, when required, to determine more appropriate control measures (e.g., replacement of the component with a more robust or rugged design or installation of a leak capture and treatment system. With the execution of the repair and retrofit program, MEG has continuously reduced its fugitive emissions year over year. This has proven to be an effective approach to managing methane as it has consistently comprised less than 1% of total releases. The FEMP has been developed in accordance with CAPP Best Management Practice:

Management of Fugitive Emissions at Upstream Oil and Gas Facilities (Requirements in AER Directive 60 as of 2018).

We have focused on reducing emission from process tanks, which are located at our production facility to store fluids, such as bitumen and diluent. The tanks are operated under pressure to manage the volume throughput and are blanketed with sweet natural gas for the purpose of process control and process safety management. Under normal operating conditions, all tank vapours are captured and returned to the fuel system. In the rare event that a tank experiences a sudden pressure increase, a safety device will lift, allowing the excess pressure to temporarily relieve as a vent; however, in some situations the device may fail to reseal properly, resulting in a continued fugitive release. In 2017, we recognized an opportunity to improve the management of these releases and focused efforts on improving detection and evaluating reliable replacement seals. As a result, we reduced the emission contribution associated with fugitive tank releases by more than 80% over the past five years.

C-OG4.8

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

MEG’s facility is a gas conserving facility, which means overall venting and flaring is virtually eliminated in normal operating conditions. MEG has a gas conservation efficiency target of 90% where gas conservation = $(\text{Solution gas production} - \text{Flared} - \text{Vented}) / (\text{Solution gas production}) \times 100$. In 2020 MEG had an overall gas conservation of >95%. MEG only flares or vents when it is absolutely necessary to maintain safe plant operations. In 2020, GHG emissions from flaring activities contributed to 0.32% of MEG’s total GHG emissions. Due to the low contribution from flaring to overall GHG emissions, MEG does not set separate GHG emissions targets for flaring. Flaring emissions are captured in the Int1 and Int2 targets reported in C4.2b. MEG does however set internal key performance indicators for flaring activities.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

January 1, 2013

Base year end

December 31, 2013

Base year emissions (metric tons CO₂e)

1,896,700

Comment



Normalized annual emissions over baseline period.
Base year start is 01/01/2013 and base year end is 12/31/2015.

Scope 2 (location-based)

Base year start

January 1, 2013

Base year end

December 31, 2013

Base year emissions (metric tons CO₂e)

500

Comment

Normalized annual scope 2 emissions over baseline period.
Base year start is 01/01/2013 and base year end is 12/31/2015.

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

C5.2

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

American Petroleum Institute Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry, 2009

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

Other, please specify

TIER Quantification Methodology (March 2021)

C5.2a

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

TIER Quantification Methodology (March 2021)

Environment Canada: Canada's Greenhouse Gas Inventory

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

2,113,449.81

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment

Market-based information is not available from our electricity provider. MEG consumed a small amount of indirect power in 2020 during turnaround activities.

C6.3

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

Reporting year

Scope 2, location-based

16.275

Comment

MEG consumed a small amount of indirect power in 2020 during turnaround activities.

C6.4

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

No

C6.5

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

Purchased goods and services

Evaluation status

Not relevant, explanation provided

Please explain

Fuel usage for drilling activities were included as Scope 3 emissions in 2018. As of 2019 they are included as Scope 1 emissions as per the CCIR/TIER boundary changes.

Capital goods

Evaluation status

Not evaluated

Please explain

Additional scope 3 categories will be investigated in the future.

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

Evaluation status

Relevant, calculated



Metric tonnes CO2e

1,718

Emissions calculation methodology

Fuel usage is obtained from suppliers or from MEGs internal fuel usage tracking system and emissions are calculated using fuel specific emission factors.

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

100

Please explain

This includes camp site and site service heating.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

MEG extracts primary resources (Bitumen) and therefore minimal upstream transportation or distribution emissions exist. This category is not applicable to MEG.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,087

Emissions calculation methodology

Fuel usage is obtained from suppliers and emissions are calculated using fuel specific emission factors.



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

100

Please explain

This includes emissions associated with transportation of waste off site.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,315

Emissions calculation methodology

Fuel usage is obtained from suppliers and emissions are calculated using fuel specific emission factors.

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

0

Please explain

This includes air travel to CLRP.

Employee commuting

Evaluation status

Not relevant, explanation provided

Please explain

Employees commuting to the corporate office are considered negligible.

Upstream leased assets



Evaluation status

Relevant, calculated

Metric tonnes CO2e

889

Emissions calculation methodology

Head office natural gas for heat and electricity usage obtained from head office management company.

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

100

Please explain

This includes emissions at MEG's head office including emissions from electricity use and natural gas for heating.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

4,682

Emissions calculation methodology

Fuel usage obtained from value chain partner and emissions are calculated using fuel specific emission factors.

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

100

Please explain

This includes downstream storage emissions.

Processing of sold products



Evaluation status

Relevant, not yet calculated

Please explain

MEG bitumen is processed in various upgrading and refining facilities in North America.

Use of sold products

Evaluation status

Relevant, not yet calculated

Please explain

Oil produced by MEG is used as a feedstock for a number of products thus end use of sold products is not known to MEG and could include transportation fuels, plastics, chemicals and other hydrocarbon-based products. The Scope 3 emissions will vary based on end product.

End of life treatment of sold products

Evaluation status

Relevant, not yet calculated

Please explain

Oil produced by MEG is used for a number of products thus end of life treatment of sold products is not known to MEG and could include transportation fuels, plastics, chemicals and other hydrocarbon-based products. The Scope 3 emissions for end of life treatment will vary based on the end product.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

MEG does not own any downstream leased assets. This category is not applicable to MEG Franchises.



Franchises

Evaluation status

Not relevant, explanation provided

Please explain

MEG does not operate any franchises. This category is not applicable to MEG.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

MEG is not a financial institution. This category is not applicable to MEG.

Other (upstream)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

11,141

Emissions calculation methodology

Annual volume of makeup solvent purchased obtained from internal records. Truck deliveries are estimated based on purchased fuel volume while processing emissions are estimated using region-based emission factors (GHG Genius 5.0c, Environment Canada, Canada's Greenhouse Gas Inventory (1990-2014), NRCAN Fuel Efficiency Benchmarking in Canada's Trucking Industry).

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

0

Please explain

Makeup solvent upstream processing and trucking emissions for eMVAPEX.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

No other (downstream) Scope 3 categories are applicable at this time.

C6.7

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

No

C6.10

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

Intensity figure

0.000922

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

2,113,466.08

Metric denominator

unit total revenue

Metric denominator: Unit total

2,292,000,000

Scope 2 figure used

Location-based

% change from previous year

57.3

Direction of change

Increased

Reason for change

The increase in emission intensity was influenced primarily by the drop in annual revenue associated with the decrease in the average blend sales price driven by the decline in WTI (West Texas Intermediate) prices, the widening of the WTI:AWB (Access Western Blend) differential at the USGC (US Gulf Coast) as the Corporation sold more barrels into the USGC during the second half of 2020 and a 12% reduction in blend sales volumes primarily as a result of turnaround activities from June to August 2020.

Intensity figure

0.07

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

2,113,466.08

Metric denominator

barrel of oil equivalent (BOE)

Metric denominator: Unit total

30,276,155

Scope 2 figure used

Location-based

% change from previous year

4

Direction of change

Increased

Reason for change

Bitumen intensity increase associated with new sustaining production brought online This should decrease through time. Please note that the MEG denominator reflects barrels of bitumen produced rather than a converted unit of oil equivalent.

C-OG6.12

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

Unit of hydrocarbon category (denominator)

Thousand barrels of oil sands (includes bitumen and synthetic crude)

Metric tons CO2e from hydrocarbon category per unit specified

58.8

% change from previous year

4

Direction of change

Increased

Reason for change

Bitumen intensity increase associated with new sustaining production brought online. This should decrease through time.

Comment



C-OG6.13

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

Oil and gas business division

Upstream

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

0.015

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

0

Comment

Reflects fugitive methane release as a proportion of total purchased natural gas throughput.

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
----------------	---	---------------

CO2	2,100,396.47	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	5,449.01	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	7,604.33	IPCC Fourth Assessment Report (AR4 - 100 year)

C-OG7.1b

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

Emissions category

Combustion (excluding flaring)

Value chain

Upstream

Product

Oil

Gross Scope 1 CO2 emissions (metric tons CO2)

2,094,544.19

Gross Scope 1 methane emissions (metric tons CH4)

74.935

Total gross Scope 1 emissions (metric tons CO2e)

2,103,993.864

Comment

Emissions category

Flaring

Value chain

Upstream

Product

Oil

Gross Scope 1 CO2 emissions (metric tons CO2)

5,852.28

Gross Scope 1 methane emissions (metric tons CH4)

33.105

Total gross Scope 1 emissions (metric tons CO2e)

6,707.923

Comment

Emissions category

Venting

Value chain

Upstream

Product

Oil



Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

20.463

Total gross Scope 1 emissions (metric tons CO2e)

511.575

Comment

Emissions category

Fugitives

Value chain

Upstream

Product

Oil

Gross Scope 1 CO2 emissions (metric tons CO2)

0

Gross Scope 1 methane emissions (metric tons CH4)

89.458

Total gross Scope 1 emissions (metric tons CO2e)

2,236.448

Comment



C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Canada 🗨️ ¹	2,113,449.81

¹MEG only operates one facility in Canada.

C7.3

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

By facility

By activity

C7.3b

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
CLRP	2,113,449.81	55.66638	-110.71404

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
----------	--------------------------------------

Electric utility generation activities	338,416.848
Oil and gas production activities (upstream)**	1,775,032.962

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

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

	Gross Scope 1 emissions, metric tons CO2e	Comment
Oil and gas production activities (upstream)	1,775,032.962	
Oil and gas production activities (midstream)	0	MEG does not have midstream activities.
Oil and gas production activities (downstream)	0	MEG does not have downstream activities.

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Canada 🗨️ ₁	16.275		21.7	0

🗨️₁MEG only operates one facility in Canada.

MEG consumed a small amount of indirect power in 2020 during turnaround activities.

C7.6

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

By facility

C7.6b

(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)
CLRP	16.275	

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Oil and gas production activities (upstream)	16.275	0	MEG consumed a small amount of indirect power in 2020 during turnaround activities.
Oil and gas production activities (midstream)	0	0	
Oil and gas production activities (downstream)	0	0	

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	Not applicable.
Other emissions reduction activities	0	No change	0	No change
Divestment	0	No change		Not applicable.
Acquisitions	0	No change		Not applicable.
Mergers	0	No change		Not applicable.
Change in output	255,324	Decreased	11	Gross emissions decrease as a result of decrease power generation and bitumen production related to extended turnaround activities and voluntary curtailment response to low commodity prices.
Change in methodology	0	No change		Not applicable.
Change in boundary	0	No change		Not applicable.
Change in physical operating conditions	68,586	Increased	3	New sustaining production brought online. This should decrease through time.
Unidentified	0	No change		Not applicable.
Other				



C7.9b

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

Location-based

C8. Energy

C8.1

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

More than 5% but less than or equal to 10%

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	10,928,590.17	10,928,590.17
Consumption of purchased or acquired electricity		0	21.7	21.7
Consumption of self-generated non-fuel renewable energy				
Total energy consumption		0	10,928,611.87	10,928,611.87

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)



Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

10,979,654

MWh fuel consumed for self-generation of heat

213,082

MWh fuel consumed for self-generation of steam

4,501,143

MWh fuel consumed for self-cogeneration or self-trigeneration

6,265,429

Emission factor

0.0022

Unit

metric tons CO₂e per m³

Emissions factor source

CH₄ and N₂O Emission Factors source: Environment Canada, Canada's Greenhouse Gas Inventory (1990-2014) Table A8–2: Emission Factors for Natural Gas

CO₂ – the Natural gas CO₂ emission factor is derived from fuel carbon content and varies.

Comment



Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

24,036

MWh fuel consumed for self-generation of heat

24,036

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.00262

Unit

metric tons CO2e per liter

Emissions factor source

Quantification Methodologies for the Carbon competitiveness Incentive Regulation and the Specified Gas Reporting Regulation (2018)

Comment

Fuels (excluding feedstocks)



Propane Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6,137

MWh fuel consumed for self-generation of heat

6,137

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.00153

Unit

metric tons CO2e per liter

Emissions factor source

Environment Canada, Canada's Greenhouse Gas Inventory (1990-2014) Table A8-11: Emission Factors for Energy Mobile Combustion Sources

Comment

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	1,269,038	305,929	0	0
Heat	138,362	138,362	0	0
Steam	6,445,301	6,445,301	0	0
Cooling	0	0	0	0

C9. Additional metrics

C9.1

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

C-OG9.2a

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

	In-year net production	Comment
Crude oil and condensate, million barrels	0	MEG does not have crude oil and condensate in its production portfolio.
Natural gas liquids, million barrels	0	MEG does not have natural gas liquids in its production portfolio.



Oil sands, million barrels (includes bitumen and synthetic crude)	30.17	MEG is a sustainable in situ thermal oil production company.
Natural gas, billion cubic feet	0	MEG does not have natural gas in its production portfolio.

C-OG9.2b

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

MEG reports its reserves and other oil and gas information in accordance with the National Instruments 51-101 – Standards for Disclosure for Oil and Gas Activities, the standard governing and reporting of petroleum reserves and resources for Canadian publicly traded companies. The Instrument requires all Canadian reporting issuers engaged in oil and gas activity to provide disclosure of their estimated oil and natural gas reserves and related future net revenues on an annual basis; and all disclosure to be prepared or audited in accordance with the Canadian Oil and Gas Evaluation Handbook.

C-OG9.2c

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

	Estimated total net proved + probable reserves (2P) (million BOE)	Estimated total net proved + probable + possible reserves (3P) (million BOE)	Estimated net total resource base (million BOE)	Comment
Row 1	1,566.3	1,702.9	2,526.2	

C-OG9.2d

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

	Net proved + probable reserves (2P) (%)	Net proved + probable + possible reserves (3P) (%)	Net total resource base (%)	Comment



Crude oil/ condensate/ natural gas liquids	0	0	0	
Natural gas	0	0	0	
Oil sands (includes bitumen and synthetic crude)	100	100	100	

C-OG9.2e

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

Development type

Oil sand/extra heavy oil

In-year net production (%)

100

Net proved reserves (1P) (%)

100

Net proved + probable reserves (2P) (%)

100

Net proved + probable + possible reserves (3P) (%)

100

Net total resource base (%)

100

Comment

MEG is a pure play thermal in situ producer.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

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

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other energy efficiency measures in the oil and gas value chain	Pilot demonstration	81-100%		MEG continues to test its proprietary eMVAPEX technology at the Christina Lake Project, which involves the targeted injection of light hydrocarbons in replacement of steam. This proprietary technology, if proven successful through expanded pilot operations, will further enhance MEG's growth potential by reducing capital requirements and operating costs, while minimizing environmental impacts to land, air and water. In 2018 the expanded eMVAPEX pilot commenced, and propane recycling facilities became fully operational. MEG has been granted funding from Alberta Innovates, Natural Resources Canada, Emissions Reductions Alberta, and Sustainable Development

				Technology Canada for continued eMVAPEX work. MEG continued to pilot eMVAPEX in 2019 and 2020.
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C-OG9.7

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

C10. Verification

C10.1

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

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

C10.1a

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

Verification or assurance cycle in place

Annual process



Status in the current reporting year


Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

 C10.1a Scope 1 Verification Statement.pdf

 C10.1aScope1VerificationStatement2.pdf

Page/ section reference

Page 1 of 1 in each document.

Relevant standard

Other, please specify

AEP TIER Regulation AR 133/2019, with amendments up to and including Alberta Regulation 132/2020 and the Standard for Validation, Verification and Audit, Version 5.1, December 2020.

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

Scope 2 location-based



Verification or assurance cycle in place

Annual process


Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 C10.1bScope2VerificationStatement1.pdf

Page/ section reference

pg. 1-2

Relevant standard

Canadian Institute of Chartered Accountants (CICA) Handbook: Assurance Section 5025

Proportion of reported emissions verified (%)

100

C10.2

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

Yes

C10.2a

(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 TIER Standard for validation, verification and audit. Version 5.1	The target is derived from the TIER (Int1 in Question C4.1b). TIER is an emissions intensity-based regime requiring large emitters to reduce their emissions intensity below a prescribed level, or otherwise achieve this through a true-up obligation whereby-credits can be applied against such required level, together with or as an alternative to physical abatement, with penalties for failure to achieve compliance. Verification for TIER was completed annually This is a reasonable level of assurance.
C6. Emissions data	Year on year emissions intensity figure	Canadian Professional Accountants – Standards for Assurance Engagements other than audits of Financial Statements and other Historical Financial Information, Handbook Section 5025.	Question C6.10, Question C6.12 Verification completed annually at a reasonable level of assurance.
C7. Emissions breakdown	Year on year change in emissions (Scope 1)	ISO14064-3 TIER Standard for validation, verification and audit. Version 5.1	Question C7.9 Verification completed annually at a reasonable level of assurance.
C7. Emissions breakdown	Year on year change in emissions (Scope 2)	ISO14064-3 TIER Standard for validation, verification and audit. Version 5.1	Question C7.9 Verification completed annually at a reasonable level of assurance. MEG's CLRP facility falls under the TIER regulation in Alberta.



C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

Canada federal fuel charge

Other ETS, please specify

Alberta Technology Innovation and Emissions Reduction (TIER) Regulation

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

100

% of Scope 2 emissions covered by the ETS

Period start date

January 1, 2020

Period end date

January 31, 2020



Allowances allocated

2,159,905

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

2,113,450

Verified Scope 2 emissions in metric tons CO2e

16

Details of ownership

Facilities we own and operate

Comment

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Canada federal fuel charge

Period start date

January 1, 2020

Period end date

December 31, 2020

% of total Scope 1 emissions covered by tax

0

Total cost of tax paid

20,268

Comment

The Federal Fuel Charge applies to fuels purchased that are beyond the scope of the Output-Based Pricing System, which was deemed to be equivalent to Alberta's Technology Innovation and Emission Reduction Regulation (TIER) on December 6, 2019 for the 2020 calendar year. The Federal Fuel Charge is paid on fuel use beyond the regulated facility boundary, encompassing use for camp heating.

C11.1d**(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

MEG is managing compliance with regulations by minimizing emissions through emissions reduction initiatives and efficiency upgrades. This is accomplished through operation of cogeneration facilities, implementation of reservoir production enhancements, and operational practices such as our methane management program. A case study of how we have applied our strategy is our significant efforts on optimizing steam generation. MEG identified that steam production is a significant source of energy usage and therefore a significant contributor to carbon emissions. Optimizing steam usage would therefore support compliance with regulations. An important metric for this purpose is Steam-Oil Ratio (SOR), the quantity of steam used to produce a barrel of oil. SOR is a key measure of efficiency for SAGD projects, with a lower SOR indicating that steam is more efficiently utilized. By decreasing the amount of steam used, MEG is able to reduce our per barrel water and fuel requirements which results in lower greenhouse gas emissions intensity and more economic projects. MEG has taken numerous actions to reduce SOR. MEG increased the application of its patented eMSAGP reservoir production technology across additional production wells. eMSAGP involves drilling additional production wells between SAGD well pairs, injecting a non-condensable gas to maintain reservoir pressure, like natural gas, into the reservoir, and reducing steam injection. The resulting overall SOR for eMSAGP is approximately 25% less than SAGD. By applying the eMSAGP process to significant portions of the operation, we have achieved an average SOR of 2.32 in 2020 at its Christina Lake Project compared to the in situ industry average of 3.1. eMSAGP has improved operational performance and reduced costs, including GHG costs linked to an increasingly stringent intensity target. In addition, MEG, with grants from Alberta Innovates, Natural Resources Canada, Emissions Reductions Alberta, and Sustainable Development Technology Canada MEG has advanced the development of the Enhanced Modified Vapour Extraction (eMVAPEX) production technology. The main objectives of eMVAPEX technology are to efficiently increase MEG's bitumen production rate, achieve sustainable cost savings and minimize environmental impacts to land, air and water. We have been operating an eMVAPEX field pilot since late 2016. Through to the end of 2020, we have achieved a cumulative SOR of 1.5 using eMVAPEX technology which is approximately 50% less than the in situ industry average of 3.1. Another aspect of our strategy is using an internal price of carbon to assess risks and opportunities for capital and operational investments.

C11.2

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

Yes

C11.2a

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

Credit origination or credit purchase

Credit origination

Project type

Energy efficiency: industry

Project identification

eMSAGP and Cogeneration

Verified to which standard

Other, please specify

AEP TIER Regulation AR 133/2019, with amendments up to and including Alberta Regulation 132/2020 and the Standard for Validation, Verification and Audit, Version 5.1, December 2020.

Number of credits (metric tonnes CO₂e)

46,455

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

46,455

Credits cancelled

No

Purpose, e.g. compliance

Compliance

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

Stress test investments

Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

MEG uses an internal price of carbon to assess risks and opportunities for capital and operational investments. MEG has an internal team that monitors and reviews carbon market trends and pricing and undertakes analysis on various carbon prices to ensure that the internal price of carbon reflects the regulatory and economic environment in which it operates.

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

30

Variance of price(s) used

MEG applies evolutionary pricing to reflect the regulatory and economic environment in which it operates. In 2020 MEG operated in Alberta, under the Technology Innovation and Emissions Reduction (TIER) Regulation TIER came into force January 1, 2020 replacing the CCIR. It includes facility-specific benchmarks and sector based high-performance benchmarks. The TIER compliance cost in 2020 was \$30 per tonne. MEG uses an internal price of carbon in 2020 set at \$30/tonne CO₂e and escalating to \$170/tonne CO₂e in alignment with the pricing structure announced by the Canadian Federal government out to 2030.

Type of internal carbon price

Shadow price

Impact & implication

The internal carbon price is used to help manage the potential cost impact associated with GHG regulations. MEG uses an internal price of carbon (set at \$30/tonne CO₂e to \$170/tonne in alignment with the pricing structure announced by the Canadian Federal government out to 2030) to forecast estimated compliance costs and potential savings associated with GHG emissions reduction opportunities which is in alignment with the 2020 carbon pricing structure applicable in Alberta where MEG operates. The carbon price is used to identify and drive toward low-carbon opportunities such as MEG's operational efficiency projects. One of MEG's operational efficiency projects is eMVAPEX. MEG continues testing its proprietary eMVAPEX technology. A modification of its eMSAGP technology, eMVAPEX has the potential to further decrease MEG's steam-oil ratio (SOR) beyond what eMSAGP can achieve, and further reduce GHG emissions intensities. Through its operational efficiency projects MEG has built substantial GHG credits given the high performance of its facilities. The price of carbon is also considered for the carbon capture initiative project economics.

C12. Engagement

C12.1

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

No, we do not engage

C12.1e

(C12.1e) Why do you not engage with any elements of your value chain on climate-related issues, and what are your plans to do so in the future?

Currently MEG produces diluted bitumen that is transported to, and processed in, various downstream facilities. Oil produced by MEG is used as a feedstock for a number of products, thus end use of sold products is not known to MEG making it difficult to engage with customers in MEG's value chain. To date, MEG has been focussing on emissions reduction, energy efficiency and decarbonization of its only facility, CLRP. We have undertaken some initial scope 3 evaluations and based on these; the supplier portion of our scope 3 emissions are relatively small in comparison to our corporate emissions. We will continue to evaluate scope 3 emissions and value chain engagement opportunities in the future. This includes opportunities for supplier engagement including compliance & onboarding and engagement campaigns to educate suppliers about climate change.

C12.3

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

Direct engagement with policy makers

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Clean energy generation	Support with minor exceptions	MEG actively consults with the Federal and Provincial Governments on policy and regulatory issues. We provide input into new policy, directives and regulations, as well as existing regulations when are under review in order to properly reflect a balanced approach to sustainable development. In the past, MEG was an active participant in the Government of Alberta's Climate Leadership Plan	MEG is committed to responsible resource development and remaining at the forefront of technology innovation, development and deployment. We are pursuing this not only in reservoir technology, but throughout the value chain in value added processing and across industrial sectors into power generation through cogeneration. In each area our desire is the same – improve energy efficiency to reduce costs and GHG

		consultation and working groups. MEG is also an active participant in the Government of Canada's Pan-Canadian Framework on Clean Growth and Climate Change consultation and working groups. MEG provided feedback on the draft Federal Clean Fuel Regulation and actively participated in Alberta Environment and Parks Climate Policy Engagement.	emissions. A collaborative approach to enhance competitiveness and GHG emissions reductions by recognizing and encouraging investment in technology and innovation is required. Creation of long-term policy and carbon pricing certainty is required to enable financial decisions on large-scale carbon reducing technology pathways.
Carbon tax	Support with minor exceptions	MEG actively consults with the Federal and Provincial Governments on policy and regulatory issues. We provide input into new policy, directives and regulations, as well as existing regulations when are under review in order to properly reflect a balanced approach to sustainable development. In the past, MEG was an active participant in the Government of Alberta's Climate Leadership Plan consultation and working groups. MEG is also an active participant in the Government of Canada's Pan-Canadian Framework on Clean Growth and Climate Change consultation and working groups. MEG provided feedback on the draft Federal Clean Fuel Regulation and actively participated in Alberta Environment and Parks Climate Policy Engagement.	MEG is committed to responsible resource development and remaining at the forefront of technology innovation, development and deployment. We are pursuing this not only in reservoir technology, but throughout the value chain in value added processing and across industrial sectors into power generation through cogeneration. In each area our desire is the same – improve energy efficiency to reduce costs and GHG emissions. A collaborative approach to enhance competitiveness and GHG emissions reductions by recognizing and encouraging investment in technology and innovation is required. Creation of long-term policy and carbon pricing certainty is required to enable financial decisions on large-scale carbon reducing technology pathways.

C12.3f

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

A continuous legislative overview is conducted that informs MEG of proposed changes. A multidisciplinary team regularly monitors developments in climate change policy and consolidates that information for the business to ensure that the business interests are protected and that policy trends are understood. To ensure that corporate guidance on activities that influence policy are consistent with MEG's systematic approach to addressing climate

risk across our organization, coordination meetings are held with all departments potentially influenced by the policy to review forthcoming engagement opportunities. Policy developments are communicated monthly to the corporate EH&S Committee and at least quarterly to the Board of Directors/applicable Board Committees to be factored into corporate strategy and planning.

C12.4

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


Publication

In mainstream reports

Status

Complete

Attach the document

 MEG.MIC_.2021(Final)Covers.pdf

 2020_AIF_Final.pdf

Page/Section reference

AIF pages: 4,5,14,15,17,32-35, 46, 52-57

MIC pages: 30,31,39-43, 60, 63-65

Content elements

Strategy

Risks & opportunities

Emissions figures

Emission targets

Comment


Publication

In voluntary sustainability report

Status

Underway – previous year attached

Attach the document

 2019MEGEnergyESGReport.pdf

Page/Section reference

ESG Report:
pg. 5 -9, 11, 12, 32

Content elements

Governance
Strategy
Emissions figures

Comment

MEG's 2021 ESG report will be available August 2021. Please check our website: <https://www.megenergy.com/>



C15. Signoff

C-FI

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

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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



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