

**PIERIDAE
ESG REPORT 2022**



TABLE OF CONTENTS

- 4** Messages from our CEO and Board Chair

- 6** Executive Summary

- 9** Following the United Nations Sustainable Development Goals

- 10** ESG and Canadian Energy

- 12** Who is Pieridae?

- 14** 2022 ESG Materiality Assessment

- 15** Pieridae's Approach to ESG

- 20** About this Report

- 21** **I. Governance**

- 25** **II. Indigenous Relations**

- 29** **III. Environment**

- 35** **IV. Social**


- 38** **V. ESG Performance Tables**

- 43** **VI. Index**

- 45** Forward-Looking Statements

*(cover) Waterton Complex,
photo: Corey Hawes*

*(above) Carpenter Canyon,
photo: Corey Hawes*

A scenic landscape featuring a river in the foreground, snow-capped mountains in the background, and a green text box in the center. The river is surrounded by dry, brown vegetation. The mountains are partially covered in snow, and the sky is a mix of blue and orange, suggesting a sunset or sunrise. The green text box is centered and contains a quote by Jane Goodall.

"You cannot get through a
single day without having an
impact on the world around you.

What you do makes a difference,
and you have to decide what kind
of difference you want to make."

JANE GOODALL

Message from our CEO



Alfred Sorensen, CEO

“Pieridae's people are our greatest asset.”

One year into our formal Environmental, Social, Governance (ESG) journey, Pieridae is renewing our commitment to our shareholders, employees and community members. Pieridae has always valued the core ESG principles of encouraging strong environmental stewardship, placing high value on relationships with our employees, contractors, Indigenous partners, community members and other stakeholders, and holding the highest standards of corporate governance, even before ESG became a catch-phrase. We continue our strategic focus on meeting the global demand for sustainable and reliable energy in an ethical and equitable manner and we are focusing on continuous improvement in our engagement efforts, diversity and inclusion skills and Indigenous knowledge base: we are not perfect, but we are active learners. The past year has contained pressures and tragedies – the invasion of Ukraine, tumultuous markets, inflation, looming Covid waves and more: throughout Pieridae has remained resilient.

This new year has revitalized us with growing cash flow, new enthusiasm and ideas to create a renewed outlook on the future. The company remains focused on reducing its greenhouse gas emissions while actively drilling and developing assets to fill our plants. We will continue to optimize our operations' efficiencies while exploring opportunities presented by the energy transition. We are still in the midst of integrating climate-related risks and opportunities into our investment framework and building long-term resiliency toward a bright future for the Company in a lower-carbon economy.

Pieridae's people are our greatest asset. Now is the time to build on their strengths, diversity and innovative energy. I want to extend a large thank-you to our people for showing fortitude during tough times. The Company is committed to engaging with you in envisioning and building the future of Pieridae.

Our commitment to long-term value creation continues to drive us to find commercially viable opportunities that create significant emissions-intensity reductions within the energy value chain. Pieridae approaches ESG with collaboration, innovation and engagement with our stakeholders, in addition to a willingness to think beyond the status quo. We will leverage our asset base, our cultural values and our strong relationships to help build sustainable, long-term solutions.

On behalf of myself and the rest of the leadership team, we are looking forward with anticipation to the road ahead.

[original signed by]

Mr. Alfred Sorensen
CEO, Pieridae Energy Limited

Message from our Board of Directors

On behalf of Pieridae’s Board of Directors, I wish to congratulate Pieridae on its second formal ESG Report. This report reflects the strong collaboration by board and management in taking concrete steps to identify ESG risks and to explore potential opportunities arising from the energy transition.

The board is committed to maintaining the highest standards of corporate governance, and we were pleased to add highly qualified directors in 2022. With a focus on stewarding the company’s overall business, financial strength and strategic direction, the board is centered on the long-term risks and opportunities in an evolving energy market.

This report goes beyond the initial work done in 2021 by developing more cohesive structures and mandates behind ESG governance, incorporating quantitative information and tying that data to industry frameworks, and using these products to assess Pieridae's key ESG risks and opportunities. This work builds the foundation for Pieridae’s future growth.

We believe these continued efforts will result in sustainable and ethical long-term value creation for shareholders.

[original signed by]

Ms. Patricia McLeod KC
Chair of the Board of Directors



Patricia McLeod, Chair of the Board of Directors

“ *The board is committed to maintaining the highest standards of corporate governance, and we were pleased to add some highly qualified directors in 2022.*”



photo: Bradley Giggs

Executive Summary

Since our last Environment, Social, Governance (ESG) report, the Company has made some significant strategic strides.

We have continued to review and optimize Pieridae's ESG governance structure and mandate since our last report, with revised Board of Director mandates expected to be completed by the end of 2022. In addition, the company recently filled the senior leadership role of Director of ESG, aiding Pieridae in focusing substantial time and energies in this area.

The company is also in the midst of building a renewed strategic plan for Indigenous engagement that reflects current corporate priorities.

Pieridae's environmental performance was benchmarked as a starting place in last year's report. At that time, we began to evaluate our carbon-related risks and opportunities.

While the company reported a number of metrics in 2021, it also committed to honoring a number of reporting frameworks in future reports, from various international organizations, namely the TCFD (Taskforce on Climate-related Financial Disclosures), GRI (Global Reporting Initiative) and SASB (Sustainability Accounting Standards Board). This

year's report is the first step in moving toward meeting those commitments in a thorough and transparent manner by following SASB recommended oil and gas disclosure recommendations combined with certain TCFD and GRI disclosures.

Pieridae has also introduced the United Nations Sustainable Development Goals (UNSDG) as the foundation for our ESG activities in the following pages.

Pieridae's 2021 ESG work included continued GHG emissions reduction efforts in the field, in addition to preliminary consideration of Carbon Capture and Storage ("CCS") in Pieridae's future. We are excited by the potential for these initiatives.

Pieridae's continued commitment to minimizing air and water emissions and their impacts on nearby communities, landowners and the environment was demonstrated in 2021 operations. As we start our 2022 drilling program, we aim to continue to meet or exceed government regulations in these areas, while managing new regulatory standards in a proactive



manner and actively assessing new technology applications in our work.

Pieridae's land use reclamation and asset retirement expenditures in 2021 dealt with key sites and areas as assessed in our risk management plan. We continue to strive to consistently and proactively invest in well abandonment and reclamation work, ensuring we meet our moral and ethical obligations of reducing our environmental impacts and maintaining biodiversity in our areas of operation.

In 2021, Pieridae continued an active community investment role in the communities near its operations. This included our work with Indigenous summer students, among many other activities.

The Pieridae team underwent a very challenging year in 2021, placing tremendous pressure on our people. We want to acknowledge the hard work and dedication

of our Pieridae team and will be working hard to grow engagement and connection throughout the company as we build our future strategy in 2022 and beyond.

In 2022, with more robust commodity prices, a renewed focus on our conventional assets and a developing decarbonization project portfolio, we cannot overstate how important the support of our team is to our future path for the company. We are looking forward to continuing to build a strong workplace culture, recognizing the company's renaissance and new path are the beginning of an open-ended journey.

Pieridae's continued commitment to minimizing air and water emissions and their impacts on nearby communities, landowners and the environment was demonstrated in 2021 operations.

Note: Data in tables represents the calendar year 2021 unless otherwise specified. Remarks and data in text contains information from both 2021 and 2022.



MORE ABOUT THE CAROLINE CARBON CAPTURE POWER PLANT COMPLEX PROJECT

In last year's ESG report, we mentioned the potential for our Caroline facility to be at the heart of a Carbon Capture and Storage ("CCS") project, combined with a "blue" power project, with a scope size possibly large enough to materially help lower overall provincial greenhouse gas emissions.

We feel the Caroline Beaverhill Lake pool has tremendous future potential to sequester large

volumes of CO₂. The pool originally contained approximately 2 TCF of original gas-in-place. With its high permeability and years of past production, it is an attractive option for CO₂ injection and sequestration, particularly given its connection to a network of pipelines potentially suitable for gathering CO₂.

Pieridae activities in early 2022 included hiring full time technical expertise to develop and manage

the Caroline carbon capture feasibility study work. In addition, Pieridae is conducting an internal risk assessment and decision process that envelops the entire Caroline development project.

The Caroline site has huge promise as an industrial complex in an energy transitioning world.

We would like to acknowledge that the Caroline operations are in Treaty 6 territory, the traditional territory of the Saulteaux, Plains Cree, Woodland Cree, Beaver Cree, Niisitapi (Blackfoot), Métis, and Nakota.

Following the United Nations Sustainable Development Goals

Our planet faces massive economic, social and environmental challenges.

The United Nations Sustainable Development Goals (UNSDGs)¹ define global priorities and aspirations for 2030, as a guide to help solve these challenges.

Private business is one of the most trusted institutions nowadays with the public's expectation that we step up regarding societal issues (according to the Edelman 2022 Trust Barometer).² Business activity, investment and innovation all drive inclusive economic growth. Article 67 in the UNSDG, agreed to by all 193 U.N. Member States, notes "We call on all businesses to apply their creativity and innovation to solving sustainable development challenges." We hold the trust of our employees, contractors, communities and partners to answer this call.

There is a business case for following the SDGs as well. Companies that help advance them will improve trust among stakeholders; strengthen their license to operate; reduce legal, reputational and other business risks; and build resilience to costs or requirements imposed by future legislation.

Pandemic-related circumstances and the war in Ukraine have slowed global progress on these goals. It is more important than ever to take ownership of them and take more concrete steps in building a sustainable future.

Pieridae has prioritized the SDG targets where we feel we can have a positive impact, as well as areas we can effectively reduce risks. We are active in reducing our GHG emissions, working on SDG 13. Our work impacts the environment so SDGs 14 and 15 are high on our list. In addition, Pieridae's engagement work with landowners and communities is reflected in SDGs 8 and 17. The company will continue to work in 2022 to integrate many of these goals throughout our ESG activities.

In the report, you will find specific SDGs flagged in each topic's 'Actions and Goals' section.

SUSTAINABLE DEVELOPMENT GOALS



¹ United Nations Sustainable Development Goals. Accessed 22-07-28. <https://sdgs.un.org/goals>

² Edelman Trust Barometer 2022. "The Trust 10." Accessed 22-07-28. https://www.edelman.com/sites/g/files/aatuss191/files/2022-01/Trust%202022_Top10.pdf

ESG and Canadian Energy

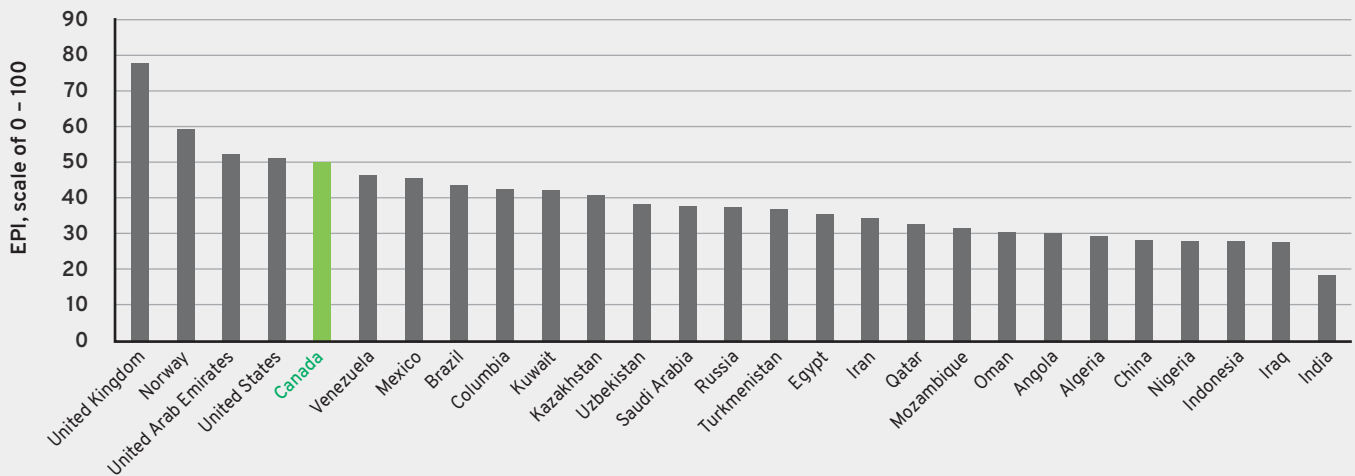
The world continues to need large amounts of energy to enable populations to move out of poverty and into better socio-economic circumstances.³ Countries with emerging economies are forecast to continue to grow their energy demands in the future, while developed countries including Canada are forecast to see more

modest increases followed by large net decreases over the next 30 years.

Canada's fossil fuel industry is among world leaders in environmental and regulatory performance.⁴ Canada ranks highly in environmental performance compared to the world's other oil and gas-producing nations.⁵

Yale Environmental Performance Index EPI 2022

27 Oil and Natural Gas Producing Countries, representing 90% of Global Oil Production and 90% of Natural Gas Reserves



Canada is a top performer for environmental and regulatory performance

³ “bp Energy Outlook 2022 edition.” BP Energy. 2022. Accessed 22-07-18. <https://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html>

⁴ Wolf, M. J., Emerson, J. W., Esty, D. C., de Sherbinin, A., Wendling, Z. A., et al. (2022). *2022 Environmental Performance Index*. New Haven, CT: Yale Center for Environmental Law & Policy. <https://epi.yale.edu/>

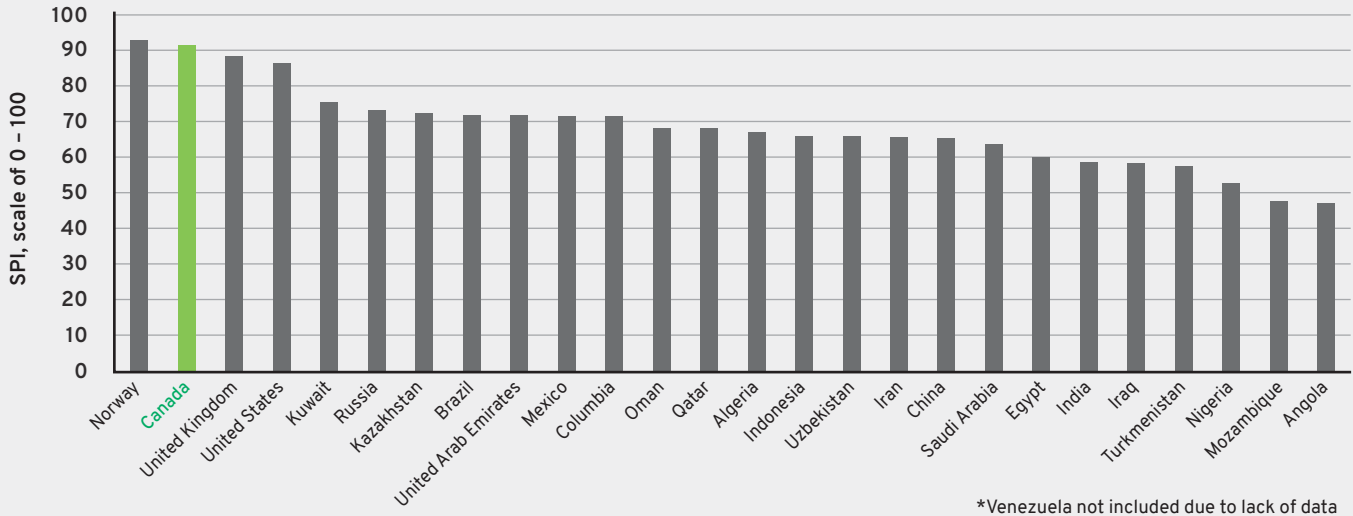
⁵ Ibid.

Southwest view from Waterton Gas Plant, photo: Bill Moore

Canada is also a strong leader in social policy issues, as evidenced by the Social Progress Index SPI noted below:⁶

Social Progress Index SPI 2022

26 Oil and Gas Producing Countries, representing 90% of Global Oil Production and 90% of Natural Gas Reserves*



Good social and environmental policy results are associated with economic prosperity, evidenced by high Gross Domestic Product (GDP) per capita, creating the environment for countries to invest in policies and programs that result in desired outcomes. While economic growth – with industrialization and urbanization – often brings pollution and other impacts on ecosystems, Canada’s performance indicates the successful outcome on both sides of the equation: a strong economy combined with positive results by social and environmental measures. Canada’s fossil fuel industry is particularly focused on technological innovation as a tool to aid in decarbonizing Canada’s energy system and helping to meet national GHG emissions reduction targets. The major oilsands producers, tight oil and gas companies, and conventional oil and gas firms are actively working on carbon capture and storage projects of various types and locations, with global carbon price, combined with both national and provincial programs building the incentives to take the next major steps in this work.

The world benefits from more Canadian energy: Canada has demonstrated its successful policy work through continuous improvement in its environmental

performance and social indicators through the years. As the world works through a transition to lower emissions energy sources, it makes sense for Canadian oil and gas to be the first and last barrel of energy produced with its world-leading ESG performance, and its leading technological work on CCS and other decarbonization innovations.



University student tour of Jumping Pound Plant

⁶ “2021 Social Progress Index.” *The Social Progress Imperative*. 2022. Accessed 22-07-18. <https://www.socialprogress.org/>



photos (L to R): Waterton Gas Complex, Jumping Pound Gas Complex, Caroline Gas Complex

Who is Pieridae?

Largest Foothills Producer in North America – Owner and Operator of Substantial Midstream Assets

Pieridae is an integrated midstream and upstream energy corporation focused on the exploration, extraction and processing of sweet and sour natural gas and natural gas liquids. Our footprint covers over a million gross acres (807,000 net acres) in the Foothills and makes up some of the largest conventional gas reservoirs in North America.

We own and operate three major sour gas processing complexes at Waterton, Caroline and Jumping Pound and remain committed to the trust and respect-based relationships we've built with the surrounding communities.

In the past year, Pieridae suffered the economic challenges that all industry was exposed to. With substantially stronger natural gas prices, we entered 2022 with renewed confidence.

Our 2022 budget includes drilling and developing additional reserves to load our facilities, and funds to support continued feasibility study work on future CCS at Caroline. While awaiting further decisions on feasibility, the Goldboro LNG project could also add value in the future while helping to decarbonize the world's energy system.



BY THE NUMBERS 2021

PRODUCTION/OUTPUT⁷

40,562 BOE/D:

(barrels of oil equivalent per day)

199,793 mcf/day of natural gas

4,386 bbl/day of natural gas liquids

2,877 bbl/day of condensate

1,530 ton/day of Sulphur

(not included in production total)

**257 FULL-TIME
EMPLOYEES**

ENTERPRISE VALUE OF

\$346 MILLION⁸

⁷ 2021 Net production, as per Pieridae Energy annual report.
<https://pieridaeenergy.com/investors/investor-resources/financial-documents>

⁸ As at December 31, 2021.

3 GAS PLANTS AND APPROXIMATELY 25 MAJOR FACILITIES

High quality upstream assets support over 30 years of low-risk, low decline production.

Sour processing facilities provide CO2 capture infrastructure and CCS opportunities.

~ **\$4 billion Midstream replacement value**

~ 3,800 km pipelines

~ Footprint of 807,000 net acres of leased mineral rights

**TOTAL PRODUCTION
FORECAST FOR 2022:
37,500-39,500 BOE/D**

Pieridae Energy acknowledges our operations are in Treaty 6, Treaty 7 and Treaty 8 territory, the ancestral and traditional territory of many First Nations: Treaty 6 – the Saulteaux, Cree, Dene, Blackfoot, Nakota Sioux; Treaty 7 – the Blackfoot Confederacy: Kainai, Piikani and Siksika as well as the Tsuu T'ina First Nation and Stoney Nakoda First Nation, including the Bears paw, Chiniki and Wesley First Nations;

Treaty 8 – the Cree and Dene; and Regions 3, 4 and 6 of the Métis Nation in Alberta. We are grateful for the traditional Knowledge Keepers and Elders who are still with us today and those who have gone before us. We recognize the land as an act of reconciliation and gratitude to those whose territory we reside on or are visiting.

2022 ESG Materiality Assessment

At the outset of our previous ESG report we conducted our inaugural ESG Materiality Assessment, resulting in five **Top Material Priorities** or **TMPs**.

This work pinpointed the Company's most material ESG issues, strengthening the link between ESG strategy and ESG actions at both the corporate and operational levels.

This prior ESG Materiality Assessment resulted in the primary five issues noted below, our **Top Material Priorities (TMPs)** being pinpointed as most impactful to the Company (in no particular order):

TMP 1 Regulatory compliance monitoring, spill management, timely and transparent communication

TMP 2 Climate-related transition risks, GHGs

TMP 3 Energy and power management

TMP 4 Workforce health and safety, operational safety, emergency preparedness and response

TMP 5 Human rights, rights of Indigenous Peoples, diversity and inclusion

Within the following pages, these five key issues are identified complete with a discussion of major potential impacts, how Pieridae currently mitigates or plans to mitigate the risks posed to the business, while at the same time considering opportunities that the ESG factors identified may present to the company.

In 2022, the Company prepared an updated and more in-depth ESG survey for stakeholders as an initial step toward renewing our Materiality Assessment. In developing the survey, Pieridae referenced the IPIECA 2020 report *Sustainability reporting guidance for the oil and gas industry*.⁹ The company scanned changing industry regulations and major reporting trends by peers and other industries.



Pieridae's new ESG survey included a review of 39 ESG factors, considering their inherent risks and opportunities to the Company's business. We engaged over 140 individuals in a much broader cross-section of our stakeholders than seen in the previous year's materiality assessment, including field and head office employees, senior management and Board members, suppliers and contractors, shareholders, Indigenous contacts, landowners and others.

Work continues on utilizing the results of the latest survey to refresh our formal ESG Materiality Assessment; however, initial results pinpoint the importance of three central values of Pieridae that underpin all our work both internally and externally: business ethics, career development and community engagement, which Pieridae will continue to focus on in 2022.

Pieridae will monitor and follow through on the five key TMPs through ongoing reviews and will assess any changes to the potential materiality of these factors on our business. In addition, we will scan the market for changing conditions to help identify new ESG issues that could impact the company's future financial and operational results.

⁹ "Sustainability reporting guidance for the oil and gas industry." 2020. <https://www.ipieca.org/resources/>



Pieridae's Approach to ESG

BUSINESS VISION:

To provide the energy to fuel peoples' lives while supporting the environment and the transition to a lower carbon world.

ESG VISION:

We will be responsible stewards of the environment, foster mutually beneficial relationships with Indigenous Peoples in Canada and our stakeholders, and be leaders in demonstrating good governance to establish trust, act with purpose and support Pieridae's business vision.

Inside Pieridae:

Pieridae recognizes that we have been through an extremely uncertain year that was impactful in numerous ways on our workforce. Our employees are the heart of the company. As we look ahead in 2022 and onward, a core ESG area of focus for all leaders within the company is the building of strength and confidence with our team. This will include a renewed engagement process that seeks to involve all workers in building our go-forward strategic plan, targeting the Top Material Priorities noted above in this work. Pieridae will place specific focus on diversity, inclusion and Indigenous awareness and knowledge-building within our team.

As we review and update our strategic plan, we are focused on global and national energy policies and regulations which are solidly grounded in reduction of GHG emissions and other environmental impacts, combined with Indigenous reconciliation and other social engagement policies. Climate change concerns and the governmental response of carbon tax and potential tax credits for investments into emissions-reducing technology and innovation rank highly in determining the company's future path, creating many

opportunities to increase shareholder value. Pieridae is diligently focused on material environmental and social factors that are critical to our operations.

Previously we took our first steps to formalize our ESG journey with the development of a mandate, ESG vision and an initial ESG materiality assessment. Pieridae considered carbon-related risks and opportunities in setting future goals and informing the company's planning work. Ongoing Board-level work includes the continued optimization of an ESG thread throughout Board committees and their mandates and work plans. This work coincides with the ongoing development of an updated Enterprise Risk Management (ERM) framework for the Company.

Pieridae continues to drive the ESG mandate and vision down into all levels of the company, and has started to integrate and embed them into daily work. What began as a Board and senior management discussion will now be shared throughout the organization, with a goal of continuous learning and improvement. Senior management have actively taken part in development activities with both personal and



Waterton Plant sulphur pit, photo: Bill Moore



Lorne Harty, Foreman,
Field Operations at Waterton

corporate growth in mind, and they are being tasked to lead the way in the coming months to raise awareness of ESG issues and values within their respective teams.

The Canadian oil and gas industry honours numerous formal reporting standards and utilizes many reporting frameworks at this time. Pieridae's target in reporting of sustainability metrics is to meet current best practices while closely monitoring the changing landscape in this area. This year, Pieridae's ESG data disclosure has expanded to follow the Sustainability Accounting Standards Board (SASB) recommended *Oil & Gas – Exploration & Production Sustainability Accounting Standard*¹⁰ with some additional information included from the *SASB Oil & Gas – Midstream Sustainability Accounting Standard*.¹¹ The ESG Tables within this report contain a GRI Content Index and a TCFD Content Index for additional information. The combination of the various frameworks and standards provide specific, detailed information which consider the most significant economic, environmental and social impacts from various ESG issues. The SASB approach to materiality is based on a financially oriented definition and focuses primarily on quantitative reporting, while GRI and TCFD both consider a broader range of comprehensive risks and issues. The GRI framework is designed for a broader stakeholder base, while SASB is aimed more at financial stakeholders.

As Pieridae more fully develops its ESG strategy internally, it will continue to make its reporting comparable, consistent and reliable as a key tool for stakeholders to consider, following global recommendations regarding transparency and completeness.

*Conrad Kenny, Plant Superintendent,
Jumping Pound and North Assets*

¹⁰ SASB Standards – Now part of IFRS Foundation. "Download SASB Standards." Accessed 22-08-12.
<https://www.sasb.org/standards/download/?lang=en-us>

¹¹ Ibid.

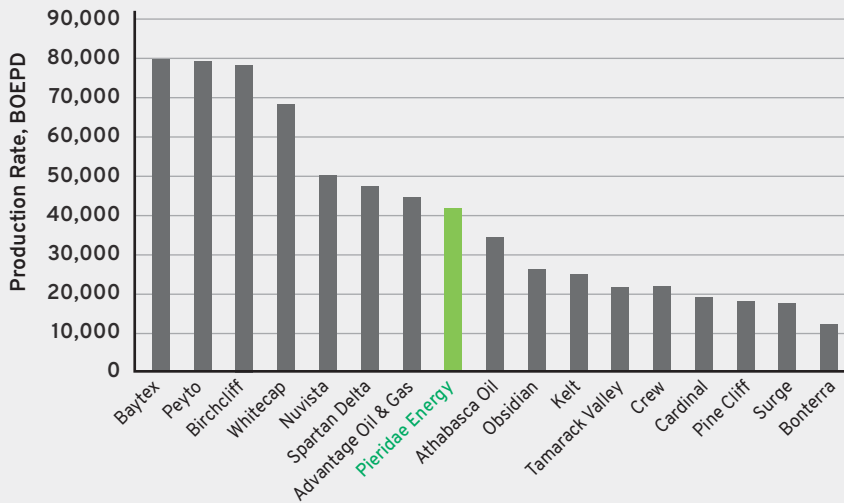


Looking Outward: ESG and Pieridae's Peers

Pieridae is a vertically integrated producer owning and operating substantial lands, wells and field facilities, in addition owning some of Alberta's most significant gas processing facilities and associated liquids and sulphur facilities. This gives the company unique opportunities for future value creation.

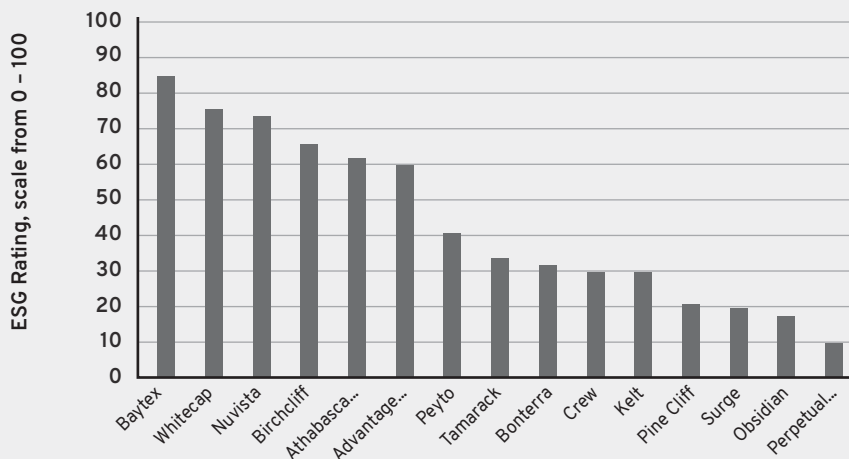
It is useful to compare Pieridae's ESG progress, actions and goals with those of its peers. By production, Pieridae has a number of peers:¹²

Pieridae and its Mid-Size Peers in Canadian Oil and Gas



The ESG performance of these peer companies is ranked as follows.¹³ Note that CSRHub rates companies by accessing publicly available data and using algorithms, and has rated 21,771 companies. Some companies such as Pieridae are not yet ranked due to lack of publicly available, pertinent data:

CSRHub Consensus ESG Ratings of Peer Companies



Like these peer companies, Pieridae too is an upstream producer, but we are also a significant midstream operator in Alberta, with some business characteristics similar to other pure midstream companies such as Keyera and Tidewater, owning a number of large sour gas plants and major gathering systems. As a result of varied plant loading levels, combined with the very low energy intensity seen with midstream pipeline operations, midstream companies show a wide range of GHG emissions intensity.

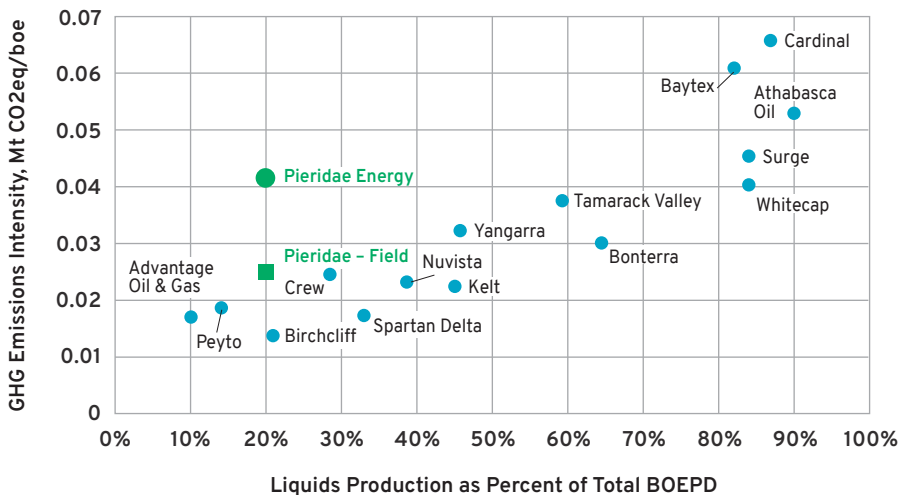
Pieridae's upstream peers show a range of GHG emissions intensity roughly correlating to their liquids content in their corporate net production.

While our production is 80% gas-weighted, our midstream facilities increase Pieridae's emissions intensity substantially. Pieridae's GHG emissions intensity at the field level is comparable to that of our upstream peers, while the plant emissions intensity seen at Pieridae facilities increases our corporate average substantially.

¹² Net production from most recent publicly available annual reports.

¹³ CSRHub Consensus ESG Rankings. Accessed 22-07-19. <https://www.csrhub.com/>

Peer companies – GHG Emissions Intensity vs Percent Liquids Production – Scope 1 and 2¹⁴



As operators of large multi-faceted midstream facilities, more methods of future decarbonization are available to us:

- 1) Invest in technology and operational efficiency: upgrades, retrofits, cogeneration opportunities, low-carbon alternatives**
- 2) Optimize facilities utilization: consolidate throughput**
- 3) Seek alternate power sources: support renewable energy alternatives such as solar, geothermal, other technologies**
- 4) Explore high volume carbon capture, utilization and storage (CCUS): explore full CCS capability at major fields and plants**

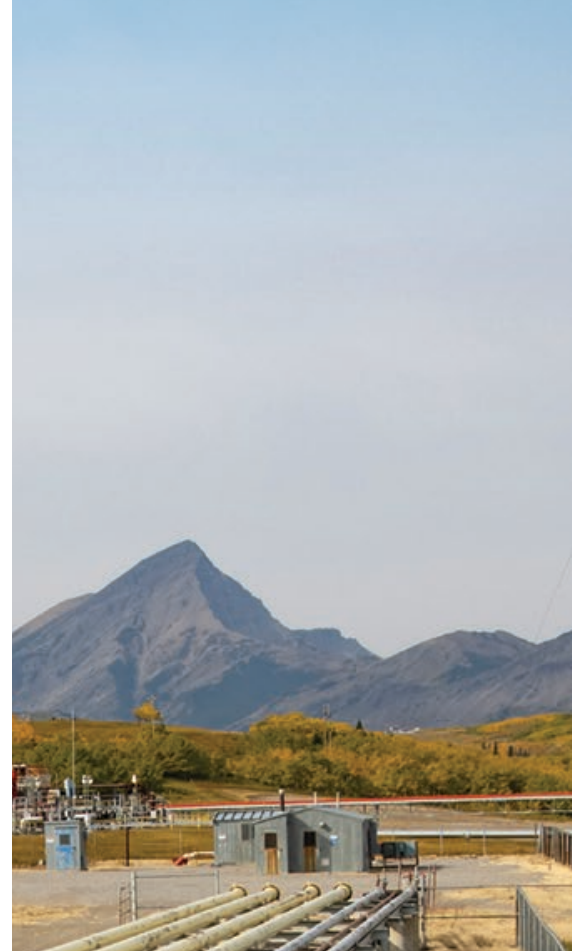
As demonstrated in the above peer study, GHG emissions intensity is a complex parameter to use in analyzing performance. Pieridae's target will be continued reduction compared to its historical levels, through the options noted above.

Pieridae's focus to date has been on improving efficiencies and reducing fuel gas usage and emissions at its plants and fields. As Pieridae builds its strategic plan for the future, we seek ways to evolve the business by considering the energy transition and associated business opportunities and public and private funding sources, analyzing Pieridae's value chain, and fostering a culture of innovation. This work includes the feasibility study of CCS at Pieridae's Caroline facility.

Pieridae employees at the Waterton Plant

¹⁴ GHG emissions intensity figures are 2021 data unless otherwise noted, and include Scope 1 and Scope 2 emissions before any sequestration volumes are accounted for.

For detailed peer company data sources, please see footnote on page 46.



About this Report:

This report represents Pieridae's second annual ESG report, and is available on our website at pieridaeenergy.com.

Within this report, the terms "Pieridae", "Pieridae Energy Limited", the "Company", the "Corporation", "our", "us", "we", and other similar terms, refer to Pieridae Energy Limited.

This report provides detailed performance results for 2020 and 2021, and when available, presents data for earlier periods to provide trending information as well as context for Pieridae's performance results.

This report is aligned with the Sustainability Accounting Standards Board's *Extractives & Minerals Processing Sector: Oil and Gas – Exploration & Production Sustainability Accounting Standard* framework and the *Oil & Gas – Midstream – Sustainability Accounting Standard* framework.¹⁵ The Tables section denotes SASB framework content.

This report includes disclosure around climate change, aligning with recommendations of the Task Force on Climate-related Financial Disclosures.¹⁶ Refer to the sections entitled, "*Climate Change Strategy*" and "*TCFD Content Index*."

This report includes reference to the Global Reporting Initiative ("GRI") Standards Index for the sustainability issues that are of interest to Pieridae's stakeholders. This report includes standard suggested disclosures but does not include all of the requirements to be considered in full accordance with GRI Standards. The Tables section denotes GRI framework content, SASB framework content and TCFD content. Refer to the section entitled, "GRI Content Index."

Unless otherwise stated, this report presents the performance of Pieridae, including data of joint arrangement for which Pieridae is the operator, regardless of financial ownership. Performance data from assets where Pieridae is party to a joint arrangement may therefore be different in this

report compared to data disclosed in Pieridae's audited consolidated financial statements ("financial statements").

Data presented in this report includes data for the entire company. Any data limitations are explicitly noted within the performance figures.

Financial data is stated in Canadian dollars. For further details on Pieridae's financial performance, refer to Pieridae's financial statements for the years ended December 31, 2020 and December 31, 2021, Pieridae's Management's Discussion and Analysis for the years ended December 31, 2020 and December 31, 2021, and Pieridae's Annual Information Form ("AIF"), all of which are available on Pieridae's website at pieridaeenergy.com and on SEDAR at www.sedar.com.

Pieridae strives to continuously improve its tracking and measurement systems, and in some instances has adjusted indicator definitions and performance data to reflect current best practices. In most cases, Pieridae uses standard industry calculation methodologies and definitions; these may be updated periodically to improve the accuracy of performance data. If industry standards are not used, applied techniques are stated alongside the data.

This report contains forward-looking information as to Pieridae's internal projections, expectations, or beliefs relating to future events or performance. Refer to the section entitled "Forward-looking Statements" within this report.

In the following sections, you will find specific United Nations Sustainable Development Goals (SDGs) flagged in each topic's 'Actions and Goals' section.

In addition, the Company's Top Material Priorities (TMPs) are also noted in the topic's 'Actions and Goals' section.

¹⁵ "Oil & Gas – Midstream – Sustainability Accounting Standard." October 2018. SASB; "Oil & Gas – Exploration & Production – Sustainability Accounting Standard. October 2018. <https://www.sasb.org/standards/download/?lang=en-us>

¹⁶ "Recommendations of the Task Force on Climate-related Financial Disclosures." June 2017. TCFD. <https://www.fsb-tcf.org/publications/>



I. Governance

photo: Matt Williams

Pieridae’s management and Board of Directors are dedicated to leading the Company with integrity, accountability and confidence. These groups recognize and follow a set of published mandates, codes and by-laws that ensure this, including a code of ethical conduct.

GOVERNANCE HIGHLIGHTS

37.5%
of the **BOARD OF DIRECTORS** are women¹⁷

7
INDEPENDENT DIRECTORS

14%
OWNERSHIP OF COMPANY by insiders including Board and senior management

¹⁷ As at June 30, 2022.



Darcy Reding, President and COO,
working from home

BOARD OVERSIGHT

The Board oversees strategic and financial planning, risk assessment and mitigation, senior management determination, corporate governance, public disclosure and compliance monitoring. These items are directed by committees within the Board including the Audit Committee; the Governance and ESG Committee; the Compensation and Nomination Committee; and the Reserve and Health, Safety and Environment Committee. The Board and all Committees meet at least quarterly to execute their tasks, including risk management and prioritization and mitigation of material ESG issues.

In early 2022, the Board makeup was amended with the addition of four new directors, adding substantial depth of experience in corporate governance. With these strategic additions, the composition of the Board changed to reach 37.5% female makeup.

The Company’s dedication to ESG and sustainable development begins with its health, safety and environmental policy which states “...We have a responsibility toward people and the environment. We expect it, and our investors and stakeholders expect it. This commitment will ensure the long-term success of the Company.”¹⁸ The Board mandate concerns risk assessment and mitigation in addition to public disclosure, regarding ESG specifically and business issues in general. The Board is currently reviewing and revising committee structure and mandates, to be

completed by end of 2022. This review will include the assessment of ESG responsibilities, seeking to define the appropriate structure and procedure to allow the Board to most effectively manage these issues.



¹⁸ Pieridae Energy Limited. “Health, Safety and Environmental Policy.” Accessed 22-08-12.
<https://pieridaeenergy.com/contact-us/health-safety-and-environment-program>

MANAGEMENT ACCOUNTABILITIES

In addition to the Board oversight, Pieridae's executive team meets on an ongoing basis to discuss the business and evaluate and approve strategy, direction and activities which progress the Company's vision and mission.

In conjunction with the current ongoing review of the board committees and mandates, a more formalized plan for enterprise risk management, which will include ESG issues, is also being constructed.

With the addition of the Director of ESG to the senior management team, the Company now has resources to dedicate to assessment and mitigation of ESG risks going forward.

EXECUTIVE COMPENSATION

The Compensation and Nomination Committee is responsible for establishing and periodically reviewing the Company's overall compensation at the executive level. Currently a number of KPIs include various ESG metrics, with executive team compensation connected to achievement of these benchmarks, at the direction of the Board.

INDUSTRY ADVOCACY

Pieridae is currently assessing the most effective ways to support industry advocacy efforts regarding ESG issues. Options include industry organization memberships and participation, direct government lobbying, and more.

ESG POLICIES

While ESG is relevant to all committees and policies, Pieridae's specific ESG mandate continues to be:

- Minimize the harmful impacts to the world around us.
- Build prosperous communities through inclusion and respect.
- Identify opportunities for increasing efficiencies and streamlining operations.
- Minimize regulatory and legal risk.
- Satisfy stakeholder needs to maximize long-term stakeholder value.
- Enhance investment opportunities through optimal ESG performance.
- Engage all employees in making ESG a part of the Company culture.
- Ensure ESG performance is linked to executive compensation.
- Assist Board in carrying out governance and oversight responsibilities for ESG.



Waterton Control Room



GOVERNANCE: ACTIONS AND GOALS

Pieridae has entered 2022 with renewed vision focusing on the upstream side of our business while evaluating other value-added projects for its major facilities and maintaining a viable LNG option. The

positive commodity prices have set the stage for major drilling, tie-ins and other projects for the coming year, which we look forward to discussing in the next edition of the ESG Report.

ACTIONS	GOALS MET								
Hired Director of ESG – 2022	<table border="0"> <tr> <td>SDG</td> <td>SDG</td> <td>TMP</td> <td>TMP</td> </tr> <tr> <td>5</td> <td>16</td> <td>1</td> <td>5</td> </tr> </table>	SDG	SDG	TMP	TMP	5	16	1	5
SDG	SDG	TMP	TMP						
5	16	1	5						
Performed ESG Materiality Assessment with Board and senior leaders – 2021	<table border="0"> <tr> <td>SDG</td> <td>SDG</td> <td>TMP</td> <td></td> </tr> <tr> <td>16</td> <td>17</td> <td>1</td> <td></td> </tr> </table>	SDG	SDG	TMP		16	17	1	
SDG	SDG	TMP							
16	17	1							
Began review of Board mandates	<table border="0"> <tr> <td>SDG</td> <td>TMP</td> <td>TMP</td> <td></td> </tr> <tr> <td>16</td> <td>1</td> <td>2</td> <td></td> </tr> </table>	SDG	TMP	TMP		16	1	2	
SDG	TMP	TMP							
16	1	2							
Added two more senior professional women with substantial governance experience to the Board – 2022	<table border="0"> <tr> <td>SDG</td> <td>SDG</td> <td>TMP</td> <td>TMP</td> </tr> <tr> <td>5</td> <td>16</td> <td>1</td> <td>5</td> </tr> </table>	SDG	SDG	TMP	TMP	5	16	1	5
SDG	SDG	TMP	TMP						
5	16	1	5						
Performed ESG Materiality Assessment with broad range of stakeholders – 2022	<table border="0"> <tr> <td>SDG</td> <td>SDG</td> <td>TMP</td> <td>TMP</td> </tr> <tr> <td>10</td> <td>16</td> <td>2</td> <td>5</td> </tr> </table>	SDG	SDG	TMP	TMP	10	16	2	5
SDG	SDG	TMP	TMP						
10	16	2	5						



Jumping Pound Facility Turnaround, 2021



II. Indigenous Relations

photo: Stephanie Gabriel

Our commitment to honouring and working with Indigenous Peoples remains strong. Through following the principles of trust, mutual respect, fairness, openness and transparency we continue to focus on supporting reconciliation efforts from an organizational level to an individual one.

INDIGENOUS RELATIONS HIGHLIGHTS

2021/22

Pieridae employed **2 INDIGENOUS YOUTHS** in our summer student program each year

2022

Senior management attended an **INDIGENOUS RELATIONS AND THE ENERGY SECTOR** Workshop

2022

Invited to participate and be honoured in the Grand Entry of the **SAMSON CREE NATION POWWOW**



Stoney Nakoda Food Bank

The *Truth and Reconciliation Commission of Canada: Calls to Action*¹⁹ states:

“We call upon the corporate sector in Canada to adopt the United Nations Declaration on the Rights of Indigenous Peoples as a reconciliation framework and to apply its principles, norms and standards to corporate policy and core operational activities involving Indigenous peoples and their land and resources.”

Pieridae is at the beginning of its reconciliation journey and is guided by this *Call to Action*. As we build our strategic plan and future direction for the Company, within that plan will be the commitment to providing knowledge-building opportunities for management and staff on Indigenous history, reconciliation and where we can make a difference, in addition to a focus on meaningful and respectful consultation with Indigenous peoples throughout our work. The Company will also review its internal practices in hiring, training and education opportunities in the corporate sector to ensure there is an equitable focus on Indigenous employees. When working in and near First Nations communities, Pieridae will consider how we can be a part of ensuring those communities gain long-term sustainable benefits from our development projects.

¹⁹ Government of Canada. “Truth and Reconciliation Commission of Canada: Calls to Action.” 2015.
<https://nctr.ca/records/reports/#trc-reports>



Orange Shirt Day 2021

BUILDING RESPECT AND TRUST

Pieridae recognizes the importance of Indigenous engagement throughout our operations in Canada, from British Columbia through Alberta and to Nova Scotia. Most of the Company's Alberta assets are on or near traditional Indigenous territory. As we take further steps in building respect and trust, we acknowledge that we are not perfect in this, but we are committed to continual learning and listening to strengthen our relationships with Indigenous Peoples and to move forward in our reconciliation journey.

Pieridae's 2022 drilling program is on traditional Indigenous lands in the Treaty 6 territory. With thoughtful engagement with the First Nations in that area, we have made positive progress in relationship-building as we discuss our plans with Indigenous representatives. Pieridae was invited to participate and be honoured in the Grand Entry of the Samson Cree Nation PowWow this year, a positive sign of forward progress in building trust.

RECONCILIATION

Our 2021 work was effective in influencing and getting our initial Indigenous Relations strategy off the ground and in beginning impactful programs like our two Indigenous Awareness Lunch n' Learns. That work will be grown and expanded in the future.

The Company supports internal staff reconciliation journeys through knowledge-building opportunities offered throughout the year. This includes our intranet Canada Day 2022 article suggesting we use this time to reflect on actions toward reconciliation:

"Change is only possible when we are open to understanding – in the spirit of reconciliation and compassion take the time today to refresh your knowledge on the Truth and Reconciliation Commission's [94 Calls to Action](#). Our future is what we make of it."

Pieridae recognizes events such as the Papal visit to Alberta are impactful to the residents of many Indigenous communities in which we work or engage with. As fulfillment of *Call to Action number 58*, we respect that Action's significance and also the complex response to its meaningfulness for different individuals.

Article 21 of the United Nations Declaration of the Rights of Indigenous People (UNDRIP) outlines the need for measures to help the continuous improvement of the economic and social conditions of Indigenous youth. The Company has hired Indigenous summer students for the past two years. In addition, Pieridae was a sponsor of the Community Futures Treaty 7 Youth STEM Camp in 2022, providing the opportunity for 56 on-reserve high school students to attend a week-long camp at Mount Royal University, exposing them to both science and technology learning opportunities, but also traditional Indigenous knowledge led by elders.

The Company will continue to honour and acknowledge important dates over the next year with events, articles and knowledge-building opportunities for employees and our First Nations contacts, to further the reconciliation process in a concrete manner.

INDIGENOUS RELATIONS: ACTIONS AND GOALS

ACTIONS	GOALS MET
2021 – Two Indigenous Knowledge Sharing lunch n’ learn sessions	SDG 10 TMP 4 TMP 5
Hired 2 Indigenous youths as summer students – 2021	SDG 8 SDG 10 TMP 4 TMP 5
Stoney Nakoda Food Bank – food drive and volunteer day – June 2022	SDG 1 SDG 2 SDG 17 TMP 5
Hired 2 Indigenous youths as summer students in head office and field positions – 2022	SDG 8 SDG 10 TMP 4 TMP 5
Senior management Indigenous training session – July 2022	SDG 10 SDG 17 TMP 4 TMP 5
Sponsoring of 56 Indigenous youths in a Community Futures Treaty 7 STEM camp at Mount Royal University – July 2022	SDG 4 SDG 17 TMP 4 TMP 5



photo: Stephanie Gabriel



photo: Lawrence Wong



III. Environment

photo: Matt Williams

Pieridae is committed to responsible development of our assets, as we supply energy to Western Canada and the world.

ENVIRONMENT HIGHLIGHTS

Caroline Beaverhill Lake pool has demonstrated **LARGE VOLUME CAPABILITY FOR CO2 SEQUESTRATION** – many decades of potential at material rates

Pieridae achieved a **2.8 PERCENT REDUCTION IN GHG EMISSIONS INTENSITY** from 2020 to 2021

Pieridae reduced **TOTAL SCOPE 1 GHG EMISSIONS** by **5 PERCENT** from 2020 to 2021



photo: Matt Williams

Pieridae is committed to responsible development of our assets, as we supply energy to Western Canada and the world. Our assets and activities are subject to some of the world’s most stringent environmental legislation, with carbon pricing, emissions caps and stringent environmental standards to ensure that energy producers like Pieridae develop their resources in an environmentally prudent manner.

Pieridae strives to carry out our operations in a manner that reduces harmful impacts to the environment and believes that the most effective response for Pieridae to fight climate change is to produce energy with the least GHG emissions possible. Pieridae’s environmental commitments include reducing our corporate GHG emissions intensity and upholding commitments to use fresh water in a responsible manner, maximizing recycling of water volumes, protecting biodiversity, and reclaiming sites back to their original state at the end of their productive phase. In addition, Pieridae is committed to exploring CCS and decarbonization of the energy system in Alberta, while adding value for shareholders.

CLIMATE CHANGE STRATEGY

In 2021, Pieridae successfully reduced its overall Scope 1 GHG emissions by 5% through optimization of operations and integration of new technologies. In our 2021 ESG report, the company noted our Energy Management Plan (EMP), which evaluates our carbon-related risks and opportunities. Through the EMP, the Company has actively participated in fuel gas reduction projects and programs designed to reduce venting and flaring, with positive results. In addition, the Company’s overall GHG emissions intensity, including Scope 1 and Scope 2 emissions, fell by 3% year-over-year.

Plant and field optimization work will continue in 2022.

MEASURE AND REPORT
carbon emissions

EVALUATE ECONOMIC OPPORTUNITIES
to reduce GHG emissions intensity

EVALUATE LARGER DECARBONIZATION OPPORTUNITIES
through infrastructure utilization

PARTICIPATE IN INDUSTRY AND GOVERNMENT DIALOGUE to support regulatory and legislative change

SUPPORT INDUSTRY RESEARCH AND COLLABORATION to encourage efficiencies in driving new technologies and large-scale change



photo: Matt Williams



Stephen DeCock,
Environmental Coordinator,
Waterton Gas Plant

The world needs more energy, but it also needs to reduce greenhouse gas (GHG) emissions. The increasing carbon price and consumer demand for clean energy and decarbonization provide incentive to continue to explore this potential. The resulting projects will aid the Company in achieving net zero.

Pieridae is focused on helping to provide low-carbon energy for the future. The Company's initial step is completing the feasibility study for potential CCS at the Caroline site. In early 2022, Pieridae hired full time technical expertise to develop and manage this evaluation.

The Caroline site has tremendous future potential for GHG emissions reduction and decarbonization, as do our other legacy assets.

Pieridae is focused on helping to provide low-carbon energy for the future.

AIR EMISSIONS

Pieridae continued to successfully operate our major facilities within all compliance requirements of the Alberta government and the *Environmental Protection and Enhancement Act* (EPEA). At each large facility, the company has an Environmental Coordinator to manage compliance and participate with industry synergy groups. Each major facility has several active air monitoring sites with various ongoing associated reporting requirements.

Our emissions in four categories, NOX (Nitrogen oxides), SOX (Sulphur oxides), VOC (Volatile Organic Compounds) and Total Particulate Matter, were all lower year-over-year.

The company continues to execute its methane reduction compliance plan. In 2019, 408 devices were identified for replacement from high-bleed to low-bleed fuel gas pneumatic devices. To the end of 2021, 44% of those were replaced, and it is expected that the remainder of the sites will be completed in 2022.



Company Geological Field Trip, 2022, photo: Stephanie Gabriel

WATER MANAGEMENT

Pieridae works to reduce water needs and increase recycling and efficiencies of water use in their facilities. As with air quality management, water resource management is regulated by the EPEA approval for each major site. Significant ongoing testing on various water streams within Pieridae's facilities is performed as part of normal operations. The Company's major facilities use water during normal operations, including for cooling processes. This water is returned to the environment as steam and ultimately returns to the environment as clean water. Water produced from the Company's wells is normally disposed of into licensed disposal wells, while collected runoff water volumes and recovered process water is carefully treated before being returned to source.

The Company has adopted technology and innovation in its water management practices, resulting in water recycling and cost savings. The Company's overarching goal is to protect health and the environment by minimizing the impact of our operations.

LAND USE, RECLAMATION, ASSET RETIREMENT

Pieridae strives to minimize negative impacts of our work while working closely with landowners, rightsholders, and other stakeholders to improve our effects on biodiversity and minimize our environmental footprint. Development of Pieridae's assets has the potential to impact environmental quality and biodiversity. We believe we have a moral and legal obligation to reclaim inactive wells, pipelines and facilities, and decommission and reclaim sites. Pieridae's approach has been a staged responsible asset retirement plan, with efficient and cost-effective execution of this plan through the years.

The company continues to manage an ongoing reclamation program for sites in Alberta and British Columbia. Site closure expenditures in 2021 totaled \$2.9 MM, and \$4.4 MM is forecast for 2022.



*Karlee Overguard,
Environmental Coordinator,
Caroline Complex*



*Lorne Harty, Foreman,
Field Operations at Waterton*

OPERATIONAL INTEGRITY AND SPILLS

Spills and leaks have the potential to impact local communities and can reduce biodiversity through habitat damage. Large or frequent spills or releases could damage Pieridae’s reputation, in addition to resulting in significant cleanup costs and fines.

Prevention is a key objective for Pieridae. The company has invested in maintenance and asset integrity to reduce the risk of spills and to ensure productivity, reliability and safety of its operations. Pieridae has comprehensive procedures and training programs to ensure a timely response in the event of a spill.

In 2021, two major full plant shut-down and turnaround projects were completed at the Jumping Pound Complex and Caroline Complex. In total, the work included 53 internal vessel inspections, servicing of 456 pressure safety valves (PSVs), 15 in-line pipeline inspections (ILIs) and 9 pipeline verification digs and repairs, for a total cost of approximately \$23 MM. During this time Total Recordable Injury Frequency (TRIF) fell by 34% for employees year-over-year.

In 2021, Pieridae did not incur any spill-related fines or penalties.

In 2021, two major full plant shut-down and turnaround projects were completed...During this time Total Recordable Injury Frequency (TRIF) fell by 34% for employees year-over-year.

ENVIRONMENT: ACTIONS AND GOALS

ACTIONS	GOALS MET			
Added full time engineering expertise to continue Caroline CCS feasibility study work	SDG 9	SDG 13	TMP 2	TMP 3
Pieridae reduced its combined Scope 1 and 2 GHG emissions intensity by 2.8 percent from 2020 to 2021	SDG 13	TMP 2	TMP 3	
Pieridae achieved a 5 percent reduction in Scope 1 GHG emissions from 2020 to 2021	SDG 13	TMP 2	TMP 3	
\$2.9 MM invested in asset retirement activities in the last year	SDG 14	SDG 15	TMP 1	TMP 4
Pieridae executed 34 Emergency Response Plan (ERP) exercises in 2021	SDG 14	SDG 15	TMP 1	TMP 4



Karen Spencer, Monica Rosevear and Jennifer Evans at SPOG Neighbour Day 2022, Sundre



IV. Social

*Company Geological
Field Trip, 2022,
photo: James Bradley*

Pieridae's connection to our employees, stakeholders and communities are the foundation of everything we do. They are ongoing relationships that demand trust, transparency and open communication.

SOCIAL HIGHLIGHTS

\$125,000+

OF COMMUNITY AND
SOCIAL INVESTMENT
FUNDING in 2021

Pieridae held
**34 ERP
EXERCISES**
in 2021

**SUPPORTED
COMMUNITY EVENTS**

such as the
**CARSTAIRS AND DISTRICT
4H SHOW AND SALE**

STAKEHOLDER RELATIONS

We work with communities where we live and operate – Caroline, Jumping Pound, Waterton, Calgary and more. Through job creation, tax generation, working with local vendors and our Community and Social Investment Fund, we strive to be responsible, active neighbours. Community Engagement is in the capable hands of our Community Liaison Officers who support stakeholder relationships at each of our major gas plants and in the surrounding areas.

Our Community and Social Investment fund focuses on helping organizations provide lasting benefits to communities in the areas of education, environment, community skills, safety, health, community development and culture. Contributions to initiatives and organizations from 2021 included:

- Local food banks,
- Bragg Creek Trails Association,
- Rocky Volunteer Search and Rescue Society,
- The Cochrane Fair,
- Greenwood Neighbourhood Place Society,
- Carstairs and District 4H Show and Sale.

HEALTH AND SAFETY

Choose Safety – because safety is a choice every day. No job is more important than protecting the safety and security of our employees, contractors, customers and neighbours.

PATH TO ZERO

We are on a journey to maintain and strengthen our safety culture, to actively walk the path to zero incidents, minimize environmental impacts and maintain regulatory compliance. This is achieved through initiatives like our Operations Management System, Hazard Identification Process, Risk Assessment Matrix and Emergency Response Planning (ERP). Pieridae's safety standards and requirements are outlined in our Health, Safety and Environment Policy. All of these policies and systems work because of the hard work and dedication of our people to put safety first.

ERPs

We conduct multiple ERP drills throughout the year involving different sites and head office. These exercises ensure that all personnel are prepared to act in the event of an emergency. In 2021, the Company executed 34 ERP exercises and drills in both the field and Calgary office.



Gina Thompson, working from home



Waterton Biosphere Day on the creek

PIERIDAE'S PEOPLE

Our people are the foundation of Pieridae. We support our employees through benefits coverage, flex days, a company retirement savings plan and annual incentives. Our Employee and Family Assistance Program offers mental health and wellness supports as well.

We are also encouraging the next generation of the energy industry through our summer student program, which continues to grow year-over-year. This summer we were pleased to welcome two returning and 10 new students to the Company. Last year was challenging for all Pieridae employees. In 2022 a renewed commitment to our team is being made to enhance confidence in the Company's long-term strategy. This will include a focus on inclusion in strategic planning, transparent communications, career planning and training, and activities on various Equity, Diversity and Inclusion (EDI) topics throughout the remainder of the year.

“The people are amazing, they're so helpful and supportive. They are really encouraging me to learn everything I can. I feel like I am respected; I have real responsibility.”

Rachel Masse,
Caroline & Shantz Summer Student

SOCIAL: ACTIONS AND GOALS

ACTIONS	GOALS MET
<p>Community and Social Investment project funding – 2021 = \$125,000. Various projects including local food banks, Bragg Creek Trails Association, Rocky Volunteer Search and Rescue Society, The Cochrane Fair, Greenwood Neighbourhood Place Society, Carstairs and District 4H Show and Sale.</p>	<p>SDG 1 SDG 3 TMP 4</p>
<p>Executed 34 ERP exercises and drills in 2021</p>	<p>SDG 14 SDG 15 TMP 1 TMP 4</p>
<p>Increased women in the the management and the executive team from 2020 to 2021 from 17% to 27%</p>	<p>SDG 5 SDG 8 TMP 1 TMP 5</p>

V. ESG Performance Tables

2021 ESG PERFORMANCE DATA

INDICATOR	ACTIVITY	UNITS	2021		2020		COMMENTS
			Plant	Field	Plant	Field	
EM-EP-000.A	production of: (1) oil, (2) natural gas, (3) condensates, and (4) natural gas liquids	boe/day	39,620	46,034	40,482	46,780	Production numbers represent gross operated volumes.
EM-EP-000.B	Number of offshore sites	number	0		0		
EM-EP-000.C	Number of terrestrial sites	number	793		793		Gross operated sites, including active, suspended and abandoned wells, other sites under remediation and major facilities sites.
I. ENVIRONMENT							
GRI 302-1	Direct energy consumption	GJ	11,881,243		13,398,641		Equivalent GJs of combustion fuel, changed methodology 2020 to 2021.
			6,991,206	4,890,037	8,531,394	4,867,248	
GRI 302-3	Production energy intensity	GJ/m3oe	2.27		2.42		
			2.72	1.83	3.04	1.79	
1. Greenhouse Gas Emissions							
EM-EP-110a.1 GRI 305-1	Gross global scope 1 emissions	metric tonnes CO2e	1,128,495		1,187,076		
			792,489	336,006	818,631	368,445	
GRI 305-2	Indirect scope 2 emissions	metric tonnes CO2e	173,449		188,331		Note: in previous ESG report, an incorrect tCO2e conversion factor was used to estimate Scope 2 emissions. These numbers have used the correct factor of 0.37 tCO2e/MWh.
			94,191	79,258	102,602	85,729	
GRI 305-4	Intensity (scope 1 and scope 2)	metric tonnes CO2e/boe	0.0416		0.0428		
			0.0613	0.0247	0.0622	0.0261	
EM-EP-110a.1 GRI 305-1	Methane emissions	percentage	4.6%		4.1%		
			2.1%	7.1%	1.0%	7.2%	
EM-EP-110a.1	Covered under emissions-limiting regulations	percentage	0		0		Limiting regulation is D060 (for methane). TIER is a carbon credit system rather than a cap and trade.
EM-EP-110a.2	Flared hydrocarbons	metric tonnes CO2e	130,050		15,376		Changed reporting methodology 2020 to 2021.
			123,206	6,844	8,541	6,835	
EM-EP-110a.2	Other combustion	metric tonnes CO2e	53,146		72,780		
			52,760	386	72,780	-	
EM-EP-110a.2	Process emissions	metric tonnes CO2e	0	0	0	0	Captured in vented and fugitive.
EM-EP-110a.2	Vented emissions	metric tonnes CO2e	48,759		55,692		
			615	48,144	3,820	51,872	
EM-EP-110a.2	Fugitive emissions	metric tonnes CO2e	3,942		43,962		Changed reporting methodology 2020 to 2021.
			1,023	2,918	830	43,133	
	Flared gas	thousand m3	51,359		7,241		Changed reporting methodology 2020 to 2021.
			47,976	3,383	3,823	3,417	
	Vented gas	thousand m3	3,011		2,175		
			60	2,951	201	1,974	
	Solution gas conservation rate	percentage	N/A		N/A		

2021 ESG PERFORMANCE DATA

INDICATOR	ACTIVITY	UNITS	2021	2020	COMMENTS
2. Air Emissions*					
EM-EP-120a.1	NOx (excluding N2O)	metric tonnes	1,274.5	1,276.9	
EM-EP-120a.1	SOx	metric tonnes	10,302.6	11,780.7	
EM-EP-120a.1	Volatile organic compounds	metric tonnes	155.1	155.1	
EM-EP-120a.1	Particulate matter	metric tonnes	81.8	85.8	
3. Water*					
EM-EP-140a.1 GRI 303-3	Total fresh water withdrawn	m3	1,239,562	1,134,683	Water used in processes at Pieridae major facilities.
EM-EP-140a.1 GRI 303-5	Total fresh water consumed	m3	962,872	868,318	= freshwater withdrawn - injected volume
EM-EP-140a.2	Volume of produced water and flowback generated	m3	82,506	87,131	
EM-EP-140a.2	Water discharged/treated	percentage	22%	24%	
EM-EP-140a.2	Water injected	percentage	20%	15%	
EM-EP-140a.2	Water recycled	percentage	N/A	N/A	
	Hydrocarbon content in discharged water	metric tonnes	0	0	
EM-EP-140a.3	Hydraulically fractured wells for which there is public disclosure of all fracturing fluid chemicals used	percentage	N/A	N/A	
EM-EP-140a.4	Hydraulic fracturing sites where ground water or surface water quality deteriorated compared to a baseline	percentage	N/A	N/A	
4. Biodiversity Impacts					
EM-EP-160a.2	Number and aggregate volume of hydrocarbon spills	number; volume (m3)	1, 0.5 m3	1, 53 m3	
EM-EP-160a.2	Volume of hydrocarbon spills in Arctic	m3	N/A	N/A	
EM-EP-160a.2	Volume of hydrocarbon spills impacting shorelines with ESI rankings 8 - 10	m3	N/A	N/A	
EM-EP-160a.2	Volume of hydrocarbon spills recovered	m3	N/A	N/A	
EM-EP-160a.3	Proved reserves in or near sites with protected conservation status or endangered species habitat	percentage	NR	NR	
EM-EP-160a.3	Probable reserves in or near sites with protected conservation status or endangered species habitat	percentage	NR	NR	
5. Reclamation					
	Active wells (net operated)*	number	387	387	
	Suspended wells (net operated)*	number	111	85	
	Abandoned wells (net operated)*	number	92	89	
	Active wells (net non-operated)**	number	62	62	
	Suspended wells (net non-operated)**	number	18	18	
	Abandoned wells (net non-operated)**	number	13	13	
	Active reclamation/remediation/monitoring ongoing (gross)***	number	156	150	
	Certificates received (gross)	number	4	4	

* indicates assets that are operated, but not licenced to PEA (For example, includes Shell asset base, acquired in 2019)

** non-operated well numbers are best estimates at time of writing

*** includes all active reclamation work (i.e remote sumps, WM facilities, surface leases/dispositions)

NR = Not Recorded

2021 ESG PERFORMANCE DATA

INDICATOR	ACTIVITY	UNITS	2021	2020	COMMENTS
6. Pipeline Incidents					
EM-MD-540a.1	Number of reportable spills, % significant	count, percentage	4, 0%	3, 0%	
	Reportable non-pipeline spills	count	3	2	
	Reportable pipeline spills	count	1	1	
	Total volume of reportable spills	m3	10.2	11.3	
	Volume of non-pipeline reportable spills	m3	6.2	11.2	
	Volume of pipeline reportable spills	m3	4.0	0.1	
	Pipeline incidents	count	4	4	
	Pipeline incident rate	incidents per 1,000 km	1.1	1.1	
	Number of fines and penalties	count	0	0	
II. HEALTH & SAFETY					
Lost-time Frequency					
EM-EP-320a.1 GRI 403-9	Full-time employees	cases per 200,000 work hours	0.37	0.00	
EM-EP-320a.1 GRI 403-9	Contractors	cases per 200,000 work hours	0.00	0.00	
Recordable Frequency					
EM-EP-320a.1 GRI 403-9	Full-time employees	cases per 200,000 work hours	.75	1.13	
EM-EP-320a.1 GRI 403-9	Contractors	cases per 200,000 work hours	0.00	0.11	
Fatalities					
EM-EP-320a.1 GRI 403-9	Full-time employees and contractors	cases per 200,000 work hours	0	0	
III. KEY INTEGRITY INSPECTION WORK					
	Full and partial plant shutdowns - planned turnaround projects	Number completed	2	1	
	Full and partial plant shutdowns - costs of planned turnaround projects	\$MM	20.0	5.8	
	Number of internal vessel inspections included in T/A work	Number	53	14	
	Number of PSVs serviced in T/A work	Number	456	38	
	Number of in-line pipeline inspections and cost	Number, \$MM	15, \$1.30 MM	35, \$1.4 MM	
	Number of pipeline verification digs and repairs and cost	Number, \$MM	9, \$0.65 MM	18, \$1.3 MM	
	Liquid sulphur pipeline verification digs and repairs	Cost, \$MM	\$0.90 MM	\$1.8 MM	

2021 ESG PERFORMANCE DATA

INDICATOR	ACTIVITY	UNITS	2021	2020	COMMENTS
IV. SOCIAL					
Workforce Profile					
	Full-time	number	257	284	
	Contractors and temporary employees	number	89	71	
Employees by Location					
	Field (permanent)	number	205	214	
	Office (permanent)	number	52	70	
	Field (contractors and temporary)	number	73	67	
	Office (contractors and temporary)	number	16	4	
Gender Diversity (Permanent Only)					
GRI 405-1	Women in workforce – Total company	percentage	17%	19%	
	Women in workforce – Field	percentage	8%	10%	
	Women in workforce – Calgary office	percentage	48%	46%	
GRI 405-1	Supervisory/professional positions	percentage	23%	18%	
GRI 405-1	Management and executive team	percentage	27%	17%	
GRI 405-1	Board of Directors	percentage	16%	16%	
Employee Age Categories					
GRI 405-1	30 years and under	number	22	29	
GRI 405-1	30 years to 50 years	number	156	176	
GRI 405-1	50 years and over	number	94	86	
Employee Turnover					
GR 401-1	Voluntary turnover	percentage	16.80%	6.60%	
Employee Training					
	Total spent on training	\$	63,588	18,863	
	Spending per employee	\$	247.42	66.42	
Security, Human Rights & Rights of Indigenous Peoples					
EM-EP-210a.1	Proved reserves in or near areas of conflict	percentage	0	0	
EM-EP-210a.1	Probable reserves in or near areas of conflict	percentage	0	0	
EM-EP-210a.2	Proved reserves in or near Indigenous land	percentage	1.3%	2.0%	
EM-EP-210a.2	Probable reserves in or near Indigenous land	percentage	2.8%	1.6%	
Community Relations					
EM-EP-210b.2	Number and duration on non-technical delays	number; days	0	0	
Business Ethics & Transparency					
EM-EP-510a.1	Proved reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Percentage Index	percentage	0	0	
EM-EP-510a.1	Probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Percentage Index	percentage	0	0	
Critical Incident Risk Management					
EM-EP-540a.1	Process Safety Event (PSE) rates for Loss of Primary Containment (LOPC) of greater consequence (Tier 1)	rate	0	0	

2021 ESG PERFORMANCE DATA

INDICATOR	ACTIVITY	UNITS	2021	2020	COMMENTS
V. ECONOMIC					
GRI 202-1	Value generated	\$millions	\$ 321.8	\$ 269.7	
Value Distributed to:					
	Suppliers	\$millions	187.1	188.5	
	Providers of capital	\$millions	40.0	47.4	
	Governments	\$millions	23.4	24.4	
	Employees	\$millions	56.6	47.6	
	Landowners	\$millions	2.3	2.0	
	Communities	\$millions	0.1	0.2	
	Value retained	\$millions	12.4	(40.4)	
Reserves Valuations & Capital Expenditures					
EM-EP-420a.2	Estimated carbon dioxide emissions embedded in proved hydrocarbon reserves	metric tonnes CO2e	NR	NR	
EM-EP-420a.3	Amount invested in renewable energy, revenue generated by renewable energy sales	reporting currency	0	0	

NR = Not Recorded

VI. Index

SASB ADDITIONAL CONTENT INDEX

Sustainability Accounting Standards Board (SASB)

TOPIC	CODE	ACCOUNTING METRIC	PAGE
Greenhouse Gas Emissions	EM-EP-110a.3	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	30
Biodiversity Impacts	EM-EP-160a.1	Description of environmental management policies and practices for active sites	31-32
Security, Human Rights & Rights of Indigenous Peoples	EM-EP210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, Indigenous rights, and operation in areas of conflict	27
Community Relations	EM-EP-210b.1	Discussion of process to manage risks and opportunities associated with community rights and interests	36
Workforce Health & Safety	EM-EP-320a.2	Discussion of management systems used to integrate a culture of safety throughout the exploration and production lifecycle	36
Reserves Valuation & Capital Expenditures	EM-EP-420a.4	Discussion of how price and demand for hydrocarbons and/or climate regulation influence the capital expenditure strategy for exploration, acquisition, and development of assets	30
Business Ethics & Transparency	EM-EP-510a.2	Description of the management system for prevention of corruption and bribery throughout the value chain	22-23
Management of the Legal & Regulatory Environment	EM-EP-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	23
Critical Incident Risk Management	EM-EP-540a.2	Description of management systems used to identify and mitigate catastrophic and tail-end risks	22, 26

TCFD REPORTING FRAMEWORK INDEX

Task Force on Climate-related Financial Disclosure (TCFD)

TOPIC	RECOMMENDATION	PAGE
Governance (a)	Board oversight	22
Governance (b)	Management's role	23
Strategy (a)	Identification of climate-related risks and opportunities	14, 30
Strategy (b)	Impact of climate-related risks and opportunities	8, 30
Risk Management (a)	Risk identification and assessment process	14, 30
Risk Management (b)	Risk management process	16, 22
Risk Management (c)	Risk integration	16, 22
Metrics and Targets (a)	Metrics	31
Metrics and Targets (b)	GHG Emissions	30, 38
Metrics and Targets (c)	Targets and performance	38

GRI CONTENT INDEX

Global Reporting Initiative (GRI) – References to Standards

DISCLOSURE	DESCRIPTION	PAGE
ORGANIZATIONAL PROFILE		
102-1	Name of organization	20
102-2	Activities, brands, products, services	20
102-3	Location of headquarters	20
102-4	Location of operations	13
102-6	Markets served	12
102-8	Information on employees and other workers	13
STRATEGY		
102-16	Statement from senior decision maker	4
102-17	Key impacts, risks, opportunities	14
ETHICS AND INTEGRITY		
102-16	Values, principles, standards, norms of behaviour	6, 16
102-27	Mechanisms for advice and concerns about ethics	14, 22
GOVERNANCE		
102-18	Governance structure	22
102-22	Composition of the highest governance body and its committees	22
STAKEHOLDER ENGAGEMENT		
102-40	List of stakeholder groups	14
102-43	Approach to stakeholder engagement	14, 36
REPORTING PRACTICE		
102-46	Defining report content and topic boundaries	20
102-47	List of material topics	2
102-50	Reporting period	20
102-51	Date of most recent report	20
102-52	Reporting cycle	20
102-53	Contact point for questions regarding the report	47
102-54	Claims of reporting with reference to GRI Standards	6, 17
102-55	GRI content index	44
ECONOMIC		
201-1	Direct economic value generated and distributed	42
ENVIRONMENT		
302-1	Energy consumption within the organization	38
302-3	Energy intensity	38
303-3	Water withdrawal	39
304-2	Significant impacts of activities, products and services on biodiversity	39
305-1	Direct (Scope 1) GHG emissions	38
305-2	Energy Indirect (Scope 2) GHG emissions	38
305-4	GHG emissions intensity	38
305-5	Reduction of GHG emissions	38
305-7	Nitrogen oxides (NOX), sulphur oxides (SOX) and other significant air emissions	39
306-3	Significant spills	39
307-1	Non-compliance with environmental laws and regulations	40
SOCIAL		
401-1	New employees hires and employee turnover	41
403-9	Work-related injuries	40
405-1	Diversity of governance bodies and employees	41

STATEMENT OF USE:

Pieridae Energy Limited has reported the information cited in this GRI content index for the period January 1, 2021 to December 31, 2021 with reference to the GRI Standards. GRI 1 used GRI 1: Foundation 2021

Forward-Looking Statements

This ESG Report contains certain forward-looking information and statements within the meaning of applicable securities laws.

The use of any of the words “expect”, “anticipate”, “continue”, “estimate”, “objective”, “ongoing”, “may”, “will”, “project”, “should”, “believe”, “plans”, “intends”, “strategy” and similar expressions are intended to identify forward-looking information or statements.

The forward-looking information and statements contained in this ESG Report reflect several material factors, expectations and assumptions of Pieridae, including, without limitation: the general continuance of current industry conditions; the continuance of existing (and in certain circumstances, the implementation of proposed) tax, royalty, and regulatory regimes; the Company’s capital budget and operational plans for 2022; the ability to complete the infrastructure projects within the proposed timelines and within the proposed budget; the ability to obtain all necessary regulatory approvals on the anticipated timelines; certain commodity price and other cost assumptions for 2022; the general continuance of current industry conditions; the retention of Pieridae’s key properties; access to equipment and qualified personnel; and the continued availability of adequate debt and equity financing and funds from operations to fund the Company’s planned expenditures. Pieridae believes the material factors, expectations, and assumptions reflected in the forward-looking information and statements are reasonable, but no assurance can be given that these factors, expectations, and assumptions will prove to be correct.

The forward-looking information and statements included in this ESG Report are not guarantees of future performance and should not be unduly relied upon. Such information and statements involve known and unknown risks, uncertainties, and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking information or statements including, without

limitation: changes in Pieridae’s plans regarding water management, facilities replacement and construction, and operations based on key learnings and experience gained through the design and implementation of such plans; changes to government regulations including royalty rates, taxes, and environmental and climate change regulation; delays and cost overruns in respect of the proposed projects; the inability to obtain the necessary regulatory approvals within the anticipated timelines; changes in commodity prices; changes in the demand for or supply of Pieridae’s products; the impact of the economic development of emerging economies on demand for fuel products; changes in development plans of Pieridae or by third-party operators of Pieridae’s properties; changes to the government; increased debt levels or debt service requirements; loss of key personnel; limited, unfavourable, or a lack of access to capital markets; deterioration of relations with Indigenous groups; a lack of adequate insurance coverage; the impact of competitors; and certain other risks detailed from time-to-time in Pieridae’s public disclosure documents (including, without limitation, those risks identified in this ESG Report and in Pieridae’s AIF for the year ended December 31, 2021).



Peer company data sources

for graph on page 19

Advantage Oil & Gas,
<https://www.advantageog.com/>

Athabasca Oil,
<https://www.atha.com/esg.html>

Baytex (2020 data),
<https://www.baytexenergy.com/sustainability/sustainability-reporting.cfm>

Birchcliff Energy,
<https://www.birchcliffenergy.com/esg>

Bonterra Energy Corp. (2020 data),
<https://www.bonterraenergy.com/responsibility/corporate-governance-1>

Cardinal Energy Ltd.,
<https://cardinalenergy.ca/wp-content/uploads/2022/03/22-03-14-2021-Cardinal-ESG-Report-5Q-FINAL-2-1.pdf>

Crew Energy Inc. (2020 data),
<https://esg.crewenergy.com/reporting-standards-indexes/>

Kelt Exploration,
<https://keltexploration.com/february-17-2022-3/>

NuVista Energy Ltd. (2020 data),
<https://nvaenergy.com/esg-commitment/our-esg-commitment/>

Peyto Exploration (2020 data),
http://www.peyto.com/Files/Corporate/Peyto_2021_ESG_Report.pdf

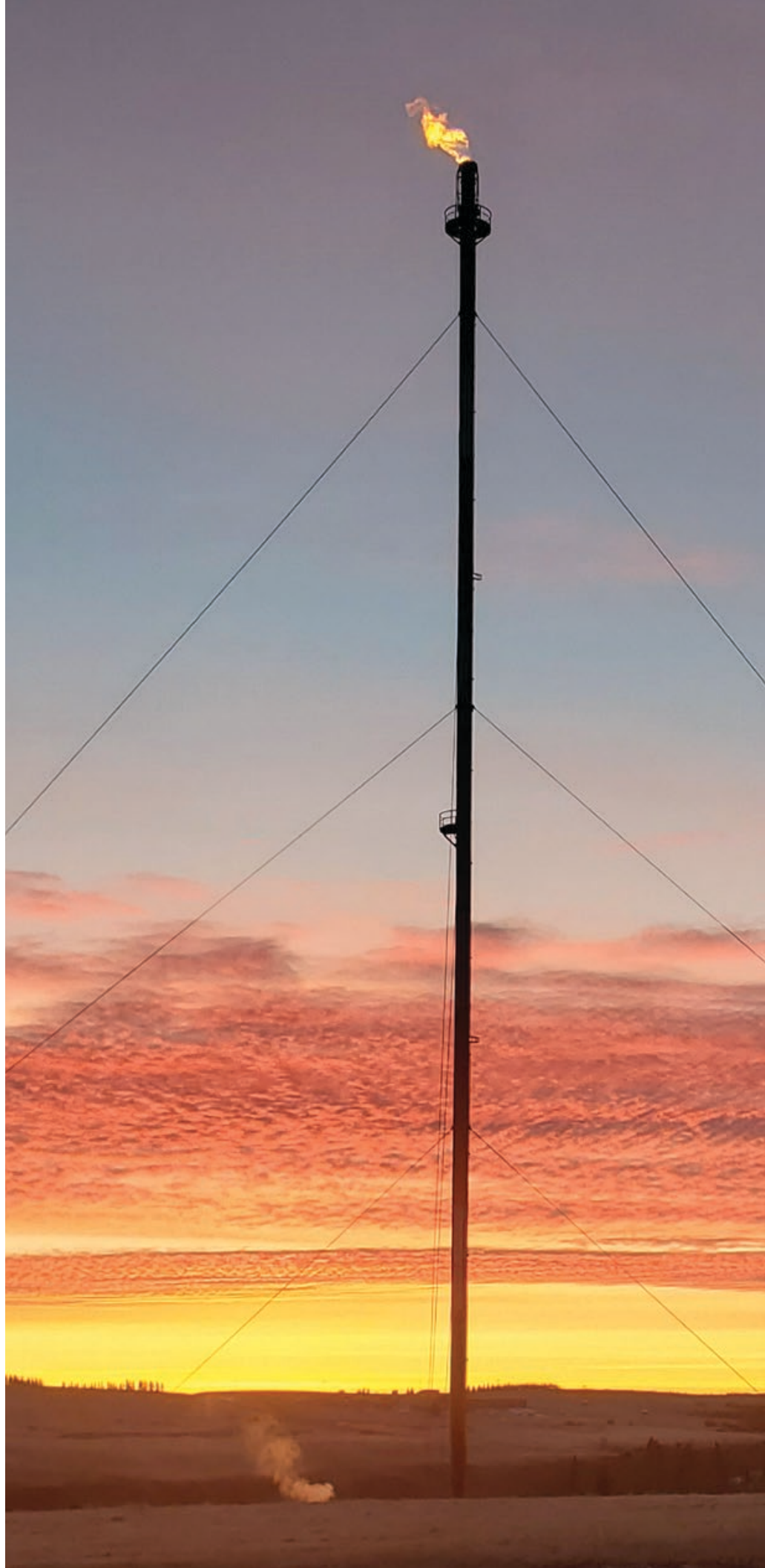
Spartan Delta Corp.,
<https://esg.spartandeltacorp.com/esg-profile/>

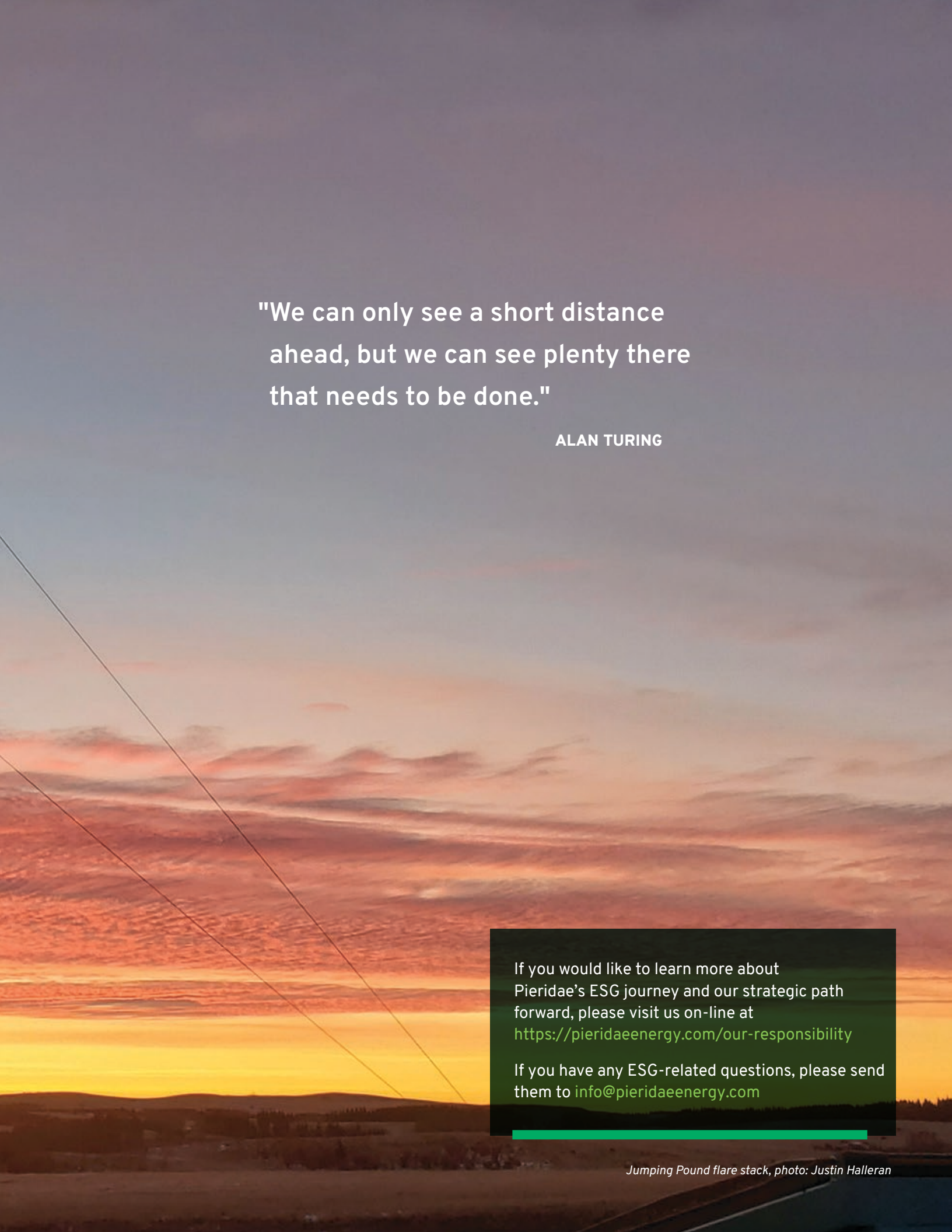
Surge Energy Inc. (2020 data),
https://www.surgeenergy.ca/wp-content/uploads/2021/12/21-12-20-SGY-ESG_Report-21-12-20.pdf

Tamarack Valley Energy (2020 data),
<https://www.tamarackvalley.ca/sustainability-report/>

Yangarra Resources Inc.,
<https://www.yangarra.ca/wp-content/uploads/2022/02/ESG-Presentation.pdf>

Whitecap Resources Inc. (2020 data),
<https://www.wcap.ca/sustainability/esg-report>



A sunset over a landscape with power lines. The sky is filled with soft, orange and pink clouds, and the sun is low on the horizon, casting a warm glow. Two power lines run diagonally across the left side of the image.

"We can only see a short distance
ahead, but we can see plenty there
that needs to be done."

ALAN TURING

If you would like to learn more about
Pieridae's ESG journey and our strategic path
forward, please visit us on-line at
<https://pieridaenergy.com/our-responsibility>

If you have any ESG-related questions, please send
them to info@pieridaenergy.com

