Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

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

Our Focus
Founded in 1994, Vermilion is a publicly traded, widely held, international energy producer headquartered in Calgary, Canada. We seek to create value through the acquisition, exploration, development and optimization of producing properties in North America, Europe and Australia — regions noted for their stable, well-developed fiscal and regulatory policies related to energy exploration and development.

Our Purpose
At the core of our business is our purpose: To responsibly produce essential energy while delivering long-term value to our people, shareholders, customers, partners and communities. We believe that providing energy to the many people and businesses around the world that rely on it to meet their daily needs and sustain their quality of life is both a great privilege and a great responsibility.

Our Priorities
We prioritize health and safety, the environment, and profitability, in that order. Nothing is more important to us than the safety of the public and those who work with us, and the protection of our natural surroundings. Our energy transition strategy focuses on reducing environmental impacts of traditional oil and natural gas production while developing renewable energy projects closely related to our core competencies.

Our Operations We focus on the exploitation of light oil and liquids-rich natural gas conventional and unconventional resource plays in North America and the exploration and development of conventional natural gas and oil opportunities in Europe and Australia.

Our Strategic Plan
Our plan includes six Matters of Importance, with strategic objectives that guide us to 2030: Extraordinary People &Culture; Health, Safety & Environment; Financial Discipline; Robust & Profitable Portfolio; Business & Operational Excellence; & Integrated Sustainability. We are a

conventional producer in Europe and Australia, not employing hydraulic fracturing in our operated European assets. In North America, we use hydraulic fracturing of horizontal wells to develop some of our oil & gas reservoirs, complying with a stringent regulatory regime.

One of Vermilion's defining strengths is our belief that sharing our success is essential to being a success. We have embedded this philosophy in our purpose to ensure that our key stakeholders – shareholders, employees, communities, governments, partners & suppliers – benefit from our achievements. This approach, based on the concepts of inclusive & sustainable growth, frames our business strategy & guides our role in the energy transition. Our energy transition plan rests on three strategic activities: focusing on efficient and responsible production of oil and natural gas; implementing technically and economically feasible options for emission reduction; and exploring new and evolving technologies and processes to identify synergistic fits for our business in both traditional and renewable energy production. This includes our geothermal projects in France, research into biogas, geothermal and hydrogen potential in Netherlands, and hydrogen potential in France and Ireland.

Because traditional fuels, particularly natural gas, will be required to support the energy transition, providing energy security, accessibility and affordability, we believe that citizens, governments & investors should turn to best-in-class oil & gas operators. In particular, natural gas has a role to play by replacing high-carbon fuels such as coal for electricity generation, which will become increasingly important as the number of electric vehicles increases. In 2021, our natural gas production in Canada alone would have enabled a third party to avoid 8,600 kT of CO2e compared to utilizing power generated by a coal-fired power plant.

In our operating regions of North America, Europe & Australia, we comply with some of the world's most stringent health, safety, environmental & human rights regulations. We voluntarily report to international frameworks such as GRI & CDP. Environmental responsibility is only a part of our sustainability focus. Inclusive growth, which we see as ensuring that everyone has an opportunity for economic advancement, is fundamental to community wellbeing & long-term democratic stability. We are therefore committed to ensuring that we produce energy in a socially responsible manner, respecting worker rights & community engagement. This broad focus on sustainability (environmental, economic & social) is why we have integrated our sustainability strategy with the UN's Global Goals for Sustainable Development (SDGs). The SDGs provide a common focus & language for the planet, stating a clear vision for our collective future. We recognize that our capabilities in health and safety, environmental stewardship, long-term economic growth generation, & creation of shareholder value provide us with opportunities and the responsibility to move the SDGs forward.

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, 2021	December 31, 2021	No

C0.3

(C0.3) Select the countries/areas in which you operate.

Australia
Canada
Croatia
France
Germany
Hungary
Ireland
Netherlands
Slovakia
United States of America

C0.4

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

CAD

C0.5

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

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier

Yes, a Ticker symbol	VET (TSE and NYSE)

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	Sustainability is 1 of 6 strategic objectives in our long-range business plan. As such, the Board has responsibility for oversight of Vermilion's sustainability performance, with Board committees providing additional expertise. Comprised of 5 independent directors, the Board's Sustainability Committee (SC) provides targeted oversight of & advice for our approach, including: Sustainability Policy & long-range strategic plan; performance & progress on sustainability goals; id & mgmt of sustainability risks and opportunities; impact of sustainability & climate issues, including water, on business strategy, budgets & risk management; & communication of sustainability policies & performance. At least quarterly, the SC reviews management's sustainability performance reports, which include ESG & climate risks, opportunities, activities & performance; environmental & social trends; & strategic community investment activities. The SC Chair reports to the Board on the SC's work, including the Company's performance & progress. Most members of the full Board attended SC meetings in 2021, & the Board also reviewed ESG thought leadership papers such as oversight frameworks, decarbonization pathways & managing the energy transition, from experts eg McKinsey, State Street & Kimmeridge Energy. The Board also oversees sustainability strategy & performance via the HSE Committee (environment & safety, risk management), Audit Committee (risk management), & GHR Committee (governance & people). The Board & SC use this info to ensure integration of sustainability & climate risks & opportunities, including water, into major decisions, such as long-range planning, budget and capital allocation, and mergers, acquisitions and divestments. In 2021 the Board reviewed the 10-year sustainability strategy for managing risks and opportunities identified under each strategy pillar of carbon, conservation (including

	water) and community and approved our GHG emission reduction targets, including our Scope 1 and 2 net zero by 2050 target and our Scope 1 15-20% intensity reduction by 2025 target.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	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	The Board's primary responsibility is to foster the long-term success of Vermilion for all stakeholders, consistent with the Board's responsibility to the shareholders to maximize shareholder value. The Board is also responsible to ensure management identifies the principal risks of Vermilion's business and implements appropriate systems to manage risks identified. In climate-related work in 2021, the Board: • Ensured there is a strategic planning process in place, and reviewed, discussed and approved the strategy and monitored its implementation • Reviewed and evaluated our business and risk management reports • Reviewed the 10-year sustainability strategy for managing risks and opportunities identified through the Company's energy transition scenario analysis, encompassing key commitments under each strategy pillar of carbon, conservation including water, & community • Reviewed sustainability-related risks and opportunities, and their integration into our ERM system • Reviewed Vermilion's sustainability performance relative to peers based on key ESG rating agency scores. In addition, the Sustainability Committee: • Assessed Vermilion's progress against its long-range strategic plan for sustainability, including approving the 10-year strategy for managing risks and opportunities identified through the Company's energy

		transition scenario analysis, encompassing key commitments under each strategy pillar of carbon, conservation & community. • Monitored Vermilion's performance via internal reporting and results from third-party ESG rating agencies • Analyzed Vermilion's sustainability-related risks, correlated to those identified as material by the TCFD and SASB, along with emerging issues, and investor and financial sector ESG trending, and approved the related management approach • Examined the carbon emissions profile of the Company, along with global carbon pricing regulatory changes, emissions intensity benchmarking, and peer comparisons, to ensure related risks and opportunities are identified and realized • Approved the Company's emission reduction targets, including the long-term aspirational goal of Net-Zero by 2050 for Scope 1 and 2 emissions, and the short-term target to reduce Scope 1 intensity by 15% - 20% by 2025 • Reviewed the Company's total freshwater use and intensity, and peer comparisons, and established a baseline for further analysis of risks and opportunities for improvement • Reviewed with management the Company's sustainability-related projects at the corporate and business unit level, and their contributions to the overall strategy, including: - Existing and innovative technology; - The execution of a significant business unit Biodiversity Action Plan; and - Vermilion's certifications under third-party agencies such as Equitable Origin • Reviewed for relevancy and transparency Company position statements on key issues including the energy transition, water use, advocacy and community relations.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence	Criteria used to assess competence of board member(s) on climate-related issues

	on climate-related issues	
Row 1	Yes	Vermilion maintains a skills matrix to evaluate the skill set of the Board based on individual Director self-assessments, including with respect to sustainability skills and experience. The results are then evaluated for individual Directors and for the Board as a whole. The skills matrix helps us identify gaps in skills and is used when we search for new Directors. The GHR Committee reviewed the completed skills matrix and evaluations and is satisfied that the Board has the appropriate experience and skills to ensure the Board is performing well. The Board completed a discussion on the results with the objective of continuously improving Board effectiveness. Skills matrix: Our Board members have significant relevant experience in all facets of our business. All Board members are skilled in all of the areas within our matrix, which were updated to reflect additional sustainability-specific areas, including climate-related issues. The matrix illustrates the skill set of our Board based on: - senior executive experience in the area from a function, role and knowledge perspective and/or significant operational experience; and - some familiarity and specific experience. All board members have senior executive experience in the Sustainability (ESG) criteria of: Management or executive experience with, or knowledge of, risks and opportunities related to a broad range of environment impacts, including climate-related issues such as emissions reduction, regulatory frameworks and renewable energy, and social impacts such as human rights, labour rights, community development and investment, and overall stakeholder engagement and communications. We also assess continuing education, which in 2021 included our directors taking courses or workshops on the Net Zero Transition, CCUS, climate change, ecosystems, environmental management, ESG, ESG strategy, energy transition and sustainability financing, purpose & profit and operationalizing ESG.

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

Other C-Suite Officer, please specify Executive Chair	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
President	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Chief Financial Officer (CFO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other C-Suite Officer, please specify Vice President, International & HSE	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Vice President, Sustainability	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Vice President, Business Development	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other committee, please specify Executive Committee	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Manager, Corporate HSE	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Business unit manager	Both assessing and managing climate-related risks and opportunities	More frequently than 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).

Organizational responsibility for sustainability and climate-related issues flows from the Board and its Sustainability Committee throughout the Company via our Executive Committee. This Committee comprises the Executive Chair, President, Chief Financial Officer, VP Business Development, VP International & HSE, VP North America, and VP European Operations.
Our Executive Committee as a group replaces the position of Chief Executive Officer, and is responsible to review and approve key financial, operational and strategic decisions. As such, the Committee and its members report to the Board more frequently than quarterly, and are responsible through their reporting lines for assessing, monitoring and managing climate issues

such as energy, emissions and water use, regulatory changes, carbon pricing, and weather impacts.

Our VP Sustainability, who reports directly to the President and presents on progress every six weeks to the Executive Committee, develops and implements sustainability strategy, working in partnership with corporate teams and business units to ensure that our strategy and reporting reflect Vermilion's goals as a company overall and for each region.

Our VP North America and our VP International & HSE together replace the position of Chief Operation Officer, and lead the operationalization of sustainability, with the leaders of each business unit responsible for sustainability activities, including managing climate-related risks and opportunities within their organizations. Business unit leaders present to the Board on sustainability strategy, projects & progress in rotation, generally at least one per Sustainability Committee meeting. Each of our business units has also identified a Sustainability Lead, to support sustainability-related work.

Our Chief Financial Officer is also our chief risk and compliance officer, and is responsible to ensure that the risks and opportunities associated with climate issues, including emissions and water, are integrated into our Enterprise Risk Management framework and reported to the Board.

Our VP Business Development is responsible to ensure that sustainability- and climate-related risks, including emissions and water management, are incorporated into merger, acquisition and divestment decisions, including reporting to the Board on these decisions.

Our corporate sustainability team provides a centre of excellence approach, advising the business on all aspects of sustainability, including environmental, climate and social trends, and reporting at least quarterly and more frequently as needed to the Board and / or the Sustainability Committee regarding progress. The corporate team is also responsible for external sustainability reporting.

Various departments within the company report sustainability-related priorities and progress quarterly to either the full Board or Board committees, including governance updates, HSE targets and performance, People and Culture policies, and public and government relations. Our Manager, HSE plays a key role in assessing and managing climate-related issues including energy, emissions and water use, along with the safety and environmental impacts of weather changes.
We believe this approach clearly communicates, both externally and internally, our commitment to sustainability as a priority throughout the company and positions us to recognize the opportunities it presents. It also supports the proactive manner in which we address external risks that have potential impacts on short and longer-term company performance.

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	Our compensation approach is one program for all to incentivize staff at every level to work toward our strategic objectives, including climate-related issues. Compensation program elements include base salary & short & long-term incentives, which we believe strengthens our organizational alignment with shareholder expectations. Our objectives are: - ensuring our operations worldwide are sustainable under a range of commodity price environments & when changes occur in our workforce; - aligning compensation programs with our strategy to ensure prudent risk taking; - allowing us to attract & retain high-calibre employees that are important to our success; and - rewarding all employees & executives when their performance & the Company's performance is top quartile. We measure Company performance annually using our balanced scorecards, which include climate-related measures such as releases (bonus) & ESG rating agency scores, including water management (long-term incentive plan).

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
All employees	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target	Employee & executive compensation is tied directly to performance targets, including those related to sustainability and climate, through our corporate performance scorecards. Achievements within the short-term incentive plan (STIP or bonus) & long-term incentive plan (LTIP) scorecards also help determine STIP & LTIP budgets overall. The 2021 corporate performance scorecards included both standard industry metrics & internal measures of performance which were compared to

		Behavior change related indicator Supply chain engagement Company performance against a climate-related sustainability index	management plans approved by the Board. Our STIP scorecard (past year performance) includes a 10% weighting on HSE Performance, including climate-related goals such as HSE inspections and compliance / regulatory inspections. We believe there is a direct link between sustainability performance, including climate performance & overall business performance, & we expect sustainability performance to be a very significant factor in the long-term viability of our economic model. Our 2021 LTIP corporate performance scorecard includes a sustainability-specific measure to illustrate to our organization the importance of this measure & to incentivize all staff to focus on sustainability performance in their daily work. We measure our performance relative to our peer group in 3 third-party sustainability rankings: CDP Climate, S&P Global and Sustainalytics, the latter 2 of which include water scores. This holds a 10% weighting & applies to all employees & executives. Because overall employee compensation is linked to sustainability index performance, every employee is able to influence our score through activities ranging from energy conservation to recycling, all of which have a climate impact. In addition, specific facilities and operations staff in are assigned to the energy and emissions efficiency & reduction projects that are an integral part of our emissions targets, such as in Saskatchewan and France, while the admin team has taken on trash reduction and reduced plastics use, all of which has a positive climate impact. We continued to provide additional focus on sustainability across all BUs in 2021, including scenario analysis, emission reduction strategy, emission reduction target setting, capital projects, climate-risk assessments & carbon liability measures.
All employees	Non-monetary reward	Emissions reduction project Energy reduction project	Recognition is provided to groups & individual employees by managers & executive based on performance & project specific successes. Our Extraordinary Effort recognition program also

		Efficiency project Behavior change related indicator	provides small monetary rewards when staff have contributed significantly to project success, including environmental/energy efficiency projects for sites such as those associated with former Spartan assets and the rollout of a future-forward assessment of business strategy in France.
Corporate executive team	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Behavior change related indicator Supply chain engagement Company performance against a climate-related sustainability index	Employee & executive compensation is tied directly to performance targets, including those related to sustainability and climate, through our corporate performance scorecards. Achievements within the short-term incentive plan (STIP or bonus) & long-term incentive plan (LTIP) scorecards also help determine STIP & LTIP budgets overall. The 2021 corporate performance scorecards included both standard industry metrics & internal measures of performance which were compared to management plans approved by the Board. Our STIP scorecard (past year performance) includes a 10% weighting on HSE Performance, including climate-related goals such as HSE inspections and compliance / regulatory inspections. We believe there is a direct link between sustainability performance, including climate performance & overall business performance, & we expect sustainability performance to be a very significant factor in the long-term viability of our economic model. Our 2021 LTIP corporate performance scorecard includes a sustainability-specific measure to illustrate to our organization the importance of this measure & to incentivize all staff to focus on sustainability performance in their daily work. We measure our performance relative to our peer group in 3 third-party sustainability rankings: CDP Climate, S&P Global and Sustainalytics, the latter 2 of which include water scores. This holds a 10% weighting & applies to all employees & executives. Because overall employee compensation is linked to sustainability index performance, every employee is able to influence our score through activities ranging from energy conservation to

			recycling, all of which have a climate impact. In addition, specific facilities and operations staff in are assigned to the energy and emissions efficiency & reduction projects that are an integral part of our emissions targets, such as in Saskatchewan and France, while the admin team has taken on trash reduction and reduced plastics use, all of which has a positive climate impact. We continued to provide additional focus on sustainability across all BUs in 2021, including scenario analysis, emission reduction strategy, emission reduction target setting, capital projects, climate-risk assessments & carbon liability measures.
Board/Executive board	Monetary reward	Company performance against a climate-related sustainability index	Each year, the GHR Committee reviews the compensation paid to directors against industry practices for oil and gas companies of similar business model, size and scope. The peer group used to measure directors' compensation is the same group used to measure corporate performance. Retainers are targeted at the median of the market. The total director compensation package recognizes the increasing responsibilities, time commitments and accountability of Board members. We conduct a review of director compensation annually to ensure we are providing a compensation package that allows us to attract and retain competent members to our Board. Recommendations are then made to the Board. Changes to retainers (if any) are approved by the Board of Directors. Effective January 1, 2019, directors no longer participated in the employee long-term incentive plan (VIP) and were no longer eligible to receive performance share award grants. This change aligns the Corporation with best governance practices to eliminate the issuance of performance share awards to non-employee directors. They do, however, receive retainers based on their committee and chair duties, including the members and chair of the sustainability committee.

			The GHR Committee ensures that each member of the Board, the committees, the Chair of the Board, and the Lead Director are assessed annually in light of their relevant terms of reference. The assessments are done by way of a questionnaire conducted by our external legal counsel Norton Rose Fulbright.

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	0	3	Short term is considered to be current year to 3 years.
Medium-term	3	6	Medium term is considered to be 3 to 6 years from the current year.
Long-term	6	50	Long term is considered to be 6 to 50 years from the current year.

C2.1b

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

Our Enterprise Risk Management system includes a corporate risk register in which we maintain records of identified risks to our business and our operations. Within the risk register, in addition to descriptions of the background and context of the risk, we use a risk matrix – approved by our Executive and Board of Directors – to identify the potential magnitude of the of the consequence of each identified risk on our business. The risk matrix is used to establish impact thresholds across a broad range of risk categories, including people, environment, business loss, reputation, regulatory, sustainability and security. We define substantive financial or strategic impact as part of this risk matrix, to ensure that the risks with the highest potential impact are appropriately managed.

As per our matrix, financial impact is deemed substantive if it could cause a business loss of more than $10 million CAD (unrisked & before mitigation/recovery instruments).

A strategic impact is defined as substantive beginning at the following levels and including any escalations if it:

· Has persistent but reversible, long term effects on habitat, ecological communities, land, air, or water. Escalations include irreversible effects on these elements, persistent reduction in sensitive ecosystem function, or effects beyond a regional or operations scale.
· Requires a specific asset to be shut in for unknown duration during regulatory or legal proceedings. Escalations include the permanent withdrawal of authority to operate.
· Has reputational damage nationally or internationally and where stakeholder concerns lead to regional or more widespread interruption of operations.

Potential impacts to our business are also assessed within the risk matrix and the corporate risk register in terms of likelihood in order to quantify or qualify risk exposure to the organization and determine order of priority in which these risks will be managed. Other measures such as speed of onset and organizational vulnerability are risk qualifiers that are also used to help us with our risk ranking process to provide greater context for risk management.

Substantive impacts with a probability greater than 10-3 or assessed as Possible require the implementation of additional safeguards to achieve ALARP (As Low As Reasonably Possible) or the formal approval from the VP level or Managing Director to temporary maintain operations while solutions are being put in place.

An example of potential substantive impact is the risk scenario that carbon taxes in Canada could exceed $10MM as the federal carbon tax escalates to $170/t by 2030; this is before mitigation via provincial programs or emission reduction projects.

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

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

Our Approach to Risk Management, and Why It Matters
Effective risk and crisis management positions the company for better resiliency from the present to the future. We use a multi-layered approach to ensure identification, awareness and effective management of our business-related risks, including sustainability risks. This includes identifying business opportunities that may arise from changing conditions.

How We Manage Risk
Sustainability-related risks and opportunities, including those related to climate, are integrated into multi-disciplinary Company-wide risk identification, assessment, and management processes as part of our ERM system, based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework. This provides an integrated approach to managing risk as it impacts strategy and performance, and includes Operational, Market & Financial, Credit, Organizational, Political, Regulatory Compliance, Strategic and Reputational, and Sustainability categories.

Identifying and Assessing Risks
Overall, risk and opportunity management is the responsibility of the Board and Executive Committee based on a Top-Down, Bottom-Up approach to engage all staff. Top-Down begins with our Board and its committees with clear terms of reference, including oversight for identification and management of specific allocations of risk type. This is translated into action by our Executive Committee, which reviews and manages the ERM process through implementation of associated policies and procedures. Our staff help develop systems, standards and procedures. Bottom-Up is how staff implement, maintain and improve risk management processes, applying the hazard-risk-mitigation process in every part of our business.

Risks are identified by key staff across our Company, including our Operations, Finance, Health, Safety and Environment, Economics, Government & Public Relations, and Sustainability teams at corporate, business unit and asset levels. These employees have significant experience, and use a wide array of inputs, including operational and facility assessments, technical and research reports, external stakeholder organizations, government policy and regulation changes, industry initiatives, communities and landowners, and non-governmental entities.

The results are incorporated into our Corporate Risk Register, which provides a consistent framework to ensure the effective tracking and communication of our material risks. Using our Risk Matrix as a prioritization tool, Teams assess severity, likelihood, speed of onset, and vulnerability using scales from 1 to 5 for each factor, described in terms of human, environment, financial, social license and cybersecurity impacts.

Every risk case has also been assessed to determine where sustainability or climate-related risk is a contributing factor. The results are provided annually at minimum to senior management, the Executive Committee and the Board and its Committees as

appropriate, who further assess the risks including interdependencies.

Our sustainability materiality analysis, which assesses issues with impact for both the Company and our key stakeholders, is integrated into our ERM system using the Corporate Risk Register through a collaboration between our Finance, HSE, Operations and Sustainability teams.

Managing Risks
Our risk management approach focuses on reducing the risk to a level as low as reasonably practicable, accepting the risk, and/or controlling it (such as insuring it). For example, if direct mitigation is not possible (e.g. changes in temperature extremes), we would adapt our business processes to reduce the potential impact (e.g. changing work hours to avoid extreme mid-day heat). In other situations (e.g. increasing risk of flood), we may take measures to protect against the risk (e.g. flood controls) while also insuring our operations.

Financial impact is deemed substantive if it could cause a business loss of more than $10 million CAD (unrisked and before mitigation/recovery instruments). Substantive is defined further using the following thresholds:
- Has persistent but reversible, long-term effects on habitat, ecological communities, land, air, or water. Escalations include irreversible effects on these elements, -persistent reduction in sensitive ecosystem function, or effects beyond a regional or operations scale.
-Requires a specific asset to be shut in for unknown duration during regulatory or legal proceedings. Escalations include the permanent withdrawal of authority to operate.
-Reputational damage is national or international, or stakeholder concerns lead to regional or more widespread interruption of operations.

Emissions Long-Range Planning
To support climate risk identification and management, we previously developed a Carbon Liability Assessment Tool, with Scope 1 emissions quantification and regulatory information for each business unit. We assessed the price of carbon on both a realized cost and shadow pricing basis, and identified likely carbon pricing scenarios for all our operating areas.

In 2021 and 2022, we developed and piloted an Emissions Long-Range Planning Tool, which uses our 10-year projections of production to estimate our Scope 1 and 2 emissions, associated carbon taxes, and impacts of emission reduction projects. We are now using this to support our planning of production, capital allocation, budgeting, target setting and merger, acquisition and divestment decisions.

Transition Risk Case Study: Since 2017, we have actively identified increased pricing of GHG emissions such as carbon taxes as a short-term transition risk, as part of our regulatory & legislative risk monitoring. We identified the federal Greenhouse Gas Pollution Act as potentially significant in Canada & responded by proactively aligning our emission reduction & reporting activities with provincial responses, to reduce the

resulting tax liability, including operational & engineering reviews aimed at increasing efficiency, & reducing emissions & expense requirements at major facilities, which has identified a large number of climate-related opportunities. Mitigating actions are guided by our Management of Change process, specific to the situation.
Physical Risk Case Study: Vermilion owns & operates an offshore platform off NW Australia & the Corrib project off the Irish coast, & oil fields in the coastal area of SW France; our risk process has identified that extreme weather events have the potential to directly impact our offshore operations resulting in down time or damage to infrastructure, particularly as weather patterns change & potentially worsen due to climate change. We have assessed both financial & strategic impact; in response, we have done extensive engineering work for re-lifing the Wandoo infrastructure, adjusted our operating procedures & arranged financial instruments to mitigate the potential for loss due to damage; we also monitor weather patterns daily as needed.

Value chain stage(s) covered

Upstream

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

Vermilion includes assessment of upstream climate related risk within our integrated risk framework, described in the ‘direct operations’ text above, but covering climate-related risks and opportunities in our upstream value chain, including governments, regulators, partners & suppliers. Our response in this section of text deals specifically with the upstream risk category.

Overall, we prioritize risk & opportunities based on the materiality, probability & potential impact to our operations. Impact to the environment as well as financial and strategic implications of identified climate change risks & potential project opportunities are built into the ERM process, with every risk in our Risk Register being assessed for its potential impact on climate change. Based on this information as well as business need, risk mitigations (i.e. climate related projects) are prioritized & completed in a manner that will allow Vermilion to support healthy communities as well as augment our strong shareholder value & return. This review for upstream risks considers the potential impact of a 1.5 to 2D scenario, with these impacts included in our risk assessment process, including:

- Carbon taxation by governments
- Carbon sequestration through our partners
- Emission reporting obligations by governments and regulators
- Product efficiency regulations & standards by governments and regulators
- Uncertainty surrounding new regulation, and
- Reputation

The results annually feed back into our risk/opportunity management process to ensure Vermilion has a sound data foundation to support responsible decisions in our operating areas. Detailed analysis of these risks, including potential impact, financial implications, management methods & cost of management, support our business strategy related to the energy transition.

The upstream value chain assessment benefits from the integrated Market analysis completed by our Marketing Team, which includes assessment of global fundamentals. This falls under the oversight of the BOD Audit and Sustainability Committees and is reviewed during committee meetings at least 3 times/year, and by the Board during its annual strategy session.

We have also expanded our scenario analysis process. The Board of Directors, executive team and senior management, including the managing directors of our business units, participated in a robust scenario analysis, examining two key scenarios from the World Economic Forum that bring together the work of significant contributors in this area, from the International Energy Agency to Carbon Tracker. These scenarios compare a Gradual and a Rapid transition to low carbon, with the latter meeting the aims of the Paris Agreement to limit global temperature increases to 1.5ºC to 2 ºC, with 1.5 ºC preferred. This provided an opportunity to assess the key factors impacting the speed of the energy transition, including the influence of new energy technologies, the potential speed of adoption of these technologies, the anticipated changes in policy and regulation surrounding the energy transition and their rate of change, and emerging market pathways such as India. The scenario analysis extended to the risks and opportunities related to these climate-related factors, the resulting impacts on the company's future not just in the short-term, but in the medium to long term (2050+), and strategies for Company resilience – overall and by business unit.

An example of the upstream risk that we consider is the availability and implementation of technology in our value chain upstream of our operations (i.e. by vendors providing services). This is both a risk and opportunity because the implementation of technology in our operations around the world ensures continued safe development and operation of our assets, which supports our commitments to HSE and Sustainability, as well as our Operational Excellence programs. Early engagement on the emergence and potential application of new technology in our programs, and ensuring outdated technology and practices are reduced by our vendors, is key to our ongoing operational excellence. This specifically includes working with vendors and suppliers to reduce the greenhouse gas emissions of the services they provide to us, and to take advantage of programs they offer, often via government and/or regulator emissions reduction

programs, to help us replace outdated technology with better options that incorporate either greater energy efficiency or renewable energy, such as the installation of small solar panels on our Mannville production sites in Canada.

Upstream opportunities include those associated with business development. Part of our overall business strategy and risk management is to establish our operations in regions around the world that have robust regulatory approaches to energy exploration and production. At the same time, our risk identification and assessment processes have identified that governments and regulators are increasingly concerned about working with strong, reputable and climate-aware producers. One of our responses is to include information about our management of sustainability and climate issues in our business development documentation for bid/RFP/license applications.

Value chain stage(s) covered

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

Vermilion includes assessment of downstream climate related risk within our integrated risk framework, described in the ‘direct operations’ text above. Our process covers climate-related risks and opportunities in our downstream value chain, including direct impacts for stakeholders such as purchasers & joint venture partners, and indirect impacts for stakeholders such as our communities, which benefit from our investment in local infrastructure, employment and non-profit/charitable organizations. Our response in this section of text deals specifically with the downstream risk category.

Overall, risk & opportunities are prioritized based on the materiality, probability & potential impact to our operations. Impact to the environment as well as financial implications of identified climate change risks & potential project opportunities are built into the ERM process, with every risk in our Risk Register being assessed for its potential impact on climate change. Based on this information as well as business need, risk mitigations (i.e. climate related projects) or business process or strategic adaptations are prioritized & completed in a manner that will allow Vermilion to support healthy communities as well as augment our strong shareholder value & return. This review for downstream risks considers the potential impact of a 1.5 to 2D scenario, with these impacts included in our risk assessment process, such as:

• Product efficiency regulations & standards
• Reputation
• Changing consumer behaviour
• Community climate risk concerns

The results annually feed back into our risk/opportunity management process to ensure Vermilion has a sound data foundation to support responsible decisions in our operating areas. Detailed analysis of these risks, including potential impact, financial implications, management methods & cost of management, support our business strategy related to the energy transition.

Specifically, this category is included in the integrated Market analysis completed by our Marketing Team, which includes assessment of global fundamentals. This type of risk falls under the oversight of the BOD Audit and Sustainability Committees and is reviewed during committee meetings 3 times/year. An example of downstream risk that is assessed is the impairment of a favourable market due to government regulation related to sources of energy.

Another example of downstream risk that we have identified, assessed and responded to is concern within our communities about the impact of oil and gas operations. We have responded in part through a focus on reducing our impact through operational excellence and HSE, through increased communication via our Public and Government Relations programs, and through our strategic community investment program, specifically by developing and launching our Global Environmental Stewardship Program. Through this program, the volunteer time and donations from our staff support non-profit and charitable organizations that are protecting the ecosystems and biodiversity that are important to the communities around our operational areas. Because of the connection to our staff, this not only supports employee engagement, but also helps our communities see a visible example of our commitment in this area when we are out planting trees, for example.

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	Vermilion is fully committed to operating responsibly in all of our jurisdictions, including meeting regulatory requirements and industry standards. This commitment makes both Current Regulation and Emerging Regulation material to our operations. On an ongoing basis in every BU our technical teams assess our current operations and planned development activities to ensure that we operate within our commitment to responsible operations. We also engage external

		regulatory experts to ensure that our staff is up to date on current regulation, as well as upcoming changes to regulations impacting our operation. In addition, the Public and Government Relations staff in our business units provide important monitoring of the interpretation of current regulations, which can be subject to change by the courts and government departments. This type of risk falls under the oversight of the Board as well as the HSE and Sustainability Committees and is reviewed during committee meetings at least 3 times/year. An example in our Canadian operations that directly impacts climate change is our ongoing monitoring of Directive PNG036 in Saskatchewan, which provides regulatory requirements for reducing flaring, and venting of associated gas. This regulation augments the commitment Vermilion made to reduce emissions associated with flaring and venting in our Saskatchewan assets following the acquisitions of infrastructure with a high emissions profile in 2014 and 2018. A related regulation risk is that our Canadian operations are subject to the federal Greenhouse Gas Pollution Pricing Act (GGPPA), with carbon tax rates at $50 /tCO2e by 2022 rising to $170/t by 2030. In 2019, the Saskatchewan government introduced regulations that provide for financial penalties starting in 2020 for methane emissions in excess of defined limits. Taxation is considered an ongoing risk and has the potential to change as a result of political elections. Increases in carbon taxes without mitigation by Vermilion, including participating in the Alberta and Sask GGPPA responses, would result in a decreased netback. Another regulation example is the Hulot Law in France, which prohibits the issuance of new oil and gas exploration concessions and limits the renewal of existing production concessions beyond 2040. These regulatory risks have the potential to increase both capital and operating costs, depending on the measures required for compliance. They may also require a change in business model.
Emerging regulation	Relevant, always included	At Vermilion, responsible energy development and stewardship includes ongoing assessment of emerging regulations in all of our business units around the world. In addition to the responsibility of managers and project leads to understand and ensure our activities are planned and completed in a manner that ensures compliance, Vermilion has positions that have direct responsibility for the identification of emerging regulations that could impact the organization. This type of risk falls under the oversight of the Board, HSE and

		Sustainability Committees and is reviewed during committee meetings at least 3 times/year. An example of emerging regulation and their associated risks impacting our operations is the risk associated with the regulation of carbon emission pricing in the regions where we operate. This is assessed on an ongoing basis, with a formal review occurring at a minimum of twice a year. Our focus on Integrated Sustainability led Vermilion to develop our country specific Carbon Liability Management Tool. Updated annually, this tool provides business unit leadership and project managers with the information to assess the current and forecasted carbon liability associated with our activities, based on the current, and forecasted changes to carbon cost in the short and medium term, and has now been replaced with our Emissions Long Range Planning tool, which forecasts emissions and taxes based on production, and allows us to assess the impact of various emission reduction projects. A key example of this type of risk is the European Union Green Deal, which aims to make Europe the first climate-neutral continent, with no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, & no person and no place left behind. Emerging regulation related to the Green Deal includes emission reduction targets for 2030, the inclusion of natural gas as an energy transition fuel, and the role of hydrogen in the energy transition, all of which can impact Vermilion's future. Related risks include the consideration by our operating regions of bans on internal combustion engines. These emerging risks have the potential to increase both capital and operating costs, depending on the measures required for compliance. They may also require a change in business model.
Technology	Relevant, always included	On an ongoing basis, we assess how new and emerging technology can impact our operations and business model, and also support our initiatives to reduce emissions, for example, or develop new products such as biogas or hydrogen. This risk operates at several different levels: on a global basis, emerging technology in renewable energy generation, LNG production, the varying sources of hydrogen production, and the impact on electricity demand of the increasing availability of electric vehicles, have the potential to impact the demand for fossil fuels. Coal-focused companies were the first to feel this impact, but oil and gas companies are increasingly impacted, particularly as national governments focus on renewables and other options, including emerging nuclear energy such as small-scale reactors, to decrease their reliance on fossil fuels. This may impact demand for our products. Since this is a quickly

		changing field, we are using scenario analysis to assess the potential impact on Vermilion of different speeds at which the energy transition, and the technology at its foundation, might move. Conversely, those technological advancements, including the potential for digitalization and artificial intelligence, may help Vermilion optimize its operations and improve return to our shareholders. A relevant example that aligns the global risk with the risk at our sites is our installation of small solar panels on our Mannville sites in Canada to harness renewable energy as a way to reduce our own emissions. Another is an ongoing program in Canada to install pump-off controllers at wellsites so that the pump operates only when enough fluid is present. Annually, this is expected to reduced power consumption by approximately 17 % resulting in an estimated 10,000 kWh saving per year per well. Current risks identified at the asset level also include the increasing pace of available technology, its cost, the resources available to assess and install it, and the cost vs benefits of using it when compared to our peers. This type of risk falls under the oversight of the Board and the Sustainability Committee and is reviewed during committee meetings at least 3 times/year.
Legal	Relevant, always included	We are committed to responsible energy development throughout the lifecycle of our operations. This includes, at a minimum, operating in compliance with all applicable regulations that govern our activities. However, our risk assessment has shown that regulatory compliance – and the anticipation of regulatory changes with proactive changes – may not be fully protective against the risk of legal challenges (a) against Vermilion directly, or (b) against other entities such as our regulators, with resulting effects on our operations. These risks are monitored by our corporate Sustainability team for legal risks with global scope, such as climate change liability suits launched by environmental non-governmental organizations and various levels of government, and such as cities and states, against the supermajors. These take several forms, including addressing liability for climate change caused by fossil fuels, and resulting damages, on behalf of specific groups. They also include attempts to establish fraud, such as New York state's lawsuit against Exxon Mobil that focused on how the company had accounted for and reported the costs of climate change, including regulation. On a business unit level, staff including managing directors, permitting specialists and public and government relations staff monitor the

		potential for legal action either directly against the company or against a regulator to be taken to curtail production, stop or delay exploration, or otherwise contest permit and license applications. Examples of this have occurred in several of our regions, including in the US, where advocacy groups went to court to contest the Bureau of Land Management's granting of oil and gas leases in Wyoming; in this case, the court ordered the BLM to reassess its environmental analysis to include a wider analysis of potential climate impacts. This type of action can create permitting delays for our exploration and production activities while the court process is followed. This type of risk falls under the oversight of the Board and the Sustainability Committee and is reviewed during committee meetings at least 3 times/year.
Market	Relevant, always included	Vermilion focuses on understanding and assessing market risks related to climate and beyond. This includes changing customer behaviour, such as consumers choosing renewable energy to fuel their homes, or electric vehicles. In 2021 and 2022, this has extended to the question of energy security and affordability, creating a situation where national governments are responding to market imperatives and electoral feedback by requesting both energy transition activities and increased oil and natural gas production from energy companies. This requires a careful balancing of both critical market needs, which impacts our business model and potentially our costs, revenue and development plans. We proactively identify market risks - and opportunities - through our sustainability, public and government relations, and marketing teams, who monitor a variety of market sources to analyze factors that could impact Vermilion directly, or the markets in which Vermilion operates. This includes our Board and senior leadership scenario analysis, which specifically addressed market issues under both a gradual and rapid transition scenario - assessing how quickly renewable energy sources can be made available and then adopted by our markets, for example, and where regulations intersect with market forces to accelerate this. This type of risk falls under the oversight of the Board, Audit and Sustainability Committees and is reviewed during committee meetings at least 3 times/year. Another example of market risks is the increasing cost of carbon credits associated with an increase in demand due to climate-neutral goals being set around the world. This impacts Vermilion's low-carbon transition strategy, in terms of the choice of carbon credits as one of our potential tools, and the associated cost-benefit analysis. Another

		risk and opportunity is the potential for our customers to seek third-party assessment of our operations as responsibly produced. Certifying to independent levels can therefore be a competitive advantage.
Reputation	Relevant, always included	One of the dedicated risk categories within Vermilion's Corporate Risk Register is Strategic & Reputational risk, which is a material risk given that Vermilion's successful global portfolio of assets depends in large part on our reputation as a safe and responsible energy producer. This is especially important to our government, regulatory and community stakeholders, as it impacts our regulatory and social license to operate; if we lose these, we could face shutdowns of production or permitting delays. It is also a critical risk for the attraction and retention of qualified staff and contractors. Reputational risks operate at various levels, including the reputation of the oil and gas sector as a whole, and the reputation for Vermilion specifically. We actively monitor and support both, working within industry organizations to support best practices (such as our implementation of the IOGP Life-Saving Rules program) and working with our local stakeholders, including communities, landowners and governments to understand their views and respond to their concerns. This type of risk falls under the oversight of the Board, HSE and Sustainability Committees and is reviewed during committee meetings at least 3 times/year. It is also closely related to our operations, and the policies and processes in place to ensure safety and environmental protection. An example of a climate- related reputational risk that impacts our business on an ongoing basis is our social license to operate in all of our jurisdictions. As we, as a society, move toward less carbon intense fuels, how energy companies produce their products will become increasingly important. This was one of the guiding factors in Vermilion updating our organizational structure and making Integrated Sustainability one of our strategic objectives. It also makes the transparency of responsible production essential for our community stakeholders. We have responded by establishing staff with dedicated responsibilities for public and government relations, and for landowner relations, in our business units, and by developing a corporate stakeholder engagement framework to guide their work. A specific example of a reputational risk is where flaring is identified by either our operational staff or our communities as a potential issue. In these cases, we assess the technical solutions, and implement as quickly as possible.

Acute physical	Relevant, always included	Climate-related physical risks to our people, the environment and our assets are ever-presents risk that are assessed on an ongoing basis, as they have the potential to impact the safety of our people as well as our infrastructure, including production shut-downs and damage to sites and facilites. Typically this exposure is associated with the frequency and severity of extreme weather events. Vermilion has detailed corporate and operation-specific emergency response plans developed and implemented to assist in managing risks and impacts from acute physical climate-related risk. Our leadership and technical teams factor this risk into the planning portions of all projects completed annually. The frequency of this risk assessment is dependent on each specific risk case. This type of risk falls under the oversight of the Board, HSE and Sustainability Committees and is reviewed during committee meetings more than 3 times/year. For example, Vermilion Australia operates the Wandoo oil field on the North West Shelf of Western Australia. Annually, we are exposed to acute physical risk to our infrastructure associated with cyclone season. During cyclone season, our monitoring of conditions is continuous to support our ability to react and respond to a potential impact to our operation. We also assess climate-related physical risks on a longer term basis, examining the risk associated with worsening weather events such as floods and wildfires, as several of our operating regions have identified these as actual or potential risks.
Chronic physical	Relevant, always included	While many of the impacts related to climate change are acute in nature (as described above), Vermilion has identified a number of risk scenarios that have the potential to impact our operations related to chronic changes in the regions which we operate. These risks include changes to temperature extremes (hot and cold) affecting our ability to develop resources as planned, changes in precipitation resulting in regional redistribution of the resources in the hydrologic cycle impacting our ability to utilize water for our operations, and rising sea levels impacting our costal operations and the communities in which we live and work. For example, flooding could result in limited access to locations / facilities, and poses a risk to our corporate headquarters (significantly mitigated since flooding last occurred in 2013). Alternatively, drought conditions could impact the availability of surface and / or groundwater, which Vermilion, in part, relies on for drilling and completion activities, and could negatively impact forecasted growth by increasing timelines

		and capital costs to bring new infrastructure onto production. This could also increase the likelihood of wildfires. Vermilion has experts in each of our Business Units who continually assess the options to develop our resource portfolios and where we can implement new technology to address challenges associated with chronic changes to the environment. This type of risk falls under the oversight of the Board, HSE and Sustainability committees and is reviewed during committee meetings at least 3 times/year.

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

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

We have identified actual, planned and potential regulatory changes that would affect our operating units by establishing and / or increasing carbon taxation.

Impact on Financial Performance: increased direct costs, impacting the Income and Cash Flow Statements

Short-term: Carbon taxes are set to increase in several of our jurisdictions, resulting in increasing costs, for example:
Canada: The Canadian Federal Greenhouse Gas Pollution Pricing Act has set carbon tax rates at $50 per tCO2e in 2022, rising to $170 by 2030.
Ireland: EU Emissions Trading Scheme cap and trade system requires users to acquire

carbon allowances to account for their emissions; Ireland carbon tax: €41 in 2022, increasing by €7.50/t annually to 2030 (Ireland is the only one of our European operations that is subject to the EU ETS)
Germany: German National Emissions Trading System established in 2021; fixed cost of €30/t in 2022, increasing to €55/t by 2025 with market pricing from 2027
Netherlands: indirect carbon tax established in 2021; cost impact is limited

Dynamic materiality: Carbon pricing is vulnerable to changes in governments and associated policy. We note a political focus in the EU, Canada, USA and Australia on a COVID-19 economic recovery that is both climate-focused and responsive to social justice issues such as labour practices, and the potential for carbon pricing in the US and Australia based on environmentally focused governments.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

12,600,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact is based on outlay associated with the various taxation schemes in our global operating areas in the medium term on an annual basis. We have established this as a financially material risk: without mitigation, carbon taxes could exceed $11MM/year by 2025 and $16.5MM by 2030.

We used Sensitivity Analysis / Simulation to establish projected costs. Based on existing carbon tax costs plus forecasting via government-announced or likely carbon pricing, which we input into our Emissions Long Range Planning Tool, the financial impact increases as follows (approximate figures, before mitigation):
- Canada: $2MM (2022) to $8MM (2025)
- Ireland EU ETS: $2.8MM (2021), 3.2MM (2025), $4.2MM (2030)
- Ireland Carbon Tax: $0.2MM/year 2021-2030
- Germany: $.2MM in 2021

This is a total of $12.6MM for 2025.

Cost of response to risk

8,000,000

Description of response and explanation of cost calculation

Mitigate – Financial Planning: Our exposure is mitigated in Canada by provincial responses to the federal Act, including Alberta's Technology Innovation and Emissions Reduction (TIER) regulation and Saskatchewan's Output-Based Pricing System (OBPS). We voluntarily opted into TIER, for example, which provides tax exemptions contingent on emissions reduction. However, these programs will evolve with the federal approach, with emission reduction requirements becoming more stringent over time.

Mitigate – Strategy:
- Continue to reduce the energy and emissions intensity of our operations, supporting our carbon strategy's emission reduction targets (2025 and 2030),
- Use of our Emissions Long Range Planning Tool to establish the tax reductions available compared to carbon abatement costs, analyze potential acquisitions and divestments, and allocate capital to emissions reduction projects, and
- Develop a transition strategy in 2022/2023 to support our net zero by 2050 target, with business unit and operational input

Accept – Strategy: In addition, we:
- Track evolving taxation requirements
- Engage external and in-house experts to support tax strategy development, including accepting the tax expense where carbon abatement costs are uneconomical

Cost Calculation: Our Emissions Long Range Planning tool inputs production, emission and carbon tax forecasts, and provides impacts of various emission-reduction projects in terms of emission reductions and annual tax liabilities. We have identified $10.4 MM in emission reduction projects that are currently being implemented or evaluated in order to reduce our annual and ongoing tax liabilities.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Enhanced emissions-reporting obligations

Primary potential financial impact

Increased direct costs

Company-specific description

As a responsible energy producer playing a key role in the energy transition, we have identified this risk as strategic because of its links to current & future regulations, both of which will impact our ability to not only operate in our areas, but also to grow. Regulatory reporting obligations are considered an ongoing short-term risk.

Impact on Financial Performance: increased indirect costs, impacting the Income and Cash Flow Statements.

Impact on Financial Position: non-alignment potentially impacts access to capital and debt markets, equity price, creditworthiness and exposure to divestment risk.

Anticipating changes to and maintaining alignment with emissions reporting obligations is related to two distinct risks:
1. Jurisdictional emissions reporting: each of our operating regions has their own distinct reporting regime, many of which are changing annually to keep pace with additional expectations in this area
2. Sustainability reporting standards: we are managing the emergence of four standards that will impact reporting expectations, including data auditability, by 2025: International Sustainability Standards Board; European Sustainability Reporting Standards; Canadian Securities Administrators Climate-related Disclosure; and the US Securities and Exchange Commission Climate Disclosure

Time horizon

Short-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)

500,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Direct Measurement: Financial impact is measured in terms of staff time required to monitor and evaluate reporting obligations, and develop company responses to ensure we remain aligned, including quantification of emissions, and the data gathering and processing necessary to support and streamline these efforts. Staff time and data capacity is estimated at $0.5MM annually ($50K per BU and corporate office staff time; $100K data support).

Cost of response to risk

500,000

Description of response and explanation of cost calculation

Operationally material: Jurisdictional and Securities compliance is non-discretionary

Mitigate – Strategy:
- In Canada, we implemented emission data gathering software in 2021
- Company-wide, we are improving and automating data gathering and processing capacity in 2022/2023

Accept – Strategy:
- Monitor jurisdictional emissions reporting obligations on an ongoing basis
- Engage stakeholders relating to emissions reporting obligations to better understand expectations
- Work with industry associations such as Canadian Association of Petroleum Producers to review emerging standards and provide feedback to standard-setting bodies
- Plan company response to ensure alignment

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Increased direct costs

Company-specific description

Impact on Financial Performance: increased direct costs to maintain compliance, including CAPEX, impacting the Income and Cash Flow Statements.
Impact on Financial Position: potential to decrease asset value, impacting the balance sheet.

Emissions regulations are becoming more stringent in many of our regions, including:
- Canada: Canada's 2030 Emissions Reduction Plan; Target to Reduce Methane from the Oil & Gas Sector by 40-45% by 2025 and 75% by 2030 (2012 baseline); Support for Global Methane Pledge
- France: Hulot Law; Commitment to End Routine Flaring by 2030
- Netherlands: Plan to Reduce Nitrogen-based Pollution in line with EU rules

Environmental regulations are evolving in the United States, particularly with respect to oil and gas leasing on federal lands, including lands offered for lease by the Bureau of Land Management, where leases were halted, then reinstated but with fewer acres available. While this did not impact our operations or planning, we monitor such regulatory changes to ensure our strategy manages them effectively.

Operationally Material: Jurisdictional compliance is non-discretionary
Dynamic materiality: may increase financial materiality 2025-2030

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10,400,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Budgeting forecast tools: capital investment of $10.4MM will likely be required between 2021 and 2025 to meet our Scope 1 emission intensity 2025 target; however, significant portions of this incorporate operationally important upgrades that are economic based on efficiency gains or maintenance requirements. This phase of emission improvements also benefit by reducing carbon taxes in some jurisdictions. As we progress to emissions that are more challenging to reduce, it's likely that capital investments will need to increase; however, as carbon taxes also rise and carbon markets solidify, we expect abatement costs to be economical for many projects.

Cost of response to risk

100,000

Description of response and explanation of cost calculation

Mitigate – Strategy: Evolving regulatory requirements feed into our long-term business strategy, which incorporates carbon reduction, including energy efficiency, emission reduction, and new technologies and processes. This includes our two emission reduction targets. Tying in vented equipment to flaring infrastructure in Canada is an example of projects completed to address this risk; in Netherlands we have used NOx scrubbers and purchased NOx certificates for various drills.

We work with external partners to further implement and develop emission reduction technologies that are economic, in part due to the potential generation of carbon credits. We have a careful, deliberate approach to project development, to mitigate the risk of investing in unsuccessful technologies.

Mitigate – Financial Planning & Capital Allocation:
- All Risk Register cases are assessed annually for potential sustainability-related impacts, including those climate-related
- Emission reduction and water requirements and intensity are factors in budget decisions for capital and operating expenses
- Emission and water intensity and other ESG considerations are factors in M&A and divestment decisions
- Collateral considerations such as training are included in mitigation

Accept:
- In Germany, we have completed work with the local industry association in support of the government's ban on activity in Water Protection Zones
- Regulations are monitored in all business units and reported quarterly to the Executive Committee and the Board

The cost of managing the risk is estimated to be $100,000 per annum. The estimated cost is based on a single 0.5 FTE employee across both business units ($0.5 x $200k = $100k).

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Changing temperature (air, freshwater, marine water)

Primary potential financial impact

Increased direct costs

Company-specific description

Impact on Operations and Financial Performance: increased direct costs, impacting the Income and Cash Flow Statements
Impact on Financial Position: potential to decrease asset value, impacting the balance sheet

A decrease or increase in temperature extremes (i.e. lower seasonal lows, higher seasonal highs) could result in an increase in fuel gas for a variety of equipment, along with additional equipment (e.g. building and line heaters). This would require additional resources (infrastructure) and increase emissions. Temperature extremes could also increase capital costs associated with drilling, completion and workover operations due to increased timelines, decreased productivity, equipment breakdown, etc. For example, warmer winters decrease our ability to access lands and increase construction capital requirements for our Canadian operations.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

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

Not currently forecast as financially or operationally material

Modelling: The financial implications on an annual basis are difficult to quantify; however, the most significant financial implications would result from shutdowns in drilling or completions locations. The estimated average cost is $0.14MM per day of delay in Canada, and the financial impact figure is based on 10 days of production shutdowns.

Cost of response to risk

100,000

Description of response and explanation of cost calculation

Vermilion has integrated technical teams in each business unit responsible for project management and advancing Vermilion Operational Excellence. These teams also act as technical experts across the organization to strengthen our development programs. As extreme weather cannot be controlled, Vermilion utilizes our various Management Systems and processes to protect the health and safety of our workers, contractors and the public, and protect the environment from adverse effect.

Vermilion will not jeopardize HSE in favor of productivity. An example of how Vermilion has adjusted our business practices to reduce the potential impact related to access in remote assets, Vermilion utilizes multi-well pads with multiple horizontal wells drilled from a single location. This reduces the aerial impact of these activities on the environment in the area and allows for the minimization of habitat fragmentation as well as carbon emissions associated with lease construction and equipment mobilization/demobilization. Utilizing multi-well locations would significantly decrease capital considerations in the event that limited frost days were realized in the coming years.

Health, Safety and Environmental management is built into Vermilion's business and core values. The cost of mitigation measures and project management that effectively reduce the financial impact to Vermilion if an event were to occur is estimated to be $0.1MM per annum. The estimate assumes a single 0.5 FTE time across all BUs is spent managing this situation annually (0.5 x $200k = $100k).

Comment

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Changing precipitation patterns and types (rain, hail, snow/ice)

Primary potential financial impact

Increased direct costs

Company-specific description

Impact on Operations and Financial Performance: increased direct costs, impacting the Income and Cash Flow Statements

Impact on Financial Position: potential to decrease asset value, impacting the balance sheet

Vermilion holds assets inland, in coastal regions and offshore where a change in precipitation could negatively impact operations due to drought or flooding. Flooding could result in limited access to locations / facilities, and poses a risk to our corporate headquarters (significantly mitigated since flooding occurred 2013). Alternatively, drought conditions could impact the availability of surface and / or groundwater, which Vermilion, in part, relies on for drilling and completion activities, and could negatively impact forecasted growth by increasing timelines and capital costs to bring new infrastructure onto production. This could also increase the likelihood of wildfires.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financially material. Asset-specific hazard identification: The financial implications of a one-time event (e.g. wildfire) are assessed on a case-specific basis, and are estimated to be greater than $10MM.

Cost of response to risk

950,000

Description of response and explanation of cost calculation

Mitigate – Strategy:
- As these incidents are out of Vermilion's control, we take all measures possible to ensure effective emergency response to extreme weather events, to ensure the protection of the health and safety of our workers, contractors and the public, the protection of the environment and limitation of financial impact of the event.
- In the case of a longer term extreme precipitation event or drought, Vermilion would implement water management programs to reduce our reliance on fresh water sources

to limit the potential impact on operations.
- In the event of a wildfire, we would eliminate water diversion and/or shut-in production to protect the health and safety of our workers, and the community.

Transfer: We maintain insurance coverage for natural disasters such as wildfires with specific deductibles, under which we self-insure.
Insurance for locations that have been identified as potentially being impacted by drought induced events (e.g. Forest fire) is estimated at $0.45MM per annum. In addition to insurance, Vermilion invests over $0.5MM in emergency response drills and training on an annual basis.

Comment

Identifier

Risk 7

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical
Sea level rise

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Impact on Operations and Financial Performance: increased direct costs, impacting the Income and Cash Flow Statements
Impact on Financial Position: potential to decrease asset value, impacting the balance sheet

Vermilion owns and operates assets in the Netherlands, where we have assessed the potential risk associated with rising sea levels. This could physically impact our operations due to issues such as flooding, transportation difficulties and supply chain interruptions. Rising sea levels also pose a threat related to the salinization of groundwater.

Time horizon

Long-term

Likelihood

Exceptionally unlikely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

107,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Not currently forecast as financially or operationally material in the short or medium term; could potentially be material in the longer term

Asset-specific hazard identification: We have estimated that a rise in sea level could have a maximum foreseeable financial impact of $107MM at our main gas processing facility Garijp (GTC) in the Netherlands, caused by an extreme 1-in-10,000-years tide/extreme wind event, and including physical damage, environmental clean-up, third-party liability and business interruption based on repair of physical damage to the plant, business interruption due to Garijp gas field production shutdown, environmental clean-up and third party liability. These costs are before any potential insurance recovery.

Cost of response to risk

350,000

Description of response and explanation of cost calculation

Other than conventional berm protection, there is no measure available to protect Vermilion's assets in the Netherlands in the event that water levels rise to a level resulting in one of our main facilities being temporarily invaded by sea water. Based on Vermilion's assessment of the probability of these events occurring over the next 5 years being less than 0.05%, Vermilion has accepted this level of risk exposure.

Vermilion currently includes a review of this risk in our annual risk management process. The cost of insurance coverage associated with this risk is estimated at $0.35MM per annum.

Comment

Identifier

Risk 8

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Cyclone, hurricane, typhoon

Primary potential financial impact

Increased capital expenditures

Company-specific description

Impact on Operations and Financial Performance: increased direct costs to repair damage, increasing insurance costs as coverage premiums rise, decreased production due to facility shut-ins, both impacting the Income and Cash Flow Statements
Impact on Financial Position: potential to decrease asset value, impacting the balance sheet.

Vermilion owns and operates an offshore platform in the Wandoo field off northwestern Australia, co-owns and operates the Corrib project off the Irish coast, and owns and operates oil fields in the coastal area of SW France. As climate effects such as hotter and drier conditions evolve, increased severe wind/rain-related weather events have the potential to directly impact our offshore operations resulting in down time or damage to infrastructure, and can impact the downstream handling capacity of our partners, resulting in a limitation to the distribution and sale of our products. Onshore flooding and wildfires are an identified risk in other locations, including our Calgary corporate office (e.g. flooding occurred in 2013, now mitigated through various government projects) and our field locations (e.g. wildfires are already a known risk in Canada and France).

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

234,510,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financially Material based on Wandoo Platform.

Probabilistic Modelling (catastrophe model): Based on the value of the Wandoo Platform and a 1-in-10,000-year cyclonic event, the financial implications associated with damage are estimated at $470MM (impact after insurance).

Scenario Analysis: The operational and financial impact of shutting-in assets (e.g. due to cyclones) is assessed using our Live Forecasting and Long-Range Planning Tools. E.g., based on 2021 production and netback data, Wandoo's impact would be $0.2MM per day, although business interruption insurance coverage could mitigate this.

Cost of response to risk

2,500,000

Description of response and explanation of cost calculation

Mitigate – Strategy: Our robust asset integrity program maintains our facilities to appropriate design specifications (e.g. at Wandoo, to CAT 5 hurricane force). Via our Emergency Response Plan and business continuity plans, we also have detailed protocols for monitoring, preparing for, and responding to severe weather events.

Transfer: We purchase insurance as a mitigative measure to reduce the financial impact associated with damage to our assets due to severe weather events.

Accept: We track evolving weather trends, such as cyclone season in Australia, wildfire seasons in Canada and the United States, and winter snowpack levels in Alberta.

Vermilion maintains insurance as a mitigative measure to reduce the financial impact associated with damages to our assets due to severe weather events. Vermilion has protocols for monitoring and preparing for cyclones, including forecasts every 12 hours that contain 24-hour and 7-day weather outlooks (this frequency changes to every 3 hours in the event of a cyclone, including its forecast and trajectory). We have also invested in our emergency response capabilities in the event of damage to our assets as a result of a cyclone or severe weather event. Operational changes are made as required to ensure (in order of priority) worker health and safety, protection of the environment, and protection of Vermilion assets. Vermilion has a robust asset integrity program that maintains its offshore facilities to its original design specifications of CAT 5 hurricane force.

The approximate cost of mitigation (insurance) measures put in place with regard to damaging weather event on an annual basis are approximately $2.5MM.

Comment

Identifier

Risk 9

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Market

Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Impact on Financial Position: potential to decrease share price and shareholder equity, impacting the balance sheet and restricting access to or increasing cost of credit of capital and debt

Changing Customer Behaviour; Perception of Sector; Changing Market Signals; Exposure to Litigation; Increased Stakeholder Concern: These risks are allocated into one category, as they are deeply interconnected. We have seen significant negative perceptions of the oil and natural gas industry prevail over the past several years from various governments, communities, investor associations and other stakeholders. This can impact valuations, restrict licensing and permitting, lead to stakeholder concerns and opposition to our activities, and increase the risk of climate-related litigation. In 2022, however, energy security and affordability issues highlighted the importance of multiple energy forms being part of a deliberately planned energy transition that includes responsible oil and natural gas production – e.g. the European Union's decision to consider natural gas a transition fuel – to provide a bridge while renewable energies are building capacity. We expect current energy security concerns to maintain the need for oil and natural gas production while directing increased capital and urgency towards renewable energy in the short to medium term.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

162,400,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financially material based on a proxy approach. The impact of decreased consumer confidence and perception is challenging to calculate; however, on a per share basis, the market impact of the loss of $1 per share would be approximately $162.4MM in enterprise value as of March 2022.

Cost of response to risk

350,000

Description of response and explanation of cost calculation

Mitigate – Business Model: Our business model prioritizes the responsible production of oil and natural gas to support energy security and accessibility. Our low-carbon strategy includes exploring new and evolving technologies and processes to identify synergistic fits for our business in both traditional and renewable energy production, particularly where have identified potential to repurpose our infrastructure to support the energy transition. We are focusing initially on geothermal and biogas, with early stage exploration of the potential for hydrogen and carbon capture, depending on the jurisdiction.

Mitigate – Strategy: Based on stakeholder engagement, Vermilion believes that independent assessments of our operations by third parties demonstrate our responsible approach to production of essential energy. We have sought and achieved limited assurance of our Scope 1, 2 and 3 emissions data; Equitable Origin responsible gas producer certification for 3 sites in our West Pembina region in Canada, the AFNOR CSR Committed label in France, and the Business Working Responsibly Mark in Ireland.

Accept: Our Public and Government Relations staff engage with a variety of key stakeholders in all business units to help inform their and our strategy development

This document details the costs associated with the activities Vermilion has undertaken and the initiatives Vermilion is exploring. The direct cost of Vermilion's operating excellence and risk management cannot be quantified on a single risk basis. The direct cost associated with monitoring and responding to the changing landscape of sustainability and emissions on an annual basis is estimated at $0.35MM. The estimate is based on a 0.25 FTE per business unit per annum (excluding CEE) (7 x 0.25 x $200k = $350k).

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Technology
Transitioning to lower emissions technology

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Impact on Financial Performance: decreased sales and revenue of our traditional products, impacting the Income and Cash Flow Statements
Impact on Financial Position: potential to decrease asset value, impacting the balance sheet .

Although we see demand for oil and natural gas remaining robust in the short- to mid-term, it is likely to fall as the energy transition evolves and various alternatives for renewable energy options become technologically and economically feasible and accessible. This could impact the need for our products long-term, post 2030-2035 for oil, particularly as bans such as on ICE vehicles take effect. However, based on long-term demand and transition scenarios2, demand for natural gas declines significantly less than oil towards 2050, and potentially remains robust as carbon reduction and removal technologies improve and scale up. As 2021 and 2022 have demonstrated, it will be critical to maintain adequate supplies of both oil and natural gas during the energy transition, to provide energy security and affordability.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Dynamic Materiality: could become financially material (2030-2035+)

Scenario Analysis: Given the uncertain timeline and progression of the energy transition,

and supply-demand dynamics, we are not using a financial forecast for impact. We are, however, identifying and exploring potential opportunities that would mitigate the risk to our product mix.

Cost of response to risk

Description of response and explanation of cost calculation

Mitigate – Business Model: Based on our scenario analysis, we identified the need to explore new and evolving technologies and processes to identify synergistic fits for our business in both traditional and renewable energy production. We are pursuing this via our established track record in geothermal energy from produced water, for which our internal expertise in engineering, geoscience and drilling is particularly well suited. We are also carefully investing in early R&D in other areas, such as biogas and the conversion of traditional oil and gas assets to geothermal and hydrogen production, to better understand the long-term potential; our deliberate approach to project development, with stage gates and off-ramps built in, is designed to minimize the risk and capital involved in investing in technology or processes in early stages of development.

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

Energy source

Primary climate-related opportunity driver

Participation in carbon market

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Impact on Financial Performance: increased revenue, impacting the Income and Cash Flow Statements
Impact on Financial Position: potential to increase asset value, impacting the balance sheet.

Under the EU ETS Directive in effect to 2030, we anticipate an active demand market for the offset credits generated at some of Vermilion's sustainability initiatives. This shift in the cap and trade scheme may provide opportunities for Vermilion to generate certified energy reduction / offset credits through our geothermal projects in France.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Vermilion is not accounting for any short term financial impact while the carbon market and international regulations around carbon offsets are developed through 2022-23 and beyond. This may move into a short-term opportunity based on the final versions.

Cost to realize opportunity

50,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: We are currently evaluating the benefit that certified offset credits from various emission reduction projects across our operations could provide. Examples of projects that have the potential to generate credits include four geothermal co-production projects in France. Vermilion's project assessment framework is applied to each identified opportunity, including considerations associated with emissions offset.

Vermilion's expenditure related to tracking this opportunity is built into the operations of our various business units and is currently minimal and is estimated at $50,000 per annum.

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

Other, please specify

Increased revenue through new solutions to adaptation needs (e.g. insurance risk transfer products and services)

Company-specific description

Impact on Financial Performance: increased R&D costs and increased revenue, impacting the Income and Cash Flow Statements.
Impact on Financial Position: potential to decrease liabilities, impacting the balance sheet.

The long-term transitional risk associated with the substitution of low-carbon products, also provides an opportunity to participate in their development. For example, we are evaluating the potential to reuse our current infrastructure to provide alternative products, such as biogas or hydrogen, and to develop new products such as geothermal energy, creating new revenue streams. An example of this opportunity is the geothermal heat we are providing from the produced water in our oil operations in France to support sustainable agriculture, residential and education projects near our operations.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Potential for Financial Materiality: These opportunities are medium- to long-term from the perspective of revenue generation, but short-term for the launch of R&D. As they are in the early stages of assessment, it is difficult to quantify the financial impact, but it is estimated at up to $2.0MM per year in revenue. Potential also exists for significant cost adjustments to ARO, as assets slated for abandonment would be repurposed to enable them to continue to generate energy.

Cost to realize opportunity

150,000

Strategy to realize opportunity and explanation of cost calculation

Business Model: We are leveraging our technical experts and partnerships to provide input into alternative and renewable energy projects as they are identified. An example of the development of low emission goods/services is our France-based industry partnership with Avenia to expand the use of geothermal energy production in oil production, along with memberships in geothermal associations in Netherlands and Germany. We have also developed clear criteria for approving the move of these ideas into and through our project development process, which provides clear gates and criteria for considering and implementing such projects. Another example is our partnership in Hylight, a 3-year project in Ireland that aims to provide the knowledge, data and tools to guide the cost-effective decarbonisation and roadmaps for sustainable large-scale implementation of hydrogen technologies.

Vermilion's expenditure related to the technical design of geothermal projects, and proactively discussing the application of technologies and methodologies of these projects between our business units is estimated to be less than $0.15MM per annum. Further expenditures (i.e. capital investment associated with infrastructure) will be reported once the project design is complete.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Impact on Financial Performance: increased revenue, impacting the Income and Cash Flow Statements.
Impact on Financial Position: potential to increase asset value, impacting the balance sheet.

Under the Canadian Environmental Protection Act and based on commitments made by the Canadian and Alberta governments and energy utilities relating to COP21, coal-fired power generation is being replaced by with natural gas. Based on this and with a number of power generating facilities in Alberta nearing the end of their service life, the demand for natural gas is likely to increase due to increased use of combined cycle gas turbine (CCGT) power generation.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

85,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The short term impact of this change on gas pricing is anticipated to be low, increasing to medium in the medium- to long-term; however, it is difficult to isolate it from other forces in the energy pricing market. As a natural gas producer, Vermilion would benefit

from an increase in marketable prices for natural gas in our Canadian operations. Based on 2021 production, an increase in gas price of $1 per MCF would increase annual sales by approximately $85MM.

Cost to realize opportunity

350,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: As we move further into the energy transition, we foresee natural gas playing an impactful role as a less carbon intense fuel than coal. Vermilion continues to focus on the identification of resources and assets where we have the opportunity to apply our industry leading expertise to optimize production while reducing emissions. An example of our strategy to realize this opportunity is our asset base in Alberta, which currently includes a large liquids rich gas play, and our 2022 acquisition of Leucrotta, providing us with access to natural gas in the Montney in NE British Columbia and NW Alberta. Vermilion's marketing team also actively pursues options for our natural gas production that enable Vermilion to achieve the optimum netbacks on production.

The costs associated with the management of changing commodity pricing as we move through the energy transition are built into our operating costs globally. Based on estimates, the costs for managing and realizing the benefit as a sustainability leader committed to the UN SDGs is $0.35MM annually [(0.25 FTE per business unit excl. CEE = 7) x 200 = $0.35MM].

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Ability to diversify business activities

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Impact on Financial Performance: increased direct costs of certification, increased revenue from premium pricing, impacting the Income and Cash Flow Statements. Impact on Financial Position: potential to increase asset value, impacting the balance sheet.

Vermilion maintains a diverse, stable global portfolio of oil and gas assets. Our strong record of safe and socially conscious development of energy resources has provided opportunities to access and develop these resources. We see our commitment to sustainability as core to our business, which has provided important organizational focus on emissions quantification and management. As consumers become more aware of and involved in the selection of their energy sources and associated carbon intensity, we believe that Vermilion will continue to be a producer of choice, providing us with opportunities not available to other organizations.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

31,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Potential for Financial Materiality
The financial impact of changing consumer preferences is difficult to quantify. We foresee revenue opportunities in two distinct areas.
1. In our customers selecting premium energy products, with these products demanding a higher price than other energy sources on the market; currently we estimate the potential impact of premium pricing in the long-term to be $1-5 per BOE, or $31MM/year based on $1 at 2021 production levels.
2. Access to more stringent markets, supported by our environmental and sustainability performance. Vermilion has entered into the German, Hungarian, Croatian and Slovak oil and gas operations in the past decade, which our sustainability performance has supported.

Cost to realize opportunity

750,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: Based on stakeholder engagement, Vermilion believes that independent assessments of our operations by third parties demonstrate our responsible approach to production of essential energy, and have the potential to generate a premium. As a result, we have sought and achieved Equitable Origin responsible gas producer certification for 3 of our Canadian sites, the AFNOR CSR Committed label in France, and the Business Working Responsibly mark in Ireland. We are currently assessing the potential to expand these certifications and our use of methane performance certificates; while we are currently realizing a small premium associated with the sale of responsibly produced natural gas, future consumer preferences may demand that all fuels be certified – we will be in a strong position should that evolve.

The funds associated with integrated sustainability are built into the operating costs of our producing regions, as well as corporate groups. Based on 2020 estimates, the financial expenditure associated with managing this opportunity was $0.75MM.

Comment

Identifier

Opp5

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Energy source

Primary climate-related opportunity driver

Shift toward decentralized energy generation

Primary potential financial impact

Other, please specify

Reputational benefits resulting in increased demand for goods/services

Company-specific description

The carbon intensity of energy utilized around the world has a direct relationship with where the energy product was generated. Vermilion's strategy focuses on a differential model including an organization model consisting of decentralized Business Units to effectively manage our geographic footprint, which consists of three stable regions (North America, Europe and Australia) that provide flexibility to be an energy generation partner for the local market. This strategy results in the significant reduction of the carbon footprint of our energy when compared to non-local sources, and also influences our acquisition strategy. Vermilion's business unit structure in Europe, for example, supports production and distribution of energy products into local markets.

We understand that as we take over operations that have a higher emissions profile than the average that exists in our portfolio, not only our absolute emissions will

increase, but also, in the short term, our emissions intensity. Our approach is to substantially reduce emissions from these operations, elevating their performance to our own standards, which in turn improves the industry's performance as a whole and creates benefits for our local landowners, communities and our customers. We achieve this through more efficient operating practices that reduce the fossil fuels used in the production process, pro-active management of fugitive emissions, reduction of spills, and reduction of water use. We believe that our consistent track record, as demonstrated by the reduction in emissions associated with our Canadian acquisitions, shows our stakeholders that Vermilion is an operator of choice.

For example, as described in Section 4 (Targets and performance), following the April 2014 (Elkhorn) and May 2018 (Spartan) asset acquisitions, we set targets to reduce the flaring and venting emissions associated with the assets by 50% by 2020 and 2024, respectively. As of 2020/12/31, the 2020 (Elkhorn) targets have been exceeded and we are well on our way to meeting the 2024 (Spartan) targets.

It is important to note that these assets would have been in production regardless of whether we were the operators. Once we take over assets that were previously in production with less efficient and less emissions-conscious companies, we substantially reduce emissions.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

525,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Vermilion's business strategy supports the distributed generation of energy products into local markets. We see access to markets outside of Canada to be something that sets Vermilion apart from our peers. On an operating netback (sales) basis, based on 2021 data, the financial premium of our non-Canadian assets was $525MM.

Cost to realize opportunity

10,835,000

Strategy to realize opportunity and explanation of cost calculation

Vermilion continues to assess where we can access local markets for our production, and to communicate to regional and national governments the importance of domestic supply to support energy security and affordability. We also have exploration and development programs in regions with relatively low energy production as compared to consumption (e.g. Hungary).

The costs associated with adjustment of our organizational structure are built into our costs across the organization. Our acquisition, development and exploration capital expenditures in Hungary, Croatia, Slovakia, and Ireland are approximately $10.8MM.

Comment

Identifier

Opp6

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Impact on Financial Performance: increased revenue, impacting the Income and Cash Flow Statements.

More stringent global measures to reduce emissions from individual ships by 30% by 2030, established through amendments to MARPOL Annex VI, came into force on Jan 1 2020, limiting the sulphur content of bunker fuel to a maximum of 0.5%. Vermilion's Australian Wando facility produces 3,810 bbl/d of low sulphur crude oil that meets the needs of refineries to comply with IMO regulations.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

High

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

Our Wandoo crude is primarily sold to lubricant producers; however, greater proportions may become available to the low sulphur fuel oil market for refining or blending directly in 2023. A financial impact would be available closer to that date.

Cost to realize opportunity

300,000

Strategy to realize opportunity and explanation of cost calculation

Strategy: Vermilion continues to access local markets for our low sulphur production. Financial Planning: Our Marketing group works with Operations to ensure Vermilion meets its contractual obligation with our buyers in terms of volumes, delivery dates and crude quality, thus maintaining our reputation of being a reliable source of low sulphur feedstock to refineries.

The cost to realize this opportunity corresponds to the salary of half a full time equivalent employee on the marketing team and is estimated at $0.3MM (0.5 * FTE cost of $0.2MM/yr * 3yrs).

The cost of the marketing staff is built into company General and Administrative costs.

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

Yes

Mechanism by which feedback is collected from shareholders on your transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

Direct engagement with financial and capital market participants such as investors, credit providers, etc, covering subjects such as Scope 1, 2 and 3 emissions, targets, net zero strategy, renewable energy projects and plans.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your transition plan (optional)

C3.2

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

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative and quantitative

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios Customized publicly available transition scenario	Company-wide	1.5ºC	World Economic Forum White Paper on the Speed of the Energy Transition: Rapid or Gradual Change compares the two transition scenarios for our energy future, setting out two clearly different narratives. The Gradual narrative is that the energy world of tomorrow will look roughly the same as that of today implying that the global energy system has an inertia incompatible with the Paris Agreement. Gradual scenarios include those from Exxon, OPEC, the World Energy Council and the Energy Information Administration as well as the IEA New Policies Scenario (NPS) and the BP Evolving Transition Scenario (ETS). Fossil fuel demand will rise for the

			foreseeable future and, when it does start to decline, the decline will be gradual. This therefore means that the goals of the Paris Agreement will become unachievable. The Rapid narrative is that current and new clean energy technologies are rapidly supplying all the growth in energy demand and together with new policies will reshape markets, business models and patterns of consumption leading to a peak in fossil fuel demand in the course of the 2020s. Rapid scenarios include normative scenarios, such as the IEA Sustainable Development Scenario (SDS), the International Renewable Energy Agency (IRENA) REMap, the Intergovernmental Panel on Climate Change (IPCC) less than two-degree models, the BP Rapid Transition Scenario, the International Institute for Applied Systems Analysis (IIASA), Low Energy Demand Scenario and the Shell Sky Scenario, as well as the primary scenarios of organizations such as Bloomberg New Energy Finance (BloombergNEF) DNV GL, McKinsey and the Energy Transitions Commission. As a rule, these scenarios seek to achieve the goals of the Paris Agreement and imply that the energy sector is about to be disrupted. They forecast rapid growth in solar and wind electricity, the gradual electrification of transport, industry and heat, greater efficiency, policy action to tax fossil fuel users for their environmental externalities, and the development of new technologies like green hydrogen. They imply that demand for fossil fuels will soon peak and then enter a long period of decline.
Physical climate scenarios Customized publicly available physical scenario	Company-wide	1.5ºC	As part of our enterprise risk management system, we have assessed the physical risks to our assets and operations related to climate change, including the risk of increased severity of extreme weather events such as cyclones, floods, wildfires and windstorms. Facilities include our offshore Australia platform, the subsea Corrib project off the Irish coast, and oil fields in the coastal area of SW France. As climate effects such as hotter and drier conditions evolve, increased severe weather events have the potential to directly impact our offshore

			operations resulting in down time or damage to infrastructure, and can impact the downstream handling capacity of our partners, resulting in a limitation to the distribution and sale of our products. Onshore flooding and wildfires are an identified risk in other locations, including our Calgary corporate office (e.g. flooding occurred in 2013, now mitigated through various government projects) and our field locations (e.g. wildfires are already a known risk in Canada and France). We use probabilistic modelling based on asset value and the likelihood of occurrence, establishing these risks as short to medium term. Our scenario analysis also identified long-term physical risks associated with climate change, including Changes in Temperature Extremes, Including Rising Mean Temperatures, Changes In Precipitation Patterns and Extreme Variability in Weather Patterns, and rising sea levels. e.g. A decrease or increase in temperature extremes (i.e. lower seasonal lows, higher seasonal highs) could result in an increase in fuel gas for a variety of equipment, along with additional equipment (e.g. building and line heaters). This would require additional resources (infrastructure) and increase emissions. Temperature extremes could also increase capital costs associated with drilling, completion and workover operations due to increased timelines, decreased productivity, equipment breakdown, etc. e.g. warmer winters decrease our ability to access lands & increase construction capital requirements for our Canadian operations. Drought could impact the availability of surface and / or groundwater, which is key for drilling and completion activities, and could negatively impact forecasted growth by increasing timelines and capital costs to bring new infrastructure onto production. This could also increase the likelihood of wildfires. Rising sea levels could impact our NL sites.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

The Board of Directors & senior management participated in a robust scenario analysis, examining two scenarios from the World Economic Forum that bring together the work of experts from the International Energy Agency to Carbon Tracker. These scenarios compare a Gradual & Rapid transition to low carbon, with the latter meeting the aims of the Paris Agreement to limit global temperature increases to 1.5-2ºC. We assessed key factors impacting the speed of the energy transition, including the influence of new energy technologies, their potential speed of adoption, anticipated changes in policy & regulation & their rate of change, & emerging market pathways. The analysis extended to risks & opportunities related to these climate-related factors, impacts on the company's future (2030+), & strategies for Company resilience, and covered the following focal questions:

What are the key factors that will influence the speed and timing of the energy transition?
Of these factors, what has the most immediate, short- to medium term (0-6 years) impact on Vermilion?
What do we need to put into place to address the most immediate factor?
What do we need to put into place to address factors to support our longer-term resilience?

The Gradual narrative is that the energy world of tomorrow will look roughly the same as that of today. Gradual scenarios include those from Exxon, OPEC, the World Energy Council and the Energy Information Administration as well as the IEA New Policies Scenario (NPS) and the BP Evolving Transition Scenario (ETS). Fossil fuel demand will rise for the foreseeable future and, when it does start to decline, the decline will be gradual.

The Rapid narrative is that current and new clean energy technologies are rapidly supplying all the growth in energy demand and together with new policies will reshape markets, business models and patterns of consumption leading to a peak in fossil fuel demand in the course of the 2020s. Rapid scenarios include normative scenarios, such as the IEA Sustainable Development Scenario (SDS), the International Renewable Energy Agency (IRENA) REMap, the Intergovernmental Panel on Climate Change (IPCC) less than two-degree models, the BP Rapid Transition Scenario, the International Institute for Applied Systems Analysis (IIASA), Low Energy Demand Scenario and the Shell Sky Scenario, as well as the primary scenarios of organizations such as Bloomberg New Energy Finance (BloombergNEF) DNV GL, McKinsey and the

Energy Transitions Commission. These scenarios seek to achieve the goals of the Paris Agreement and imply that the energy sector is about to be disrupted. They forecast rapid growth in solar and wind electricity, the gradual electrification of transport, industry and heat, greater efficiency, policy action to tax fossil fuel users & the development of new technologies like green hydrogen.

Results of the climate-related scenario analysis with respect to the focal questions

What are the key factors that will influence the speed and timing of the energy transition?
We discussed key factors impacting the speed of the energy transition, including increasing demand for electrification and the role of natural gas and renewables, the influence of new energy technologies (solar, wind), the potential speed of adoption of these technologies and impediments to their growth, anticipated changes in policy & regulation & their rate of change, & emerging market pathways (China and India).

Of these factors, what has the most immediate, short- to medium term (0-6 years) impact on Vermilion?
We identified that policy and regulatory changes have the greatest potential impact on the company in the short-term, as our industry is highly regulated in our operating regions, all of which have net-zero by 2050 climate targets and are implementing changes in policy, operating regulations (e.g. methane) and taxation to achieve these aims. Of those regulations, emissions reduction was the most significant immediate requirement, as it provides the greatest evidence of our commitment and our progress.

What do we need to put into place to address the most immediate factor?
We identified an immediate need to set an aspirational target of net zero emissions from our operations by 2050 (Scopes 1 and 2). We recognize this must be founded on a clear pathway. Supported by our existing track record in setting and meeting emission reduction targets, we are continuing the journey with a target to reduce our company's Scope 1 emissions intensity by 15-20% by 2025, compared to a 2019 baseline. We have also committed to setting additional targets every five years, which will include assessing how Scope 3 emissions and intensity may be reduced.

To support our 2025 target, we developed an Emissions Long-Range Planning tool that forecasts emissions and taxes based on production forecasts and projected emission reduction projects, down to the business unit level. This provides critical input for decisions around financial planning, including capital allocation and merger/acquisition/divestment and new energy development.

What do we need to put into place to address factors to support our longer-term resilience?
In addition to developing a net zero strategy that will guide our actions post 2025 to ensure we reach our 2050 goal, we identified the need to explore new and evolving technologies and processes to identify synergistic fits for our business in both traditional

and renewable energy production. This includes geothermal energy, for which our internal expertise in engineering, geoscience and drilling is particularly well suited, and is expanding into areas such as biogas and the conversion of traditional oil and gas assets to geothermal and hydrogen production.

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	Based on the results of our scenario analysis, we reassessed and revitalized our business strategy. This included Integrated Sustainability as 1 of 6 pillars in our strategic business plan, with clear priorities set within the three areas of Carbon, Conservation & Community. Within the carbon category, we established long-term tangible objectives to 2030, along with short-to mid-term commitments that included creating a low-carbon transition plan to directly address climate-related risks. An example of a risk (and opportunity) case that influenced this plan is the potential for change in consumer behaviours (Risk 9 & Opportunity 3). This risk is associated with the impacts from negative consumer views of the organization & shifting energy source preferences, and has a potential impact of a loss of value on a per share basis (approximately $162.4MM per $1 of lost share value). Based on the cumulative effects of this risk & opportunity, along with several other product & service-related risks (1, 3 & 4) and opportunities (1 & 2), particularly emerging regulations and increased carbon pricing, we identified that exploring new and evolving technologies and processes to identify synergistic fits for our business in both traditional and renewable energy production should be 1 of 3 key activity areas within the Carbon priority. This includes alternative energy: developing our knowledge and use of alternative energy sources, including geothermal energy, for which our internal expertise in engineering, geoscience and drilling is particularly well suited. This work has begun with the geothermal potential of our produced water, supporting

		a circular economy model that conserves, reuses and recycles resources to better protect our environment. We are working with government, industry & other research entities to extend this, and we are also expanding into areas such as biogas and the conversion of traditional oil and gas assets to geothermal and hydrogen production. We expect to progress this work in the 2022-2030 timeframe.
Supply chain and/or value chain	Yes	Based on our forecasting, our operations will be increasingly exposed to supply & value chain impacts. For example, we have assessed impacts reported under Risk 1 (the impact of increased pricing from our fuel suppliers due to government carbon taxation in the value chain) and Opportunity 1 (the potential to participate in carbon markets, creating a potential new source of revenue), both of which are relatively small in the short term (2021-2024), but could significantly increase in the mid-term and beyond (2024-2030). An example of an opportunity in the medium-term that we believe will impact our operations is the impact from participation in the carbon market (Opportunity 1). We foresee a potential for the generation of certified carbon credits from our operations that could be traded in the EU ETS, with a timeframe of 2023-2030 (Medium Term). We are therefore researching the opportunities to participate in the carbon market, through the purchase of carbon credits, or our own generation of carbon credits based on biodiversity activities or certified responsible gas production. An example of an opportunity downstream in our value chain that we believe will impact our operations is the impact associated with the shift in consumer preferences associated with sourcing their energy products. In the long-term, as society moves through the energy transition, there is a need for responsible producers of traditional sources of reliable energy. There will likely be a niche market for producers who are committed to sustainability and providing energy products to their customers at a tCO2e intensity better than others on the market. The magnitude of this opportunity is difficult to quantify, but it is estimated that the impact could be $34.8MM to $174.2MM (refer to 2.4, OPP4 for more details). This has provided additional motivation to pursue carbon market options, including third-party certification of select operations, with the potential to

		generate increased revenue and/or preference among customers for those products.
Investment in R&D	Yes	An opportunity that has and will continue to impact our business is research and development into low emission goods and services (Opp 2). This is occurring now, and we anticipate continuing through the short term to 2024, and potentially accelerating in the mid-term and beyond (2024-2030). We are leveraging our technical experts and partnerships to provide input into alternative and renewable energy projects as they are identified. We have developed clear criteria for approving the move of these ideas into and through our project development process, which provides clear gates and criteria for considering and implementing such projects. Examples include our partnership in Hylight, a 3-year project in Ireland that aims to provide the knowledge, data and tools to guide the cost-effective decarbonisation and roadmaps for sustainable large-scale implementation of hydrogen technologies. Another example is the identification of geothermal energy generation potential from our assets, which is anticipated to increase revenues over the lifecycle of our infrastructure through conversion of waste energy to heat, as well as decrease abandonment expenditures as assets are re-lifed from conventional production to renewable energy generation. To further this research, we have partnered with Avenia, an industry partnership that advises the French government on energy, on an industry and country-wide study to identify the potential for waste energy use from oil and gas operations. In addition to contributing financial support, we provided the expertise of our people, and actively encouraged other companies to participate. The results were shared following a detailed review by AVENIA. We are also involved in geothermal associations in Netherlands and Germany. In Harlingen, we have partnered with SPF Group, a producer of sustainable fuels, to investigate the use of our Harlingen Treatment Centre location for their biogas production site. The location includes a quay, which makes it possible to receive raw materials via water, thereby limiting truck transportation, and it offers existing buildings instead of new builds, which supports the sustainability

		principle that all parties involved are pursuing. It can also make use of Vermilion's extensive gas infrastructure there.
Operations	Yes	Vermilion has identified 4 physical risks associated with climate change, including tropical cyclones, rising sea levels, changes in temperature extremes and changes in precipitation extremes (Section 2.3a Risks 5, 6, 7 & 8). The impacts of these risks to our operations include physical damage to our assets, loss of production capacity and environmental clean-up. As part of our ongoing strategy, we take a short-term, immediate approach by reassessing these risks annually to identify whether they are increasing overall (e.g. 1 in 10,000 cyclone vs 1 in 5,000 cyclone). We then identify options to better protect the infrastructure and local environment, along with investment in response capabilities, and assessment of insurance coverage to protect the business. This includes the initiation of a major company-wide project to support integrated technical teams in each business unit to develop and share best practices that advance our operational excellence, with peer reviews built into the process for a diversity of experience and skills. We believe that ongoing assessment and optimization of operations, as well as the ability to respond to non-operational events, is key to reducing the impact of climate related physical risks. We also identified an opportunity related to the regulations-intensive regions where we operate, for demonstrating our performance via third-party certifications. As a result, we have sought and achieved Equitable Origin responsible gas producer certification for 3 of our Canadian sites, the AFNOR CSR Committed label in France, and the Business Working Responsibly mark in Ireland. We are currently assessing the potential to expand these certifications and our use of methane performance certificates; while we are currently realizing a small premium associated with the sale of responsibly produced natural gas, future consumer preferences may demand that all fuels be certified – we will be in a strong position should that evolve.

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 Acquisitions and divestments Access to capital Assets Liabilities	Revenues The outcomes of our opportunity assessment process directly impact planning in all scenario analysis completed. We have identified the potential for additional revenue in the next 10-20 years from returns on investment in low-emission technology (sale of carbon credits from emission reduction initiatives – 2.4 OPP1), geothermal projects (2.4 OPP2) & the expansion of favorable markets resulting from low emission goods & services (2.4 OPP3). Yearly impacts above the level reported in 2.4 are expected to be associated with greater access to consumers thereby increasing the price for our products. The new limit on sulphur content of bunker fuel used by the shipping industry is generating premium pricing for our low sulphur Wandoo field production (2.4 OPP6), increasing revenue in the next 3 years. The potential impacts are built into our project management assessment framework, which includes economic factors & impact on sustainability. Direct Costs Through our Corporate Risk Assessment & management process, we have identified 5 cases related to climate change that either have or could impact operating expenditures: financial impact related to regulation & taxation & impact from physical risks. Regulation & taxation risks include increased operational cost due to carbon taxation (Section 2.3 Risk 1) & potential increased operational cost of changes in regulation (Section 2.3, Risk 4). The potential magnitude of these risks is $12.6MM annually by 2025. As a result, we have identified emission reduction projects that will reduce the ongoing annual cost of taxation. Physical risks that have or could impact our operating costs include changes in temperature extremes (Section 2.3 Risk 5), changes in precipitation (Section 2.3 Risk 6) & the frequency & intensity of storms (Section 2.3 Risk 8). The magnitude of these impacts includes damage to assets, business interruption & environmental cleanup & 3rd party liability (total impact before insurance). We have adjusted our financial planning for development activities to mitigate the impacts from delays related to weather extremes, including supplemental emergency response training & equipment to manage the impacts from cyclones/storms. To manage the impacts of taxation & regulation, we proactively review our infrastructure to reduce our emissions & engage regulators & government on policy. We have also developed internal expertise on carbon taxation related to our operations, which supports our risk management.

		Capital Expenditures All climate related risks quantified in our Corporate risk register are considered during the allocation of capital for development. This integrated nature of our project management framework ensures that our capital investment is effective & resilient. An example of how a risk scenario impacted capital allocation is the facility planning adjustments & re-engineering project completed in relation to product efficiency regulations & standards (Section 2.3 Risk 3). Vermilion proactively conducts operational & engineering reviews aimed at increasing efficiency, including reducing emissions & financial requirements at major facilities. The magnitude of this impact, specific to the capital to manage this risk, is anticipated at $2MM per annum. Acquisitions & Divestments Climate related risks, among other risks, are assessed & quantified during acquisition & divestment activities, including the impact from current regulation, as well as potential short-term regulatory changes, using our Emissions Long-Range Planning tool. This is also used to assess current & potential impacts of the price of carbon & is included when we assess the value of an asset package. E.g. we assessed the impact of a natural gas acquisition in the Montney formation (Leucrotta) on our emissions intensity & taxes, finding that it is expected to reduce our intensity. This is used by the integration team to identify opportunities to reduce emissions while optimizing production. The magnitude of the work completed against this category depends on the size of the acquisition or divestment. On larger acquisitions, this can have impacts to valuations in the tens of millions of dollars. Access to Capital As the investment community continues to add focus to sustainability factors, the expansion of access to capital to companies with a strong track record of sustainability performance will increase. Sustainability performance is integral to our business & is positively correlated to our strong shareholder returns. When compared to a 5-Year Total Return, comparing Sustainalytics, CDP Climate & S&P Global scoring, all indicate that strong sustainability performance positively correlates to shareholder returns. The magnitude of the impact of sustainability performance on access to capital will likely be industry-wide. Assets We have adjusted our strategy to ensure that Integrated Sustainability is engrained in our operations by making it 1 of 6 strategic objectives. Risk cases associated with the price of carbon as well as changing regulation have had, & will continue to have, an impact on our assets: e.g., the long-term impact in our France operations associated with the cessation of in-country oil production. As governments adjust regulations &

		expectations to support COP26 NDCs, we anticipate continued energy landscape changes. We also see opportunities associated with the energy transition: e.g. geothermal in France. Liabilities Vermilion has identified opportunities associated with re-lifing depleted oil & gas assets to support geothermal & hydrocarbon energy, & we have adjusted our financial planning by committing to explore this alternative with partners in our European operations, including in France, Netherlands & Ireland. Building off the success & learnings from our geothermal co-generation projects in France, we joined the Green Deal in NL in 2017, a partnership of 7 companies with the Dutch Government & a non-profit research organization to investigate geothermal energy generation from natural gas infrastructure. We undertook a geological evaluation of the available 3D seismics, & concluded that the required Dinantien carbonate platform in Heerenveen is probably not present. While the project identified that this is not currently practical in our area, it demonstrates our partnership approach to developing new products & services through R&D. In France, we continue as an active participant in the H2020 MEET partnership to advance geothermal systems exploration & production with real projects in existing industrial environments, with a timeline of 2021 to complete assessment & recommendations. In Ireland, we have joined a partnership to assess the potential for the Corrib asset's infrastructure to be converted from natural gas to hydrogen. If successful, these projects will significantly reduce our financial liability for Abandonment & Reclamation while providing ongoing economic benefits for our communities.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

No, but we plan to in the next two years

C4. Targets and performance

C4.1

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

Absolute target

Intensity target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 2

Year target was set

2018

Target coverage

Business division

Scope(s)

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Base year

2018

Base year Scope 1 emissions covered by target (metric tons CO2e)

340,926.2

Base year Scope 2 emissions covered by target (metric tons CO2e)

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

340,926.2

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

66

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

66

Target year

2024

Targeted reduction from base year (%)

50

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

170,463.1

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

154,695.4

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

154,695.4

% of target achieved relative to base year [auto-calculated]

109.2499197774

Target status in reporting year

Achieved

Is this a science-based target?

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

Target ambition

Please explain target coverage and identify any exclusions

In May 2018, Vermilion acquired Spartan Energy Corp., a publicly traded oil & gas company headquartered in Calgary, Alberta. A major addition, the acquisition of Spartan represented a substantial increase to our Alberta and Saskatchewan production in relation to our 2017 totals. Consistent with our corporate emphasis on Health, Safety and Environment, Integrated Sustainability and Operational Excellence, a target was set in 2018 to reduce flaring and venting emissions associated with the Spartan assets by

50% by 2024. This reduction is being accomplished through a variety of gas conservation and recovery initiatives including the construction of new infrastructure and implementation of enhanced operational practices and technology.

Infrastructure changes and performance optimization activities undertaken by Vermilion subsequent to the Spartan acquisition have reduced flaring and venting emissions from the former Spartan assets by approximately 54.6% [1 – (Current Year Emissions = 154,695.4 / Base Year Emissions 340,926.2) = 54.6%]. This reflects an approximately 109% success rate to date in relation to our 2024 target [(340,926.2 – 154,695.4) / (340,926.2 x 50%) = 109.2%].

On an annualized basis, flaring and venting emissions from the former Spartan assets were reduced by (217,831- 154,695) = 63,136 tCO2e in 2021. In addition to the implemented operational improvements, the 2021 total also reflects reductions associated with natural production declines and voluntary production shut-ins for economic and maintenance reasons.

The target applies to our Canadian Business Unit.

Plan for achieving target, and progress made to the end of the reporting year

List the emissions reduction initiatives which contributed most to achieving this target

The dominant emissions reduction initiatives that have contribute d to achieving this target are:
1. Installation of new gas conservation and recovery facilities (e.g. gas gathering, and vapour recovery systems) that have allowed us to bring historically flared or vented natural gas to market.
2. Facility consolidations that have further allowed for the conservation and recovery of flared and vented gas, and the delivery of this gas to market.
3. Discretionary shut-in of production for economic purposes, or pending infrastructure upgrades.
4. Natural production declines.

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

2021

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Intensity metric

Metric tons CO2e per barrel of oil equivalent (BOE)

Base year

2019

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)

0.019

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

0.019

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure

% of total base year emissions in all selected Scopes covered by this intensity figure

100

Target year

2025

Targeted reduction from base year (%)

20

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

0.0152

% change anticipated in absolute Scope 1+2 emissions

15

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

0.018

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

0.018

% of target achieved relative to base year [auto-calculated]

26.3157894737

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

Please explain target coverage and identify any exclusions

As a global energy producer, we have an opportunity to be part of the low-carbon solution: to help ensure the supply of safe, reliable and affordable energy during this transition. This is why we have set an aspirational target of net zero emissions from our operations by 2050 (Scopes 1 and 2).

We recognize this must be founded on a clear pathway. Supported by our existing track record in setting and meeting emissions reduction targets, we are continuing the journey

with a target to reduce our company's Scope 1 emissions intensity by 15% to 20% by 2025, compared to a 2019 baseline. We have also committed to setting additional targets every five years, which will include assessing how Scope 3 absolute emissions and emission intensity may be reduced.

Plan for achieving target, and progress made to the end of the reporting year

Our plan rests on three strategic activities:

• Focusing on efficient and responsible production of oil and natural gas, viewing emissions as potential energy sources:
- Lower carbon fuels. Since 2012, we have shifted our production mix towards natural gas as a cleaner burning fuel than other fossil fuels, and sell our fuels within the country of production wherever possible, reducing the carbon footprint associated with transportation of the fuel to consumers while increasing national energy security.
- Socially responsible fuels. We are committed to ensuring that our products are produced in an environmentally and socially responsible manner, respecting worker rights and community engagement.
- Transparency and reporting. We have established a strong record of reporting on greenhouse gas emissions, energy usage and other key environmental metrics.

• Implementing technically and economically feasible options for emission reduction, covering combustion, flaring, venting and fugitive emissions
- Greater energy efficiency. Many energy and operational efficiency initiatives go hand-in-hand.
- Lower greenhouse gas emission intensity with particular focus on methane.

• Exploring new and evolving technologies and processes to identify synergistic fits for our business in both traditional and renewable energy production.
- Alternative energy. We are continuing to develop our knowledge and use of alternative energy sources, including geothermal energy, biogas and the conversion of traditional oil and gas assets to geothermal and hydrogen production.

As described elsewhere, emission reduction activities undertaken since 2019 have included the implementation of gas conservation and recovery measures at our oil producing assets, discretionary production shut-ins for economic or operational (i.e. upgrade) considerations, and a strategic development focus on lower CO2e intensity natural gas reserves. The Scope 1 emission reduction measures implemented since 2021 represent a (0.0190 - 0.0180) / (0.0190 – 0.0152)] = 26.3% progress towards our 2025 target.

List the emissions reduction initiatives which contributed most to achieving this target

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 2

Year target was set

2018

Target coverage

Business activity

Target type: absolute or intensity

Absolute

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

Methane reduction target

Total methane emissions in CO2e

Target denominator (intensity targets only)

Base year

2018

Figure or percentage in base year

136,714.3

Target year

2024

Figure or percentage in target year

68,357.1

Figure or percentage in reporting year

58,525

% of target achieved relative to base year [auto-calculated]

114.3834153535

Target status in reporting year

Achieved

Is this target part of an emissions target?

This is part of Target ID ABS2

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

This is a proportionate target associated with our target to reduce flaring and venting emissions from our former Spartan assets by 50% by 2024 (ABS2). The target represents a 68,357tCO2e reduction in methane emissions (Baseline = 136,714 x 50% = 68,357 tCO2e).

The operational response to this target consists of multiple projects with impact on a variety of emission sources. Infrastructure changes and performance optimization activities undertaken subsequent to the acquisition have reduced methane emissions from the former Spartan assets by approximately 57% [1-(Current Year Emissions = 58,525.0 tCO2e / Base Year Emissions = 136,714) = 57 .2% reduction to date]. This reflects an approximately 114% success toward our 2024 target of a 50% reduction over 2018 emission levels (136,714 - 58,525 = 78,189 tCO2e; 78,189 / 68,357) = 114%).

On an annualized basis, methane emissions from the former Spartan assets were reduced by approximately (72,352 - 58,525) = 13,827 tCO2e between in 2021. In addition to the implemented infrastructure or operational changes, the 2021 total reflects reductions associated with natural production declines and voluntary production shut-ins for economic and maintenance purposes.

The target applies to our Canadian Business Unit.

Plan for achieving target, and progress made to the end of the reporting year

List the actions which contributed most to achieving this target

The dominant emissions reduction initiatives that have contribute d to achieving this target are:

1. Installation of new gas conservation and recovery facilities (e.g. gas gathering, and vapour recovery systems) that have allowed us to bring historically flared or vented natural gas to market.
2. Facility consolidations that have further allowed for the conservation and recovery of flared and vented gas, and the delivery of this gas to market.
3. Discretionary shut-in of production for economic purposes, or pending infrastructure upgrades.
4. Natural production declines.

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 target coverage and identify any exclusions

As a global energy producer, we have an opportunity to be part of the low-carbon solution: to help ensure the supply of safe, reliable and affordable energy during this transition. That's why we have set an aspirational target of net zero emissions from our operations by 2050 (Scopes 1 and 2).

We recognize this must be founded on a clear pathway. Supported by our existing track record in setting and meeting emissions reduction targets, we are continuing the journey with a target to reduce our company's Scope 1 emissions intensity by 20% by 2025, compared to a 2019 baseline (INT1). We have also committed to setting additional targets every five years, which will include assessing how Scope 3 emissions and intensity may be reduced.

Our plan rests on three strategic activities:
• Focusing on efficient and responsible production of oil and natural gas, viewing emissions as potential energy sources:
o Lower carbon fuels. Since 2012, we have shifted our production mix towards natural gas as a cleaner burning fuel than other fossil fuels, and sell our fuels within the country of production wherever possible, reducing the carbon footprint associated with transportation of the fuel to consumers while increasing national energy security.
o Socially responsible fuels. We are committed to ensuring that our products are produced in an environmentally and socially responsible manner, respecting worker rights and community engagement.
o Transparency and reporting. We have established a strong record of reporting on greenhouse gas emissions, energy usage and other key environmental metrics.
• Implementing technically and economically feasible options for emission reduction, covering combustion, flaring, venting and fugitive emissions

o Greater energy efficiency. Many energy- and operational-efficiency initiatives go hand-in-hand.
o Lower greenhouse gas emission intensity with particular focus on methane.
• Exploring new and evolving technologies and processes to identify synergistic fits for our business in both traditional and renewable energy production.
o Alternative energy. We are continuing to develop our knowledge and use of alternative energy sources, including geothermal energy, biogas and the conversion of traditional oil and gas assets to geothermal and hydrogen production.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?

Unsure

Planned milestones and/or near-term investments for neutralization at target year

Planned actions to mitigate emissions beyond your value chain (optional)

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	15	25,700
To be implemented*	3	1,200
Implementation commenced*	4	34,000
Implemented*	4	46,500
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify

Associated gas valorization

Estimated annual CO2e savings (metric tonnes CO2e)

33

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

135,500

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

2,458,000

Payback period

16-20 years

Estimated lifetime of the initiative

16-20 years

Comment

This an natural gas valorization project within our France business unit. A total of six (6) microturbines were installed to generate a small quantity of electricity using associated gas that was previously being flared. Future electricity generation is estimated at 60% of the 390 kW installed generating capacity , or approximately 5,600 kWh/d. Appling the 2021 EDF grid intensity value to this value represents a corresponding Scope 2 reduction of approximately [(390 x 0.6)/1000 x 365 x 0.0160) = 33 tonnes/yr.

Initiative category & Initiative type

Low-carbon energy consumption

Large hydropower (>25 MW)

Estimated annual CO2e savings (metric tonnes CO2e)

27,550

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

0

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

23,680

Payback period

No payback

Estimated lifetime of the initiative

>30 years

Comment

In our Netherlands Business Unit, we have moved to acquire all of our purchased electricity from certified renewable sources. If we had not made the decision to purchase green power, based on published grid intensity information our 2021 Scope 2 emissions would have been approximately 27,550 tCO2e.

Vermilion has been acquiring 100% of our Netherlands electricity as certified renewable power since 2017.

Initiative category & Initiative type

Low-carbon energy generation
Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

80

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

0

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

2,461,000

Payback period

No payback

Estimated lifetime of the initiative

>30 years

Comment

This initiative encompasses of a number of solar power projects including a full-scale trial of a solar powered remote generating (EPOD) unit was initiated in 2021. Capable of generating approximately 8 MWh/year, the EPOD unit is expected to result in an annual CO2e savings of approximately 60 tonnes when compared to traditional, fuel-based power generation. Other solar power projects that were implemented in 2021 include the installation of solar powered remote monitoring equipment; new solar pump installations and solar retrofits of existing pumps; and, the installation of solar powered leak detection systems. Collectively, these initiatives are expected to result in a further CO2e savings of approximately 20 tonnes/year.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

18,825

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

410,000

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

1,600,000

Payback period

4-10 years

Estimated lifetime of the initiative

21-30 years

Comment

To achieve the emission reduction targets set for our Spartan (acquired in 2018) assets, Vermilion continues to invest significant focus on the reduction of flaring and vented solution gas at these sites. As described in Section 4.1, through multiple projects including the construction of new infrastructure, tying gas production into gathering systems to reduce flaring, installing vapour recovery units to mitigate fugitive emissions, and shutting-in uneconomical assets, we have reduced CO2e emissions associated with these assets greater than 50% to date. On an annualized basis, and net of emission reductions associated with production decline, the gas conservation and recovery activities completed in 2021 have resulted in an approximate 18,825 tCO2e (per year) reduction in flaring and venting emissions. Consistent with our objectives of optimizing production while minimizing our emissions intensity, all of the projects that have

contributed to these reductions met Vermilion's economic criteria prior to being implemented.

C4.3c

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

Method	Comment
Employee engagement	Vermilion's structure and culture is designed to foster the sharing of ideas and garner maximum benefit from the expertise and experience of our staff, consultants and management. In addition to regularly held Business Unit meetings and international subject matter expert (SME) meetings, designed to facilitate the sharing information and learnings between all organizational groups, Vermilion hosts virtual town halls every six to eight weeks (due to COVID-19) where employees are encouraged to openly share ideas and provide questions and feedback on the company, its performance, corporate strategy and initiatives that they believe would benefit the organization via pre- and post-anonymous surveys. Vermilion also hosts an annual weeklong Global Operational Leadership conference. During this week, 25% of the agenda items at this conference are focused around HSE and Sustainability strategies and actionable plans. In addition to these corporate events, regular HSE meetings are held in all Business Units, as well as town hall meetings, where employees are encouraged to discuss ideas and provide feedback. Our intranet also offers a "suggestion box" tool that is available to all staff. This frequently results in suggestions becoming actions and improvements in areas throughout the company. In 2020-21, we reassessed our business strategy, including a cross-functional, company-wide working group dedicated to Integrated Sustainability. Preliminary results were shared with the entire staff, with virtual workshop sessions and survey options provided for staff feedback to help guide the vision for the sustainability strategy, including the low-carbon transition plan.
Compliance with regulatory requirements/standards	One potential driver for Vermilion's emission oriented projects is the year-over-year reduction expectation defined by regulators in the countries in which we operate. This is one of the factors considered when Vermilion assesses emission reduction activities. We note that Vermilion assesses many factors associated with investment in all projects, including but not limited to, potential impact to the communities in which we live and work, potential sustainability impacts (HSE, energy use, water use, land protection, etc., and financial considerations.
Financial optimization calculations	As part of Vermilion's commitment to operational excellence, we are continuously seeking to find new, more efficient ways to produce our products and maximize shareholder returns. An example of this is the

	many optimization activities undertaken in Vermilion's Business Units that have a positive effect on fuel consumption and emissions. While having a positive impact on emissions and changing Vermilion's emission profile on a go forward basis, these activities typically also reduce financial outlay. This is an example of Vermilion utilizing our expertise to advance projects that will have an ongoing positive impact to the communities where we live and work and our sustainability goals while providing stable shareholder value and growth.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

No

C-OG4.6

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

Similar to other upstream oil and gas production, the majority of methane emissions from Vermilion's operations stem from venting, flaring (recognizing that flaring is typically considred to achieve an approximate 98% combustion efficiency), storage emissions, and process/instrumentation emissions. At this time, we see the greatest opportunities to reduce methane emissions in our projects and programs surrounding leak detection and repair (see Section 4.7) and our efforts to reduce flaring. Examples of our methane reduction efforts are the emission targets set for our former Spartan (ABS2/OTH2) and Elkhorn (ABS1/OTH1; retired in 2020) assets (Reference 4.2b). Both of these programs consist of a number of different types of projects, including the construction of new infrastructure, tying gas production into gathering systems to bring additional gas to market (and thereby reduce flaring/venting and associated methane emissions), and installing vapour recovery tanks with gas management to limit fugitive methane emissions.

Emissions reduction activities undertaken by Vermilion in relation to the Spartan assets are ongoing (target year 2024) and have resulted in greater than 100% progress towards this emission reduction targets to date. The emission reduction targets associated with the Elhorn assets were also exceeded and the targets retired in 2020.

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.

In all of our operations, we understand the integrated nature of Operational Excellence, Best-In-Class Health, Safety & Environment, and Integrated Sustainability (3 of our 6 strategic objectives). Vermilions method for elimination of methane leakage is simple: If a leak is identified, it is fixed.
Vermilion has a robust emissions quantification program in all operated business units. We also have fugitive emission programs in place that are managed through our operations groups in each business unit, with the exception of our offshore platform in our Australia operation (an oil asset with no natural gas production infrastructure). Our Leak Detection and Repair (LDAR) program varies between business units:

CBU: An expanded LDAR program was implemented in 2020 with effectively 100% of our operated Alberta facilities and multi-well pads now assessed at minimum annually using optical gas imaging (OGI) technology. At our predominantly oil producing Saskatchewan assets, OGI surveys are undertaken annually at our larger facilities in accordance with regulatory requirements. Routine checks for natural gas releases using a FLIR camera are completed by operations personnel at our smaller Saskatchewan assets in conjunction with regular field visits. In addition to thermal imaging, AVO (auditory, visual and olfactory) inspections are a standard component of operator field visits. Targeted identification of leaks during facilities work is also built into all turnaround activities.

FBU: Quantitative LDAR programs vary annually. This is an oil-dominated asset and the volume of natural gas and associated CH4 is low. All operated well clusters are checked at least daily and twice daily in more sensitive areas such as Parentis Lake. Pipeline routes are surveyed at weekly or monthly intervals depending on the sensitivity of the pipeline location and pipeline type. Process security equipment including pressure sensors and hydrocarbon detection equipment are also installed on wellheads, cellars and pipeline infrastructure to detect leaks, shut-in production, and alert operations personnel.

NBU: Our Netherlands business unit has a robust LDAR program with effectively 100% of accessible flanges and potential leak points screened annually using thermal imaging technology.

ABU: This is an oil asset with no natural gas production infrastructure. Any associated gas is either utilized in on-platform processes to displace fuels we would have to bring from the mainland, such as diesel, or maintained within the process and reinjected into the formation it was produced from. While we do not complete a formal LDAR program for natural gas, any significant potential leak sources would be identified by our continuous gas detection monitoring system (line of sight and point source) or through on-platform crew visual

inspections. Where required equipment is repaired and pressure/leak tested prior to return to service.

USBU: The USBU has a comprehensive leak detection and repair program that includes initial and semi-annual monitoring for fugitive emissions using a thermal camera at all wellsites that are subject to EPA and/or Wyoming air permit requirements. In addition to point source identification, Vermilion has permanently mounted monitoring equipment at our major facilities that check for the presence of natural gas outside of the process on an ongoing basis.

GBU: All producing oil and disposal wells are thoroughly checked at least twice per week. Wells that are not in production are checked monthly. In our operated gas assets, all wells and facilities are checked five times per week. During these checks all accessible flange connections are visually inspected for leaks. Field and transportation pipelines in our operated oil assets are inspected once per week in populated areas and once per month in unpopulated areas. Pipeline routes in our operated gas assets are checked every two months by walking in populated areas, and twice per year in unpopulated areas in accordance with regulatory requirements. Oil and gas transportation pipelines are also helicopter surveyed on a biweekly basis.

IBU: In the first year of operation a Differential Absorption LIDAR (DIAL) Survey was completed to survey for methane and VOC Emissions. No significant emissions were observed from the areas measured. OGI surveys are completed on a bi-annual basis and cover approximately 80% of accessible leak points. All identified leaks are managed through the operations weeps and seeps repair programme. In 2021 of 95% the identified leaks were below the measurable leak detection rate for the High Flow Sampler.

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.

During the production of petroleum energy products, some operational instances exist that make flaring a relevant and necessary part for the safe production of our oil and gas assets. Vermilion has reported on key climate-related metrics annually since 2012, which includes information associated with flaring related emissions.

Consistent with our philosophy that when we acquire production from less emissions-conscious companies, we address reducing these emissions under our care and control as a priority, Vermilion has made a commitment to reducing flared (and vented) emissions in the form of targets related to specific, higher intensity acquisitions within our Canadian business unit.

Spartan Energy Corp., acquired in 2018, represented an approximately 30% increase to our Alberta and Saskatchewan production at that time. Consistent with our corporate priorities, a target was set in 2018 to reduce flaring and venting emissions associated with the Spartan assets by 50% by 2024. This reduction is being accomplished through a variety of gas conservation and recovery initiatives including the construction of new infrastructure, tying gas production into gathering systems to reduce flaring, installing vapour recovery systems to limit

fugitive methane emissions, and upgrading battery infrastructure. The target is underway and, to date, has resulted in emission reductions totalling 186,230 tonnes of CO2e, or approximately 109% of the target total.

Similarly, emission reduction targets were previously declared for Elkhorn Energy, acquired by Vermilion in 2014. The Elkhorn targets were retired in 2020 and represented an approximately 170,642 tCO2e emission reduction, or approximately 176% of the Elkhorn target total.

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology	The following methodology or measurement changes ocurred in 2021: 1. Application of the 2019 IPCC guidance for fugitive emission calculations. This change impacted our Canada and German business units. Fugitive emissions for both of these business units were previously calculated in accordance with the 2006 IPCC guidance. This methodology change represented a net decrease to our Scope 1 emissions.

		2. Implementation of regulatory (AER DIrective 60) changes with respect to fuel and vent gas accounting . This change in accounting methodology impacted our Canada business unit and represented a net increase to our Scope 1 emissions. 3. Improved flare gas accounting in our France business unit. This operational change involved the installation and/or re-calibration of flare gas meters at several facilities, which allowed for more accurate accounting of flare gas volumes. This measurement change represented a net increase to our Scope 1 emissions. The combined total of the 2021 methodology and measurement changes represents approximately 5.8% of the reported 2020 Scope 1 and 2 emissions (60,393/1,040,347 = 5.81%), and is less than the materiality threshold defined in our corporate Emissions Recalculation Policy for this category of emission change (10%).

C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1		

C5.2

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

Scope 1

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

858,822

Comment

To be consistent with the newly reported Scope 3 base year emissions, and to align with our 2025 company-wide emission reduction target (INT1), we have adjusted our Scope 1 base year from calendar 2012 to calendar 2019. The change in base ear did not involve an emissions recalculation.

Scope 2 (location-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

279,962

Comment

To align with our Scope 1 and Scope 3 base years, we have adjusted our Scope 2 (location-based) base year from calendar 2012 to calendar 2019. The change in base ear did not involve an emissions recalculation.

Scope 2 (market-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

8,383

Comment

To align with our Scope 1 and Scope 3 base years, we have adjusted our Scope 2 (market-based) base year from calendar 2012 to calendar 2019. The change in base ear did not involve an emissions recalculation.

Scope 3 category 1: Purchased goods and services

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

44,791

Comment

Initial base year

Scope 3 category 2: Capital goods

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

42,369

Comment

Initial base year

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

272,375

Comment

Initial base year

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

101,417

Comment

Initial base year

Scope 3 category 5: Waste generated in operations

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

17,904

Comment

Initial base year

Scope 3 category 6: Business travel

Base year start
January 1, 2019

Base year end
December 31, 2019

Base year emissions (metric tons CO2e)
9,359

Comment
Initial base year

Scope 3 category 7: Employee commuting

Base year start
January 1, 2019

Base year end
December 31, 2019

Base year emissions (metric tons CO2e)
1,020

Comment
Initial base year

Scope 3 category 8: Upstream leased assets

Base year start
January 1, 2019

Base year end
December 31, 2019

Base year emissions (metric tons CO2e)
0

Comment
Not applicable

Scope 3 category 9: Downstream transportation and distribution

Base year start
January 1, 2019

Base year end
December 31, 2019

Base year emissions (metric tons CO2e)
87,780

Comment

Initial base year

Scope 3 category 10: Processing of sold products

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

674,098

Comment

Initial base year

Scope 3 category 11: Use of sold products

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

12,937,168

Comment

Initial base year

Scope 3 category 12: End of life treatment of sold products

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

0

Comment

Negligible in relation to processing and use of sold products.

Scope 3 category 13: Downstream leased assets

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

0

Comment

Not applicable

Scope 3 category 14: Franchises

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

0

Comment

Not applicable

Scope 3 category 15: Investments

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

0

Comment

Negligible in relation to processing and use of sold products.

Scope 3: Other (upstream)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

0

Comment

Not applicable

Scope 3: Other (downstream)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

0

Comment

Not applicable

C5.3

(C5.3) 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
Australia - National Greenhouse and Energy Reporting Act
European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
US EPA Mandatory Greenhouse Gas Reporting Rule
Other, please specify
France Arrêté du 31 janvier 2008 relatif au registre et à la déclaration annuelle des émissions polluantes et des déchets

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)

648,336.5

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 are reporting a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based

208,272.4

Scope 2, market-based (if applicable)

6,505.4

Comment

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, calculated

Emissions in reporting year (metric tons CO2e)

24,321

Emissions calculation methodology

Spend-based method

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

0

Please explain

Scope 3 emissions related to Purchased Goods and Services were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol"). Total GHG emissions are exclusive of any biogenic CO2 emissions. An "Operational Control" approach as described in the Protocol was employed for the consolidation of Purchased Goods and Services. Emissions were calculated according to an environmental economic input-output methodology using the following steps:

1) Expenditures on purchased goods and services were identified from primary financial accounting data and sorted according to economic sector;
2) Emission factors, for different economic sectors, in units of tCO2e/$ were formulated from WIOD national input output tables;
3) GHG emissions were calculated for each economic sector by multiplying expenditure totals with the relevant emission factors, followed by the summation of emissions for all economic sectors.

This Scope 3 category represented less than 1% of the total 2021 Scope 1 emission an is therefore considered to be not-relevant.

Capital goods

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

35,036

Emissions calculation methodology

Average spend-based method

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

0

Please explain

Scope 3 emissions related to Capital Goods were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol"). Total GHG emissions are exclusive of any biogenic CO2 emissions. An "Operational Control" approach as described in the Protocol was employed for the consolidation of Capital Goods. Emissions were calculated according to an environmental economic input-output methodology using the following steps:

1) Expenditures on capital goods were identified from primary financial accounting data and sorted according to economic sector;
2) Emission factors, for different economic sectors, in units of tCO2e/$ were formulated from WIOD national input output tables;
3) GHG emissions were calculated for each economic sector by multiplying expenditure

totals with the relevant emission factors, followed by the summation of emissions for all economic sectors.

This Scope 3 category represented less than 1% of the total 2021 Scope 1 emission an is therefore considered to be not-relevant.

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

205,040

Emissions calculation methodology

Average data method

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

0

Please explain

Scope 3 emissions related to Fuel-and-Energy Related Activities (Not Included in Scope 1 and 2) were calculated following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard "Protocol"). Total GHG emissions are exclusive of any biogenic CO2 emissions. The emissions were calculated using the Quantis Scope 3 Evaluator.

This Scope 3 category represented approximately 1.76% of the total 2021 Scope 3 emissions.

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

84,904

Emissions calculation methodology

Spend-based method

Distance-based method

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

0

Please explain

Scope 3 emissions related to Upstream Transportation and Distribution were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting

and Reporting Standard ("Protocol") distance-based method, and a spend-based method. Total GHG emissions are exclusive of any biogenic CO2 emissions. Distance based method emissions were calculated by multiplying the estimated distance travelled with the fuel quantity transferred and then by the corresponding emission factor for the method of travel. Spend-based method emissions were calculated according to an environmental economic input-output methodology using the following steps: 1) Expenditures for Transportation and Distribution of goods incoming to Vermilion and between Vermilion operations were identified from primary financial accounting data; 2) Emission factors, for transportation methods, in units of tCO2e/$ were formulated from WIOD national input output tables; 3) GHG emissions were calculated for each transportation method by multiplying expenditure totals with the relevant emission factors, followed by the summation of emissions for all transportation methods.

This Scope 3 category represented less than 1% of the total 2021 Scope 1 emission an is therefore considered to be not-relevant.

Waste generated in operations

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

9,357

Emissions calculation methodology

Average data method

Waste-type-specific method

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

0

Please explain

Scope 3 emissions from Waste Generated in Operations were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol"). Total GHG emissions are exclusive of any biogenic CO2 emissions. An "Operational Control" approach as described in the Protocol was employed for the consolidation of waste tonnages. Emissions were calculated according to established waste GHG quantification models including IPCC Emissions from Waste Incineration and the LandGem EPA model. An EPA drilling mud degassing emission factor was used to calculate offgas from drilling muds.

This Scope 3 category represented less than 1% of the total 2021 Scope 1 emission an is therefore considered to be not-relevant.

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

6,923

Emissions calculation methodology

Distance-based method

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

2

Please explain

GHG emissions from business travel were calculated following the WRI/WBCSD's GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ('Protocol' hereafter). Total GHG emissions are reported in metric tons of CO2 equivalent, excluding biogenic CO2 emissions and independent of any GHG trades. This section employed the 'Operational Control' approach for consolidation as described in the Protocol. For reimbursement of private vehicle use, actual km/miles traveled were utilized, which was then converted to GHG emissions using published (e.g. EPA or EU) emissions factors for passenger cars, depending on location of travel. For air travel, route and class specific information was utilized globally. Air travel emissions for CBU, FBU and NBU were obtained from the service provider.

This Scope 3 category represented less than 1% of the total 2021 Scope 1 emission an is therefore considered to be not-relevant.

Employee commuting

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,020

Emissions calculation methodology

Average data method

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

0

Please explain

Scope 3 emissions related to Employee Commuting were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol"). Total GHG emissions are exclusive of any biogenic CO2 emissions. The emissions were calculated using the Quantis Scope 3 Evaluator.

This Scope 3 category represented less than 1% of the total 2021 Scope 1 emission an is therefore considered to be not-relevant.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Vermilion is using the Operational Control boundary and following this approach all emissions from leased assets are incorporated into Scope 1 and Scope 2.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

42,922

Emissions calculation methodology

Distance-based method

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

0

Please explain

Scope 3 emissions related to Downstream Transportation and Distribution were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol") distance-based method, and a spend-based method. Total GHG emissions are exclusive of any biogenic CO2 emissions. Distance based method emissions were calculated by multiplying the estimated distance traveled with the fuel quantity transferred and then by the corresponding emission factor for the method of travel, followed by the summation of emissions for all transportation methods.

Processing of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

598,241

Emissions calculation methodology

Average data method

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

0

Please explain

Scope 3 emissions related to Processing of Sold Products were identified following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol") and customized for oil and gas. Total GHG emissions are exclusive of any biogenic CO2 emissions. All activity within the organizational boundary is included. Activity data is net production.

Emissions for oil refining were calculated using the Production Method: Tier 1, according to the following steps: 1) Average oil refinery emission factors were calculated for the type of oil Vermilion produces using publicly available refining data. 2) GHG emissions were then calculated by multiplying the crude volume totals with the corresponding refining emission factor and 100 year GWP. 3) Product volumes were obtained from Vermilion's annual report. 4) Emissions for natural gas and natural gas liquids processing were calculated using emission factors obtained from the US EPA and Vermilion's annual production. Emission factors for crude oil consumption were built from National Inventory Reports submitted to the United Nations.

This Scope 3 category represented approximately 5.14% of the total 2021 Scope 3 emissions.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

10,624,199

Emissions calculation methodology

Methodology for direct use phase emissions, please specify

Calculation method for direct use phase emissions for fuels and feedstocks

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

0

Please explain

Scope 3 emissions related to Use of Sold Products were identified and calculated following the WRI/WBCSD GHG Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Protocol") and CDP Guidance Methodology for Estimation of Scope 3 Category 11 Emissions for Oil and Gas Companies. The total GHG emissions are exclusive of any biogenic CO2 emissions.

Emissions were calculated according to the following steps: 1) Total annual production volumes were obtained; 2) Fuel combustion emission factors were calculated for each fuel type and production region; 3) GHG emissions were calculated by multiplying

production volumes with the relevant fuel combustion emission factor; 4) Emissions from each region were summed to give the total emissions. IPCC GWP values (100 year) were used for the calculations.

This Scope 3 category represented approximately 91.34% of the total 2021 Scope 3 emissions.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

Vermilion products sold do not generate any end of life GHG emissions because they are consumed as a primary source of energy or as a feedstock for other processes. Vermilion does not have any information on the fate of its products once they are sold. Since the majority of Vermilion's products are energy based, it is anticipated that there will not be any end of life emissions.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Vermilion does not lease any assets according to the definitions for this category.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Vermilion does not operate as a Franchisor, therefore, this section is not relevant for Scope 3 emissions.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

Based on the Protocol and a quick analysis of values, the GHG emissions associated with investments would be minor and not material compared to the emissions from product use or transportation.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

Vermilion has not identified any "Other" Scope 3 sources of emissions therefore this category is not relevant.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

Vermilion has not identified any "Other" Scope 3 sources of emissions therefore this category is not relevant.

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

0.0008

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

863,114

Metric denominator

unit total revenue

Metric denominator: Unit total

2,079,761,000

Scope 2 figure used

Market-based

% change from previous year

55.34

Direction of change

Decreased

Reason for change

The year-over-year decrease in the revenue-based emission intensity is related to the increase in global commodity prices that occurred in 2021. An unprecedented drop in commodity prices had occurred in 2020 during the Covid19 pandemic. We anticipate that the 2021 intensity represents the start of a progressive realignment of this metric with Vermilion's historical performance data.

Intensity figure

0.0277

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

863,114

Metric denominator

barrel of oil equivalent (BOE)

Metric denominator: Unit total

31,154,575

Scope 2 figure used

Market-based

% change from previous year

7.53

Direction of change

Decreased

Reason for change

The year-over-year decrease in emission intensity in this category is primarily related to the ongoing emission reduction activities undertaken in relation to our Saskatchewan (Spartan Energy) assets (see Target ABS2 and OTH2), and a methodology change involving application of the 2019 IPCC guidance for fugitive emissions within our Canadian and German business units (see C7.9a). The combined total of the methodology changes implemented in 2021, including application of the 2019 IPCC guidance, was approximately 60,393 tCO2e.

Although capital expenditures remained constrained in 2021 due to the Covid19 pandemic and global economic conditions, full calendar year benefit of emission reduction initiatives implemented prior to 2021 and other, lower capital initiatives implemented in 2021 continued to have a positive effect on our corporate emissions intensity. As described in Section 4 (Targets and Performance), on an annualized basis, flaring and venting (Scope 1) emissions from the former Spartan assets were reduced by approximately (217,831- 154,695) = 63,136 tCO2e in 2021. In addition to the implemented operational changes, the 2021 total also reflects emission reductions associated with natural production declines and discretionary production shut-ins for economic and maintenance (or upgrade) purposes.

The 2021 intensity figure represents a 7.5% reduction in relation to the 2020 intensity value [(0.02770 - 0.02996)/0.02996 = 7.5%]. It is expected that the emissions intensity in this category will continue to improve in response to the ongoing infrastructure and operational improvements related to these assets.

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 crude oil/ condensate

Metric tons CO2e from hydrocarbon category per unit specified

24

% change from previous year

5

Direction of change

Decreased

Reason for change

The year-over-year decrease in emission intensity in this category is primarily related to the ongoing emission reduction activities undertaken in relation to our Saskatchewan (Spartan Energy) assets (see Target ABS2 and OTH2), and a methodology change involving application of the 2019 IPCC guidance for fugitive emissions within our Canadian and German business units (see C7.9a). The combined total of the methodology changes implemented in 2021, including application of the 2019 IPCC guidance, was approximately 60,393 tCO2e.

Although capital expenditures remained constrained in 2021 due to the Covid19 pandemic and global economic conditions, full calendar year benefit of emission reduction initiatives implemented prior to 2021 and other, lower capital initiatives implemented in 2021 continued to have a positive effect on our corporate emissions intensity. As described in Section 4 (Targets and Performance), on an annualized basis, flaring and venting (Scope 1) emissions from the former Spartan assets were reduced by approximately (217,831- 154,695) = 63,136 tCO2e in 2021. In addition to the implemented operational changes, the 2021 total also reflects emission reductions associated with natural production declines and discretionary production shut-ins for economic and maintenance (or upgrade) purposes.

The 2021 intensity figure represents an approximately 5% reduction in relation to the 2020 intensity value [(25.00 - 25.35)/25.35 = 5.3% reduction]. It is expected that the

emissions intensity in this category will continue to improve in response to the ongoing infrastructure and operational improvements, particularly in relation to our SK assets.

Comment

Unit of hydrocarbon category (denominator)

Million cubic feet of natural gas

Metric tons CO2e from hydrocarbon category per unit specified

2.95

% change from previous year

11

Direction of change

Decreased

Reason for change

The year-over-year decrease in emission intensity in this category is primarily related to the ongoing emission reduction activities undertaken in relation to our Saskatchewan (Spartan Energy) assets (see Target ABS2 and OTH2), and a methodology change involving application of the 2019 IPCC guidance for fugitive emissions within our Canadian and German business units (see C7.9a). The combined total of the methodology changes implemented in 2021, including application of the 2019 IPCC guidance, was approximately 60,393 tCO2e.

Although capital expenditures remained constrained in 2021 due to the Covid19 pandemic and global economic conditions, full calendar year benefit of emission reduction initiatives implemented prior to 2021 and other, lower capital initiatives implemented in 2021 continued to have a positive effect on our corporate emissions intensity. As described in Section 4 (Targets and Performance), on an annualized basis, flaring and venting (Scope 1) emissions from the former Spartan assets were reduced by approximately (217,831- 154,695) = 63,136 tCO2e in 2021. In addition to the implemented operational changes, the 2021 total also reflects emission reductions associated with natural production declines and discretionary production shut-ins for economic and maintenance (or upgrade) purposes.

The 2021 intensity figure represents an approximately 11% reduction in relation to the 2020 intensity value [(2.95 – 3.31)/3.31 = 11.0% reduction].

Comment

Unit of hydrocarbon category (denominator)

Thousand barrels of natural gas liquids

Metric tons CO2e from hydrocarbon category per unit specified

20.73

% change from previous year

14

Direction of change

Decreased

Reason for change

The year-over-year decrease in emission intensity in this category is primarily related to the ongoing emission reduction activities undertaken in relation to our Saskatchewan (Spartan Energy) assets (see Target ABS2 and OTH2), and a methodology change involving application of the 2019 IPCC guidance for fugitive emissions within our Canadian and German business units (see C7.9a). The combined total of the methodology changes implemented in 2021, including application of the 2019 IPCC guidance, was approximately 60,393 tCO2e.

Although capital expenditures remained constrained in 2021 due to the Covid19 pandemic and global economic conditions, full calendar year benefit of emission reduction initiatives implemented prior to 2021 and other, lower capital initiatives implemented in 2021 continued to have a positive effect on our corporate emissions intensity. As described in Section 4 (Targets and Performance), on an annualized basis, flaring and venting (Scope 1) emissions from the former Spartan assets were reduced by approximately (217,831- 154,695) = 63,136 tCO2e in 2021. In addition to the implemented operational changes, the 2021 total also reflects emission reductions associated with natural production declines and discretionary production shut-ins for economic and maintenance (or upgrade) purposes.

The 2021 intensity figure represents an approximately 14% reduction in relation to the 2020 intensity value [(20.73 – 24.07)/24.07 = 13.9% reduction].

Comment

Unit of hydrocarbon category (denominator)

Other, please specify

Gross Inlet Throughput (BOE)

Metric tons CO2e from hydrocarbon category per unit specified

0.02

% change from previous year

6

Direction of change

Decreased

Reason for change

The year-over-year decrease in emission intensity in this category is primarily related to the ongoing emission reduction activities undertaken in relation to our Saskatchewan (Spartan Energy) assets (see Target ABS2 and OTH2), and a methodology change involving application of the 2019 IPCC guidance for fugitive emissions within our Canadian and German business units (see C7.9a). The combined total of the methodology changes implemented in 2021, including application of the 2019 IPCC guidance, was approximately 60,393 tCO2e.

Although capital expenditures remained constrained in 2021 due to the Covid19 pandemic and global economic conditions, full calendar year benefit of emission reduction initiatives implemented prior to 2021 and other, lower capital initiatives implemented in 2021 continued to have a positive effect on our corporate emissions intensity. As described in Section 4 (Targets and Performance), on an annualized basis, flaring and venting (Scope 1) emissions from the former Spartan assets were reduced by approximately (217,831- 154,695) = 63,136 tCO2e in 2021. In addition to the implemented operational changes, the 2021 total also reflects emission reductions associated with natural production declines and discretionary production shut-ins for economic and maintenance (or upgrade) purposes.

This 2021 intensity figure represents an approximately 6% reduction in relation to the 2020 intensity value [(0.0176 – 0.0188)/0.0188 = 6.4% reduction]. A relative increase in the production of natural gas in relation to crude oil in 2021 is also reflected in the intensity value, as our natural gas production has a lower per BOE emission intensity.

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

0.22

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

0.12

Comment

According to a 2016 Environmental Defense Fund report (Improving Methane Disclosure in the Oil and Gas Industry), scientific studies on methane emissions from the natural gas and oil industries suggest that in order to maximize the climate benefits of a transition from both diesel and coal to natural gas on all time scales, methane emissions from the industry must be limited to an emissions rate of 0.8%. Vermilion's emission ratio of CH4 to natural gas production is significantly lower than the EDF's recommendations at 0.22% (on a v/v basis). When comparing CH4 emitted to total hydrocarbon production within our emissions reporting scope (on a BTU basis), Vermilion's ratio is 0.12%. We feel that both of these values are a testament to our commitment to methane detection and reduction, and we continue to examine areas where we can improve.

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	466,407	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	181,052	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	878	IPCC Fourth Assessment Report (AR4 - 100 year)

C-OG7.1b

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

Emissions category

Fugitives

Value chain

Upstream

Product

Oil

Gross Scope 1 CO2 emissions (metric tons CO2)

979.5

Gross Scope 1 methane emissions (metric tons CH4)

1,373.6

Total gross Scope 1 emissions (metric tons CO2e)

37,122

Comment

Vermilion quantifies venting and flaring in both the oil and natural gas value chains separately. These values are not aggregated in the total for the category, as per the reporting guidance.

Emissions category

Venting

Value chain

Upstream

Product

Oil

Gross Scope 1 CO2 emissions (metric tons CO2)

18,184.3

Gross Scope 1 methane emissions (metric tons CH4)

1,831.1

Total gross Scope 1 emissions (metric tons CO2e)

63,998.1

Comment

Emissions category

Flaring

Value chain

Upstream

Product

Oil

Gross Scope 1 CO2 emissions (metric tons CO2)
108,514.5

Gross Scope 1 methane emissions (metric tons CH4)
290.1

Total gross Scope 1 emissions (metric tons CO2e)
115,888.8

Comment

Emissions category
Fugitives

Value chain
Upstream

Product
Gas

Gross Scope 1 CO2 emissions (metric tons CO2)
1,838.8

Gross Scope 1 methane emissions (metric tons CH4)
1,068.1

Total gross Scope 1 emissions (metric tons CO2e)
28,540.2

Comment
Vermilion quantifies venting and flaring in both the oil and natural gas value chains separately. These values are not aggregated in the total for the category, as per the reporting guidance.

Emissions category
Venting

Value chain
Upstream

Product
Gas

Gross Scope 1 CO2 emissions (metric tons CO2)
14,420.6

Gross Scope 1 methane emissions (metric tons CH4)
2,286.1

Total gross Scope 1 emissions (metric tons CO2e)
71,572.2

Comment

Emissions category
Flaring

Value chain
Upstream

Product
Gas

Gross Scope 1 CO2 emissions (metric tons CO2)
65,277.8

Gross Scope 1 methane emissions (metric tons CH4)
204.3

Total gross Scope 1 emissions (metric tons CO2e)
70,386.3

Comment

Emissions category
Combustion (excluding flaring)

Value chain
Upstream

Product
Oil

Gross Scope 1 CO2 emissions (metric tons CO2)
116,311.9

Gross Scope 1 methane emissions (metric tons CH4)
3

Total gross Scope 1 emissions (metric tons CO2e)
116,396.8

Comment

Emissions category
Combustion (excluding flaring)

Value chain
Upstream

Product
Gas

Gross Scope 1 CO2 emissions (metric tons CO2)
139,770

Gross Scope 1 methane emissions (metric tons CH4)
8.4

Total gross Scope 1 emissions (metric tons CO2e)
139,981.1

Comment

Emissions category
Venting
Process (feedstock) emissions

Value chain
Upstream

Product
Unable to disaggregate

Gross Scope 1 CO2 emissions (metric tons CO2)
1,987.3

Gross Scope 1 methane emissions (metric tons CH4)
97.3

Total gross Scope 1 emissions (metric tons CO2e)
4,451.1

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	427,592
France	74,136
Netherlands	10,080
Australia	69,386
United States of America	16,691
Germany	8,175
Ireland	41,126
CEE (Central and Eastern Europe)	1,150

C7.3

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

By activity

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Production of Natural Gas	251,238.6
Production of Light & Medium Oil	334,117.5
Production of Natural Gas Liquids	62,980.4

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

(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)	648,336.5	Vermilion is an upstream oil and gas producer. 100% of our Scope 1 emissions are attributed to our upstream activities.

Oil and gas production activities (midstream)	0	Vermilion is an upstream oil and gas producer. None of our Scope 1 emissions (0%) are attributed to midstream activities.
Oil and gas production activities (downstream)	0	Vermilion is an upstream oil and gas producer. None of our Scope 1 emissions (0%) are attributed to 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)
Canada	194,319	0
France	0	2,661
Netherlands	0	0
Australia	88	0
United States of America	13,856	0
Germany	0	3,845
Ireland	0	0
Hungary	9.6	0

C7.6

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

By activity

C7.6c

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Purchased electricity	208,272.4	6,505.4

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)	208,272.4	6,505.4	All of our Scope 2 emissions are associated with the upstream production of oil and gas.
Oil and gas production activities (midstream)	0	0	Vermilion does not have activities that fall within the midstream oil and gas production category.
Oil and gas production activities (downstream)	0	0	Vermilion does not have activities that fall within the downstream oil and gas category.

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	This category did not materially impact our operations in 2021.
Other emissions reduction activities	24,633	Decreased	2.4	Although capital expenditures remained constrained in 2021 due to the Covid19 pandemic and global economic conditions, full calendar year benefits of emission reduction initiatives implemented prior to 2021 and other, lower capital initiatives implemented in 2021 continued to have a net positive effect on our emissions footprint.

				Emission reduction activities completed in 2021 were largely focused on our higher intensity Saskatchewan (Spartan Energy) assets in Canada (see ABS2 and OTH2 targets) and included additional facility consolidations and installation of vapour recovery systems. The net total of the 2021 emission reduction activities (24,633 tCO2e) represents an approximately 2.4% reduction in CO2e emissions in relation to the quantified 2020 Scope 1 and Scope 2 total [(24,633/1,040,347) = 2.37%].
Divestment	0	No change	0	This category did not materially impact our operations in 2021.
Acquisitions	2,670		0.26	A small acquisition was completed in our Germany business unit in mid-2021. The acquisition added 143,600 BOE to the calendar year production. Applying the 2021 GBU Scope 1 and 2 emission intensity to this production volume represents a corresponding emission increase of 2670 tCO2e (143,600 BOE x 0.0186 tCO2e/BOE = 2670 tCO2e), or 0.26% of our quantified 2020 Scope 1 and 2 emissions (2670/1,040,347 = 0.26%).
Mergers	0	No change	0	This category did not materially impact our operations in 2021.
Change in output	94,877	Decreased	9.1	Vermilion's annual 2021 operated production declinled by approximately 9,384 BOE/day in relation to the 2020 production total. Applying the 2021 production intensity (0.0277 tCO2e/BOE) to this volume represents a corresponding Scope 1 and 2 emission decrease of approximately 94,877 tonnes (9,384 x 365 x 0.0277 = 94,877 tonnes) or 9.12% of the quantified 2020 Scope 1 and 2 total (94,877/1,040,347) = 9.12%).
Change in methodology	60,393	Decreased	5.81	The following methodology or measurement changes occurred in 2021:

				1. Application of the 2019 IPCC guidance for fugitive emission calculations. This change impacted our Canada and German business units. Fugitive emissions for both of these business units were previously calculated in accordance with the 2006 IPCC guidance. This methodology change represented a net decrease to our Scope 1 emissions. 2. Implementation of regulatory (AER Directive 60) changes with respect to fuel and vent gas accounting. This change in accounting methodology impacted our Canada business unit and represented a net increase to our Scope 1 emissions. 3. Improved flare gas accounting in our France business unit. This operational change involved the installation and/or re-calibration of flare gas meters at several facilities, which allowed for more accurate accounting of flare gas volumes. This measurement change represented a net increase to our Scope 1 emissions. The combined total of the 2021 methodology and measurement changes represents approximately 5.8% of the reported 2020 Scope 1 and 2 emissions (60,393/1,040,347 = 5.81%), and is less than the materiality threshold defined in our corporate Emissions Recalculation Policy for this category of emission change (10%).
Change in boundary	0	No change	0	This category did not materially impact our operations in 2021.
Change in physical operating conditions	0	No change	0	This category did not materially impact our operations in 2021.
Unidentified	0	No change	0	This category did not materially impact our operations in 2021.

Other	0	No change	0	This category did not materially impact our operations in 2021.

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?

Market-based

C8. Energy

C8.1

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

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

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	1,335,041	1,335,041
Consumption of purchased or acquired electricity		251,282	291,534	542,816
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		251,282	1,626,575	1,877,857

C8.2b

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

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

C8.2c

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

Sustainable biomass

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

Sustainable biomass was not consumed as a fuel in 2021.

Other biomass

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

Other biomass was not consumed as a fuel in 2021.

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

Other renewable fuels were not consumed as a fuel in 2021.

Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

Coal was not consumed as a fuel in 2021.

Oil

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Comment

Oil was not consumed as a fuel in 2021.

Gas

Heating value

HHV

Total fuel MWh consumed by the organization

1,187,690

MWh fuel consumed for self-generation of electricity

415,692

MWh fuel consumed for self-generation of heat

771,999

Comment

Natural gas was consumed as a fuel source in 2021.

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

147,351

MWh fuel consumed for self-generation of electricity

113,011

MWh fuel consumed for self-generation of heat

34,340

Comment

Diesel and propane were consumed as fuel in 2021.

Total fuel

Heating value

HHV

Total fuel MWh consumed by the organization

1,335,041

MWh fuel consumed for self-generation of electricity

528,702

MWh fuel consumed for self-generation of heat

806,339

Comment

The total fuel consumption is equal to the total fuel consumption reference in 8.2a.

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	194,778	194,778	0	0
Heat	794,385	794,385	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2e

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

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Energy mix identified by provider (Naturgy) as 100% renewable.

Country/area of low-carbon energy consumption

Ireland

Tracking instrument used

Other, please specify

Monthly statements and annual Commission for Regulation of Utilities (CRU) fuel-mix disclosure and CO2 emission report.

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

792.9

Country/area of origin (generation) of the low-carbon energy or energy attribute

Ireland

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,021

Comment

100% of the electricity purchased by our Ireland business unit (IBU) in 2021 came from renewable energy sources.

Sourcing method

Unbundled energy attribute certificates (EACs) purchase

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

Country/area of low-carbon energy consumption

Netherlands

Tracking instrument used

GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

84,673.7

Country/area of origin (generation) of the low-carbon energy or energy attribute

Netherlands

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,021

Comment

The origin country is identified in the GO as Europe AIB.

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Low-carbon energy mix, please specify

Approximately 87% of the electricity purchased by our France business Unit (FBU) in 2021 was nuclear. Approximately 10% of the purchased electricity was renewable (including hydro).

Country/area of low-carbon energy consumption

France

Tracking instrument used

Other, please specify

Grid mix information communicated by electricity provider (EDF).

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

161,629.4

Country/area of origin (generation) of the low-carbon energy or energy attribute

France

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,021

Comment

Based on information published by the electricity provider (EDF) approximately 87% of the electricity purchased by our France business Unit (FBU) in 2021 was nuclear. Approximately 10% of the purchased electricity was renewable (including hydro).

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area
Canada

Consumption of electricity (MWh)
384,159.4

Consumption of heat, steam, and cooling (MWh)
472,841.9

Total non-fuel energy consumption (MWh) [Auto-calculated]
857,001.3

Country/area
France

Consumption of electricity (MWh)
166,717.7

Consumption of heat, steam, and cooling (MWh)
1,264.8

Total non-fuel energy consumption (MWh) [Auto-calculated]
167,982.5

Country/area
Netherlands

Consumption of electricity (MWh)
87,808.2

Consumption of heat, steam, and cooling (MWh)
12,621.8

Total non-fuel energy consumption (MWh) [Auto-calculated]
100,430

Country/area

Australia

Consumption of electricity (MWh)

39,102.9

Consumption of heat, steam, and cooling (MWh)

143,115.8

Total non-fuel energy consumption (MWh) [Auto-calculated]

182,218.7

Country/area

United States of America

Consumption of electricity (MWh)

16,183.7

Consumption of heat, steam, and cooling (MWh)

13,172.7

Total non-fuel energy consumption (MWh) [Auto-calculated]

29,356.4

Country/area

Germany

Consumption of electricity (MWh)

12,252.3

Consumption of heat, steam, and cooling (MWh)

18,469

Total non-fuel energy consumption (MWh) [Auto-calculated]

30,721.3

Country/area

Hungary

Consumption of electricity (MWh)

1,197.2

Consumption of heat, steam, and cooling (MWh)

3,331.8

Total non-fuel energy consumption (MWh) [Auto-calculated]

4,529

Country/area

Ireland

Consumption of electricity (MWh)

30,172.2

Consumption of heat, steam, and cooling (MWh)

129,567.6

Total non-fuel energy consumption (MWh) [Auto-calculated]

159,739.8

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	13.92	Total production of crude oil and condensate as reported in our 2021 annual report. For complete consolidated results, we encourage investors to review our financial reporting.
Natural gas liquids, million barrels	3.04	Total production of natural gas liquids as reported in our 2021 annual report. For complete consolidated results, we encourage investors to review our financial reporting.
Oil sands, million barrels (includes bitumen and synthetic crude)	0	Vermilion does not have bitumen or synthetic crude assets

Natural gas, billion cubic feet	85.28	Total production of natural gas as reported in our 2021 annual report. For complete consolidated results, we encourage investors to review our financial reporting.

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.

Estimated proved and proved plus probable reserves attributable to the assets as evaluated by GLJ Petroleum Consultants Ltd. in a report dated February 11, 2022 with an effective date of December 31, 2021. Reserves for Australia, Canada, Croatia, France, Germany, Hungary, Ireland, Netherlands, and United States are established using deterministic methodology. Total proved reserves are established at the 90 percent probability (P90) level. There is a 90 percent probability that the actual reserves recovered will be equal to or greater than the P90 reserves. Total proved plus probable reserves are established at the 50 percent probability (P50) level. There is a 50 percent probability that the actual reserves recovered will be equal to or greater than the P50 reserves. The net total resource base includes the 2P reserves and a risked best estimate of the contingent and prospective resources. Vermilion does not complete a contingent and prospective resources assessment and thus no total resource base is included in this report.

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	427.92	0	427.92	Reserves are net of royalty reserves, as reported in our Annual Information Form. Please note, that Vermilion does not report 3P reserves, contingent resources or prospective resources. For complete consolidated results, we encourage investors to review our financial reporting.

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	63	0	63	Reserves are net of royalty reserves, as reported in our Annual Information Form. Please note, that Vermilion does not report 3P reserves, contingent resources or prospective resources. The net total resources base is the total of the 2P reserves. For complete consolidated results, we encourage investors to review our financial reporting.
Natural gas	37	0	37	Reserves are net of royalty reserves, as reported in our Annual Information Form. Please note, that Vermilion does not report 3P reserves, contingent resources or prospective resources. For complete consolidated results, we encourage investors to review our financial reporting.
Oil sands (includes bitumen and synthetic crude)	0	0	0	Vermilion does not have bitumen or synthetic crude assets.

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

Onshore

In-year net production (%)

90

Net proved reserves (1P) (%)

94

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

94

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

0

Net total resource base (%)

94

Comment

Reserves are net of royalty reserves, as reported in our Annual Information Form. Please note, that Vermilion does not report 3P reserves, contingent resources or prospective resources. The net total resources base is the total of the 2P reserves. For complete consolidated results, we encourage investors to review our financial reporting.

Development type

Shallow-water

In-year net production (%)

4

Net proved reserves (1P) (%)

3

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

3

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

0

Net total resource base (%)

3

Comment

Reserves are net of royalty reserves, as reported in our Annual Information Form. Please note, that Vermilion does not report 3P reserves, contingent resources or prospective resources. The net total resources base is the total of the 2P reserves. For complete consolidated results, we encourage investors to review our financial reporting.

Development type

Deepwater

In-year net production (%)

6

Net proved reserves (1P) (%)

3

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

3

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

0

Net total resource base (%)

3

Comment

Reserves are net of royalty reserves, as reported in our Annual Information Form. Please note, that Vermilion does not report 3P reserves, contingent resources or prospective resources. The net total resources base is the total of the 2P reserves. For complete consolidated results, we encourage investors to review our financial reporting.

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	Current low emission R&D activities focus on: 1) Developing geothermal energy projects that leverage the heat contained in our produced water (France). Vermilion's petroleum extraction process produces a mix of oil, gas and water which is naturally heated to around 60°C. Once the oil and gas are separated out, the heated water enters a closed-loop system where heat exchangers transfer its caloric energy to a second water system belonging to our partners (while ensuring the two water systems never come into contact). Vermilion reuses the produced water by pumping it back underground to maintain reservoir pressures and enhance production. By demonstrating proof-of-concept, our partnership with tomato growers Tom d'Aqui in Parentis has been credited as being a catalyst for building an agriculture sector in this area independently of Vermilion. We provided a second example of this technology to heat an eco-neighbourhood in La Teste, and in 2021 established a third geothermal application; our Vic Bilh asset will provide geothermal heat to a nearby Fleur de Vie facility that produces high quality spirulina, a microalgae with a wide variety of uses and a fourth, providing heat to a college in Arcachon. 2) Developing biogas initiatives that feed biogas into existing pipeline gathering systems (Netherlands) 3) Our first use of an ORC turbine, in which a turbogenerator transforms thermal energy into mechanical energy (France). 4) Participation in Avenia, a multi-sector association in France with many

		programs related to supporting geothermal development and optimizing recovery from existing hydrocarbon reservoirs. We supported (with funding, expertise and marketing) an industry and country-wide study to identify the potential for waste energy use from oil and gas operations. 5) Participation in the Geothermal Forum in Germany provides a platform for the exchange and preparation of information for the geothermal industry 6) Our non-operating partnership in the Weyburn-Midale Carbon Capture and Storage facility in Saskatchewan, Canada, which is 1 of the world's largest CCUS projects. Our non-operated production from this enhanced oil recovery project was 2,098 bbls/d in 2020. 7) Investigating the potential to use our existing infrastructure in NL and Ireland for hydrogen applications.

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
Renewable energy	Applied research and development	41-60%	250,000	Vermilion is an active participant on the H2020 MEET project whose objective is to demonstrate the geothermal potential of Europe in different geological settings to ensure replicability of solutions and to attract investors in agreement with our ESG roadmap. The applied research and development part of this project consists of mapping thermal resource from oil facilities, searching and mapping end users with heat demand, de-risking (thermal modeling, corrosion and scaling study), and testing Rankin thermodynamic cycles for electricity production at low temperature.
Renewable energy	Small scale commercial deployment	21-40%	125,000	Developing geothermal energy projects that leverage the heat contained in our produced water (France). Vermilion's petroleum extraction process produces a mix of oil, gas and water which is naturally

				heated to around 60°C. Once the oil and gas are separated out, the heated water enters a closed-loop system where heat exchangers transfer its caloric energy to a second water system belonging to our partners (while ensuring the two water systems never come into contact). Vermilion reuses the produced water by pumping it back underground to maintain reservoir pressures and enhance production. By demonstrating proof-of-concept, our partnership with tomato growers Tom d'Aqui in Parentis has been credited as being a catalyst for new projects launched independently of Vermilion, along with 3 additional applications within Vermilion partnerships. We provided a second example of this technology to heat an eco-neighbourhood in La Teste, and in 2021 established a third geothermal application; our Vic Bilh asset will provide geothermal heat to a nearby Fleur de Vie facility that produces high quality spirulina, a microalgae with a wide variety of uses and a fourth, providing heat to a college in Arcachon.
Renewable energy	Applied research and development	21-40%	125,000	Participation in Avenia, a multi-sector association in France with many programs related to supporting geothermal development and optimizing recovery from existing hydrocarbon reservoirs. We supported (with funding, expertise and marketing) an industry and country-wide study to identify the potential for waste energy use from oil and gas operations.
Hydrogen	Applied research and development	≤20%		We are a partner in Hylight, a 3-year project in Ireland that aims to provide the knowledge, data and tools to

				guide the cost-effective decarbonisation and roadmaps for sustainable large-scale implementation of hydrogen technologies.
Renewable energy	Small scale commercial deployment	21-40%		In Harlingen, we have partnered with SPF Group, a producer of sustainable fuels, to investigate the use of our Harlingen Treatment Centre location for their biogas production site. The location includes a quay, which makes it possible to receive raw materials via water, thereby limiting truck transportation, and it offers existing buildings instead of new builds, which supports the sustainability principle that all parties involved are pursuing. It can also make use of Vermilion's extensive gas infrastructure there. As of June 2022, SPF Group has located their head office at our location.

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.

9.62

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	Third-party verification or assurance process in place

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
Limited assurance

Attach the statement

2021_CDP-VerificationLetter_FNL.pdf

Page/ section reference
Page 1 - 2

Relevant standard
ISO14064-3

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

2021_CDP-VerificationLetter_FNL.pdf

Page/ section reference

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Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-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

2021_CDP-VerificationLetter_FNL.pdf

Page/ section reference

Page 1 - 2

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution

Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Upstream leased assets
Scope 3: Investments
Scope 3: Downstream transportation and distribution
Scope 3: Processing of sold products
Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products
Scope 3: Downstream leased assets
Scope 3: Franchises

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

2021_CDP-VerificationLetter_FNL.pdf

Page/section reference

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Relevant standard

ISO14064-3

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

C7. Emissions breakdown	Year on year change in emissions (Scope 1 and 2)	The 2021 and prior year (2020) variations were completed to ISO 14064-3	For consistency, Vermilion maintains our verification process year-over-year. For 2021 and 2020 , this included the same verification team, support of the verification data, and changes in emissions year-over-year. See attached verification statement.

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.

EU ETS
Ireland carbon tax
Other carbon tax, please specify
Alberta Technology, Innovation & Emissions Reduction (TIER) Regulation
Other carbon tax, please specify
Saskatchewan Output Based Pricing System

C11.1b

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

EU ETS

% of Scope 1 emissions covered by the ETS

6.3

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2021

Period end date

December 31, 2021

Allowances allocated

8,294

Allowances purchased

32,245

Verified Scope 1 emissions in metric tons CO2e

40,539

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Vermilion's Ireland BU is subject to the EU ETS.

C11.1c

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

Ireland carbon tax

Period start date

January 1, 2021

Period end date

December 24, 2021

% of total Scope 1 emissions covered by tax

6.3

Total cost of tax paid

160,039

Comment

Vermilion's Ireland operations are subject to the Ireland carbon tax.

Other carbon tax, please specify

Period start date

January 1, 2021

Period end date

December 31, 2021

% of total Scope 1 emissions covered by tax

29.2

Total cost of tax paid

90,200

Comment

Vermilion's Alberta (Canada) operations are subject to the Technology Innovation & Emissions Reduction (TIER) Regulation.

Other carbon tax, please specify

Period start date

January 1, 2021

Period end date

December 31, 2021

% of total Scope 1 emissions covered by tax

36.8

Total cost of tax paid

325,000

Comment

Vermilion's Saskatchewan (Canada) operations are subject to the Saskatchewan Output Based Pricing System (OBPS). Our 2021 OBPS verification audit is in progress. The referenced total cost of tax paid is a forecast and subject to the final audit results.

C11.1d

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

Carbon taxes are set to increase in several of our jurisdictions, resulting in increasing costs. The Canadian Federal Greenhouse Gas Pollution Pricing Act, established in 2019, has set carbon tax rates at $50 per tCO2e in 2022, with progressive escalations to $170 by 2030. The EU Emissions Trading Scheme cap and trade system requires users to acquire carbon allowances to account for their emissions. Our IBU carbon tax was €41 in 2022, increasing by €7.50/t annually to 2030. The German National Emissions Trading System, established in 2021, will impact our GBU operations with a fixed cost of €30/t in 2022, increasing to €55/t by 2025, with market pricing from 2027.

Our strategy to comply with the systems we are regulated by involves both financial and strategic planning considerations. Our exposure in Canada is mitigated by provincial responses to the federal Act, including Alberta's Technology Innovation and Emissions Reduction (TIER) regulation and Saskatchewan's Output-Based Pricing System (OBPS). Vermilion has voluntarily opted into both programs, which provides tax exemptions contingent on emissions reduction. However, these programs will evolve with the federal approach, with emission reduction requirements becoming more stringent over time.

Strategically, we will also continue to reduce the energy and emissions intensity of our operations, supporting our carbon strategy's emission reduction targets (2025 and 2050). We will do this by 1) Using our Emissions Long Range Planning Tool to establish the tax reductions

available compared to carbon abatement costs, analyze potential acquisitions and divestments, and allocate capital to emissions reduction projects; 2) Developing a net zero plan in 2022/2023 to support our net zero by 2050 target, with business unit and operational input; 3)Tracking evolving taxation requirements; and, 4) Engaging external and in-house experts to support tax strategy development, including accepting the tax expense where carbon abatement costs are uneconomical .

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

Navigate GHG regulations

GHG Scope

Scope 1
Scope 2

Application

To support climate risk identification and management, we previously developed a Carbon Liability Assessment Tool, with Scope 1 emissions quantification and regulatory information for each business unit. We assessed the price of carbon on both a realized cost and shadow pricing basis, and identified likely carbon pricing scenarios for all our operating areas. In 2021 and 2022, we developed and piloted an Emissions Long-Range Planning (ELRP) Tool, which uses our 10-year projections of production to estimate our Scope 1 and 2 emissions, associated carbon taxes, and impacts of emission reduction projects. We are now using this to support our planning of production, capital allocation, budgeting, target setting and merger, acquisition and divestment decisions.

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

50

Variance of price(s) used

We have assessed the price of carbon on both a realized cost and shadow pricing basis, and have identified likely carbon pricing scenarios for all BUs where we have operational control (Low, Probable and High Cost scenarios). The carbon costs applied in our forecasting tools are jurisdictionally and time dependent, and vary based the current and anticipated taxation schemes in each of our operating areas.

The identified price in our response to this question is the base (Probable) cost scenario for Canada in 2022. Consistent with current Government of Canada guidance, this base-case value for Canada is progressively increased in our forecasting to $170/tonne in 2030.

Type of internal carbon price

Shadow price

Impact & implication

The ELRP tool is being used to support our planning of production, capital allocation, budgeting, target setting and merger, acquisition and divestment decisions. This tool, along with the technical expertise of BU and Corporate personnel, supports each of our BUs in assessing the impact associated with the price of carbon. Changing GHG regulations and the impact associated with the cost of carbon is considered to be an ongoing risk. The implications of a change in GHG regulation, on an increased price of carbon basis, would be a decreased netback on a per BOE basis as a result of an increased operating expenditure associated with the increase in taxation. Actual impact (current) and potential impact (forecast) have been assessed against all carbon cost scenarios for our operating regions.

Objective for implementing an internal carbon price

Stakeholder expectations

GHG Scope

Scope 1
Scope 2

Application

Supporting our strategic objective of Integrated Sustainability, Vermilion recognizes and is committed to playing a role in the energy transition. Sustainability-oriented investors, governments and citizens will affect their greatest positive impact by turning to Best-in-Class operators like Vermilion during the transition We align our work and measure our impact according to the United Nation's Global Goals for Sustainable Development (SDGs) and have been consistently been recognized for outstanding sustainability performance across a wide of independent organizations. When correlated to market performance, Vermilion sees a direct link to our market outperformance and our strong sustainability performance.

Our ELRP tool allow for the assessment of potential financial exposures under the various carbon regimes our operations fall under around the globe. This is an important

component of our Operational Excellence and effective management or carbon price risk.

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

148

Variance of price(s) used

Our former Carbon Liability Assessment tool and new ELRP tool are used to support multiple objectives, including managing stakeholder expectations regarding management of the financial impacts associated the price of carbon. The case scenario for this carbon pricing uses the example of the probable cost scenario (Converted to CAD) for France in 2030. This scenario assumes TICPE is paused at €45 as a result of the "yellow vest protests" as of mid 2019. This scenario assumes that following the 'pause' the TICPE continues to be implemented in full as outlined in the Law on Energy Transition (reaching € 100 by 2030).

Type of internal carbon price

Shadow price

Impact & implication

Vermilion has identified likely carbon pricing scenarios for all of our operations. This work pertains to Scope 1 and 2, but is applicable to Scope 3 emissions as these emissions have the potential to be impacted by an economy wide carbon tax, such as the tax in Alberta, Canada. Carbon pricing is utilized by personnel with roles and responsibilities related to our strategic objective of Integrated Sustainability, as well as in Production Operations and Finance. The rationale for identifying potential carbon pricing (current and future) schemes is that they will have a direct financial impact to Vermilion and we have a duty to our investors to manage financial risk to ensure growth and return for our shareholders.

Objective for implementing an internal carbon price

Identify and seize low-carbon opportunities

GHG Scope

Scope 1
Scope 2
Scope 3

Application

New in 2017 and continuing into 2022, all capital projects at Vermilion are assessed for impact on various areas of sustainability, including emissions and climate change. This supports all areas of our business in understanding (a) how sustainability is integrated into our operations and work, and (b) the positive impacts from the capital projects we complete across our organization (over and above the production of our products).

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

118

Variance of price(s) used

The carbon price utilized in the assessment of the impact of our projects, specific to the price of carbon, is dependent on the region and timeframe of the project. The flexibility of our Carbon Liability Assessment Tool supports the identification of climate related impacts of our capital investments in the short, medium and long term.

The example carbon cost reported in this row is the high cost scenario (Converted to CAD) for Croatia out to 2023. This scenario assumes the that the factors associated with the Berenberg ETS price projections for 2019-20 are extrapolated out to a trajectory that will reach a price of €80 by 2023.

Type of internal carbon price

Shadow price

Impact & implication

The process for determining carbon pricing includes a review of current pricing assertions by governments and a review of published research relating to the Paris Agreement and potential carbon price requirements. As this is a landscape that evolves and changes on a regular basis, Vermilion completed an in-depth review of our Carbon Liability Policy Framework with the support of third party experts in 2019.

Carbon pricing and emissions have a direct impact on our business and we currently have operations in regions with active carbon Implementation of a corporate Emissions Reduction Long Range Plan (LRP) tool will allow us to proactively evaluate different operating scenarios and assess the impact of business decisions on carbon emissions (absolute and intensity based) and associated carbon liability. This will help us to determine the best course of action for Capex, Opex, M&A and other business decisions, and identify opportunities for further emission reduction targets.

In the future, we anticipate that the price of carbon may lead Vermilion to look at additional projects to support reduced carbon emissions as well as green energy projects, similar to the cogeneration project that is active in our France business unit and our low-carbon projects in the Netherlands. These types of projects support Vermilion's assessment of the future development of our business, while effectively managing the cost of carbon as we move through the energy transition.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers/clients

Yes, other partners in the value chain

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

62

% total procurement spend (direct and indirect)

72

% of supplier-related Scope 3 emissions as reported in C6.5

65

Rationale for the coverage of your engagement

This is an extension of our current approach to supplier engagement, which includes working with specific suppliers to improve climate change management, and to better understand potential risks and opportunities. Through our third-party compliance system in our Canada and US Business Units, approximately 62% of our suppliers in these business units have been engaged on providing climate-related risk information. Questions include: Has Your Company Identified Its Sources Of Direct And Indirect GHG Emissions; what types of fuels are used; does your company track and report on GHG emissions; what are your sources of Scope 1, 2 and 3 emissions; have you developed a strategy to reduce GHG emissions; do you track ozone-depleting substances; quantify use or generation of energy from renewable and non-renewable sources; plans for implementing energy efficiency strategies; plans to advance the use of renewable resources such as solar; and all related energy and emissions data. This constitutes another step in greater direct supplier engagement on climate-related issues, and focuses on the Canada Business Unit, where our emissions intensity is highest, and where our use of third party supplier compliance systems enables us to leverage existing supplier questionnaires. This questionnaire will be updated annually, and reviewed by our HSE and sustainability teams to identify opportunities for further engagement and improvement over time. We have expanded this external supplier engagement while reviewing our own emissions and intensity, and to demonstrate our own performance via CDP Climate submissions. We believe this is providing a solid foundation for data gathering from suppliers, and helps to guide the data and information requests that we make of them.

Impact of engagement, including measures of success

The most important impact of our engagement on climate is 100% compliance with climate-related regulations in our operating areas, which has a direct impact on our

company reputation, and on reducing the risks associated with water use and availability for Vermilion and for our stakeholders.

Based on the third-party supply chain questionnaire, we are able to further identify suppliers' level of water risk management and water management, and identify metrics such as the percentage of respondents responding to the climate questions (93%), the percentage reporting climate data (and the percentage with water management plans in place. Based on where the supplier is operating and the level of criticality to our operations, this provides additional information to help support our 100% compliance with water-related regulations, and our sustainability strategy's focus on water efficiency and reduction.

In addition, Vermilion engages many of our suppliers and all of our contractors relating to safe and efficient completion of the approved scope of work. The current focus of this engagement is optimization of resources to reduce the impact and exposure, both from a health, safety and environment perspective, as well as water impact perspective. Measurements of success related to our engagement, while it is still in the initial stages of implementation, is expected to be the quantification of a sustainability capital effectiveness ratio, to aid in our internal assessment of the supplemental benefit of our capital investments. This will support our strategic objective of Integrated Sustainability, while providing a way for Vermilion to demonstrate to our investors and the public that our market outperformance is correlated to our strong sustainability focus and performance.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Collaboration & innovation

Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

100

Please explain the rationale for selecting this group of customers and scope of engagement

Since we don’t have downstream oil and gas operations, our customers are not traditional consumers; they are instead markets that include North American-based

midstream and downstream refiners, Asia Pacific-based refining and lubricant businesses, European downstream refiners, and key aggregators and utilities, such as the 50% state-owned GasTerra in The Netherlands. In some cases, we are mandated to provide products through specific customers (such as GasTerra); in others, there is a transparent and competitive process in which potential customers bid for those products. Our goals for engaging with these entities in our value chain is to (a) ensure they are aware of our commitment to and reputation for ESG issues, including climate change, and (b) by asking for details about their commitment, encourage their own activities to reduce climate change impacts. Our Marketing department has established an ESG section in our communications with potential customers, including requests for proposal, tenders and bid documents. This establishes our commitment to ESG, including climate issues, and requests that entities wishing to purchase our products include information about their commitment to ESG as part of bid packages. This enables us to use the customer-provided ESG information as part of the assessment of the bid packages, including the comparison between bidders. At the same time, it raises awareness with these customers – whether they are successful bidders or not – about the growing criticality of these commitments and associated activities.

Impact of engagement, including measures of success

Our measures of success include the number of customers (and potential customers) that we communicate with on ESG commitments, including climate change – this is our input measure. We are also tracking the number of potential customers that respond with their ESG commitment – this is our output measure. As the initiative further develops, we anticipate being able to use outcome measures, such as number of successful bids for which ESG commitments made a material difference, and the potential for developing partnerships based on a mutual recognition of the importance of ESG, particularly climate change, and tracking the results from those partnerships. We anticipate using these results to further communicate with our potential and actual customers. The current impact is that 100% of all new tenders/requests for proposals or bids, etc. for our crude oil and gas marketing in 2021 include our ESG commitment and request information on the potential customer's commitment. We are tracking the number of bids that return with ESG and climate information included (9.45% in 2021), and comparing this for top candidates to the companies' externally communicated ESG and climate information. This provides an assessment of how many companies are responding to our request, and provides an opportunity for further engagement with them on ESG and climate matters.

C12.1d

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

One of Vermilion's defining strengths is our belief that sharing or success is essential to being a success. We have embedded this philosophy in our mission and we continue to live it today. Our objective is to ensure that our stakeholders, shareholders, employees, communities and partners benefit from our achievements. This approach, based on the concepts of inclusive and sustainable growth, frames our business strategy and guides our role in the energy transition.

Vermilion engages our value chain in many ways, one of which is with other companies that are part of our sector. This is important to us because these companies may be our partners or potential partners in our operating areas, and because they are part of our industry sector, and our collective performance on climate issues as an industry is an essential part of the successful energy transition. As a case study, our formal engagement in this regard is as an active participant in a sustainability leadership working group comprised of other companies in the energy industry in Alberta, based in Calgary. This group meets bi-monthly to discuss such issues as challenges, innovation, solutions and best practices regarding sustainability, particularly with respect to climate change and greenhouse gas emissions. Subjects have covered such issues as reporting best practices, methane reduction, systems thinking, collaborative innovation, climate change and GHG reduction case studies from leading companies. The subjects are led each meeting by one of the companies that has a challenge or initiative they wish to engage the group on. In addition, an annual longer workshop expands the work and scope of this member-driven working group to the wider industry at no charge, with the specific intent of sharing best practices and open dialogue that will raise the bar for the entire industry. Outputs include discussion records collated to create living documents housed online that form an ongoing resource for best practices and ideas, and the ability to reach out to this group with questions for the members at any time between meetings.

Vermilion chaired this group in 2016-2017 and continues to be an active member. We have prioritized this method of engagement as directly applicable to our industry, producing ideas and solutions that can be immediately trialled or implemented within the company. One of the ongoing focuses for the group is supply chain, as many of our member companies are either engaging with, development engagement plans, or working to understand how to engage the supply chain, which is the natural extension of this collaborative work. One example of success is the linkage through members of this group this year to an external ESG- and climate-focused initiative that is aiming to standardize reporting on ESG and climate change such as GHG emissions for the oil and gas industry. This is a particular challenge for the industry, given the differences between reporting boundaries and company-specific definitions and approaches. Alignment between other companies in the sector will provide better comparability between companies, better performance assessments, and more decision-useful information for investors and other stakeholders.

We engage with the public by communicating our emission reduction activities through publications and voluntary reporting (such as CDP and our Corporate Sustainability Report).

We engage with our employees on Sustainability and emissions performance at quarterly town hall meetings where we review our six strategic objectives, including Integrated Sustainability. Measures of success on supply chain engagement initiatives will be initiative-specific (i.e. a project-specific emissions reduction target). This is an area that will continue to be developed as Vermilion's Sustainability strategy evolves. Vermilion prioritizes engagement based on the potential for collaborative identification of emission reduction potential, as well as potential effect on Vermilion's brand and license to operate.

Vermilion, on an ongoing basis, looks for opportunities to engage a larger percentage of our value chain based on potential impact of the engagement. Vermilion also engages partners in the value chain where the partner has a specific interest (i.e. investor interest group). In addition, Vermilion is actively working with customers who are developing their own frameworks to assess sustainability, with a view to qualifying as responsible suppliers of natural gas.

We also engage with our governments and regulatory authorities on climate change through our business development activities. For example, we include ESG and climate issues and performance in our bid documents, and actively discuss our performance as part of the bid process, establishing not only our own credentials in this area, but the importance of considering this as a comparator between companies to help advance country performance on NDCs related to the Paris Agreement.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Complying with regulatory requirements

Description of this climate related requirement

We require third-party contractors and sub-contractors – our vendors – to be HSE pre-qualified prior to commencing service work. This helps ensure that they have an HSE program in place that meets or exceeds our requirements, which is compliance with all regulations, including climate. We also observe and interact with our vendors on an ongoing basis to ensure that they are adhering to Vermilion's HSE practices, procedures and rules; this includes engaging with them on emissions standards and regulations.

We hold mandatory monthly HSE meetings in every field district that all staff (field and administration) attend and senior management routinely participate in. On a quarterly basis, the HSE district meetings are replaced by HSE-focused town hall meetings that include our vendors. This practice has resulted in a better understanding of Vermilion's HSE requirements, and an improved understanding of where and how we can provide better support to our vendors. Our site and work procedures also provide strong oversight of staff and contractor activities alike, as do our Corporate Contractor/Vendor Selection and Management Guidelines.

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

First-party verification

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations
Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

Available publicly at:
http://sustainability.vermilionenergy.com/ourenergytransition/associations.cfm

We recognize the need to ensure that our advocacy efforts reflect our business strategy, particularly with respect to climate change and the energy transition. We engage directly with government representatives when we believe we can make a difference in creating policy and regulation decisions to support the participation of oil and natural gas companies in the energy transition, so that we can be part of the solution.

Vermilion supports the goals of the Paris agreement and governments' actions to develop and implement related climate change policy and regulation, while recognizing the critical role that oil and natural gas will play during the energy transition to ensure accessible and affordable energy supplies.

Our position is that while oil and gas resources are still needed during the energy transition, the provision of clear, stable and reasonable regulations will allow energy producers such as Vermilion to continue to operate in an environmentally and socially responsible manner.

We believe that domestic energy supply should be prioritized over importing oil and gas, for its contributions to national energy security, the economic benefits it provides to local communities through employment and local investment, its compliance with stringent safety, environmental and workplace regulations, and the lower carbon footprint it often provides.

We are aware that the trade and industry associations we belong to may, as part of their roles, represent their membership by advocating for government policy and regulations. We monitor that advocacy to ensure that it fairly represents our position and the goals of the Paris agreement.

To support this, we annually review all memberships to assess alignment, and provide our Executive Committee and Board of Directors Sustainability Committee with a summary, including misalignment and recommendations. In 2022, three associations had no commitment or equivalent to the Paris agreement, and one had lobbying activities misaligned with Paris. When there are discrepancies between the organization's position and ours, we engage with the association to understand and influence the issue. We consider withdrawal of membership only if no improvement proves likely.

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

Vermilion has identified personnel in Sustainability, HSE, Communications, Community Investment & Investor Relations (IR) groups as responsible to ensure that corporate guidance & direction is passed effectively to the Business Units (BUs) & external parties in a consistent manner, including climate. Our VP Sustainability regularly engages with BU leaders, VP Europe & our Public & Government Relations teams to ensure multi-directional communication on sustainability, including expectations & shared best practices, & consistency of external messaging. All external messaging is reviewed by IR, with any inconsistencies resolved prior to publication, which is approved via our Disclosure Committee, including the President, CFO & VP IR. Regional level outreach to local stakeholders occurs in all Bus; this information is integrated corporately into our overall strategy and to identify areas in the BUs where specific support is required. Our HSE professionals in each of our operating countries monitor policy development within their respective jurisdictions. Direction related to communication and strategy associated with climate change flow from Corporate to Business Unit Management within Vermilion's structure.

We are aware that trade and industry associations may, as part of their roles, represent

their membership by advocating for government policy and regulations. We monitor that advocacy to ensure that it fairly represents our position; if there are discrepancies between the organization's position and our company approach, we would engage with the association. This monitoring is carried out at the corporate level by our sustainability team for all business units. Should we identify a discrepancy between our position and the association's position, our approach is to engage with the association to influence their direction. We actively participate in government industry working groups, often at the request of our governments. These are often designed to seek our expertise on technical aspects feedback input as one of many stakeholder positions that governments then consider prior to setting out regulatory or legislative changes.

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Adaptation and/or resilience to climate change

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Hulot Law to end exploration and production of hydrocarbons by 2040, and the related regulations including the Mining code

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

France

Your organization's position on the policy, law, or regulation

Support with major exceptions

Description of engagement with policy makers

Informal discussions, face-to-face meetings with members of government, members of cabinet for environment and energy, parliamentary assembly staff, etc.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Proposed alternative approach is to recognize the role of transitional and future energy alternatives to provide opportunities to repurpose our infrastructure and to continue supporting the economic and social foundation of the communities where we operate, particularly through the development of related/alternative substances for extraction or production such as rare minerals (e.g. lithium) or hydrogen. This incudes proposing an adaptation of the criteria for calls for projects on the energies of tomorrow (to include hydrogen); and discussions on the value of developing pilot lithium extraction projects

on the company's concessions; raising awareness of our direction on well transition; the use of secondary energy in the framework of local partnerships; to ensure the follow-up of the regulatory transcription of the "climate-resilience" bill; proposal to make the Mining Code easier to read and understand by bringing together the provisions relating to the legal authorisation and exploitation regimes in a single section; proposal to include an obligation for prior consultation with all stakeholders in the sector in the context of the reform of the mining code by ordinance; authorise the extension of existing mining titles to the exploitation of related mining substances (e.g. lithium) without changing the duration of the mining title.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Adaptation and/or resilience to climate change

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Climate Action and Low Carbon Development (Amendment) Bill 2021

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

Ireland

Your organization's position on the policy, law, or regulation

Support with major exceptions

Description of engagement with policy makers

Email regarding the Climate Action and Low Carbon Development (Amendment) Bill 2021 and discussions in Dail Eireann and to present IOOA analysis on the potential impact on Energy security in Ireland sent to 5 TDs regarding Awareness of IOOA analysis and Corrib's commitment to a safe and secure supply of indigenous natural gas for Ireland and to have same raised at any parliamentary meetings or Dail Eireann debates; site visit of TD (Dáil Éireann, the Oireachtas) to Bellanaboy Gas Terminal to build on Vermilion's reputation as a safe & responsible operator both locally & nationally, to advocate on Climate Action Amendment Bill, Energy Security, and the role of natural gas in supporting renewables, and to highlight the importance of Vermilion Energy as an important contributor to the local and national economy; Letter in support of the Government's 2050 zero carbon targets and efforts via the Climate Action Bill and the Climate Action Plan to transition Ireland's energy mix to achieve this aim, including awareness of Corrib's commitment to a safe and secure supply of indigenous natural gas for Ireland and to offer assistance to the Department and other key stakeholders to ensure that Ireland meets its responsibilities in terms of the carbon reduction targets and

providing Energy Security for its citizens, to Minister (Department of Environment, Climate and Communications);

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Approach to support domestic natural gas exploration and production, using Irish Offshore Operators Association analysis and Corrib's commitment to a safe and secure supply of indigenous natural gas for Ireland

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Other, please specify

Pole Avenia

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

This group is focused bringing together companies, researchers and training institutes to develop technologies to support the geoscience sector with the goal of enhancing recovery and geothermal opportunities, reducing the environmental impact and developing long-term energy and CO2 storage solutions. The organization's position is that these initiatives will have a positive impact on reducing the carbon intensity of industry in the region and foster technology development for application locally and abroad. POLE AVENIA, located in Pau in southwest France, is the only French competitiveness cluster in the geosciences sector. A competitiveness cluster brings together companies, research laboratories, and schools working in a specific sector. Governments and local organizations are also closely involved in this dynamic. The energy transition is based on two principles: the reduction of primary energy consumption and the development of renewable energy. However, these changes do not affect the impact of fossil energies, as most of fossil resources will remain prominent

in the energy mix by 2030. Out of 70 competitiveness clusters in France, 12 focus mainly on renewable energies and POLE AVENIA is the only cluster focused on fossil energy, geothermal, geological storage of CO2 and of energy. So, it is important that POLE AVENIA also focuses on those sectors, to contribute to reducing our dependence on fossil energies during the energy transition. Its ambition is to promote the subsurface component of the energy mix by developing technologies for subsurface applications and by promoting technology and skill transfers. It works in three interconnect markets: oil and gas; geothermal; and geological storage (e.g. CO2).

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Canadian Association of Petroleum Producers

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Re Climate Policy Development: CAPP will engage in constructive, solutions-focused dialogue with governments and other stakeholders and partners to develop sound policies that achieve global emissions reductions in the most efficient, cost effective way. CAPP can contribute data driven evidence-based analysis and operational expertise to inform the development of policy pathways that can lead to further emissions reductions. CAPP will do this in accordance with CAPP's Climate Policy Principles. • Collaborative and Solutions-Oriented • Efficient, Effective and Predictable • Technology and Innovation Focused • Globally Competitive We will work with government(s) to meet emissions reduction objectives and the ambition of the Paris Agreement, to which Canada is a signatory, as a global framework for addressing the risk of climate change. This includes defining net zero and the most efficient and cost-effective manner to achieve it with the least impact to society. Any pathway to net zero includes the efficient use of oil and natural gas. Considerable investment in technology

and innovation at scale will be needed, including negative emissions technologies such as carbon capture, use and storage. This offers important opportunities for industry to contribute given our expertise in these areas.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Irish Offshore Operators Association

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Founded in 1995, the Irish Offshore Operators' Association (IOOA) is the representative organisation for the Irish offshore oil and gas industry. By cooperating and providing a common approach to issues such as safety, the environment, legislation and employment, the IOOA pro-actively assists in the development of oil and gas exploration and production in Ireland's waters. Our vision for Ireland's decarbonisation transition is for a clear, realistic, costed and fully integrated plan, based on international experience and supported by robust evidence. Cognisant of the many challenges that will face Ireland on the transition journey, we believe our views are grounded in practical and pragmatic realism. We highlight a number of the challenges that must be addressed. The Government's decarbonisation plan and the targets for emissions reductions to 2030 are extraordinarily ambitious and challenging, with no modern economy ever having achieved such levels of reduction to date. Decarbonisation of the electricity system is advancing with the upscaling in wind and solar energy deployment. However, making further significant emissions reductions in this and especially in other areas, including agriculture, heating and transport, is recognised as being far more challenging. Achieving these in the timescale envisaged will require unprecedented levels of use and integration of all available low carbon technologies, together with the deployment at

scale within the next decade, of new and next generation technologies, some of which are still at an early stage of development. The overriding objective running through the implementation of the planned transition should be the achievement of a clean, reliable and affordable energy future where Ireland has control over our energy security and where Irish society will benefit both throughout the journey and at the destination of a climate-resilient country and a leader in clean energy generation. Ireland's gas demand is projected to continue for the coming decades. It will not be possible to dispense entirely with natural gas for power generation and grid stability for the next two decades and a reliable natural gas supply is essential into the future. Indigenous natural gas, with very low emissions, can play a crucial role in the decarbonisation of the electricity system and in heating and transport.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3c

(C12.3c) Provide details of the funding you provided to other organizations in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

Type of organization

Research organization

State the organization to which you provided funding

HyLIGHT–Leading Ireland's Green Hydrogen Transition; Funding Body: Science Foundation Ireland & Industry; Coordinator:Dublin City University, Research Partners: Bord Gais Energy, Bord na Móna, Coillte, Eirgrid, Energia, ESB, Gas Networks Ireland, Lumcloon Energy, Aughinish Alumina, Cement Manufacturers Ireland, Constant Energy, Sepam, Infrastrata, Mannok Cement, Vermilion, Indaver, GreenCoat Renewables, Simply Blue Energy, Micro-Bio, Fingleton White, Arup, Echelon, DCC Flogas, Mutual Energy, SSE

Funding figure your organization provided to this organization in the reporting year (currency as selected in C0.4)

14,000

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

HyLIGHT is a 3-year project funded by Science Foundation Ireland (SFI) and a 25-strong industry consortium through MaREI the SFI Research Centre for Energy, Climate and Marine, UCC, DCU & NUIG. The overall aim of HyLIGHT is to provide the knowledge, data and the necessary tools to guide the cost-effective decarbonisation and roadmaps for sustainable large-scale implementation of hydrogen technologies in Ireland to enable sector integration for a zero-carbon, secure, resilient energy system.

HyLIGHT will achieve its aim by collaborating with the leading national and international companies, universities and stakeholders working to facilitate the delivery of hydrogen to all energy sectors; heat, transport and electricity; but also to where it is needed in industry, in a safe and cost effective manner for energy consumers and industry. Over its 3-year timeline, HyLIGHT has four objectives Vision, Roadmap, Plan, Partnership. The first three each contribute a project milestone. The fourth facilitates collaboration in optional investment opportunities, facilitated by the network and knowledge gained that may build into independent projects outside this project.

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

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 voluntary sustainability report

Status

Underway – previous year attached

Attach the document

2021-Vermilion-Sustainability-Report-final.pdf

Page/Section reference

Climate change is integrated throughout the report; TCFD section is 'our energy transition' section

Content elements

Governance
Strategy
Risks & opportunities

Emissions figures
Emission targets
Other metrics

Comment
Since 2014

Publication
In mainstream reports, incorporating the TCFD recommendations

Status
Complete

Attach the document

2022_Management_Information_Circular.pdf
Annual_Report_2021.pdf

Page/Section reference
2021 Annual Report: Pages 7 to 10 - Message to Shareholders - Sustainability Performance; Pages 43 - 50 - Sustainability and Climate-Related Strategy; 2022 Information Circular p 51-61

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
Since 2018

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for	Description of oversight and objectives relating to biodiversity

	biodiversity-related issues	
Row 1	Yes, both board-level oversight and executive management-level responsibility	Sustainability is 1 of 6 strategic objectives in our long-range business plan. As such, the Board has responsibility for oversight of Vermilion's sustainability performance, with Board committees providing additional expertise. Comprised of 5 independent directors, the Board's Sustainability Committee (SC) provides targeted oversight of & advice for our approach, including: Sustainability Policy & long-range strategic plan; performance & progress on sustainability goals; id & mgmt of sustainability risks and opportunities; impact of sustainability & climate issues, including water, on business strategy, budgets & risk management; & communication of sustainability policies & performance. At least quarterly, the SC reviews management's sustainability performance reports, which include ESG & climate risks, opportunities, activities & performance; environmental & social trends including biodiversity; & strategic community investment activities. The SC Chair reports to the Board on the SC's work, including the Company's performance & progress. Most members of the full Board attended SC meetings in 2021, & the Board also reviewed ESG thought leadership papers such as oversight frameworks, decarbonization pathways & managing the energy transition, from experts eg McKinsey, State Street & Kimmeridge Energy. The Board also oversees sustainability strategy & performance via the HSE Committee (environment & safety, risk management), Audit Committee (risk management), & GHR Committee (governance & people). The Board & SC use this info to ensure integration of sustainability & climate risks & opportunities, including water, into major decisions, such as long-range planning, budget and capital allocation, and mergers, acquisitions and divestments. In 2021 the Board reviewed the 10-year sustainability strategy for managing risks and opportunities identified under each strategy pillar of carbon, conservation (including water and biodiversity, and reviewed the execution of a significant business unit Biodiversity Action Plan, and Vermilion's certifications under third-party agencies such as Equitable Origin, which includes biodiversity issues.

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Commitment to Net Positive Gain Commitment to No Net Loss Adoption of the mitigation hierarchy approach	SDG Other, please specify Natura 2000 in France

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Impacts on biodiversity Details on biodiversity indicators Biodiversity strategy	Biodiversity Action Plan - throughout; Sustainability Report - Water and Land Stewardship sections 1, 2

[1]2021-Vermilion-Sustainability-Report-final.pdf

[2]Biodiversity Action Plan 2021.pdf

C16. 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.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Vice President International and HSE (as per our Information Circular, this job is the Chief Operating Officer role, shared with the Vice President North America.	Chief Operating Officer (COO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	2,040,730,000

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

Not applicable at this time.

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Doing so would require we disclose business sensitive/proprietary information	Direct engagement with customers in relation to specific information requests.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

No

SC1.4b

(SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

Not at this time; however, we are open to engaging one a one-to-one basis when requested.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms

JACOBS

Bruce MacEachern
Environmental Advisor
Vermilion Energy Inc.
3500-520-3rd Avenue SW
Calgary, Alberta T2P 0R3

July 8, 2022

Mr. MacEachern,

The purpose of this letter is to clarify matters set out in the assurance report. It is not an assurance report and is not a substitute for the assurance report.

This letter and the verifier's assurance report, including the opinion(s), are addressed to you and are solely for your benefit in accordance with the terms of the contract. We consent to the release of this letter by you to CDP to satisfy the terms of CDP disclosure requirements but without accepting or assuming any responsibility or liability on our part to CDP or to any other party who may have access to this letter or our assurance report.

In accordance with our engagement contract with Vermilion, dated 2012 March 1 (the "contract"), and the Proposal for Third Party Greenhouse Gas Verification 2021 CDP Report (authorized 2021 April 14) and for the avoidance of doubt, we confirm that our *Findings for Greenhouse Gas Verification for 2021 Carbon Disclosure Project Report* to you dated July 8, 2022 (the "assurance report") incorporated the following matters:

1. A "declaration of independence" which specifies that we, the assurance provider, has no conflict of interest in relation to providing the assurance of environmental data for Vermillion, the company which has been assured.

2. Boundaries of the reporting company covered by the assurance report and any known exclusions.

   Consolidation Method: Operational Control
   Operations: Canada, France, Netherlands, Australia, United States of America, Germany, Ireland, Eastern Europe (Hungary and Croatia).

3. Emissions data verified - broken down by Scope 1, Scope 2, and Scope 3 categories.

Scope 1	648,336	tonnes CO_2e
Scope 2	214,778	tonnes CO_2e
Scope 3	11,631,971	tonnes CO_2e

   This represents approximately a 18% decrease in Scope 1 emissions, a 13% decrease in Scope 2 emissions, and a 12% decrease in Scope 3 emissions compared to data evaluated from 2020,

which had Scope 1, Scope 2, and Scope 3 values of 793,203 tonnes CO_2e, 247,144 tonnes CO_2e, and 13,226,527 tonnes CO_2e, respectively.

4. Period covered (e.g. ’12 months to DD MM YY’)
   12 months to 2021 December 31.

5. 2006 verification standard used
   ISO 14064-3

6. Assurance opinion (incl. level of assurance and any qualifications)
   Limited Level of Assurance

7. Verification provider and accreditations (if relevant)
   CH2M HILL Canada Limited (wholly owned by Jacobs Consultancy Canada)

8. Lead verifier name and relevant accreditations/professional membership (if relevant)
   Emily Chan, Ba.Sc.