



**LIVING
OUR VALUES**
GOVERNANCE
INDIGENOUS
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**PIERIDAE 2023
ESG REPORT**

For the year ending December 31, 2022





OUR BUSINESS VISION

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

OUR ESG VISION

To 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.

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 respect and inclusion



Identify opportunities for increasing efficiencies and streamlining operations



Minimize regulatory and legal risk



Maximize long-term value and satisfy stakeholder needs



Enhance our investment opportunities via optimal ESG performance



Engage all employees in making ESG a part of our company's culture



Ensure ESG performance is linked to executive compensation



Assist Board of Directors in carrying out oversight and governance



near Moose Mountain



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LAND ACKNOWLEDGMENT

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 Bearspaw, 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.



MESSAGE FROM OUR CEO

In early 2022, Pieridae's focus returned to building and growing our upstream and midstream assets while upholding our core Environment, Social and Governance (ESG) principles: 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.

2022 was a year of changes: war, major commodity price fluctuations and evolving government regulations. Energy security has become the topic of conversation around the globe. Changes in the European energy system escalating with the war in Ukraine in February 2022, led to historic pressures on natural gas demand, affecting industry drivers while imposing energy prices and inflation levels not seen in Canada in some time. Despite the many uncertainties, Pieridae achieved a positive year with substantial debt reduction and the successful spud of its first Alberta Foothills horizontal well.

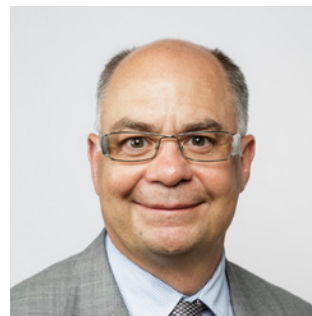
At time of writing, we are fortunate to have had a full year with Pieridae's first Environmental, Social and Governance Director. Her guidance has proved a welcome addition to the management team and our ESG work. Our carbon management plan has begun to take shape and last year's ESG Report was met with positive reviews from peers and stakeholders. We are looking forward to continuing the good work laid out in last year's report and following this open-ended journey of energy transition and fueling the world.

Supporting reconciliation at an organizational and individual level remains a key ESG focus. The principles of trust, mutual respect, fairness, openness and transparency drive our work in this area. In addition, our team continues to be strengthened with an emphasis on diversity and inclusion and raising our levels of self-awareness of these issues. Throughout 2022, we focused on creating an educational baseline for our employees through knowledge-building opportunities. We continue to look for opportunities to partner and engage with Indigenous businesses and communities in our upstream and midstream growth.

The dedication and passion of our people carried Pieridae through the many challenges of last year. By pulling together, rolling up our sleeves and getting back to the essentials, the team has created a superb foundation for 2023's growth work. I am pleased that we saw an integrated thread of ESG throughout our work. It is what makes Pieridae stronger.

I look forward to a year with solid growth potential aimed at continuing to build and consolidate Pieridae's position as Canada's leading Foothills producer, while tackling a major midstream growth strategy. We have a motivated team of dedicated employees who willingly share their knowledge and expertise. The Company's growing success stems from our people.

On behalf of myself and the rest of the leadership team, thank you to our staff, management, directors and community stakeholders for your continued support of Pieridae.



Mr. Alfred Sorensen
CEO, Pieridae Energy Limited



MESSAGE FROM THE CHAIR OF OUR BOARD OF DIRECTORS

Having been Chair of the Board of Directors at Pieridae for a year now, I am pleased to announce the release of Pieridae's 2023 Environmental, Social, Governance (ESG) Report.

The Company has achieved significant milestones in 2022, including spudding one of the first successful Canadian Foothills wells drilled in the past decade and executing a successful pivot to become an active upstream driller and producer. The Board has also undertaken numerous initiatives in the last year to become a more effective and accountable governance group, particularly in the realm of ESG.

The Board conducted a substantial review and reorganization of its committee structure and mandates to align governance mandates with Pieridae's strategy and to embed best practices in ESG oversight. Relevant aspects of the Board's oversight of ESG are now incorporated into every committee mandate, allowing the Board to better understand and address ESG risks, sustainability initiatives and opportunities, in addition to human capital management concerns and challenges.

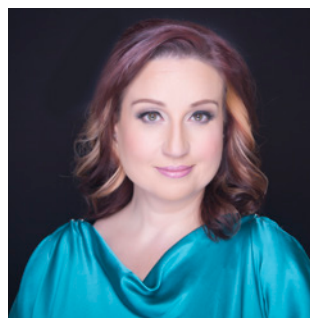
On an individual level, various Board members, including myself, have dedicated time to broadening our own understanding of ESG risks and reporting through training and accreditations. The Board also updated its skills matrix to ensure that the Board builds its competencies in ESG oversight through succession planning as well as training and professional development of the Board. Bolstering our overall knowledge base at a Board level closes the information gap on emerging trends and developments in the ever-changing realm of ESG.

Recent ESG focused accreditations and certificates obtained by some of our Board members include the Competent Boards, ESG Certification (CGB.D) and the certificate program from the Institute of Corporate Directors, Governance Oversight of Climate Change. Director Gail Harding is also accredited with the Fundamentals of Sustainability Accounting from SASB. The Board looks forward to continuing its educational journey with Pieridae employees as they too learn and grow through

the various ESG workshops provided to them throughout the year. Better understanding of the ESG world will lead to better governance oversight and stronger, more efficient operations.

Focused efforts this past year also served to better incorporate ESG into Pieridae's corporate objectives and goals. It is woven through the Company's updated vision and mission as a common theme, and integrated into corporate objectives such as the Carbon Management Strategy. International reporting frameworks such as the TCFD (Taskforce on Climate-related Financial Disclosures), GRI (Global Reporting Initiative) and SASB (Sustainability Accounting Standards Board) help to guide measuring and reporting on the Company's progress to net zero by 2050.

The Board proudly supports the projects and ingenuity that actively move Pieridae on the path to achieving its ESG goals. Through leadership, innovation and determination, the Company will strengthen its position as a progressive leader in the energy industry and the Western Canadian Foothills.



Ms. Patricia McLeod KC
Chair of the Board of Directors



EXECUTIVE SUMMARY

Over the past twelve months, Pieridae has focused on its core business of producing energy from its Foothills assets. The Company completed its ESG governance structure update, strengthening its commitment to sustainable energy production. Pieridae offered learning opportunities through the year on various topics such as equity, diversity and inclusion, and Indigenous history in western Canada. The year also included a start in decarbonization studies, with the Company taking concrete next steps toward emissions reduction.

The past 12 months have been illuminating for the global energy industry. The environment within which Pieridae strives to achieve its goals has changed. While the strong drive to reduce greenhouse gas (GHG) emissions and decarbonize industry continues, a multitude of goals now exists: the war in Ukraine has put a magnifying glass on the real pressures of energy needs and the value of energy security. The world needs more energy from stable, democratic, environmentally and socially responsible countries such as Canada. It is with this lens that Pieridae analyses its ESG work in 2022.

Pieridae completed its update of its ESG governance structure and mandate in 2022, optimizing the Board committee oversight roles and responsibilities and working hard to integrate ESG into regular senior leadership work throughout the year.

The company's work on growing its foundation of Indigenous knowledge within began in 2022 with employees taking part in a number of workshops and other activities in the latter part of the year. Focused outward, Pieridae's Indigenous engagement has been integrated throughout the Company with a strong team of community engagement specialists who have been tasked with seeking ways of working with our Indigenous neighbours, whether it be as an economic partner or in other community support roles. In 2023 the Company will explore areas where potential partnerships with Indigenous communities are possible in our core areas of operation.

Pieridae's environmental track record on the many complex assets it owns and operates is solid, and 2022 was an introduction year to digging deep into not only the regulatory

requirements and compliance costs of GHG emissions, but the kick-off of optimization projects designed to reduce emissions and emissions intensity while adding value for the Company. More results will be seen in 2023. Work in 2022 also included setting in motion two pre-FEED studies looking at the potential Caroline Carbon Capture Power Complex concept which explores the possible combination of a large-scale Carbon Capture and Sequestration ("CCS") project with a "blue power" (zero emissions) project. The studies were proposed in 2022 and the first is underway at the time of writing, and will help to define longer term steps in the Company's carbon management initiative. A corporate Carbon Management Plan is now under development and will be completed in 2023.

Pieridae's land use reclamation and asset retirement obligations continued in 2022 with priority sites and areas pinpointed in our risk management plan. The Company consistently and proactively invested in well abandonment and reclamation work over the year, ensuring that we reduce our environmental impacts and maintain biodiversity in our operating areas.

The Company's work to increase corporate knowledge around diversity and inclusion, unconscious bias and other social issues actively began in the latter half of 2022 with webinars and learning opportunities. Pieridae must be a great place to work for all employees. This recipe includes a highly skilled group of individuals – from our operators and foremen in the field to our engineers, accountants and geologists in Calgary – combined with strong leadership and a clear path to our short and long-term goals. We know that all employees want to be



PIERIDAE CAROLINE CARBON CAPTURE POWER PLANT COMPLEX PROJECT

In past reports, we have 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 lower overall provincial GHG emissions.

The Caroline Beaverhill Lake pool has large future potential to sequester substantial volumes of CO₂. The pool originally contained approximately 2 TCF of original gas-in-place. Its high permeability and years of past production make it a good candidate for CO₂ injection and sequestration, particularly given its connection to a network of pipelines potentially suitable for gathering CO₂.

Project work in 2022 included studying the reservoir for its sequestration capabilities, in addition to taking the first steps in pursuing pre-FEED studies which will develop cost estimates for carbon capture from flue gas at the Caroline plant. A second pre-FEED study of blue power generation at Caroline is currently being considered. In addition to developing pre-FEED studies for technical alternatives, Pieridae is also evaluating sequestration options created through the newly awarded “Carbon Hubs” located near Pieridae assets. As this work proceeds in 2023, the Company is formulating its Carbon Management Plan which will encompass Caroline and all Pieridae’s assets.

The Caroline site has potential to play an important role in an energy transitioning world. Stay tuned!



Caroline Plant Environmental Coordinator, Karlee O.

respected and connect with the Company’s purpose – making a positive impact on people and the environment – and this work enhances their ability to do that.

In this report, Pieridae has reported a number of measures following many international reporting frameworks. This includes the TCFD (Taskforce on Climate-related Financial Disclosures), GRI (Global Reporting Initiative) and SASB

(Sustainability Accounting Standards Board).

The global need continues for energy security in 2023. Pieridae’s 2022 focus was on the basic tasks of providing secure, economic energy to Canadians and the world. This ESG report describes how we choose to live our values while executing that core business.



UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

A key measure of Pieridae’s ESG success is the slow and careful building of trust between the Company and its stakeholders. Employers and businesses continue to be highly trusted institutions according to the Edelman 2023 Trust Barometer¹.



We call on all businesses to apply their creativity and innovation to solving sustainable development challenges.
 – United Nations Sustainable Development Goals (UNSDG) Article 67

There are clear expectations from the public for corporations to engage in meaningful work to address social challenges. We hold the trust of our employees, contractors, communities and partners to follow through to the best of our abilities.

Global challenges from the last few years have deteriorated progress toward the United Nations Sustainable Development Goals (UNSDGs)², heightening the need for all organizations and individuals to apply resources and expertise to support recovery.

What are the UNSDGs? “An urgent call for action by all countries – developed and developing – in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.”⁴

The business case for the UNSDGs is strong. Evidence shows companies that work on advancing them will improve trust among stakeholders, strengthen their license to operate, reduce legal, reputation and other business risks, and build resilience to costs or requirements imposed by future legislation. In the spirit of being a good neighbour, it is good for our employees, our stakeholders and our Company to develop strategies to take action on these issues³.

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 therefore 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 to integrate these goals throughout our ESG activities.

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



1 Edelman. (2023). The Edelman Trust Barometer 2023 Global Report. <https://www.edelman.com/sites/g/files/aatuss191/files/2023-03/2023%20Edelman%20Trust%20Barometer%20Global%20Report%20FINAL.pdf>
 2 The United Nations Sustainable Development Goals. (2022). Progress Chart 2022. <https://unstats.un.org/sdgs/report/2022/Progress-Chart-2022.pdf>
 3 Mahmut Aydogmus et al. “Impact of ESG performance on firm value and profitability.” Istanbul. Elsevier B.V. 2022. <https://www.sciencedirect.com/science/article/pii/S221484502200103X> ; Jun, H.; Kim, M. From Stakeholder Communication to Engagement for the Sustainable Development Goals (SDGs): A Case Study of LG Electronics. Sustainability 2021, 13, 8624. <https://doi.org/10.3390/su13158624>
 4 The United Nations. (n.d.). Sustainable Development Goals. <https://sdgs.un.org/goals>



ESG AND CANADIAN ENERGY

A review of global energy demand reveals a dynamic and changing 2022.

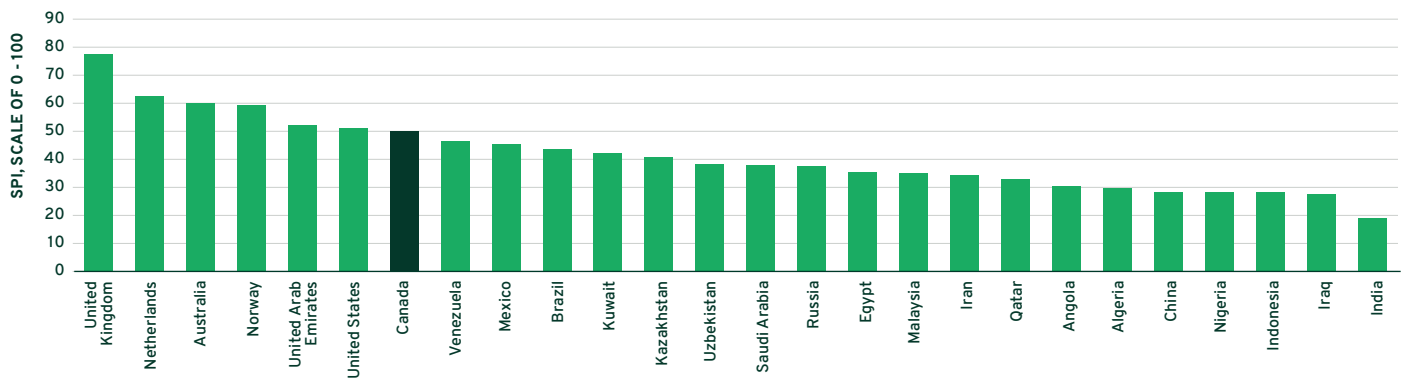
While countries such as Canada have committed to their national targets of greenhouse gas (GHG) emission reduction, Canadian total GHG emissions have increased year-over-year from 659 Mt CO₂eq in 2020 to 670 Mt CO₂eq in 2021¹ as the country's economy rebounds post-COVID. The war in Ukraine served to raise the focus on energy security in 2022. As stated by Fatih Birol, Executive Director, International Energy Agency: "The biggest driver of renewable energy growth today is energy security."² Natural gas continues to be a transition fuel to lower carbon energy sources, while diversity in decarbonization methods is forecast. Carbon capture and storage is predicted to be an important abatement methodology in the coming years³.

In 2022, the continued drive toward energy transition and emissions reduction met with public concerns around the basics: down-to-earth economic survival. High energy prices, and in particular high natural gas prices in Europe, have driven fuel

switching where it can be done at low cost, but the crisis is also impacting consumers by driving them out of the market. The pressures from Russia's invasion of Ukraine have meant the number of people without access to modern energy is rising for the first time in 10 years. Around 75 million people who recently gained access to electricity will likely lose the ability to pay for it, while 100 million people may revert to the use of traditional biomass for cooking⁴. Economic conditions in Canada and globally have evolved into a high inflation environment with society focusing more on the priorities of food and shelter and less on ESG, climate change, diversity and inclusion⁵.

It is in this challenging setting that Canada's fossil fuel industry is ranked highly in environmental and regulatory performance. When considering the world's top oil and natural gas producing countries, Canada ranks well⁶.

**YALE ENVIRONMENTAL PERFORMANCE INDEX 2022
26 TOP OIL AND NATURAL GAS PRODUCING COUNTRIES**



1 Environment and Climate Change Canada. "National Inventory Report 1990-2021: Greenhouse Gas Sources and Sinks in Canada." Gatineau, QC. 2023. <https://unfccc.int/documents/627833>

2 "World Economic Forum Annual Meeting." 2023. Accessed 23-04-21. <https://www.weforum.org/agenda/2023/01/davos23-clean-energy-transition-takeaways/>

3 "bp Energy Outlook 2023 edition." BP Energy. 2023. Accessed 23-04-17. <https://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html>

4 IEA. "World Energy Outlook 2022 – Key Findings." Accessed 23-04-21. <https://www.iea.org/reports/world-energy-outlook-2022/key-findings>

5 "Mind the Gap," Stack Data Strategy and Hanbury Strategy.

6 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/>

"The biggest driver of renewable energy growth today is energy security."

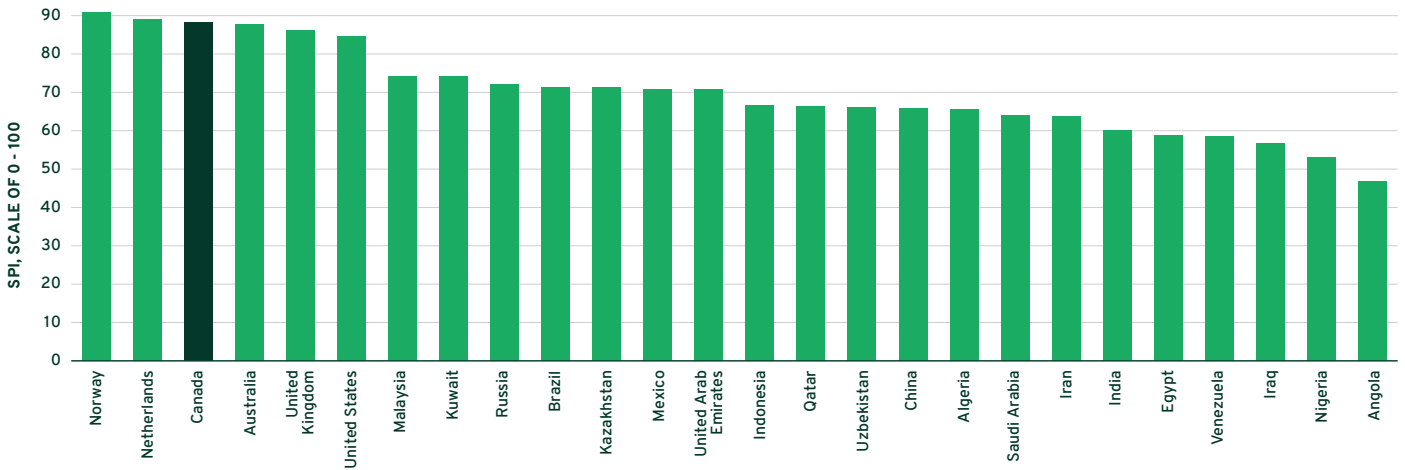
- Fatih Birol, Executive Director, International Energy Agency



Jumping Pound Gas Complex

Canada is also a strong performer in social policy issues, as evidenced by the Social Progress Index SPI noted below⁷:

**SOCIAL PROGRESS INDEX SPI 2022
26 TOP OIL AND NATURAL GAS PRODUCING COUNTRIES**



By the close of 2022, Canada’s population was more focused on how to pay their power bills than how to decarbonize and save the world. The oil and gas industry’s most successful focus in 2022 was in continuing to deliver a high efficiency, streamlined business contributing steady jobs and continued, positive community impacts in Canada, and by doing so strongly impact North American energy security. It is the ESG aspects of our industry that make Canada stand out. While Alberta’s energy industry is first and foremost an integral part of our economy as one of the province’s largest employment sectors, with above-average wages and strong secondary employment impacts in other sectors, our industry continues to take a global stand and show leadership on social and environmental issues.

The Canadian fossil fuel industry is increasingly integrating decarbonization actions into annual budgets, and firms are now taking concrete steps as we have begun to see carbon sequestration wells drilled and large capital investments proposed for mega-scale carbon capture projects⁹. Canada’s federal government tax credit programs are assessed to be weak incentives compared to the American *Inflation Reduction Act* legislation, but it is a start⁸. As Alberta’s energy industry takes its first large steps into carbon sequestration, these projects will also serve to create valuable jobs for both the construction phase and the long-term operations phase for years to come, demonstrating integration of ESG with jobs and economic prosperity.

7 "Global Index 2022: Results." The Social Progress Imperative. 2022. Accessed 23-04-21. <https://www.socialprogress.org/global-index-2022-results/>

8 Stephenson, Amanda. "Budget measures unlikely enough to spur major carbon capture investments: Experts." CTV News. March 29, 2023. <https://calgary.ctvnews.ca/budget-measures-unlikely-enough-to-spur-major-carbon-capture-investments-experts-1.6334466>

9. Pathways Alliance. "Pathways Alliance focuses on suites of technologies to advance net zero plan." November 10, 2022. GlobeNewswire. <https://www.globenewswire.com/en/news-release/2022/11/10/2553153/0/en/Pathways-Alliance-focuses-on-suite-of-technologies-to-advance-net-zero-plan.html>



WHO IS PIERIDAE?

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 in Alberta and British Columbia. Our land holdings in the Foothills comprise some of the largest conventional gas reservoirs in North America.



BY THE NUMBERS 2022¹

Production/Output
36,686 BOE/D

181,677 MCF/DAY of Natural Gas
3,729 BBL/DAY of Natural Gas Liquids
2,860 BBL/DAY of Condensate
1,459 MT/DAY of Sulphur
 (not included in production total)

\$312 MILLION
 Enterprise Value

~\$4 BILLION
 Midstream Replacement Value

285
 Employees (as of December 31, 2022)

¹ All 'By the Numbers' data from the Pieridae Energy Annual Information Form dated March 10, 2023 <https://www.pieridaeenergy.com/sites/default/files/2023-03/2022%20Annual%20Information%20Form.pdf>

ASSET INFORMATION

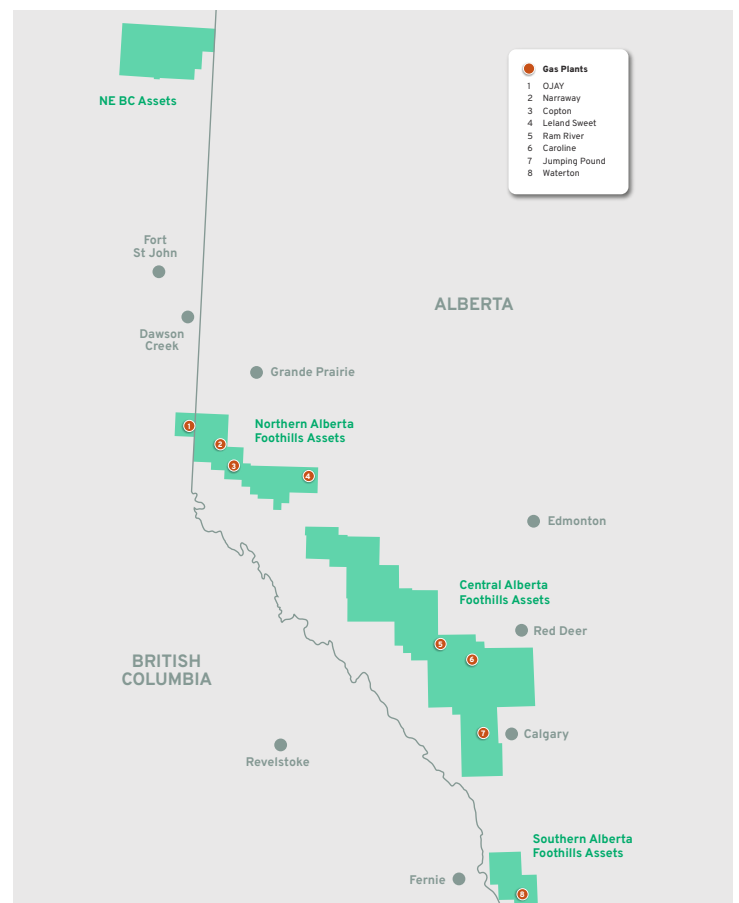
Pipeline kilometres
3,800 KM

Plants and Major Facility Count
3 GAS PLANTS AND APPROXIMATELY 25 MAJOR FACILITIES

Land Holdings
835,738 NET ACRES

We own and operate three major sour gas processing complexes at Jumping Pound, Waterton and Caroline. Our team includes many residents from in and around the small communities surrounding our facilities, and Pieridae is committed to the ongoing engagement and nurturing of the relationships we have built with our neighbours in rural Alberta.

Our 2022 focus has been optimizing current production operations and beginning the Company's first Foothills drilling program. An active Foothills drilling program began in late 2022, and Pieridae is proud to have successfully drilled and completed its first Foothills horizontal well in the Brown Creek area. In addition, Pieridae is focused on growing our midstream business. Throughout this foundational work, there is always an integrated awareness of living our values: honoring our employees, our stakeholders, our Indigenous neighbours and partners, and the environment.



- **Largest Foothills Producer** in Canada
- **Owner and Operator of Substantial Midstream Assets**



2023 ESG MATERIALITY ASSESSMENT

Each year Pieridae conducts an ESG Materiality Assessment to pinpoint the relative importance of specific ESG and sustainability topics. We are looking for areas of potential impact on the organization in addition to what is most important to our stakeholders, rights holders, landowners, vendors, employees and communities in which we operate. After gathering the information, the results are used to inform goals, initiatives and strategies within the Company.

It is clear from the responses to this year's Materiality Assessment that most respondents are pragmatic and clearly understand the current business environment. As in the past two years, two of the highest priority issues were repeated and are consistent with the Company's corporate objectives: personal safety – health and safety of employees and community, and environmental protection – spill management, biodiversity impacts and regulatory compliance. These two items are foundational requirements for successful operation in Western Canada.

Three additional important points were once again highlighted in the responses: business ethics, career development and community engagement. Feedback from the community and vendors noted that job creation was a high priority, while employees in both the field and the head office focused on cybersecurity.

While much of the focus from survey results indicated operational priorities, there was also emphasis placed on diversity and inclusion, Indigenous engagement and human

rights. It is important to note that these areas can create opportunities for mutual support and success even with the high cost of energy and inflation pressures felt throughout the value chain. The strength of the Company's ESG values results in a stronger relationship with our stakeholders.

The ESG Materiality Assessment, by its nature, explores facets of climate change and actions designed to help the Company actively mitigate GHG emissions. While methane and emissions reduction and reporting is a regulatory requirement, it was noted to be more of a longer-term consideration by stakeholders than an immediate one. The Company's very near-term focus on emissions is to reduce related emissions compliance costs and lower operating expenses across the Company's assets. Longer-term emissions reduction goals may include carbon capture and sequestration and are mainly of prime focus to senior management at this time as a long-term carbon management plan is developed. Both short and long term values on this issue were noted in the survey responses.

"The strength of the Company's ESG values results in a stronger implementation of our core operations with our stakeholders."

The senior leadership team reviewed and assessed the ESG Materiality Assessment survey results, comparing and aligning them to the Company's strategic goals. They also gauged which issues were of the highest impact to the corporation and which were most important to our stakeholders. Based on this review process, the ESG Materiality Assessment resulted in six primary issues, our **Top Material Priorities (TMPs)** being pinpointed as most impactful to the Company (in no particular order):

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

TMP
2 Regulatory compliance monitoring, spill management, timely and transparent communications

TMP
3 Business ethics, preventing corruption

TMP
4 Skills enhancement, career development

TMP
5 Community engagement, human rights, rights of Indigenous Peoples, diversity and inclusion

TMP
6 Climate-related transition risks, costs, opportunities – GHGs

Within the following pages, these six TMPs are reviewed complete with a discussion of major potential impacts: how Pieridae currently mitigates or plans to mitigate the risks posed to the business, and how they may present to the Company.

Pieridae will monitor and follow through on these TMPs through ongoing reviews and will assess any changes to the 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.

"Three important points were once again highlighted in the responses: business ethics, career development and community engagement."





PIERIDAE'S APPROACH TO ESG



INSIDE PIERIDAE

Pieridae constantly monitors energy policies and regulations aimed at reducing GHG emissions and other environmental impacts, combined with Canadian Indigenous reconciliation policies 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 will drive the Company's longer-term path, seeking to increase shareholder value through these new opportunities.

Pieridae had a much more positive economic year in 2022 compared to 2021. That said, many global and national pressures continue to be felt by the Company – at a corporate level and as employees and other individual stakeholders – including large pressures on costs and softer commodity prices toward yearend.

In late 2022, Pieridae's executive team led the company's management through a strategy update that resulted in formulating eight key goals:

1. Exploit our dominant Foothills position
2. Develop and implement our midstream strategy
3. Improve capital structure and financial flexibility
4. Instill and drive a high performance culture
5. Implement a Carbon Management Plan
6. Apply technology solutions to improve profitability
7. Seek new markets for our products
8. Develop and implement a "New Ventures" strategy

All the activities inherent in achieving the above goals have an integrated thread of ESG value, or perhaps a cost if ignored. Whether exhibited in the strong team building that is diverse and multicultural, the excellent surface land engagement work done in anticipation of the next drilling opportunities, or the focus on reducing GHG emissions compliance costs, many daily work tasks have ESG attributes woven throughout. The value of demonstrating strong ESG values as the Company executes its foundational work is expected to be evident in corporate performance throughout the year. ESG does not define our activities, but it helps to determine how we approach those activities.

What does this mean internally for Pieridae? The senior leadership team is focused on instilling a high-performance team environment by engaging the Calgary and field-based teams in Company strategy discussions. That starts with a focus on transparent communication of goals, an active training and professional development program and effective delegation of authority. In 2022 there were ongoing opportunities for employees to grow their base knowledge in various social and environmental areas, in addition to Indigenous traditional knowledge learning opportunities. These sessions will continue throughout 2023 and will serve as part of the actions taken by Pieridae's senior leadership team to strengthen and build the team.

The Company's 2023 ESG focus will remain on reducing measurable emissions compliance costs, building a stronger team through ongoing diversity and inclusion training, and striving to add a valuable partnership with Indigenous players in a core area.

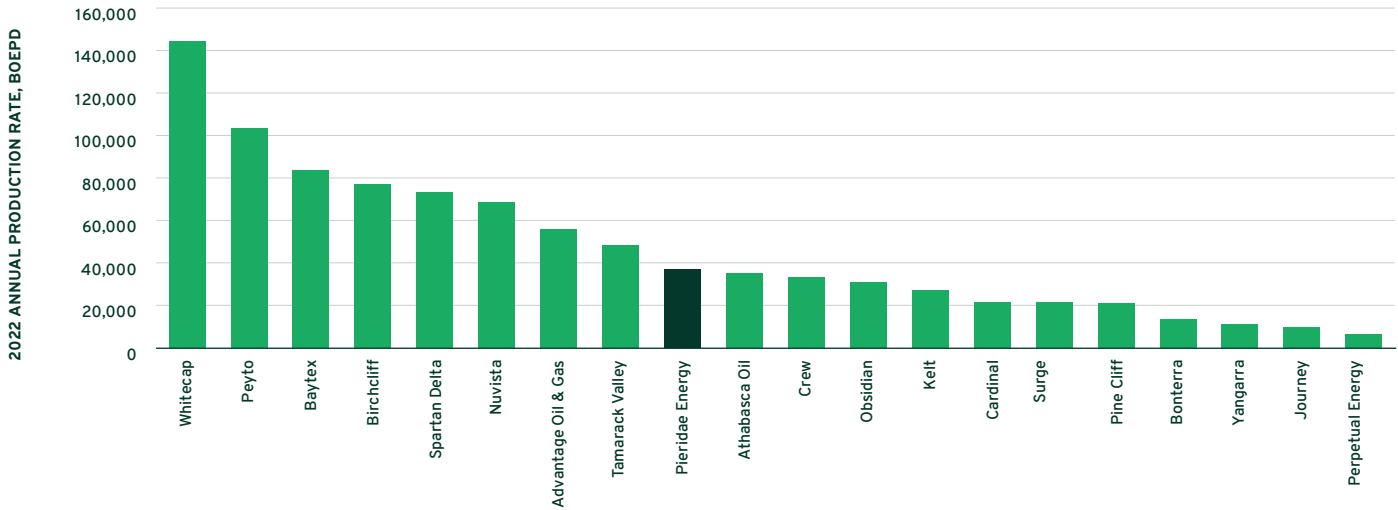
"In 2022 there were ongoing opportunities for employees to grow their base knowledge in various social and environmental areas, in addition to Indigenous traditional knowledge learning opportunities."

LOOKING OUTWARD: ESG AND PIERIDAE'S PEERS

Many social and governance actions taken by Pieridae are similar to those of its peers, while actions directed at GHG emissions mitigation will be unique to each organization. As a vertically integrated producer owning and operating substantial surface leases, wells and field facilities, large gas plants and associated liquids and sulphur facilities, Pieridae has unique opportunities to generate value as it targets reducing its greenhouse gas emissions.

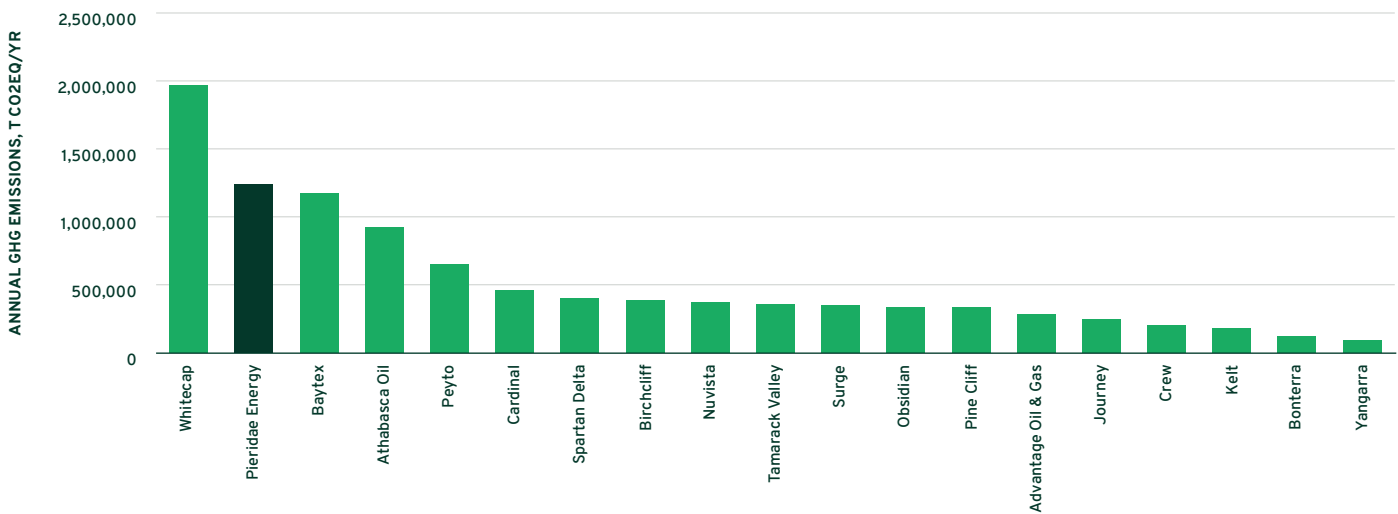
We can compare Pieridae to a number of peer companies by production level:

PIERIDAE AND ITS MID-SIZE PEERS IN CANADIAN OIL AND GAS



While Pieridae is in the middle of this peer group for production, it is high in terms of total GHG emissions largely due to its ownership of the gas plants used to process the Company's production. (Note: CO₂ sequestration volumes are not included as offsets to the amounts below):

TOTAL GHG EMISSIONS, SCOPE 1 AND 2



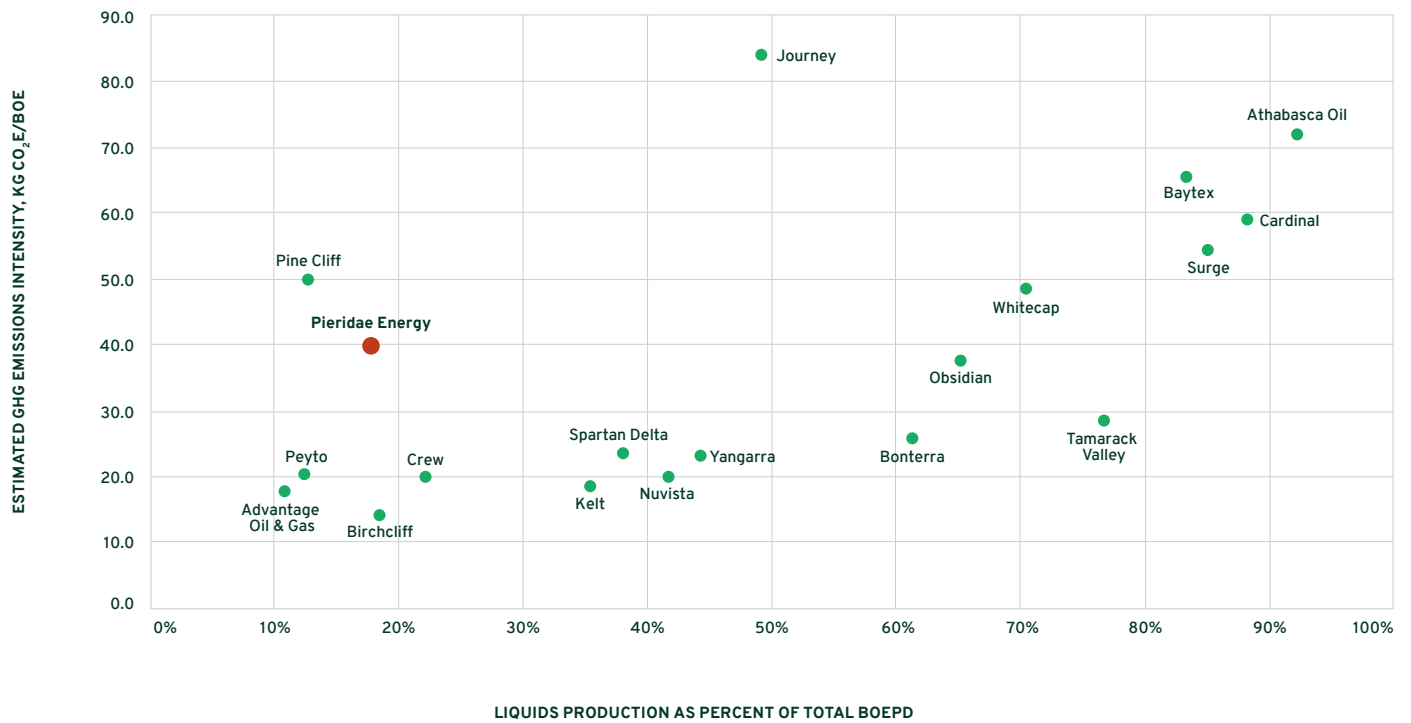
*Perpetual Energy is not included due to no available data



Waterton gas plant

Pieridae’s upstream peers show a range of GHG emissions intensity mainly correlating to their liquids content in their net production, as seen below:^{1,2}

PIERIDAE AND PEERS - EMISSIONS INTENSITY AND % LIQUIDS PRODUCTION



1 Peer company emissions intensity calculation: This estimated metric is based on publicly available data that includes the corporate net production for a given year and the total Scope 1 and Scope 2 emissions combined. This number varies slightly from some reported intensity figures that use the total operated production volumes flowing through a company’s facilities. This number is not consistently available therefore net corporate production was used. All production data and emissions data used in the intensity calculation is 2021 with the exception of Advantage O&G which is 2020 and Athabasca Oil, Kelt, Cardinal, Bonterra and Yangarra, which used 2022 data. The percent liquids was calculated from 2022 annual data for all companies.

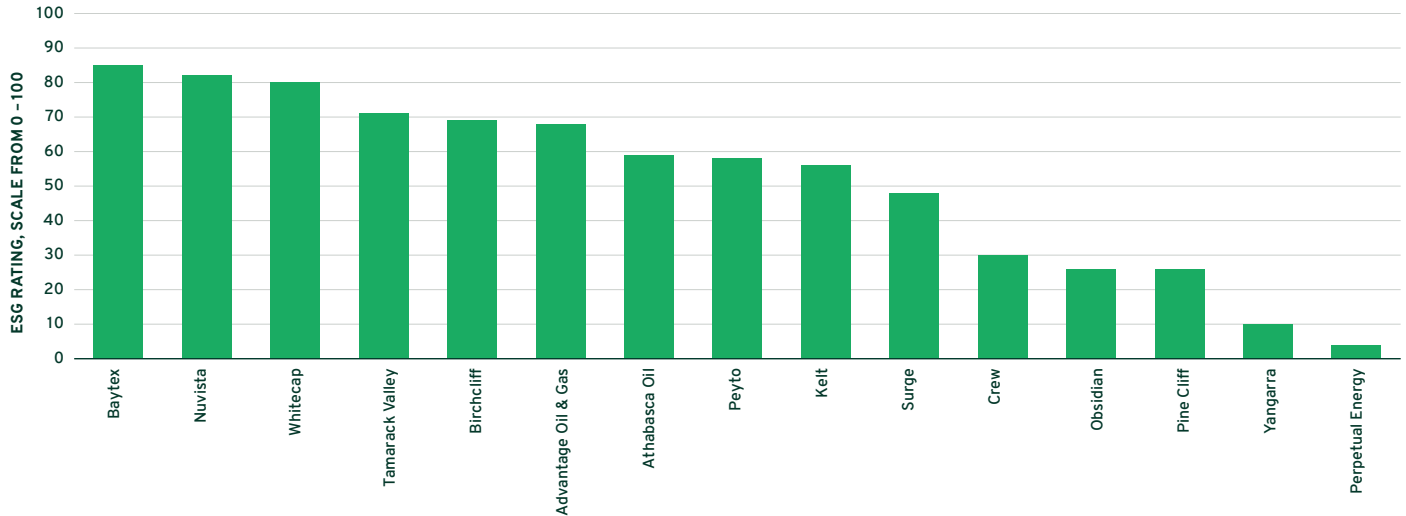
2 Perpetual Energy not included due to no available GHG emissions data.

The peer group emissions intensity is similar to that reported in the Company's last ESG report.

The ESG performance of these peer companies is noted below¹.

Note that CSRHub rates companies by accessing publicly available data and applying proprietary algorithms, and has rated 52,012 companies using 886 data sources. Some companies such as Pieridae are not yet ranked.

CSRHUB CONSENSUS ESG RATINGS OF PEER COMPANIES - APRIL, 2023



Of 19 peer company comparisons by July 2022 four companies had not issued formal ESG reports. At June 2023, only one peer company had not issued a formal ESG report of some kind. Many peer companies are now reporting with some use of various international reporting frameworks including TCFD, GRI, SASB or CDP.

The Canadian oil and gas industry utilizes numerous formal reporting standards and 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. For 2022 reporting, Pieridae's ESG data disclosure again follows the SASB recommended Oil & Gas – Exploration & Production Sustainability Accounting Standard, with some additional information included from the SASB Oil & Gas – Midstream Sustainability Accounting Standard². 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 primarily at financial stakeholders. In 2022 and early 2023, Pieridae internally evaluated its ESG strategy, and 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.

¹ CSRHub Consensus ESG Rankings. Accessed 23-06-20. <https://www.csrhub.com/>

² SASB Standards – Now part of IFRS Foundation. "Download SASB Standards." Accessed 23-06-20. <https://www.sasb.org/standards/download/?lang=en-us>

In our previous ESG report, it was noted Pieridae has some characteristics similar to midstream companies such as Keyera and AltaGas, owning a number of large sour gas plants and major gathering systems. As operators of large multi-faceted facilities, four methods of decarbonization are available below.

As outlined earlier, a focus on the first two points below are integral to the company's near-term midstream goals and will have the added benefit of reducing GHG emissions intensity and therefore emissions compliance costs.

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 and geothermal

4

Explore **high volume carbon capture** and storage (CCS): explore full CCS capability at major fields and plants

The rock Pieridae drills for: this is likely a Syringopora, which is a common type of colonial coral that is present in the Turner Valley Formation, one of our Foothills producing zones. As seen in this microscopic photo, the coral would have dissolved, creating the holes we see there now.





ABOUT THIS REPORT





This report represents Pieridae's third annual ESG report, and is available on our website at <http://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, 2021 and 2022 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* framework¹. The Tables section denotes SASB framework content.

This report includes disclosure around climate change, which aligns with recommendations of the Task Force on Climate-related Financial Disclosures². 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.

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 and Management's Discussion and Analysis for the years ended December 31, 2021 and December 31, 2022, and Pieridae's Annual Information Form ("AIF"), all of which are available on Pieridae's website at <http://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.

Caroline Gas Plant – Fall 2022 – courtesy of Justin S.



1 "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>

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



GOVERNANCE

2022 GOVERNANCE HIGHLIGHTS

7

Independent Directors

37.5%

of the Directors are women

14%

ownership of Company by insiders
including Board and senior management

"The Company's senior leaders are focused on cultivating a safe working environment with mentoring, training and alignment of values."



BOARD OVERSIGHT

With the change in the Board of Directors at the beginning of 2022 there also came a re-structuring of committees and mandates. The Board of Directors Mandate outlines the specific statutory, strategic and financial planning, risk assessment and mitigation, senior management determination, corporate governance, public disclosure and compliance monitoring responsibilities. These can be found in detail on the Company website at <https://www.pieridaenergy.com>.

The above responsibilities are further directed by committees within the Board. As dictated by the Mandates, each Committee shall review and evaluate its performance on an annual basis to ensure the Mandate appropriately addresses the matters within its scope. The current committees are:

- The Audit and Risk Committee
- The Governance and Human Resources Committee
- The Reserves, Health, Safety and Environment Committee

The Reserves, Health, Safety and Environment Committee mandate includes setting targets and measuring performance against those targets. These targets may include emissions and emissions intensity reductions. The Audit and Risk Committee mandate includes corporate risk management oversight, which includes operational, ESG, and climate change risks. The various committees are also tasked with keeping up to date on regulations, industry trends and best practices regarding ESG and climate-related issues.

As mentioned in last year’s report, in early 2022 we welcomed an additional four new directors: Patricia McLeod, Richard Couillard, Gail Harding and Doug Dreisinger. Ms. McLeod joined us as the new Chair of the Board of Directors. These additions result in a Board makeup of 37 per cent female representation, 14 per cent higher than the industry average for 2022¹. As opportunities for Board change present themselves in the future, Pieridae will actively work to maintain appropriate Board diversity.

MANAGEMENT DIRECTION

In late 2022 and in the first quarter of 2023, the Pieridae Senior Leadership and Executive Leadership Teams began the process of developing an updated corporate vision, mission and strategy. A key pillar in the ongoing strategy work is the development of a Carbon Management Plan. This plan will include specific metrics and targets related to emissions reduction. Leadership continues to meet regularly to discuss business matters and strategic direction including strategy surrounding all ESG issues. These meetings ensure integration and consistency across the organization.

As we look to 2023 and beyond, focus has been placed on fostering a high-performance culture throughout the Company. This includes more leadership development opportunities to drive culture and performance within our teams.

The senior management team knows this can only be achieved through mindful work to foster a sense of ownership and purpose in all employees. In 2023, the Company's senior leaders are focused on cultivating a safe working environment with mentoring, training and alignment of values.

2022 ACTIONS AND GOALS

ACTIONS	GOALS MET								
Completed Board Mandate Review	<table border="0"> <tr> <td>TMP</td> <td>SDG</td> </tr> <tr> <td>3</td> <td>16</td> </tr> </table>	TMP	SDG	3	16				
TMP	SDG								
3	16								
Performed ESG Materiality Assessment	<table border="0"> <tr> <td>TMP</td> <td>SDG</td> </tr> <tr> <td>5</td> <td>17</td> </tr> </table>	TMP	SDG	5	17				
TMP	SDG								
5	17								
Launched corporate strategic update process	<table border="0"> <tr> <td>TMP</td> <td>TMP</td> <td>TMP</td> <td>SDG</td> </tr> <tr> <td>1</td> <td>2</td> <td>4</td> <td>9</td> </tr> </table>	TMP	TMP	TMP	SDG	1	2	4	9
TMP	TMP	TMP	SDG						
1	2	4	9						

¹ Osler, Hoskin & Harcourt. (2022). Women board representation by industry, p. 23, retrieved from <https://www.osler.com/osler/media/Osler/reports/corporate-governance/Osler-Diversity-Disclosure-Practices-report-2022.pdf>



INDIGENOUS RELATIONS

2022 INDIGENOUS RELATIONS HIGHLIGHTS

14.5%

of the total social investment fund directed to Indigenous organizations in 2022

Sponsored CFT7 Youth STEM Camp in 2022, supporting 56 on-reserve high school student attendees

Recognized the first National Day for Truth and Reconciliation in Canada on September 30, 2022

"Pieridae is committed to taking more steps each year in growing our Indigenous Relations efforts."



THE FOUNDATION OF PIERIDAE'S INDIGENOUS RELATIONS WORK IS GUIDED BY THE TRUTH AND RECONCILIATION COMMISSION OF CANADA CALLS TO ACTION:

“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.”¹



National Day for Truth and Reconciliation 2022

RECONCILIATION

As Pieridae continues its reconciliation journey through 2023, we remain committed to:

- Enabling our employees' journeys of reconciliation through knowledge-building opportunities;
- Reviewing our internal practices to find opportunities to be more equitable; and
- Upholding respectful, positive relationships with Indigenous Communities and ensuring those communities have long-term sustainable benefits from our development projects.

In addition, Pieridae has added a further specific action item that it committed to in late 2022:

- Explore Indigenous partnerships in major operating areas for mutual economic success, reconciliation, and seeking long term sustainable growth opportunities.

The National Centre for Truth and Reconciliation (NCTR) has six actions everyone can use to support their work toward reconciliation: Learn; Understand; Explore; Recognize; Take Action; and Teach². Purposeful, respectful Indigenous engagement demands we follow these actions throughout all that we do at a corporate and personal level.

Pieridae is committed to taking more steps each year in growing our Indigenous Relations efforts. Building on our two Lunch n' Learns from 2021, the Company hosted five webinar Indigenous learning sessions in 2022 and a senior leadership Indigenous training session. This diverse program has continued into early 2023 with a webinar on Indigenous Peoples' connection to the land in Alberta, and there is more planned for the remainder of 2023. Paired with each event is a collection of extra resources to encourage the search for additional learnings.

¹ Government of Canada. "Truth and Reconciliation Commission of Canada: Calls to Action." 2015. <https://nctr.ca/records/reports/#trc-reports>

² National Centre for Truth and Reconciliation. (2022). ReconciliACTION Plans. Retrieved from <https://nctr.ca/reconciliation-plans/>



Moose Mountain area – Geological field trip 2022

Through the Company’s social investment fund, Pieridae provided over \$19,000 to support Indigenous organizations split between our three major operating areas and Calgary. These included:

- Community Futures Treaty Seven
- The Stoney Nakoda Bantam Hockey Team
- Plain Eagle Arts & Crafts
- Na-ah’s Catering

This support was in addition to several other smaller community investments with various First Nations that were ongoing throughout the year.

Community Futures Treaty Seven (CFT7) is an exceptional organization that “supports all First Nations individuals to obtain and maintain meaningful employment based on community needs through the provision of training in the Treaty Seven Catchment Area.”¹ In particular, CFT7 targets Indigenous youth with various programs and events, serving as a connection and support between students and potential employers. In February 2022, the Company attended the CFT7

Youth Employment Symposium, designed to connect students with employers while providing Indigenous knowledge-building opportunities to companies. Pieridae’s July 2022 sponsorship of the Youth STEM Camp at Mount Royal University provided the opportunity for 56 on-reserve high school students to attend a week-long camp on science, technology and traditional Indigenous learning.

In June 2022, we volunteered and contributed a corporate donation to the Stoney Nakoda food bank. Pieridae volunteers once again supported the Stoney Nakoda food bank in early 2023. Pieridae continues to seek other strong community-run organizations such as this to offer our ongoing support, as it is an integral part of the community.

As with previous years, the Company acknowledged important dates such as November 8th, 2022 – National Indigenous Veterans Day – through events and knowledge-building opportunities designed to engage our employees and to further the reconciliation process in a significant way. We are looking forward to more projects with Indigenous partners coming to fruition in 2023.

¹ Community Futures Treaty Seven (n.d.). About Us. Retrieved from <https://t7edc.com/about-us/>

Pieridae’s July 2022 sponsorship of the Youth STEM Camp at Mount Royal University (MRU) provided the opportunity for 56 on-reserve high school students to attend a week-long camp on science, technology and traditional Indigenous learning.



From left to right –Alfred Sorensen, Pieridae CEO; Cali Weasel Fat, Community Futures Treaty 7 (CFT7); Steve Kootenay-Jobin, Iniskim Centre at MRU; Rob St. Denis, youth Labour Market Consultant with CFT7.

2022 ACTIONS AND GOALS

ACTIONS	GOALS MET								
5 Indigenous Learning Webinars – including recognition of National Day of Truth and Reconciliation	<table border="1"> <tr> <td>TMP</td> <td>SDG</td> <td>SDG</td> </tr> <tr> <td>5</td> <td>10</td> <td>16</td> </tr> </table>	TMP	SDG	SDG	5	10	16		
TMP	SDG	SDG							
5	10	16							
Hired 2 Indigenous Summer Students	<table border="1"> <tr> <td>TMP</td> <td>SDG</td> <td>SDG</td> </tr> <tr> <td>5</td> <td>8</td> <td>10</td> </tr> </table>	TMP	SDG	SDG	5	8	10		
TMP	SDG	SDG							
5	8	10							
Stoney Nakoda Food Bank Volunteer Day	<table border="1"> <tr> <td>TMP</td> <td>SDG</td> <td>SDG</td> <td>SDG</td> </tr> <tr> <td>5</td> <td>2</td> <td>3</td> <td>10</td> </tr> </table>	TMP	SDG	SDG	SDG	5	2	3	10
TMP	SDG	SDG	SDG						
5	2	3	10						
Sponsoring of 56 Indigenous youths in a Community Futures Treaty 7 STEM camp at Mount Royal University	<table border="1"> <tr> <td>TMP</td> <td>SDG</td> <td>SDG</td> </tr> <tr> <td>5</td> <td>4</td> <td>10</td> </tr> </table>	TMP	SDG	SDG	5	4	10		
TMP	SDG	SDG							
5	4	10							
14.5% of Social Investment Fund directed to Indigenous Organizations in 2022	<table border="1"> <tr> <td>TMP</td> <td>SDG</td> <td>SDG</td> </tr> <tr> <td>5</td> <td>10</td> <td>16</td> </tr> </table>	TMP	SDG	SDG	5	10	16		
TMP	SDG	SDG							
5	10	16							

1 Darnell Dobson. “NCTR Statement on Doctrine of Discovery Repudiation.” NCTR. March 30, 2023. <https://nctr.ca/nctr-statement-on-doctrine-of-discovery-repudiation/>
 2 Nicole Lampa. “A humongous symbolic victory: Indigenous people react to Vatican rejection of Discovery Doctrine.” CTV News Edmonton. March 30, 2023. <https://edmonton.ctvnews.ca/a-humongous-symbolic-victory-indigenous-people-react-to-vatican-rejection-of-discovery-doctrine-1.6336062>



ENVIRONMENT

2022 ENVIRONMENT HIGHLIGHTS

\$ 3.9MM

Invested in asset retirement activities

47

Emergency Response Plan (ERP) exercises executed

6.1%

Reduction in total Company Scope 1 and 2 GHG emissions from 2021 to 2022

"Our ongoing environmental goal is to proceed with day-to-day operations while minimizing and mitigating harmful impacts to the environment."



Pieridae continues its commitment to responsible development of our assets, as we supply energy to Western Canada and the world. Oil and gas assets within Canada are subject to some of the most stringent global environmental legislation, including carbon pricing and strict environmental standards that ensure energy producers develop their lands and assets in an environmentally responsible manner.

Our ongoing environmental goal is to proceed with day-to-day operations while minimizing and mitigating harmful impacts to the environment. We believe the most powerful response for the Company in the fight against climate change is to produce energy with the least greenhouse gas (GHG) emissions possible, ensuring Canada's ethical and well-regulated, emissions-controlled energy production helps to fuel global demand.

Pieridae's environmental commitments include reducing our corporate emissions intensity and utilizing fresh water efficiently, maximizing use of recycled water, protecting biodiversity, and reclaiming sites back to their original state at the end of their productive phase. As a longer-term goal, Pieridae is committed to evaluating carbon capture and storage (CCS) and playing a role in the decarbonization of the energy system in Alberta while adding value for shareholders.

CLIMATE CHANGE STRATEGY

In late 2022 Pieridae updated its corporate strategy. This work included recognizing that a key component of that strategy is a Carbon Management Plan. This plan is currently under development in 2023, and includes the following short-term goals:

- i. Develop an internal evaluation tool to assess the value of GHG emissions compliance cost savings for future projects.
- ii. Post-appraise optimization projects to quantify GHG emissions and cost reductions as an additional value-added layer in economic analysis.
- iii. Build an emissions marginal cost abatement curve from proposed projects and use this tool to aid in the prioritization of capital projects.

Pieridae is also evaluating several large projects with potential to materially reduce GHG emissions and their costs. These include consolidation of major infrastructure and CCS opportunities.

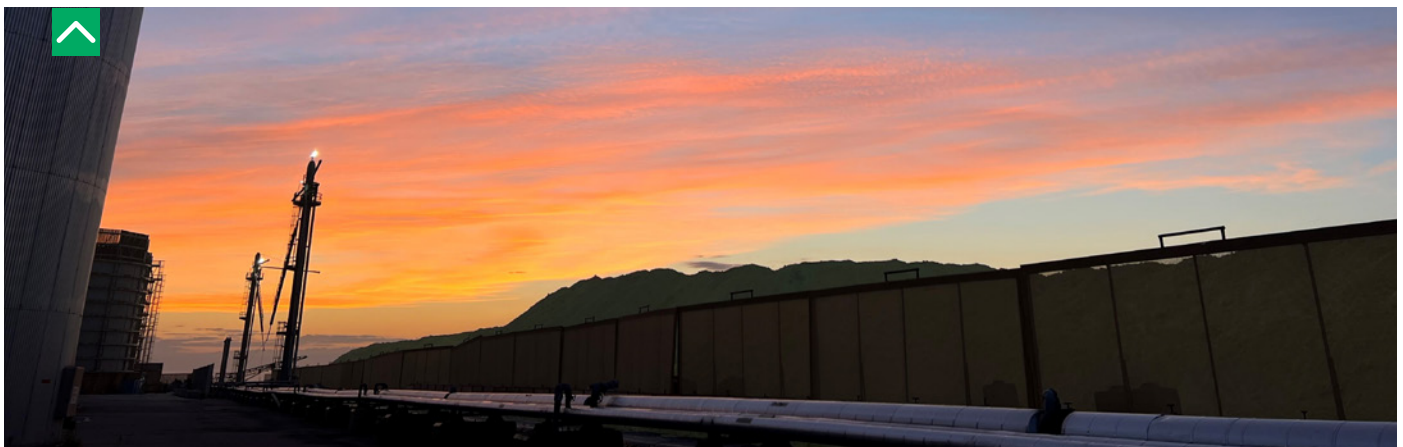
In 2022 the Alberta Technology Innovation Emissions Reduction (TIER) regulation continued to incentivize reductions in GHG emissions with the increased carbon cost of \$50 per tonne CO₂e. Pieridae's Carbon Management Plan is driven by this regulation and will drive the Company to achieve net zero. Our strategic work in 2023 will assess several projects that have the potential reduce the company's overall carbon intensity and related compliance costs.

In 2022, Pieridae's total corporate Scope 1 and Scope 2 GHG emissions decreased by 6.1 per cent year over year.

Total gas plant emissions intensity increased 11 per cent year over year. The primary cause was an unplanned outage at the Caroline gas plant in Q4 2022, resulting in excessive fuel gas requirements during an extreme cold snap while gas plant throughputs were very low.

Total emissions decreased while average emissions intensity increased; this is because the unplanned outages resulted in overall reductions in emissions, but brought with them corresponding high reductions in throughput, therefore affecting emissions intensity – the ratio of emissions divided by throughput volumes.

Photo courtesy of Sydney S.



As Pieridae develops our Carbon Management Plan, we will continue to focus on these five areas of our strategy:

MEASURE AND REPORT

GHG 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 CHANGE

to encourage efficiencies and large-scale improvements with technology and other innovations



Moose Mountain area – Geological field trip 2022

AIR EMISSIONS

Pieridae’s operations strive to meet or exceed all air emissions compliance requirements of the Alberta government and the Environmental Protection and Enhancement Act (EPEA). The Company’s Environmental Coordinators, located at each major facility, manage all compliance requirements in addition to engaging with industry groups such as the West Central Airshed Society.

Pieridae completed its methane reduction compliance plan in early 2023, replacing all high-bleed pneumatic control devices to low-bleed in Alberta. This work resulted in a reduction of 25,000 tonnes CO₂e per year at an abatement cost of \$1.10 per tonne CO₂e (considering a 10-year life for the mechanisms).

“Our environmental target is to protect health and the biodiversity of the environment through minimizing the impact of our operations.”

WATER MANAGEMENT

Pieridae’s industrial water needs are reduced through increasing recycling and improving efficiencies of water use at our major facilities. Similar to air quality management, the Company’s water resource management is regulated by the EPEA approval for each major site. Each year ongoing testing is conducted on various water streams serving the Pieridae facilities as part of environmental monitoring operations. The three major gas plants require water during normal operations, including for use in cooling processes. This water is later returned to the environment as clean water. Produced water from wells is normally disposed of into licensed disposal wells, and collected runoff water volumes, together with recovered process water, are both carefully treated before being returned to source.

Pieridae’s water management practices utilize innovative technology and result in water recycling and cost savings. Our environmental goal is to protect health and the biodiversity of the environment by minimizing the impact of our operations.

LAND USE, RECLAMATION, ASSET RETIREMENT

Pieridae’s ongoing operations affect land and water biospheres, and we aim to minimize and mitigate negative impacts of our work. The Company works closely with landowners, rights holders and other stakeholders to mitigate the effects of our work and minimize the environmental footprint. We take our obligation to reclaim inactive wells, pipelines and facilities, and decommission and reclaim sites seriously. Our approach begins with a detailed asset retirement plan followed by efficient and cost-effective execution.

The Company has an ongoing reclamation program for sites in Alberta and British Columbia. Site closure expenditures in 2022 totaled \$3.9 MM.

2022 ACTIONS AND GOALS

ACTIONS	GOALS MET					
Added additional engineering expertise in the Calgary office to evaluate and optimize the TIER program submissions	TMP 2	TMP 4	TMP 6	SDG 13		
\$ 3.9 MM invested in asset retirement activities	TMP 1	TMP 2	TMP 5	SDG 12	SDG 14	SDG 15
Executed 44 Emergency Response Plan (ERP) exercises	TMP 1	TMP 2	TMP 5	SDG 12	SDG 15	
Evaluated proceeding with two pre-FEED studies for blue power and carbon sequestration from flue gas at the Caroline complex – 2022 (study work to start in 2023)	TMP 2	TMP 6	SDG 8	SDG 9	SDG 13	
Ensured representation on the current Joint EASC-PJVA Emissions Task Force (Energy Accountants Society of Canada and the Petroleum Joint Venture Association)	TMP 5	TMP 6	SDG 9	SDG 13		



SOCIAL

2022 SOCIAL HIGHLIGHTS

OVER \$140,000

in Social Investment Funding

47

Emergency Response Plan (ERP)
exercises/drills

HIRED 12

Summer Students

"Help given by businesses like yours assists in making it possible for children to be creatively engaged in worthwhile educational programs and activities."

- Aspen Ranch Outdoor Education Facility



STAKEHOLDER RELATIONS – COMMUNITY

Being good neighbours in the areas where we live and work is high on our list of priorities. Pieridae is comprised of many field employees who live in the same communities in which we do business: Caroline, Cochrane, Crowsnest Pass, Sundre, Pincher Creek, Calgary and more. Our impact on these communities makes a difference through job creation, tax generation, engaging and working with local vendors and companies, social investment opportunities and more.

Pieridae aims to be a responsible, active member of these communities. Our Community Liaison Officers reside near and work at each of our major facilities, supporting active stakeholder relationships at those facilities and the surrounding areas.

Every year we give back to these communities through our Social Investment fund. This fund focuses on helping organizations provide lasting benefits in the areas of education, environment, community skills, safety, health, community development and culture. Examples of where Pieridae provided support to the community in 2022 include:

In the Jumping Pound area:

- The Nakoda Bantam Hockey Team
- The Moose Mountain Bike Trail Society
- Cochrane & District Agriculture Society
- The Jumping Pound Community Association

In the Waterton area:

- Pincher Creek & District Agricultural
- Beaver Mines Community Association
- Livingstone School
- Plain Eagle Arts & Crafts
- Crowsnest Forest Stewardship Society
- Twin Butte Community Society
- Waterton Biosphere Reserve Association
- Na’Ahs Catering
- Windy Slopes Health Foundation

In the Caroline area:

- Wetaskiwin Health Foundation
- Sundre Minor Hockey Association
- Aspen Ranch Outdoor Education Centre
- Caroline & District Chamber of Commerce

- Sundre Rodeo & Race Association
- Greenwood Neighbourhood Place Society
- Carstairs District 4H Show and Sale

In 2022, for the first time, Pieridae also extended the fund to include Calgary, with funding for the Community Futures Treaty 7 (CFT7) MRU STEM Summer Camp and the Calgary Homeless Foundation’s (CHF) Sidewalks to Door Locks event. More information on the CFT7 Summer Camp can be found in the Indigenous Relations section of this report on page 29.

The Calgary Homeless Foundation (CHF)’s *Sidewalks to Door Locks* event in November 2022 raised money for the fight against homelessness in Calgary and kicked off the #DonateEssentialsYYC campaign. It also showcased those at the frontline of the agencies under the CHF umbrella. We are pleased to note our CEO, Alfred Sorensen, presented the Art Smith Awards for Front-Line Employee and Front-Line Project. These awards are named for the CHF founder and celebrate some of the most impactful people and projects in the sector.

The Calgary Homeless Foundation reached over 2,000 individuals through their multi-faceted umbrella partnerships in 2022 while managing allocation of over \$70 million in funding from various levels of government¹. The CHF worked with 31 agencies in support of 54 ongoing programs in 2022. Pressures of the various Covid impacts, high energy prices and inflation on food prices all combine to potentially increase this dramatic need further in 2023. The Foundation’s broad reach has an impact on our most vulnerable.



Cochrane Food Bank Donation with JP Plant and Unifor Local 1400

1 Calgary Homeless Foundation. (2022). Report to Community. Retrieved from <https://www.calgaryhomeless.com/meet-us/what-we-do/report-to-community/our-report-to-community/>
 2 Calgary Homeless Foundation. (2022). PIT Admin Report. Retrieved from http://www.calgaryhomeless.com/wp-content/uploads/2022/01/PIT-Admin-Data-Report_Calgary_Final.pdf



HEALTH AND SAFETY

Choose Safety - Because Safety is a Choice Everyday

Every day we reaffirm our commitment to promoting a safe and healthy work environment.

PATH TO ZERO

Living a safety-first culture takes the efforts of everyone in the organization. Pieridae’s safety standards and requirements are outlined in our Health, Safety and Environment Policy and can be found on our website. Our HSE goals are:

- 1 Progress Pieridae’s HSE&R Culture
- 2 Safeguard the Environment & Communities
- 3 Uphold and Improve our Reputation

OPERATIONS MANAGEMENT SYSTEM (OMS)

Pieridae’s OMS is an organized and formal approach to managing the key operations of the organization, and is founded on the continuous improvement cycle of “*plan-do-check-act*”. It is an integrated set of requirements, responsibilities and business processes that continuously improve our performance and help us achieve our goals. The system is intended to assist workers to understand and meet regulatory requirements, providing a systematic and consistent approach for meeting expectations within the organization.

The OMS is comprised of structured, company-wide HSE processes that provide effective risk-based decision-making for daily business functions, and are made up of standards, procedures, guides and forms.

MVP PROGRAM

Our Most Valuable Proactive program recognizes individuals every month for submitting the ‘most valuable’ proactive Hazard Identification, Behaviour Based Observation ("BBO") or Pause for Safety ("Pause"). The program has helped increase the focus on proactive reporting and the quality of reporting.



Incident Command System Training Session with Plant Operators

EMERGENCY RESPONSE TRAINING

An important part of our safety culture is Emergency Response Training. Our various Emergency Response Plans (ERPs) are regularly reviewed and updated. In addition, the Company practices tabletop and active ERP exercises throughout the year. In 2022, the Company executed 47 tabletop and active ERP exercises.

OUR PEOPLE

Our people are our greatest asset. Without their hard work and dedication, we wouldn't be who we are today. We support them through benefits coverage, flex days, flexibility with working from home, a Company retirement savings plan, an employee family assistance program and other annual incentives. Our

Employee and Family Assistance Program offers mental health and wellness supports.

Pieridae is an equal-opportunity employer committed to diversity and inclusion. We are pleased to consider all qualified applicants for employment without regard to race, colour, religion, sex, national origin, age, disability, protected veterans' status or any other legally protected factors.

We continue to provide opportunities to the next generation energy industry with our summer student program. Whether they are in the Calgary office or at one of our three major facilities, students receive real-time experience in various aspects of the oil and gas industry, allowing them to learn from experienced leaders and employees. In summer 2022 we were pleased to welcome 12 summer students to Pieridae in various roles.

2022 ACTIONS AND GOALS

ACTIONS	GOALS MET				
Community and Social Investment Project Funding = over \$140,000	TMP 5	SDG 1	SDG 16	SDG 17	
47 ERP tabletop and active exercises at Pieridae facilities	TMP 1	TMP 2	TMP 5	SDG 11	SDG 17
Supported youth in many different Social Investment projects in 2022, including Mount Royal University, Didsbury High School and Aspen Ranch Outdoor Education Facility	TMP 4	TMP 5	SDG 4	SDG 11	



ESG PERFORMANCE TABLES

2022 ESG PERFORMANCE DATA

Indicator	Activity	Units	2022		2021		2020		Comments
			Plant	Field	Plant	Field	Plant	Field	
EM-EP-000.A	Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas	boe/day	37,725	47,831	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		0		
EM-EP-000.C	Number of terrestrial sites	number	793		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	11,980,894		11,881,243		13,398,641		Equivalent GJs of combustion fuel, changed methodology 2020 to 2021.
			7,635,259	4,345,635	6,991,206	4,890,037	8,531,394	4,867,248	
GRI-302-3	Production energy intensity	GJ/m ₃ oe	2.42		2.27		2.42		
			3.49	1.58	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 CO ₂ e	1,046,033		1,128,495		1,187,076		
			796,118	249,915	792,489	336,006	818,631	368,445	
GRI 305-2	Scope 2 Indirect emissions	metric tonnes CO ₂ e	176,705		173,449		188,331		Note: in previous ESG report, an incorrect tCO ₂ e conversion factor was used to estimate Scope 2 emissions. These numbers have used the correct factor of 0.37 tCO ₂ e/MWh.
			97,892	78,813	94,191	79,258	102,602	85,729	
GRI 305-4	Intensity (Scope 1 and Scope 2)	metric tonnes CO ₂ e/boe	0.0393		0.0416		0.0428		
			0.0649	0.0190	0.0613	0.0247	0.0622	0.0261	
EM-EP-110a.1 GRI 305-1	Methane emissions	percentage	2.5%		4.6%		4.1%		
			0.9%	7.4%	2.1%	7.1%	1.0%	7.2%	
EM-EP-110a.1	Covered under emissions-limiting regulations	percentage	0		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 CO ₂ e	97,929		130,050		15,376		
			92,775	5,154	123,206	6,844	8,541	6,835	
EM-EP-110a.2	Other combustion	metric tonnes CO ₂ e	48,258		53,146		72,780		
			48,258	-	52,760	386	72,780	-	
EM-EP-110a.2	Process emissions	metric tonnes CO ₂ e	0	0	0	0	0	0	Captured in vented and fugitive.
EM-EP-110a.2	Vented emissions	metric tonnes CO ₂ e	47,190		48,759		55,692		
			588	46,602	615	48,144	3,820	51,872	
EM-EP-110a.2	Fugitive emissions	metric tonnes CO ₂ e	3,773		3,942		43,962		Changed reporting methodology 2020 to 2021.
			1,556	2,217	1,023	2,918	830	43,133	
	Flared gas	thousand m ³	49,848		51,359		7,241		Changed reporting methodology 2020 to 2021.
			47,225	2,623	47,976	3,383	3,823	3,417	
	Vented gas	thousand m ³	2,980		3,011		2,175		
			72	2,908	60	2,951	201	1,974	
	Solution gas conservation rate	percentage	N/A		N/A		N/A		

Indicator	Activity	Units	2022	2021	2020	Comments
2. Air Emissions*						
EM-EP-120a.1	NOx (excluding N ₂ O)	metric tonnes	1,101.1	1,274.5	1,276.9	
EM-EP-120a.1	SOx	metric tonnes	9,701.5	10,302.6	11,780.7	
EM-EP-120a.1	Volatile organic compounds	metric tonnes	136.6	155.1	155.1	
EM-EP-120a.1	Total particulate matter	metric tonnes	504.3	81.8	85.8	
3. Water*						
EM-EP-140a.1 GRI 303-3	Total fresh water withdrawn	m3	1,188,128	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	929,448	962,872	868,318	= freshwater withdrawn - injected volume
EM-EP-140a.2	Volume of produced water and flowback generated	m3	83,217	82,506	87,131	
EM-EP-140a.2	Water discharged/treated	percentage	32%	22%	24%	
EM-EP-140a.2	Water injected	percentage	20%	20%	15%	For WT all water injected is produced water.
EM-EP-140a.2	Water recycled	percentage	N/A	N/A	N/A	
	Hydrocarbon content of discharged water	metric tonnes	0	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	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	N/A	
4. Biodiversity Impacts						
EM-EP-160a.2	Number and aggregate volume of hydrocarbon spills	number; barrels (bbl)	0, 0	0.0	1,333 bbl	
EM-EP-160a.2	Volume of hydrocarbon spills in Arctic	bbl	0	0	0	
EM-EP-160a.2	Volume of hydrocarbon spills impacting shorelines with ESI rankings 8-10	bbl	0	0	0	
EM-EP-160a.2	Volume of hydrocarbon spills recovered	bbl	N/A	N/A	N/A	
EM-EP-160a.3	Proved reserves in or near sites with protected conservation status or endangered species habitat	percentage				
EM-EP-160a.3	Probable reserves in or near sites with protected conservation status or endangered species habitat	percentage				
5. Reclamation						
	Active wells (net operated*)	number	382	387	387	
	Suspended wells (net operated*)	number	105	111	85	
	Abandoned wells (net operated*)	number	99	92	89	
	Active wells (net non-operated)	number	62	62	62	
	Suspended wells (net non-operated)	number	18	18	18	
	Abandoned wells (net non-operated)	number	13	13	13	
	Active reclamation/remediation/monitoring ongoing sites (gross) **	number	133	156	150	
	Certificates received (gross)	number	2	4	4	
6. Pipeline Incidents						
EM-MD-540a.1	Number of reportable spills, % significant	count, percentage	6, 0%	5, 0%	3, 0%	
	Reportable non-pipeline spills	count	4	4	2	
	Reportable pipeline spills	count	2	1	1	
	Total volume of reportable spills	m3	677.8	9.7	11.3	
	Volume of non-pipeline reportable spills	m3	87.8	6.2	11.2	
	Volume of pipeline reportable spills	m3	590.0	3.5	0.1	
	Pipeline incidents	count	2	4	4	
	Pipeline incident rate	incidents per 1,000 km	0.5	1.1	1.1	
	Number of fines and penalties	count	0	0	0	

* includes assets that are operated, but not yet licensed to PEA (Includes Shell asset base, acquired in 2019)

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

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

Indicator	Activity	Units	2022	2021	2020	Comments
II. Health & Safety						
Lost-time Frequency						
EM-EP-320a.1 GRI 403-9	Full-time employees	cases per 200,000 work hours	0.75	0.37	0.00	
EM-EP-320a.1 GRI 403-9	Contractors	cases per 200,000 work hours	0.00	0.00	0.00	
Recordable Frequency						
EM-EP-320a.1 GRI 403-9	Full-time employees	cases per 200,000 work hours	1.13	0.75	1.13	
EM-EP-320a.1 GRI 403-9	Contractors	cases per 200,000 work hours	0.19	0.00	0.11	
Fatalities						
EM-EP-320a.1 GRI 403-9	Full-time employees and contractors	cases per 200,000 work hours	0.00	0.00	0.00	
III. Key Integrity Inspection Work						
	Full and partial plant shutdowns – planned turnaround projects (Field compression or batteries)	Number completed	18 partial	2	1	
	Full and partial plant shutdowns – costs of planned turnaround projects (Field compression or batteries)	\$MM	\$1.60	20.0	5.8	
	Number of internal vessel inspections included in T/A work	Number	65	53	14	
	Number of PSVs service in T/A work	Number	269	456	38	
	Number of in-line pipeline inspections and cost	Number, \$MM	38, \$1.88MM	15, \$1.30MM	35, \$1.4MM	
	Number of pipeline verification digs and repairs and cost	Number, \$MM	9, \$0.59MM	9, \$0.65MM	18, \$1.3MM	
	Liquid sulphur pipeline verification digs and repairs (includes repairs and cleanup costs)	Cost, \$MM	\$0.73MM	\$0.90MM	\$1.8MM	
IV. Social						
Workforce Profile						
	Full-time	number	283	257	284	
	Part-time	number	3			
	Contractors and temporary employees	number	95	89	71	
Employees by Location						
	Field (permanent)	number	214	205	214	
	Office (permanent)	number	72	52	70	
	Field (contractors and temporary)	number	78	73	67	
	Office (contractors and temporary)	number	17	16	4	
Gender Diversity (Permanent Only)						
GRI 405-1	Women in workforce –total company	percentage	14%	17%	19%	
	Women in workforce – field	percentage	2%	8%	10%	
	Women in workforce – Calgary office	percentage	44%	48%	46%	
GRI 405-1	Supervisory/professional positions	percentage	25%	23%	18%	
GRI 405-1	Management and executive team	percentage	23%	27%	17%	
GRI 405-1	Board of Directors	percentage	38%	16%	16%	
Employee Age Categories						
GRI 405-1	30 years and under	number	28	22	29	
GRI 405-1	30 years to 50 years	number	162	156	176	
GRI 405-1	50 years and over	number	103	94	86	

Indicator	Activity	Units	2022	2021	2020	Comments
Employee Turnover						
GR 401-1	Voluntary turnover	percentage	13%	16.8%	6.6%	
Employee Training						
	Total spent on training	\$	166,260	63,588	18,863	
	Spending per employee	\$	587.49	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	0	
EM-EP-210a.1	Probable reserves in or near areas of conflict	percentage	0	0	0	
EM-EP-210a.2	Proved reserves in or near Indigenous land	percentage				
EM-EP-210a.2	Probable reserves in or near Indigenous land	percentage				
Community Relations						
EM-EP-210b.2	Number and duration of non-technical delays	number; days	0	0	0	
Business Ethics & Transparency						
EM-EP-510a.1	Proved reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	percentage	0	0	0	
EM-EP-510a.1	Probable reserves in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	percentage	0	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	0	
V. Economic						
GRI 201-1	Value generated	\$millions	487,830,000	334,655,000		
Value Distributed to						
	Suppliers	\$millions	144,623,030	108,587,680		
	Providers of capital	\$millions	28,147,123	37,249,770		
	Governments	\$millions	92,972,669	28,977,600		
	Employees	\$millions	49,551,278	49,772,423		
	Landowners	\$millions	1,854,900	1,165,046		
	Communities	\$millions	121,555	79,347		
	Value retained	\$millions	146,584,000	(39,790,000)		



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STATEMENT OF USE

Pieridae Energy Limited has reported the information cited in this GRI content index for the period January 1, 2022 to December 31, 2022 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 2023; 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 2023; 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, 2022).





"Business is now the dominant force pushing the speed of decarbonisation"

– Chris Goodall

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

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



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