# 2021 SUSTAINABILITY REPORT





# Message from our President and CEO President and CEO

I am pleased to present our inaugural Sustainability Report and am grateful to the many individuals who have contributed to this effort. In this report, we outline our environmental, social and governance ("ESG") practices for the year ended December 31, 2021, as well as our commitment to the ongoing sustainability of our business and plans for the future. I am proud of the success we have built at Alvopetro and see this report as a prime opportunity to enhance transparency for all stakeholders into how we conduct ourselves as an accountable and responsible corporate citizen.

2021 was a record year for Alvopetro, the first full year of operations from our Caburé natural gas field.

We delivered exceptional financial and operating results, well above our target expectations. Alvopetro accomplished a number of firsts in Brazil with our Caburé project, culminating in Alvopetro becoming the first independent company to deliver sales specified natural gas into Brazil's local distribution network.

Our success would not have been possible without the excellent team effort of our employees. I want to

thank these dedicated individuals, whose hard work drives our success and fuels our future growth. Our ability to have a lasting positive impact on all our stakeholders relies on our ability to generate strong business results and growth and I am confident our team can continue to deliver these results.

Natural gas deliveries commenced from our Caburé field on July 5, 2020, and our efforts to that point were laser-focused on bringing this project onstream, creating a platform for long-term, sustainable operations. Our social and environmental practices have always gone well beyond what is required by Brazil's already strict regulatory requirements and our small local team, consisting of only 20 employees, has worked hard to minimize our environmental impact, with particular attention paid to preventing erosion and preserving biodiversity. On the heels of our first full year of operations from our Caburé natural gas field and continued strong production and cash flows, we can now also communicate our approach to ensuring sustainability of our operations.

"I am extremely proud of the success we have built at Alvopetro."



President and CFO



We believe progress is defined by striking a balance between economic results while having a positive impact in the communities in which we operate. Our sustainability approach is focused on three key pillars:





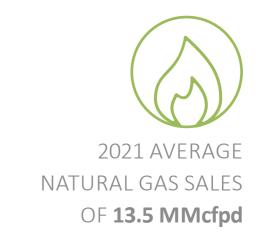


### Responsibly supplying energy

With ever-growing economic development, the world continues to demand more and more energy. While many businesses and governments look to transition to net zero, this shift will not happen overnight. Hydrocarbons are expected to remain a key component of the energy mix for the foreseeable future to ensure a continuous source of affordable energy. Our goal is to help meet this demand as efficiently and responsibly as possible.

Our Caburé project supports an overall reduction in greenhouse gas ("GHG") emissions by enabling end users to switch from more carbon intensive energy sources to natural gas. We also think maximizing natural gas production in proximity to demand at more competitive prices has a significant positive impact on the local economy and the environment.

We ended 2021 with annual average sales of 13.5 million cubic feet per day ("MMcfpd") of natural gas and an overall average of 2,358 barrels of oil equivalent per day ("boepd"), including condensate and oil sales.



As we look to 2022 and beyond, we are focused on increasing our production further, creating an opportunity to expand those benefits to the local economy and the environment. Our growth is expected to come from development of our Murucututu natural gas field, where we expect early production to commence in the third guarter of 2022 with additional development wells coming onstream later in 2022. In 2022 we have now drilled two exploration wells. The first well, our 182-C1 well, encountered 25 metres of potential natural gas pay, with an average porosity of 8.2% and an average water saturation of 34%, based on open-hole logs. The second well, our 183-B1 well, had discoveries in multiple formations with a total of 34.3 metres of potential hydrocarbon pay, with an average porosity of 10.6% and an average water saturation of 29.0%, based on open-hole logs and fluid samples.

### Strengthening communities and our workforce

We take pride in being a good corporate citizen and are committed to having a positive impact in the communities where we operate. Since inception we have always maintained an open dialogue with local communities. In 2021, we completed a comprehensive community needs assessment, visiting over 190 families. We also commenced a formal voluntary social contribution program targeting the long-term sustainability of seven communities within our areas of operation and have set a plan to contribute \$0.20 per boe produced to these programs. Our initial endeavors under this program include a music and arts project for underprivileged students and an agricultural initiative involving rural families to boost small farming productivity through circular water systems and collective cooperation in productive systems and techniques.



We recognize that our employees are paramount to our success, and we have established a framework of policies, procedures, and practices to attract and retain qualified personnel across the entire organization. We focus on creating a diverse and inclusive work environment where everyone is treated fairly and with respect, with no tolerance for discrimination of any kind. Our daily practices concentrate on maintaining a safe and healthy work environment and we are proud to report that we had no lost-time incidents in 2021.

### Minimizing our impact

We acknowledge that upstream development of any kind carries with it an environmental impact and are mindful of that reality as we continue growing our business. Our actions are governed by a desire to minimize, offset, remedy, or counteract the results of our actions on the environment. Minimizing our impact is a core principle that we believe leads to development that can be sustainable in the long-term. As part of this commitment, we have prioritized measures to prevent erosion and preserve biodiversity, undertaking projects which are well above what is required by already stringent local regulations. Since 2019, we have voluntarily reforested nine square kilometres as part of the development of our Caburé natural gas field and related midstream infrastructure,

reintroducing 19 different species of native Atlantic Forest seedlings. During construction and installation of our Murucututu pipeline, we were able to preserve 65% of the trees and vegetation initially approved for removal.

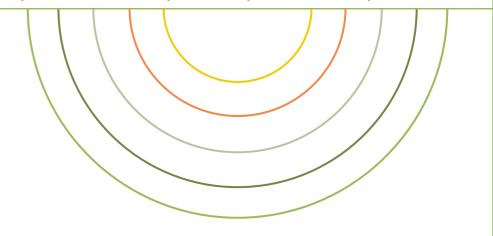
### **Outlook**

Alvopetro has made early investments in strategic natural gas infrastructure, and we are well positioned to execute on our strategy to unlock the onshore natural gas potential in our area of influence. We look forward to our organically funded capital program in 2022 that will help guide our multi-year growth plan.

It is an exciting time to be an Alvopetro shareholder. Our team is strongly aligned with our shareholders, and our balanced capital allocation model is focused on adding shareholder value by delivering solid dividend yield and per-share production and reserve growth. We have tremendous opportunities in front of us and we are confident our team can deliver on the full potential of our asset base.

Corey C. Ruttan

President and CEO





Cash flows from operations of

\$24.3 million and funds flow from

operations of \$24.6 million

Operating netback<sup>1</sup> of \$33.39

per boe representing an 82%

operating netback margin<sup>1</sup>

### **2021 AT A GLANCE**

Key Operational & Financial Highlights:

2P reserves net-present value before-tax (discounted at 10%) increased 52% to \$297 million (C\$11.20/share), based on 8.2 MIMboe of 2P reserves on December 31, 2021

Capital expenditures of \$4.5 million

Quarterly dividends (\$0.06/share) commenced in the third quarter of 2021 with \$4.1 million in total dividends declared in 2021, increased 33% to \$0.08/share in Q1 2022

Share restructuring completed with total share repurchases of \$1.1 million, reducing shareholder accounts by over 60%

Repaid \$9.0 million of outstanding debt, reducing balance outstanding to \$6.5 million as at December 31, 2021

Production of 2,358 boepd (annual average natural gas, oil and NGL sales)

Realized natural gas sales price of \$6.50/Mcf; overall realized sales price of \$40.64 per boe<sup>1</sup>

. Please see the "Non-GAAP and Other Financial Measures" in the Advisories & Disclaimers section In this report





MESSAGE FROM OUR CEO

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ENVIRONMENTAL

# ESG Highlights



>>> Zero
environmental penalties

\$0.20 per boe allocated to social programs



53% reduction

in GHG emissions relative to fuel oil

Senior Leadership:



381 hours of ESG-related training

100% of produced water reinjected

5/6 independent Board of Director members

100% >>> of workforce trained in

**Alvopetro Code of Conduct** 

vegetation

spared

Caburé:
50
permanent jobs added to the region

# **Murucututu Pipeline:**

75 new jobs created

65% 79% of route followed existing rights-of-way of trees &

11% used directional boring



#### ► GRI 2-1

Alvopetro (TSXV: ALV; OTCQX: ALVOF) is uniquely positioned as a leading independent producer of natural gas in the State of Bahia. Our strategic midstream infrastructure established the company as an industry leader, becoming the first independent supplier to deliver sales specified natural gas directly into the distribution network.

We believe in operating responsibly to meet local demand for reasonably priced natural gas. Alvopetro was an early pioneer in the opening of Brazil's natural gas market by investing in strategic infrastructure and establishing a new local source of natural gas supply.

By supplying natural gas locally and efficiently, we are helping to transform the Bahian natural gas landscape, and the market is now benefiting from a more open and expanded supply base than has traditionally been available. Local natural gas has meaningful advantages over gas from LNG imports, not only due to the

minimized transportation costs and emissions, but also through the economic spin-off benefits generated from our operations, as well as local government revenues through royalties and taxes. At the same time, we are able to provide customers with a lower price per unit of energy, thereby accelerating this important transition.

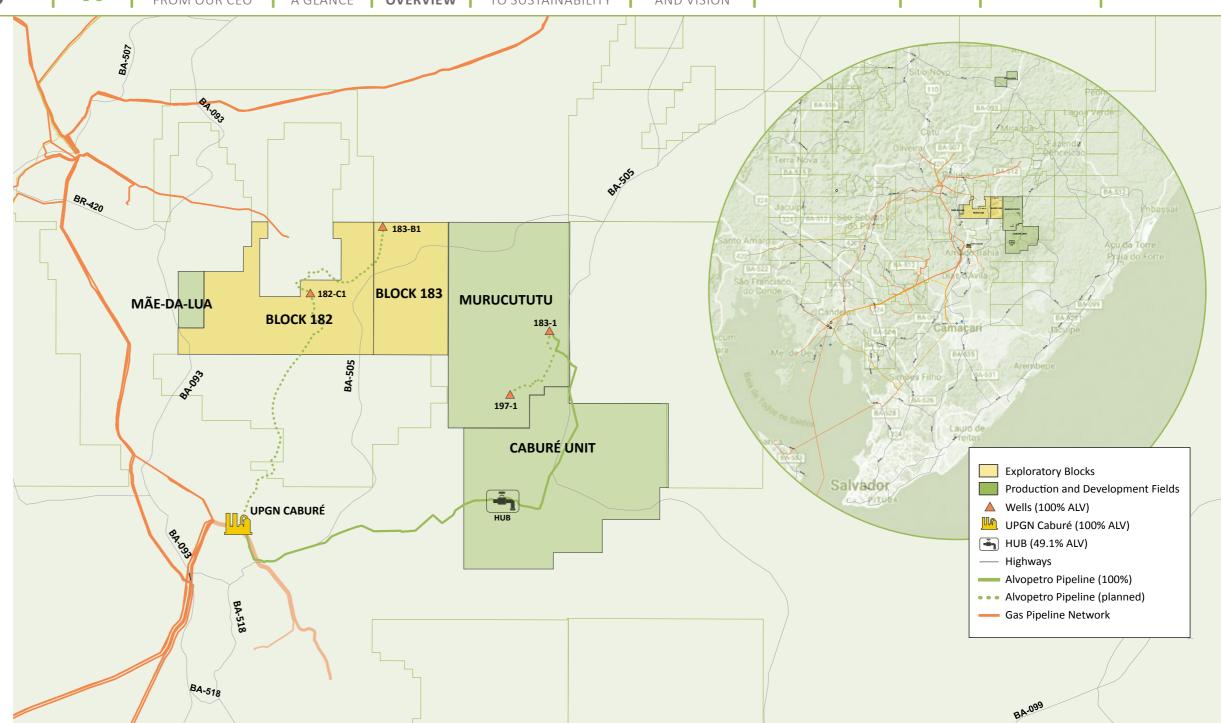
We recognise the inherent responsibilities in upstream and midstream operations and acknowledge that sustainable economic performance must go hand in hand with environmental stewardship, with due regard for social responsibility including safe operations, and maintaining high standards of corporate governance. Our approach to ensuring sustainability is primarily driven by our governing purpose to responsibly and efficiently supply energy, generating shared value for all of our stakeholders, while minimizing our impact on the environment.



# Where we Operate

► GRI 2-1 | SASB EM-EP-000.C

Alvopetro is an integrated energy company engaged in the exploration, development, and production of hydrocarbons in the state of Bahia, onshore Brazil.









As at December 31, 2021, Alvopetro held interests in the Caburé natural gas field and the Murucututu natural gas field, two exploration assets (Block 182 and the western portion of Block 183) and two oil fields (Bom Lugar and Mãe-da-lua), comprising a total of 22,166 acres (gross and net). Alvopetro's share of the Caburé natural gas field is 49.1%. All other assets are held 100% by Alvopetro. Virtually all of Alvopetro's 2021 production is from our Caburé natural gas field, with ongoing development of our Murucututu natural gas project plus exploration drilling expected to diversify our production base in 2022 and beyond.

### Midstream

100% of Alvopetro's natural gas is sold to Bahiagás, the local distributor for gas supply in the state of Bahia, pursuant to a long-term gas sales agreement ("GSA"). The GSA was signed in May 2018 and commercial natural gas deliveries commenced on July 5, 2020.

Natural gas is shipped from our Caburé natural gas field through our 11-kilometre transfer pipeline to our natural gas treatment facility (the "UPGN Caburé"). The facility was constructed and is operated by Enerflex Ltd. ("Enerflex"), a world-leader in natural gas solutions. The facility uses mechanical

refrigeration, whereby the gas is compressed and cooled to remove water and liquid hydrocarbons, resulting in sales specified natural gas for delivery to the local market.

In early 2022 we completed construction of a 9-kilometre pipeline connecting our 183 well on our Murucututu natural gas project to our Caburé transfer pipeline. Production from Murucututu will also be processed at the UPGN and sold to Bahiagás under the terms of our GSA.

Processed natural gas is transferred to Bahiagás by way of a custody transfer and measurement facility (the "Bahiagás citygate"), at our UPGN Caburé location. Thereafter, gas is transferred to the distribution network for consumption by various end users, the majority of whom are located in the industrial complex of Camaçari, approximately 15 kilometres to the south of our project area.

From our field to the Bahiagás citygate, our strategic midstream infrastructure has expanded and diversified the supply of natural gas for the Bahian residential and industrial market, providing an affordable fuel for energy and industrial heating processes that results in lower emissions when compared to other fossil fuel alternatives.

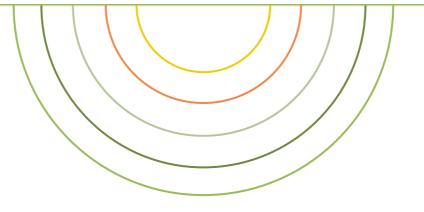


**ALVOPETRO IS AN INTEGRATED ENERGY** COMPANY



### Our Value Chain Chain Chain

Alvopetro is engaged in both upstream and midstream operations of the oil and gas value chain. We explore for, develop, and produce natural gas and crude oil, in addition to processing raw natural gas and selling the resultant sales specified product into the distribution network.



We are engaged in both upstream and midstream operations



## PRELIMINARY EVALUATION & EXPLORATION

- Seismic
- Drilling exploration wells
- Technical and economic feasibility
- Reservoir studies



### **DEVELOPMENT**

- Well testing
- Development drilling



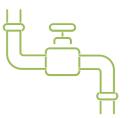
### **PRODUCTION**

- Natural gas and oil extraction
- Crude oil and raw natural gas primary treatment facilities
- Transfer of natural gas through flowlines



### **PROCESSING**

 Natural gas treatment to sales specification

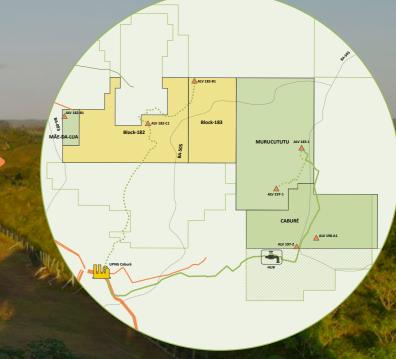


### **MARKETING**

- Transfer of sales-specified natural gas via pipeline
- Trucking of condensate and crude oil

2021 AT







Flagship project in Brazil

1st independently controlled UPGN

Breakthrough
Gas Sales Agreement with local distributor

Operational capacity expanded to 500,000 m³ /d (17.7 MMcfpd)





TO SUSTAINABILITY

► GRI 2-22

GOVERNANCE





### **MINIMIZING OUR IMPACT**

**Impact Assessments Water Use Efficiency Biodiversity Preservations Ecosystem Restoration Emissions Monitoring & Control** 

> **OUR ESG APPROACH**

### **STRENGTHENING OUR COMMUNITIES** & WORKFORCE

**Stakeholder Engagement Community Investment Developing the Best Talent Fair Labor Practices Continuous Improvement** 

### **RESPONSIBLY SUPPLYING ENERGY**

**Highest Safety Standards Efficiency and Reliability** in our Operations **Gas-focused Organic Growth Transparent & Ethical Conduct Strategic** Infrastructure























We deliver long-term value by focusing on three key pillars: responsibly supplying energy, minimizing our environmental impact, and strengthening our communities and workforce.

We have aligned our ESG programs to the United Nations (UN) Sustainable Development Goals (SDGs), according to those most significant for our local context and where we can have a meaningful impact.

Our commitment is to achieve long-term success by growing our natural gas business in Brazil.

We believe locally produced natural gas plays an important role in satisfying demand for energy from less carbon intensive sources and Alvopetro seeks to be a preferred supplier.

Focused on minimizing our environmental impact and maximixing benefits for stakeholders

In our inaugural Sustainability Report, Alvopetro Energy Ltd. aims to provide insight to our stakeholders on our economic, social, and environmental performance for the year-ended December 31, 2021, as well as our governance priorities in planning for the future. The content of this report has been reviewed and approved by the Board of Directors and we intend to report annually. As standards of reference, the Report draws upon the following internationally recognized sources of guidance:

- The Global Reporting Initiative (GRI), on a Core basis.
- Sustainability Accounting Standards Board (SASB)
- Greenhouse Gas Protocol (GHG Protocol)
- UN Guiding Principles Reporting Framework
- 2030 Agenda for Sustainable Development

Voluntary corporate reporting is an important element of maintaining an open and honest dialogue with stakeholders. While adapting our business to a rapidly changing environment, we realize the demand for enhanced disclosure on environmental, social, and governance performance. With this in mind, we have collected baseline data for the full year of 2021 to include in our first sustainability report. Tracking and recording those metrics that are relevant to us and our stakeholders helps us assess our performance and continuously evolve our approach toward ensuring the ongoing sustainability of our business. We are proud of the work we have done, and this initial set of data and metrics sets us on a course toward continuous improvement.

The information included herein relates to Alvopetro and its subsidiaries. All monetary amounts in this Report and references to \$ are in United States dollars unless otherwise noted. Please refer to the section entitled Advisories and Disclaimers at the end of this Report. All ESG metrics reported herein are on a 100% operated basis, excluding GHG emissions and production data, which are reported on equity share basis.





Any questions or comments on the information presented herein or on our sustainability efforts can be directed to:



# Materiality

In 2021 we conducted our first materiality assessment to better identify and understand which sustainability issues are most relevant to our stakeholders and to Alvopetro and to guide us in enhancing our practices and providing transparency on the issues that matter most to our stakeholders.

### THE MATERIALITY ASSESSMENT WAS CONDUCTED IN FOUR MAIN STAGES:



### STAKEHOLDER IDENTIFICATION:

Through a series of workshops involving multiple levels of the organization, we considered the entire spectrum of Alvopetro's participation in the oil and gas value chain and catalogued all groups associated in some way with our business.



#### **MATERIAL TOPICS & SURVEY DESIGN:**

In assessing the potential material topics, we reviewed SASB and GRI elements to select all potentially relevant topics for our industry and, with the senior leadership team, refined the list to a short list of topics to be considered. The team drew inputs from different sources to guide an analysis that considered risks and opportunities related to the company's current and potential impacts, both positive and negative.

- Identification of key stakeholders to engage.
- Review of SASB and GRI potentially relevant topics for our industry.
- Consultation process with the company's senior leadership team.
- Surveying representatives of key stakeholder groups.
- Workshops with upper management to analyze stakeholder responses and to prioritize issues.



### SURVEY:

Key members of stakeholder groups were asked to complete a survey



### PRIORITIZATION OF MATERIAL TOPICS:

Results from the survey were reviewed by the senior leadership team in additional workshops. The materiality assessment resulted in the prioritization of select topics considered to be of highest relevance to our stakeholders and to our business. The list of ESG-related topics from the survey was narrowed down to seven topics deemed to be most critical to Alvopetro's long-term value creation.

The definition of materiality primarily considered in defining the Company's top priorities was any topic that, in the view of management and external stakeholders, has the potential to significantly affect the assessments and decisions of stakeholders and is an economic, environmental, or social topic that the Company can impact or has the potential to impact the Company.



ESG

INNOVATION, BUSINESS STRENGTH AND GROWTH

LOCAL NATURAL GAS SUPPLY

BIODIVERSITY

WATER STEWARDSHIP HEALTH AND SAFETY

COMMUNITY RELATIONS & INVESTMENT ETHICS, COMPLIANCE & ANTI-CORRUPTION

RISK AND CRISIS MANAGEMENT





### Our vision is to become a leading independent upstream and midstream operator in Brazil

#### ► GRI 3-3 (201)

Our strategy is to unlock the onshore natural gas potential in the state of Bahia in Brazil, building off the development of our Caburé natural gas field and our strategic midstream infrastructure. Our ability to execute our strategy and achieve our vision, relies on the strength and sustainability of our business over the long-term and our ability to adapt and grow with the changing landscapes with a focus on continuous improvement and respect for all individuals, communities, and cultures, acting in the best interest of our stakeholders.

# Innovation, Business Strength and Growth

#### ► GRI 2-24





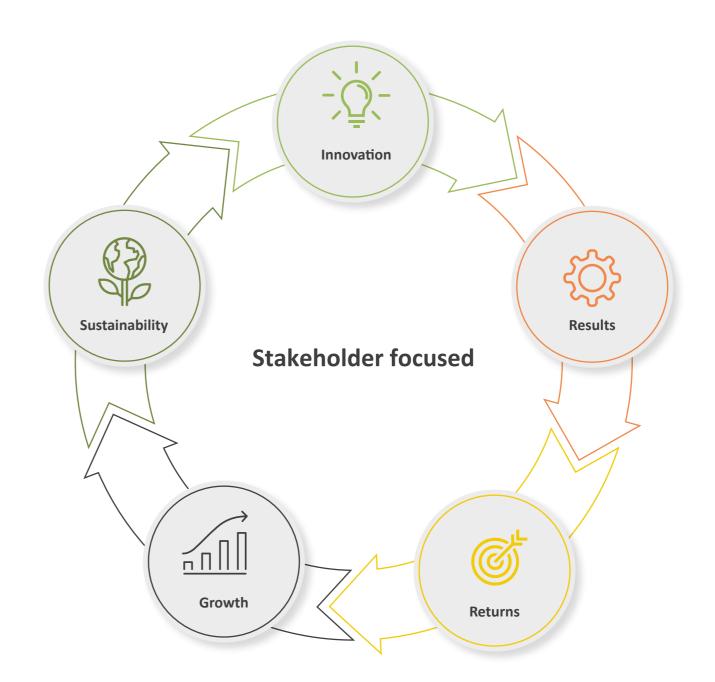




A strong and vibrant business provides the foundation for Alvopetro to be able to create lasting benefits for all our stakeholders. Our success can be attributed to our core values, including innovation and continuous improvement. Our early investments and the results from our flagship project, Caburé, have already created a positive impact and position Alvopetro for sustainable long-term growth and even greater lasting benefits for our stakeholders.



WE WANT TO **CREATE LASTING BENEFITS** FOR ALL
OUR STAKEHOLDERS



### Direct Economic Value Generated, Distributed and Retained in 2021 (in USD millions) PGRI 201-1

**Economic value** generated1

\$36.3

**Economic value** distributed<sup>2</sup>

\$18.9

**Economic value** retained<sup>3</sup>

\$17.5

**Employee Wages** and Benefits

\$3.8

Other production and G&A expenses \$5.0

Taxes to government4

\$9.2

**Royalties to** government

Payments to capital providers⁵

Community investments

\$0.05

- 1 Computed as revenues less sales taxes, interest income and proceeds of disposition.
- 2 Computed as employee salaries and benefits and any other production expenses and general and administrative expenses, payments to providers of capital, government
- omputed as economic value generated less economic value distributed.
- ncludes \$0.5 millions of income tax and \$8.7 million of sales taxes. Sales taxes are netted gainst revenues in the computation of economic value generated.
- includes dividends declared to shareholder, interest on outstanding debt and effective

### **Innovation**

Alvopetro's approach has always been to look for opportunities to apply industryleading technologies to our operations. An early example was to merge and reprocess the available seismic on our blocks using modern reprocessing techniques, resulting in a comprehensive enhanced dataset thereby creating a competitive advantage and the foundation for our exploration and development programs.



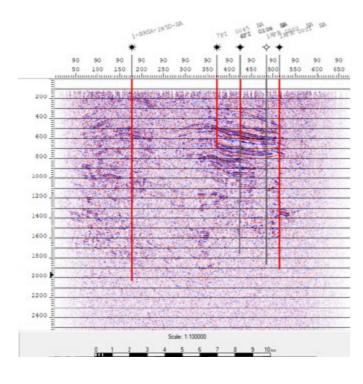
**CORE VALUES:** 

**INNOVATION** AND **CONTINUOUS** 

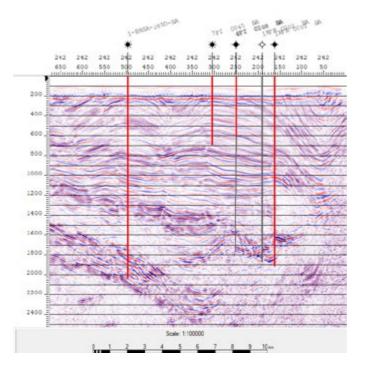
**IMPROVEMENT** 

### SEISMIC IMAGING ENHANCEMENT USING **MODERN REPROCESSING TECHNIQUES**

### 2001 BRAZIL REPROCESSING



### ALV 2017 REPROCESSING



The images above demonstrate examples of Alvopetro's 2D and 3D seismic reprocessing workflow that includes survey re-calculation for location accuracy, noise attenuation and 5D Interpolation to improve the structural imaging of faults and stratigraphy. The improved imaging reveals the complex shallow faulting definition as well as the shallow angular unconformity that can be observed across the Recôncavo Basin.

Another prime example is the partnership we cultivated to make UPGN Caburé a reality. Our facility construction and operating partner, Enerflex, financed the facility at a critical time for Alvopetro when we had more limited financial resources. They also guaranteed the construction schedule and ongoing performance of the plant. Construction utilized offsite modular construction techniques that accelerated the construction schedule by allowing the project to be constructed in parallel with environmental permitting with better cost and quality control.

Alvopetro's focus on innovation allowed us to accomplish a number of firsts in Brazil through Caburé's development including:





- Field unitization process completed between two independent energy companies;
- Gas Sales Agreement between an independent natural gas producer and a local distribution company;
- Independently owned gas processing facility; and
- Independent company to deliver sales-specified natural gas into the local distribution network in Brazil.

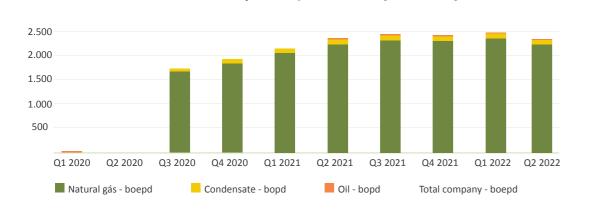




### **Business Strength and Growth**

Prior to bringing our Caburé project on production on July 5, 2020, Alvopetro had just a small amount of marginal production and negative funds flows from operations. Since then, Alvopetro has been significantly exceeding precommercialization expectations and built a highly profitable base of production.

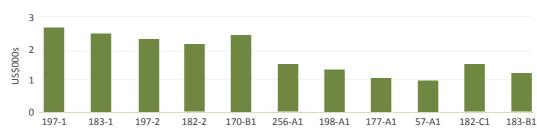
### AVERAGE DAILY SALES, BY QUARTER (BOEPD)

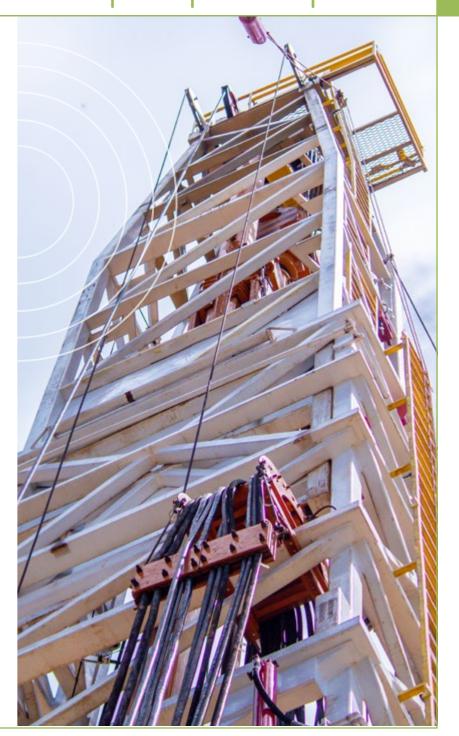


### **Continuous improvement**

An integral part of our innovative culture is one of Alvopetro's core values to focus on continuous improvement and to learn from both our successes and failures. A prime example of this continuous improvement culture is highlighted by our reduction in drilling costs. Our most recent well (183-B1) was drilled at an estimated cost of \$1,290 per metre drilled, a 51% improvement compared to our first well drilled in Brazil.

### **DRILLING COST (PER METRE)**









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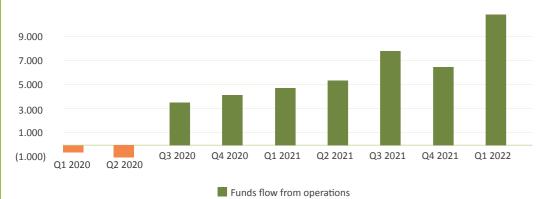
ENVIRONMENTAL

SOCIAL

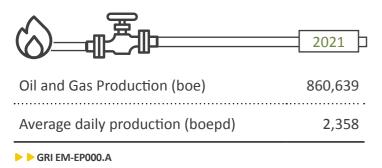
GOVERNANCE



# FUNDS FLOW FROM OPERATIONS, BY QUARTER (US\$000s)



### **PRODUCTION**

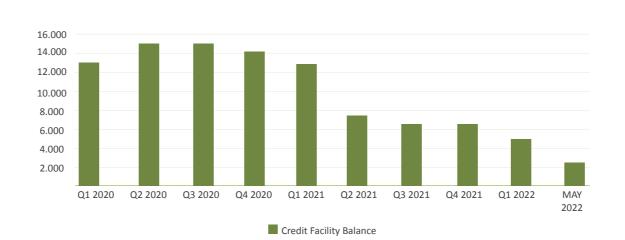


# We are

# well positioned to achieve our growth objectives

Over this same time, we have accelerated the repayment of our original \$15 million project debt financing and built considerable financial flexibility that allowed us to implement a quarterly dividend to shareholders and is allowing us to implement an entirely organically funded, growth focused, capital program in 2022.

### CREDIT FACILITY BALANCE OUTSTANDING BY QUARTER (US\$000s)





Our strategic infrastructure uniquely positions Alvopetro to quickly and cost effectively convert natural gas development and exploration successes into production and cash flow. We are well positioned to achieve our growth objectives and the strength of our business is driving our capital allocation model that balances stakeholder returns and organic growth. As the Brazilian market continues to demand increasing levels of energy, Alvopetro's goal is to meet that demand by locally supplying energy responsibly and efficiently. Our long-term strategy is focused on increasing natural gas supply in the state of Bahia, which helps reduce GHG emissions and creates a positive economic and social impact.

To achieve this goal, we have a multi-year growth plan focused on natural gas exploration and development and we are committed to executing efficiently and effectively while minimizing our impact on the environment.





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# Benefits of Locally **Produced Natural Gas**



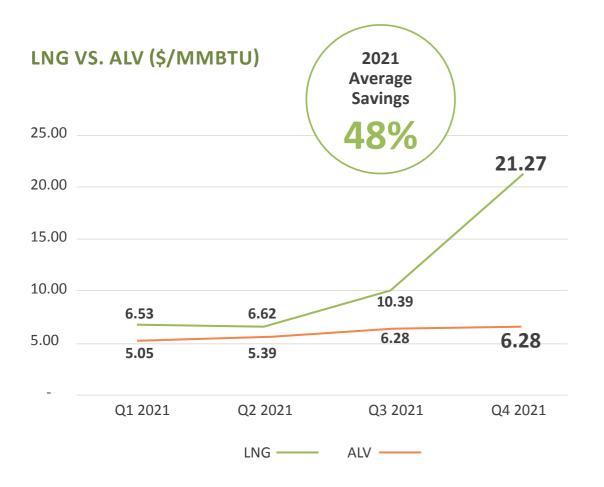
**45% OF NATURAL GAS** CONSUMED IN BRAZIL IS IMPORTED Although Brazil has sizeable natural gas reserves yet to be recovered, growing demand is still largely met with reserves from abroad. In 2021, 45% of the natural gas consumed in Brazil was imported. Following a severe dry spell, Brazil's water reservoirs for hydroelectric power generation shrank to critical levels. To keep up with demand for power, LNG imports increased more than threefold.8

The benefits of sourcing gas locally begin with the economic advantage. The natural gas supplied by Alvopetro is priced at approximately half of what importers paid for LNG through Brazil's regasification terminals in 2021.9

<sup>8</sup> Source: MME, 2022. Boletim de Acompanhamento da Indústria de Gás Natural

<sup>9</sup> Source: IEA, 2022. Gas Market Report Q1 2022. https://iea.blob.core.windows.net/assets/4298ac47-e19d-4ab0-a8b6-d8652446ddd9/GasMarketReport-Q12022.pdf

### Pricing for Imported Liquified Natural Gas Compared to Alvopetro's Natural Gas Sales Price



With demand for energy in Brazil expected to grow and potentially double by 2030<sup>10</sup>, natural gas from independent local suppliers such as Alvopetro will be a key driver of economic prosperity for the state of Bahia. We believe Alvopetro's proven track record of delivering affordable energy in a safe and reliable manner and our goals to expand this supply brings positive gains for society at large.

Gas delivered into the Bahian distribution network serves a variety of uses, including:

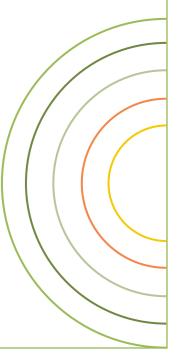
- Fuel for industrial heating processes;
- Thermal power generation;
- Co-generation, a highly efficient process where natural gas (or other energy fuel source) can be converted into steam and electricity;
- Petrochemical feedstock; and
- Automotive, commercial, and residential markets.

The price of natural gas is a critical element in decisions involving energy source and investments in the petrochemical supply chain. Benefits of an increase in the supply of attractively priced natural gas that is close to market include:

- Less reliance on fuel oil, diesel, coke gas, and other sources of fuel and heat with greater carbon intensity;
- Local job creation and new sources of income for the region;
- Improved social and economic development through tax revenue, royalties, and social investment;

- Reduced importation of LNG for energy supply (which typically entails higher pricing and greater emissions from liquefaction, transport, and regasification processes);
- Monetizing national reserves;
- National self-sufficiency in power generation;
- Attracting investment in critical infrastructure and new technology;
- Reduced use of road transportation for fuels (dangerous cargo), thereby improving road safety and conditions and fewer vehicle emissions;
- Increased interest in developing new markets linked to derivatives from natural gas production, such as propane, in a manner less disruptive to the environment; and
- Creating a variable source of energy supply to compensate for natural fluctuations in the availability of energy from renewable sources as markets increasingly build capacity to create energy from even lower emissions sources.

10 Source: MME/EPE, 2021. Plano Decenal de Expansão de Energia 2030 / Ministério de Minas e Energia. Empresa de Pesquisa Energética. Brasília.





# Minimizing Our Impact

While supplying the state of Bahia with natural gas as a cleaner and more affordable fuel, Alvopetro recognizes there are opportunities to minimize our environmental footprint. Alvopetro adopts environmental policies and programs that meet or exceed standards from industry best practices and local government regulations, led by a team with substantial expertise derived from multiple decades of international operations. As a result, Alvopetro is able to draw upon best practices garnered from experience in a multitude of jurisdictions relying on the combined strengths of our Canadian and Brazilian based teams. Our environmental impact mitigation efforts permeate all project stages, from planning to decommissioning.

Alvopetro's results are being driven by a small, highly qualified and dedicated team. We work hard to draw on the strengths of our combined team working across, cultures, languages, locations and time zones."

**Frederico Oliveira,**Brazil Country Manager





### **Emissions Monitoring & Control**

GRI 305-1, 305-2, 305-3, 3-3 SASB EM-MD-110

Alvopetro has begun quantifying our carbon footprint and measuring our Scope 1 & 2 GHG emissions in accordance with the GRI Standards and GHG Protocol. In natural gas processing, the main sources of emissions are compressors, acid gas waste and fugitive emissions from processing equipment. Our gas treatment plant is primarily powered by high-efficiency natural gas-fueled generators or powered from the local electrical grid. The plant was designed and implemented using industry best practices. The field also does not currently require compression, minimizing field consumption/shrinkage.



As Alvopetro is not the primary operator of a significant portion of our facilities, our ability to reduce emissions largely relies on us working with our operating partners to mitigate emissions from our assets. Our engineering team has strived to optimize the use of diesel and natural gas by adopting newer technologies wherever practicable. In close cooperation with our operating partners, we are studying new measures and technology that:

- Increase process efficiency to reduce the volume of natural gas flared;
- Further optimize the use of diesel consumed in all our sites; and
- Detect leaks or integrity issues that could lead to fugitive emissions.

**11 Source**: EPA AP-42, Section 5.3: Natural Gas Processing. https://www.epa.gov/sites/default/files/2020-09/documents/5.3\_natural\_gas\_processing.pdf

When planning for new sites and the expansion of our existing sites, we have prioritized efficient machinery and systems. To reduce the volatility and maximize recovery of natural gas liquids, our treatment plant utilizes a condensate stabilization system and vapor recovery unit, among other technologies. The condensate stabilization system removes volatile hydrocarbon components and stabilizes the condensate by regulating the temperature and vapor pressure to conditions that are safe for transportation. In addition, the volatile hydrocarbons are captured by the vapor recovery unit and recycled as "sales gas" instead of flaring. This results in reduced plant shrinkage and improves overall plant performance.

Alvopetro regularly monitors technological developments related to energy efficiency and best practices across our industry. Within our larger goal of expanding our natural gas processing facility's throughput, our expansion planning has included routing natural gas that would normally be flared back into our processing system to achieve greater process efficiency.

As Alvopetro is producing very little water and not running any field compression our GHG intensity is 4.7 kg/CO<sub>2</sub> equivalent/boe which is top tier in the industry.

### SCOPE 1 & 2 EMISSIONS 2021

Direct GHG Emissions (million tonnes CO₂e)	0.0040
Indirect GHG Emissions (million tonnes CO <sub>2</sub> e)	0.0001
Direct and Indirect GHG Emissions (million tonnes CO <sub>2</sub> e)	0.0041
GHG Emissions Intensity (kgCO <sub>2</sub> /boe)	4.7
Methane Emissions (million tonnes CO <sub>2</sub> e)	0.0023
Methane Emissions Intensity (kgCO <sub>2</sub> /boe)	2.7
Methane Emissions Intensity (% of natural gas produced)	0.1%

> 305-1, 305-2

#### **FLARING AND VENTING**

Hydrocarbons flared (m³)	61,888
Hydrocarbons vented (m³)	119,609
Volume of vented and flared gas in relation to volume of oil and gas produced (%)	0.1%

► EM-MD-120a.1

#### **ENERGY**

Energy Used – Fuel and Electricity Use (kW/h)	122,027
MW of Power for Industrial Use	0.60

▶ ▶ 302-1



We are investing in environmental programs that help reduce our environmental footprint, through preservation and regeneration programs focused on preserving forest and its inherent biodiversity.





15 UFE ON LAND

### Environmental Management EM-MD-160a.1

As standard Alvopetro practice, we seek to preserve environmentally sensitive areas beyond what is required by law and environmental licenses. Our Caburé pipeline was installed in primarily low impact pasture areas, and we minimized the impact of our 8.6-kilometre Murucututu pipeline by following existing right of ways for 79% of route and using directional boring for 11% of the route. Directional boring is a trenchless method of installing a pipeline which significantly reduces the project's environmental impact by eliminating surface impacts. Selecting less invasive construction methods and routing is a critical component of our conservation strategy.

Alvopetro's Tree and Forest Protection program ensures interventions resulting from our activities are restricted to already deforested areas. A fundamental precept of this program considers that avoiding deforestation is a vastly superior conservation measure than compensating for areas degraded. The company's environmental team is involved throughout all stages of our projects, from planning to execution through to decommissioning and works diligently to minimize our impact and to protect environmentally sensitive areas. with the aim of preserving the habitat's ecological balance.

In our most recent project, the Murucututu Pipeline, conservation efforts spared 65% of trees and vegetation originally authorized for clearance by extending the length of the directional bores that crossed through forested areas.



	TOTAL LENGTH (m)	DIRECTIONAL DRILLING (m)	% TRENCHLESS	SHARED ROW (m)	% USING EXISTING RIGHTS-OF-WAY	ORIGINALLY IDENTIFIED & AUTHORIZED FOR SUPPRESSION	CLEARED	% REDUCTION IN TREE COVER LOSS
Caburé Pipeline	10,930	1,506	14%	0,00	0%	170 trees	77 trees	55%
Murucututu Pipeline	8,639	960	11%	6,800	79%	1,441 m²	501 m <sup>2</sup>	65%
TOTAL	19,569	2,466	13%	6,800	35%			

### PREVENTING BIODIVERSITY LOSS AT THE MURUCUTUTU PIPELINE PROJECT

Operating within a biodiverse biome means promoting the conservation of Atlantic Forest cover as a priority.

When planning our route for the Murucututu pipeline a dedicated team of environmental specialists assessed ways to mitigate our ecological impact through actions aimed at preserving biodiversity. In route planning, the team prioritized the use of existing rights-of-way, which accounted for 79% of the total length of the Murucututu pipeline.

Throughout the pipeline route, the environmental team marked permanent preservation areas and legal reserves. In planning directional boring, the environmental team worked with the engineering team to ensure an additional 30% over the distance required by law

from a preservation area to act as a buffer zone for forest regeneration, considering it is a safe habitat for species of high ecological sensitivity.

During our wildlife monitoring, our team catalogued 89 wildlife species and 22 plant life species. Preserving remaining Native Atlantic Forest patches of Bahia is a key focus of our environmental team. During the Murucututu pipeline installation, the species spotted were left undisturbed in their habitat and suppliers were trained in wildlife protection measures. No species classified as Critically Endangered or Endangered were found in the study area per the IUCN Red List. Post-implementation environmental compensation efforts will focus on areas where species classified as Vulnerable or Near Threatened have been spotted.









### **Biodiversity**

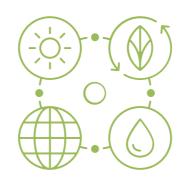
► GRI 303-5, 3-3, EM-MD-160a.1

There is a growing global recognition that biodiversity loss and ecosystem degradation carry long-term negative effects and hinders development and economic growth that depends on the natural balance of the region's ecosystem.

Alvopetro works diligently to ensure we protect the biodiversity of our surrounding environment. Our sites are in areas generally dedicated for agricultural farming and cattle raising, with remaining patches of Atlantic Forest. To the greatest extent feasible, we prioritize using already degraded land for the installation of our pipelines and facilities. As part of our Wildlife Management and Rescue Program, a thorough wildlife impact assessment is conducted in the implantation area involving professionals trained in safely managing and relocating wildlife. The same professionals also raise awareness among suppliers and site workers to ensure strict adherence to the practices outlined in the program.

Furthermore, for any suppression of vegetation that does take place, voluntary compensation actions have gone beyond what is required by the environmental regulator to ensure their positive effects are long-lasting. Our ecosystem restoration efforts are carried out by biodiversity experts that ensure proper management of plant and wildlife, with consideration for the rich diversity of the ecosystem.

Our environmental restoration program has focused on floodplains and wetlands of the Itapecerica River watershed. Regenerating these areas reduces suspended sediments, avoids flooding, and improves water quality both for human activities and as habitat for wildlife.



WE WORK TO ENSURE THE BIODIVERSITY PROTECTION OF OUR SURROUNDING ENVIRONMENT.



#### **BIODIVERSITY**

Extent of area studied (total and/or Atlantic Forest vegetation, in hectares)	1,424
Diversity of species logged during environmental study	389
Forested areas preserved in project planning and execution (hectares)	0.5
Percentage of proved and probable reserves in or near sites with protected conservation status or endangered species habitat	0
Area (in hectares) of sites owned, leased or managed in or adjacent to protected areas and/or key biodiversity areas (KBA)	0
Sanctions due to environmental non-compliance	0
Hectares preserved in the areas of influence of our assets	19.7











### Water stewardship

► GRI 303-5, 3-3 | EM-MD-160a.1

Alvopetro recognizes that water is a shared local resource and that we have a duty towards responsible water management to minimize our impact on local water availability. Although Alvopetro's operations are not primarily located in areas characterized by high levels of water scarcity, 12 our region's microbasins are critical to ensuring water security as Brazil potentially faces increasing levels of water stress and longer dry periods. In strict compliance with environmental regulations, Alvopetro does not directly extract water from surface water bodies.

Understanding our water use patterns helps
us identify possible inefficiencies and impacts
to water supply at a regional level. Our
operations do not have a significant impact on
the availability of water in the region. Special
attention is given to avoid contamination to the
water resources surrounding our operation areas
through water quality monitoring and sampling.

When proper measures are not taken, erosion can pose a risk of environmental degradation due to runoff and carriage of materials to nearby water bodies. Alvopetro's Erosive Process and Silt Control Plan requires erosion and silt control measures for new and existing sites to prevent runoff, carriage or other impact to drainage basins and waterways, or any nearby water source.

During pipeline construction, a member of the environmental team walked the pipeline route daily, surveying the right-of-way and noting any preventive or corrective actions for possible erosion that could arise from the pipeline installation. These inspections have continued to occur after the conclusion of construction and are also planned for the operation phase. Erosion and silt control measures implemented have included permanent rainwater drainage systems, trench breakers during trenching, water diversion ditches, outlet dissipators and silt barriers.



### WATER

Water Usage (m³)	609
SPILLS	
Reportable Spill Events Released to the Environment (events)	(

► EM-EP-160a.2





Rio Pojuca - Mata de São João/BA

### Waste & Effluents

► GRI 306-1, 3-3



Our upstream and midstream operations routinely interact with materials that, when mishandled, may present a threat to human health and the environment. For this reason, we strictly control and manage our hazardous and non-hazardous waste in accordance with federal, state, and municipal legislation, following industry best practices and company policies and relevant procedures. Company procedures provide guidance for employees and contractors on properly disposing of any material that has been in contact with hazardous waste, ensuring proper conditioning, treatment, and disposal.

Examples of hazardous waste produced from our operations include but are not limited to soil contaminated with oil or condensate following a spill, any absorbent material used to contain the spill, drilling cuttings, drilling mud and completion fluids, and materials used for handling oil, diesel, or solvents.

Our HSE team is responsible for classifying waste to determine which procedure to follow. The team ensures any hazardous waste is carefully documented at the point of generation and transported to licensed sites for proper disposal.

#### **REINJECTION OF PRODUCED WATER**

Alvopetro reinjects produced water from both our own production wells and from third parties into our disposal well at the Bom Lugar field. Injection of produced water helps minimize the impact on local communities and ecosystems. Prior to injection, the water undergoes monitoring for hydrocarbon traces and salinity, as well as primary separation. Water injection is measured for discharge reporting in compliance with applicable state and federal regulations.

### **WASTE & EFFLUENTS**



18.7
Effluents Generated (m³)



**9.4**Hazardous Solid Waste (m³)



GRI 401; 201-3; 102-41; 103-2













Being a good corporate citizen is a value we uphold in our everyday interactions with host communities, employees, contractors, clients, partners, and all stakeholders.







# Our team

► GRI 2-7, 2-8

At Alvopetro, we value our Team as our greatest asset. We believe in a fair, inclusive and diverse workforce and require all employees to adhere to a code of conduct which sets out these requirements. We understand that investing in our people adds great value to our business and helps us deliver superior operational results.

At the end of 2021 we had 20 full-time employees in Brazil and seven in Canada.

# NET FULL-TIME EMPLOYEES (TOTAL COMPANY)

► GRI 2-7, 2-8



Canada

7



Brazil

20

Females as a Percentage of Workforce

> GRI 405-1



► GRI 405-1

%

of Workforce in Leadership positions

18.5%



Women as a % of Senior Leadership Team

40%



Men as a % of Senior Leadership team

60%



### **YEARS OF SERVICE**

••••••••••••••••••••••••••••••••••••••	
Less than 5 years (percent of headcount)	19%
5-9 years	41%
10-14 years	41%
Median Age	
Canada and Brazil	43
Employees covered by collective bargaining agreements (%) 100% in Brazil, 0% in Canada	74%

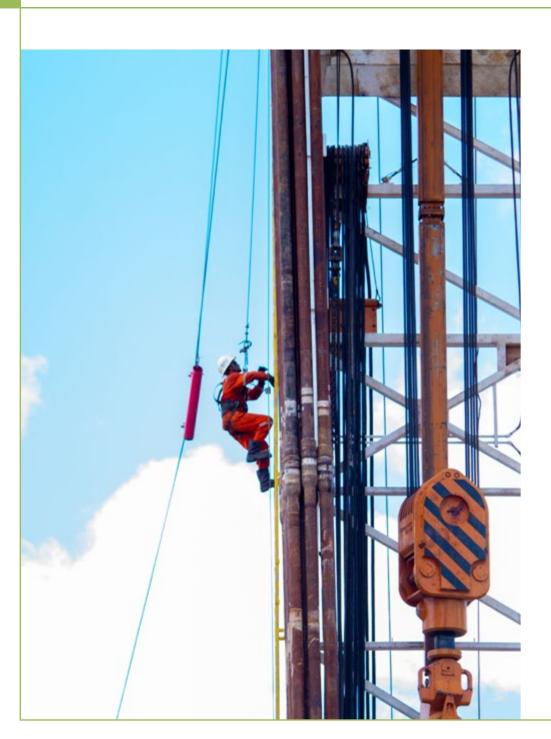


**ALVOPETRO** HAS BEEN OPERATING

IN BRAZIL FOR 14 YEARS







# Health & Safety





► GRI 403-9, 403-3, 403-6, 3-3 | EM-EP-320a.2

Alvopetro maintains the highest standards to ensure a healthy and safe working environment. We work to maintain and continuously improve our safety culture, striving toward our zero lost-time incident goal.

HEALTH & SAFETY METRICS	2021
Employees	
Total Recordable Incident Rate (TRIR)	0
Employee Hours	36,054
Accidents with Lost Time - Employee	0
Accidents without Lost Time - Employee	0
Number of internal workforce incidents (OHS)	0
Number of fatalities (excluding illness fatalities)	0
Fatal Accident Rate (excluding illness fatalities)	0
Contractors	
Total Recordable Incident Rate (TRIR)	0
Contractor Hours	177,157
Accidents with Lost Time - Contractor	0
Accidents without Lost Time - Contractor	0
Lost time injury frequency (LTIF) (per million hours worked)	0
Number of emergency simulations - Tabletop and in-person	3
Number of contractor-linked incidents (OHS)	0
Number of fatalities	0
Fatal Accident Rate	0



Alvopetro keeps health and safety risks to acceptable levels by implementing processes and engaging in positive practices that assist the team in their identification and mitigation, including but not limited to:

- **∨** Daily safety meetings;
- √ Hazard operability studies (HAZOPs);
- √ Permit to work (PTW) system;
- √ Preliminary Risk Analyses;
- √ Management of change reviews;
- √ Incorporating <u>lessons learned</u>;
- √ Integrity assessments for wells through wellhead inspections;
- √ Integrity assessment of pipeline through routine pigging operations;
- √ Integrity assessment of facilities through the operator's maintenance and inspection program which includes continuous leak detection; and
- ▼ Employee training to execute routine tasks and make safe decisions in their day-to-day activities.

#### ► GRI 403-1, 403-5

At Alvopetro, all employees are empowered to interrupt any activity or operation based on a perceived risk or threat to safety.

In 2021, we ran a gap analysis study on Company practices related to our Operational Safety
Management System to identify improvement opportunities and began implementing an Integrated Management System in compliance with updated regulatory standards on well and asset integrity management practices from the industry regulator, the ANP. Our goal is to ensure continuous improvement in safety and operational practices.



26 HOURS
OF SAFETY
CONVERSATIONS

339 PERMIT TO
WORK FORMS
ISSUED<sup>13</sup> FOR OUR
OPERATIONS



13 Includes safe work permits issued for contractors and employees linked to Alvopetro controlled operations.



### LESSONS LEARNED – HABITS THAT BUILD EXCELLENCE

Our company's safety culture is built from daily habits that are repeated in our operational routines. For example, the DDS (Daily Safety Dialogues) is a practice where the teams meet at the beginning of each day to review scheduled tasks and identify potential risks to ensure safe execution.

Learning from our experiences is a key habit to create a safety-focused mindset. We always conclude projects by looking back and analyzing what went well and what can be improved, based on records collected and disseminate our "lessons learned" to all employees. This enables us to add value to the next projects, building and maturing the operational effectiveness and safety culture in the organization.

"We begin every week with a company-wide conference call that includes addressing a specific topic related to care at work and in life, in addition to reviewing with each manager and project leader, the week's schedule and any safety concerns regarding scheduled activities."

Élvio Garcias, HSE Manager

#### **COVID-19 RESPONSE**

Alvopetro engaged a **specialized medical consultancy** to implement a comprehensive Covid management plan to manage impacts and protect the health and well-being of employees, contractors, and local communities.

A special Covid-19 Committee was formed with the objective of generating plans and practices to help prevent the spread of Covid-19 amongst our workforce and surrounding communities. The Committee is coordinated by a company representative and a doctor and is comprised of members of our team as well as members of supplier teams and our partners. The Committee plans and ensures the implementation of prevention measures aimed at ensuring the health and well-being of team members, suppliers, partners, and the local population.

As part of the Covid response, we stationed a full-time nurse on site to conduct screening for symptoms and ensure compliance with corporate protocol. Any symptomatic worker was directed to Alvopetro's medical consultant who could offer remote medical assistance and orientation to minimize the risk of transmission among workers and the broader community.

With the coordination of our Corporate Health Consultant, we set up our Telemedicine channel to clear any questions and to guide symptomatic workers, with regular follow-up for suspected and confirmed cases. We hired a Nursing Technician to be on-site full-time to ensure adherence and implementation of measures. To assist community efforts, the committee visited with local health authorities in our host community to ensure resources were in place to provide general access to specialized care and Alvopetro employees distributed over 80 cleaning supply kits to families in need.

"We started our Covid-19 management work at Alvopetro whilst cases and deaths were surging in Brazil, averaging 80,000 to 100,000 cases and 2,000-3,000 thousand deaths daily. Faced with the threat to the company's human and financial capital, we implemented our strategy based on a four-pronged approach: the Covid Committee, Preventive Monitoring, Strategies and Actions, and Corrective Measures."

#### **Dr. Erlon Tostes**

Physician & Alvopetro's Corporate Health Consultant during the COVID-19 Pandemic



6 confirmed cases
Zero deaths
Zero hospitalizations
74 teleconsultations
1,100 checklists applied on site for compliance with preventive measures







In 2021, Alvopetro implemented a Performance Management System which set forth expected standards and criteria by which performance is measured and to ensure our team is continuously learning and improving professionally. Performance metrics were linked to corporate objectives related to operational, financial, HSE related and strategic corporate objectives.

Employees are encouraged to strive for continuous improvement and to seek professional development opportunities related to their roles and responsibilities and are eligible for reimbursement or corporate sponsorship for their professional development.

### AVERAGE HOURS TRAINING PER EMPLOYEE ▶ GRI 404-1

CANADA	BRAZIL	OVERALL	
12	21	17	
17	25	24	





#### **Benefits**

A large part of our growth plan relies on our ability to attract new talent and retain our current key personnel. Alvopetro offers an attractive compensation and benefit package that is competitive with other peer companies operating in the industry. Our benefits package includes health, dental and life insurance coverage for all employees and their families, and, in Brazil, additional monthly compensation for meals, groceries and transportation.

All employees are encouraged to enroll in additional training including in-house workshops and formal professional courses as part of our commitment to continuous growth and development. We encourage participation in industry and professional organizations and sponsor employee participation in these organizations.

All Alvopetro employees are free to associate with independent unions. Alvopetro maintains open and direct communication and collaboration with our Team, discussing any concerns, with the shared objective of maintaining positive and transparent labour relations.



### Voluntary Social Programs







► GRI 413-1, 3-3 | IPIECA SOC-9: C2, SOC-13: C2

In 2021, upholding our commitment of having a positive impact on the communities impacted by our operations, Alvopetro completed a comprehensive community assessment visiting over 190 families in our areas of operations. Following this assessment, we set a plan to invest \$0.20 per boe produced, to be allocated to investment in social projects and strategic corporate philanthropy. The program's focus is to add social value and contribute on three main fronts, aligned with the UN SDGs:

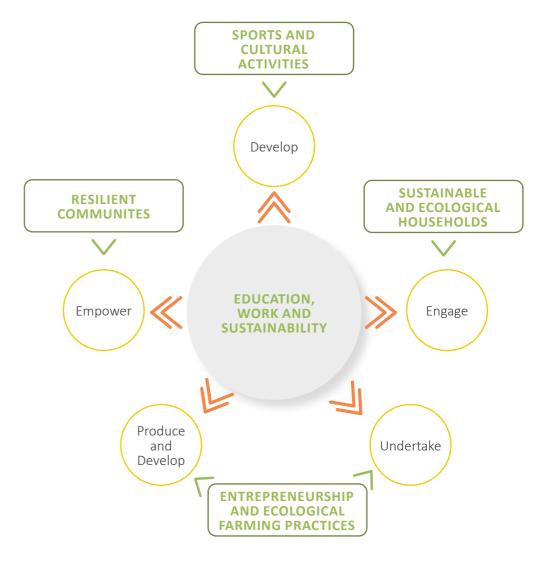
- SDG no. 4: Quality Education
- SDG no. 8: Decent Work and Economic Growth
- SDG no. 11: Sustainable Cities and Communities.

An expert NGO was engaged to conduct investment opportunity mapping through a participatory process. As a result, Alvopetro's Social Investment program was guided by a thorough local context assessment involving stakeholder mapping and engagement,

baseline data gathering through 190 interviews across nine local communities and through building local partnerships with key members. Our community needs assessment focused on the immediate 10-km radius of our operations. This initial study resulted in a Strategic Corporate Social Responsibility Plan that selected four focus areas that drive social and economic development and address the community's needs: Sports & Cultural Activities, Sustainable and Ecological Households, Resilient Communities and Entrepreneurship and Ecological Farming practices.

By engaging multiple stakeholders and ensuring an open and two-way dialogue, we hope to build trust and to contribute to effective solutions that have been developed collaboratively.

### PRELIMINARY DEVELOPMENT GUIDELINES





#### **MUSIC & ARTS CONSERVATORY**

Fostering artistic talent and bringing kids back to schools.

The Conservatory of Music and Arts of Mata de São João offers lessons and workshops in acoustic guitar, choir, wind instruments, percussion, ballet, and others for over 75 students in the town and surrounding regions. By developing local musical and artistic talents, this initiative builds positive connections with local youth, who benefit from renewed self-esteem and gain new perspectives in their educational development. The project team ensures students are enrolled in school with good performance as a requirement for continued enrollment. By fostering local cultural talent, this project is drawing students back to educational spaces whilst keeping alive Mata´s rich cultural and musical traditions.







RECOGNITION FROM
CITY COUNCIL FOR GOOD
SOCIAL PRACTICE DUE TO

IMPLEMENTATION OF MUSIC AND ARTS PROGRAM

"My name is Camila, I am from Banda Marcial Nova Geração, I feel very happy to be part of the nova geração family. This period that we lived through with the pandemic was very scary, and when I learned that the Band was returning to its activities, it was a huge joy. I hope after June recess that Band and Fanfare competitions will be resumed, and that we will compete."

#### Camila Conceição dos Santos

Student, Music & Arts Conservatory Marching Band member









Promoting sustainable farming practices in our region

Alvopetro operates in a predominantly rural area. The first stage of this community investment program is aimed at helping local farmers increase their food production and ensure crop resiliency through diversification and innovation. Through this project, 10 farming families were selected to receive materials and training to build greywater reuse systems that converts wastewater from showers, sinks, washing machines, and other kitchen appliances into liquid fertilizer. For the broader community, a series of workshops were held, which focused on sustainable farming and land management practices that help improve soil conditions and boost crop production.









### Stakeholder dialogue and consultation

Establishing a two-way dialogue with our stakeholders is a fundamental element of our shared value creation over the long term. Alvopetro maintains a telephone hotline available 24 / 7 as a channel for stakeholders in Brazil to report grievances and concerns anonymously. A company representative records any grievances and directs the grievance to a responsible staff member.







#### Murucututu:

75 jobs created,41 hired locally

### Caburé:

91 jobs created,68 hired locally

### **Generating Opportunities and Hiring Locally**

When implementing our projects, we understand we play a key role in bringing employment opportunities to the region and increasing the local workforce's ability to benefit from new development being brought to the region.

In collaboration with the local municipality of Mata de São João, Alvopetro has implemented a local labor sourcing program, which sought to source local labor during the construction of the Caburé and Murucututu natural gas transfer pipelines by centralizing the construction hiring process through the public National Employment System, facilitated by the municipal government. This ensured a transparent and equitable process through channels familiar to the local population.

Through our local labor sourcing program, our Murucututu Pipeline project generated 41 local jobs out of a total of 75 employment opportunities. In 2020, for the construction of the Caburé Pipeline, of the 91 jobs generated, 68 were hired locally.

### Supply Chain Management

► GRI 308-1, 414-1, 3-3 | SDG 8.7, 8.8

Alvopetro consistently screens suppliers prior to contracting to ensure they have established HSE management systems in place. Alvopetro has dedicated in-house individuals monitoring suppliers to ensure these systems are implemented to our company's standards.

To begin working on site, contractors undergo an HSE Orientation, where the Alvopetro HSE team shares the company's standards and expectations related to safety and environmental management. Our supplier's sites are consistently monitored and audited by our HSE team to ensure standards of safety are met, as well as compliance with our human rights and safe workplace standards. As standard practice, Alvopetro team members meet at least monthly with project suppliers to review HSE performance and discuss upcoming and past challenges.

In line with our commitment to source materials and services responsibly, Alvopetro's supplier screening process follows international best practices, analyzing risks and implementing procedures to ensure compliance throughout

our Supply Chain. Prior to procuring, our procurement and HSE department will ensure potential suppliers are procuring materials from licensed sources and that contractors have high HSE standards in place.

When working with contractors, team members are guided to check for health and safety management practices regarding; work site camp infrastructure, worker's rights and wellbeing, Covid-19 prevention plan, borrow and dump site licenses for earthworks and waste disposal, responsibly sourced timber for fencing and environmentally friendly waste management procedures, among other practices.



**62%**OF GOODS AND SERVICES PROCURED LOCALLY











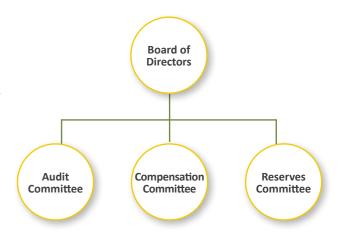
Alvopetro's Board of Directors has implicitly and explicitly acknowledged its responsibility for the overall stewardship of the Corporation. While the Board has delegated the responsibility for dayto-day management of the Corporation to the management team, the Board oversees Alvopetro's strategic planning and strategic direction and works with management to identify the principal risks of the business whilst ensuring the implementation of appropriate systems to manage those risks.

Members of Alvopetro's Board are elected annually at the Company's annual general meeting of shareholders to serve until the next meeting is held. Alvopetro's director nomination process recognizes the benefits of diversity. The Board has established a matrix of skills and competencies that it views as necessary to carry out its responsibilities and reviews the skills matrix for each individual director and the Board in aggregate.

The most recent skills matrix is available in the Company's 2022 Management Information Circular which is available on **SEDAR** and on our <u>website</u>. The Corporation has not adopted specific diversity targets

or quotas as it does not believe that such quotas are necessary at this time given the size of the Board, the diversity in backgrounds and skills of the current Board members and its existing nomination process.

The Board provides oversight of all sustainability related matters and works with management in the identification, measurement, and assessment of all related risks and opportunities along with the communication of the Company's strategy, policies, and performance.







### Anti-corruption, Ethics and Transparency

► GRI 2-15, 2-23, 2-25, 2-26, 2-27

Alvopetro's core values outline the guiding principles of the Company and provide the foundation for Alvopetro's <u>Code of Conduct</u> that applies to all employees, officers and directors and sets out the requirements for compliance with respect to various policies of the Company. Topics addressed in the code of conduct include anti-corruption, confidentiality, conflicts of interest, insider trading, business conduct and ethics, whistleblower reporting, and the Company's human rights policy which is also included by reference in the Company's code of conduct.

An annual training session is held to ensure employees understand and comply with our Anti-Corruption Compliance policy. All employees based out of our offices in Brazil, headquarters in Canada and operational bases, upon joining the company, must undergo training on the Company's anti-corruption policies and procedures. All employees, officers, and directors are required

to certify annually that they understand the code of conduct (including the human rights policy) and provide confirmation of compliance, along with confirmation that any non-compliance has been reported appropriately as provided for under the code of conduct and related policies.

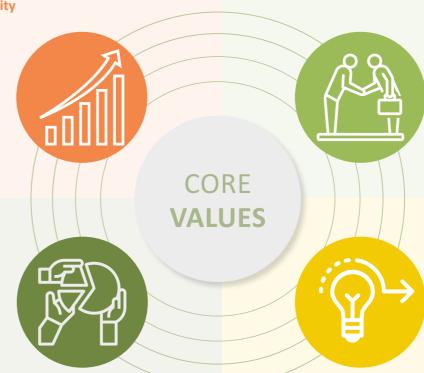
Alvopetro's code of conduct provides the foundation for all stakeholder engagements and sets our expectations of how all of our partners, suppliers and contractors should act when dealing with the Corporation. The Company encourages transparency and ethics in day-to-day interactions between employees and external stakeholders.

In support of global efforts to increase transparency in our industry, Alvopetro has complied with the Extractive Sector Transparency Measures Act (2015) by annually disclosing payments the Company has made to governments in Canada, Brazil, and abroad since 2017.

### CREATE

#### **VALUE**

- Create long-term per-share growth
- Always act as owners
- Focus on long-term profitability and recognize the interests of all our stakeholders
- Look for best value when making spending decisions



### BUILD TRUST

- Treat our people and all our stakeholders with respect
- Act with honesty and integrity
- Be 100% committed to safety
- Minimize our environment footprint
- Meet or exceed regulations using international best practices

#### INNOVATE

- Take initiative and tackle challenges creatively
- Manage risks and find innovative solutions
- Challenge ourselves and each other
- Focus on continuous improvement

### BE

#### **ACCOUNTABLE**

- Work collaboratively
- Share ideas across groups and locations
- Objectively measure our performance
- Learn from both our successes and failures and celebrate our successes
- Take responsibility and accountability in everything we do

### **Human Rights**

► GRI 2-23

Alvopetro respects the human rights of all individuals and strives to uphold the highest human rights standards, seeking to avoid causing or contributing to any human rights violation and working to remedy any violations to the extent they do occur. Our commitment to human rights applies not only to our own activities but also to third parties acting on our behalf or in any part of our operations.

Alvopetro's Human Rights Policy establishes the framework upon which we rely to ensure that our team members and contractors act responsibly and respect the rights of all individuals. The policy follows guidance from the International Bill of Human Rights, the United Nations Guiding Principles on Business and Human Rights, the OECD Guidelines for Multinational Enterprise and the International Labour Organization Declaration on Fundamental Principles and Rights at Work. All employees, officers, and directors are required to certify annually that they understand the code of conduct (including the human rights policy)



WE STRIVE TO UPHOLD
THE HIGHEST **HUMAN RIGHTS** STANDARDS

and provide confirmation of compliance, along with confirmation that any non-compliance has been reported appropriately as provided for under the code of conduct and related policies.

The Company consistently reinforces the availability of appropriate channels within the company for voicing any concerns related to any behavior that undermines our organizational integrity and healthy working environment.

### Whistleblower

► GRI 2-16

Alvopetro has established a Whistleblower Policy which encourages all employees, directors, agents and consultants and anyone impacted by Alvopetro operations to report violations or suspected violations of any of the Company's policies, including the code of conduct and human rights policy and complaints or concerns regarding our business practices. Anyone wishing to report a violation may do so as further described in our website.

There were no whistleblower reports made in 2021 or any prior year.



WHISTLEBLOWER REPORTING

Click here to learn more.





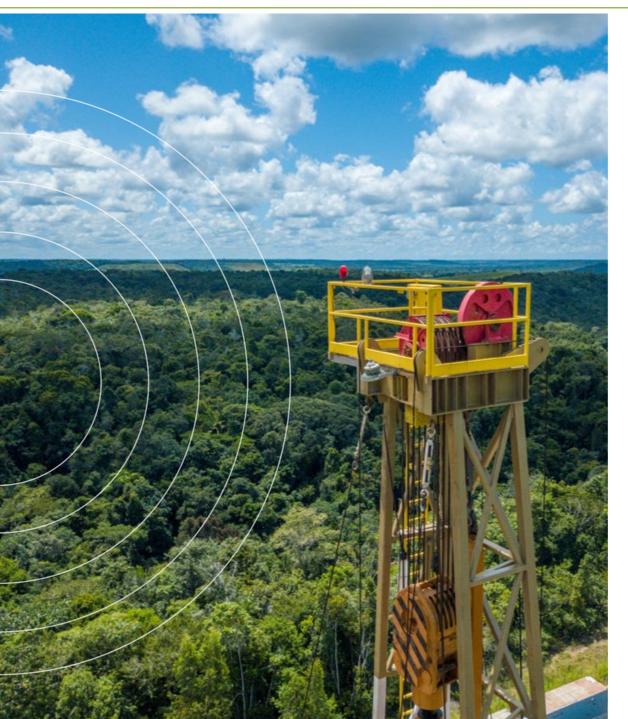
SUSTAINABILITY REPORT

### Risk & Crisis Management

► GRI 2-2

Alvopetro is exposed to a variety of risks and our long-term success relies on our ability to identify, respond, monitor, and manage those risks, including all climate related risks. In 2021, our senior leadership team and the Board of Directors reviewed a comprehensive risk analysis matrix covering various risk factors, the chance of occurrence of such risks, potential impact on the Corporation and the risk mitigation strategy. Various risks were analyzed including environmental risks, commercial and financial risks, operational risks, exploration risks, compliance risks, cybersecurity and information technology risks, and human resources related risks. Alvopetro reviews our risk analysis matrix at least annually and commits to adjust mitigants as required.

2021 was a record year for Alvopetro, being the first full year of operations from our Caburé natural gas field. Alvopetro was able to maintain all operations despite the prevailing public health crisis and its effects on the supply chain, due to our focus on effective risk management which allowed us to continue delivering on our commitments and strengthening our business.



### WE HAVE STRICT OCCUPATIONAL

AND OPERATIONAL RISK CONTROL PROGRAMS



# Emergency Preparedness & Response

► EM-MD-540a.4

Our policy of targeting a zero lost-time incident performance is supported by strict occupational and operational risk control programs and delegation of authority to any employee to interrupt work that is perceived to pose a threat. All of our production infrastructure including wells, process and storage facilities and associated pipelines are covered by a comprehensive Integrity Monitoring and Operational Safety Management program and contingency plans are in place for a timely response to environmental or safety incidents.



**Training and Safety Drills** 

Ensuring process safety is a critical component in ensuring we can continue to produce safely and reliably. We take a proactive approach to ensure we are prepared for adverse safety or process events that may pose a risk to our people, the environment, or our operations. Our Operational Safety Management System includes Emergency Response Plans tailored for each site to mitigate risks effectively and ensure appropriate resources are in place for our team to take immediate action. Periodic reviews of procedures, training and practice drills ensure our teams can act promptly as planned under unforeseen circumstances.

In 2021, our facility operator conducted three safety drills to assess awareness and adequacy of our emergency response procedures and resources and identify areas for improvements:



A TABLETOP EXERCISE
SIMULATING A RUPTURE
OF THE CABURÉ PIPELINE
WITHOUT CONTAINMENT



A **SAFETY DRILL** OF A
MOTOR VEHICLE CRASH
INVOLVING A THIRD PARTY



AN EMERGENCY
RESCUE DRILL FOR
INJURED WORKER
FALLEN FROM HEIGHT

Operator team members work in collaboration with supervising members of Alvopetro's team to ensure communication is escalated through appropriate channels and in timely manner.

A rigorous maintenance and inspection program for our facilities is in place to minimize risks or disruptions to our operations. Alvopetro's operations supervision and management team meet regularly with facility operators to review HSE performance and become apprised of newly identified risks and opportunities. This allows us to act effectively to prevent incidents, prioritize corrective actions, and identify improvement opportunities.





## REPORTING

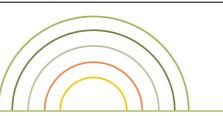


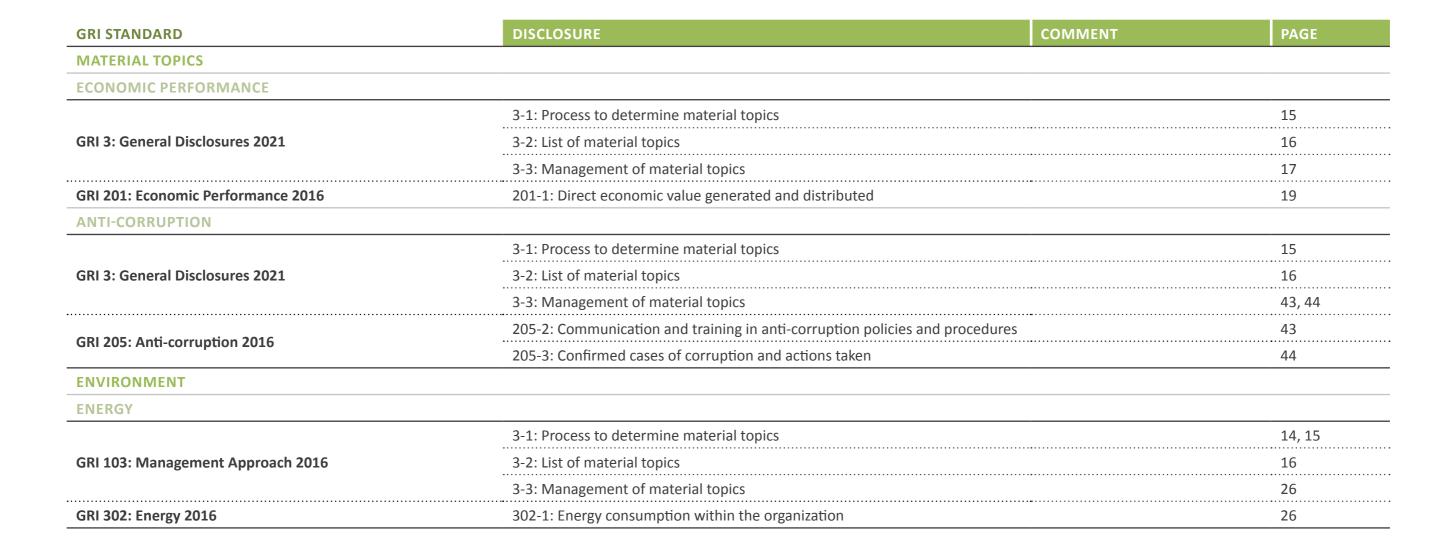
### GRI standards content summary



GRI STANDARD	DISCLOSURE	COMMENT	PAGE
GRI 1: FOUNDATION 2021			
GENERAL DISCLOSURES			
Organization and its reporting practices			
	2-1: Organizational details		7
	2-2: Entities included in the organization's sustainability reporting		11, 13
GRI 2: General Disclosures 2021	2-3: Reporting period, frequency and contact point	2021. This is Alvopetro`s first sustainability report	13 and 60
	2-4: Restatements of information	Not appliable	
	2-5: External assurance	This report was not externally assured	
Activities and workers			
	2-6: Activities, value chain and other business relationships		7, 8, 9 and 10
GRI 2: General Disclosures 2021	2-7: Employees		32, 33
	2-8 Workers who are not employees		32, 33





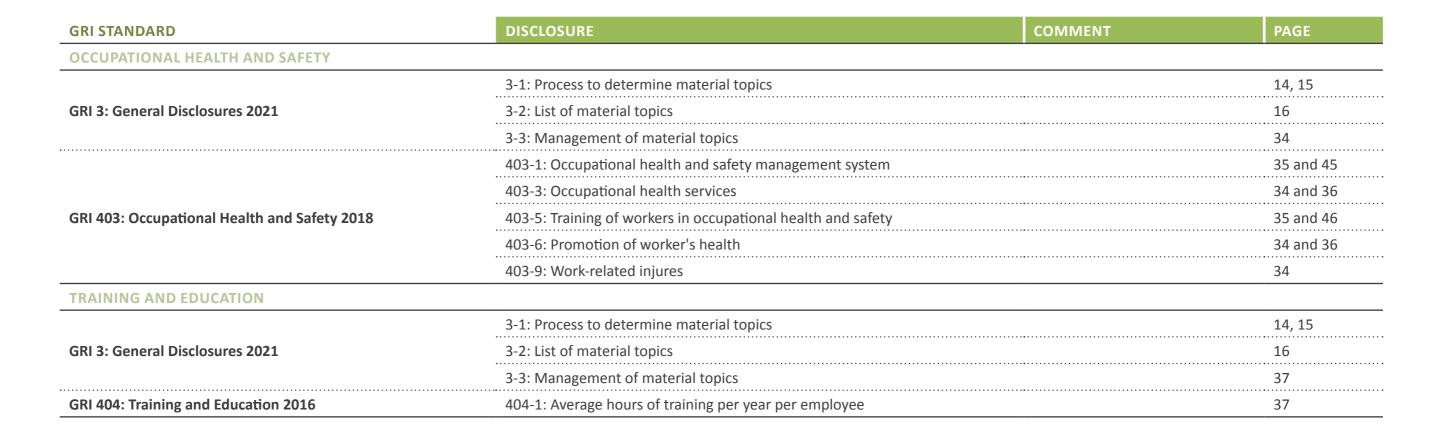


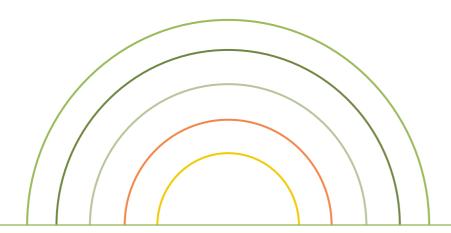
GRI STANDARD	DISCLOSURE	COMMENT	PAGE
WATER AND EFLLUENTS			
	3-1: Process to determine material topics		14, 15
GRI 3: General Disclosures 2021	3-2: List of material topics		16
	3-3: Management of material topics		30
GRI 3: General Disclosures 2021	303-5: Water consumption		30
BIODIVERSITY			
GRI 3: General Disclosures 2021	3-1: Process to determine material topics		14, 15
	3-2: List of material topics		16
	3-3: Management of material topics		28 and 29
GRI 304: Biodiversity 2016	304-1: Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas		28 and 29
EMISSIONS			
GRI 3: General Disclosures 2021	3-1: Process to determine material topics		14, 15
	3-2: List of material topics		16
	3-3: Management of material topics		25
CDI 20E. Emissions 2016	305-1: Direct (Scope 1) GHG emissions		25 and 26
GRI 305: Emissions 2016	305-2: Energy indirect (Scope 2) GHG emissions		25 and 26



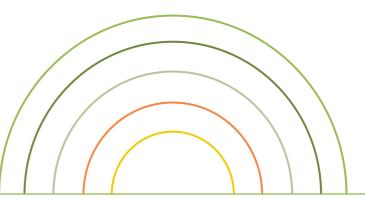
GRI STANDARD	DISCLOSURE	COMMENT	PAGE
WASTE			
	3-1: Process to determine material topics		14, 15
GRI 3: General Disclosures 2021	3-2: List of material topics		16
	3-3: Management of material topics		31
GRI 306: Waste 2020	306-1: Waste generation and significant waste-related impacts		31
ENVIRONMENTAL ASSESSMENT OF SUPPLIERS			
	3-1: Process to determine material topics		14, 15
GRI 3: General Disclosures 2021	3-2: List of material topics		16
	3-3: Management of material topics		41
GRI 308: Environmental Assessment of Suppliers 2016	305-1: Direct (Scope 1) GHG emissions		41
SOCIAL			
EMPLOYMENT			
	3-1: Process to determine material topics		14, 15
GRI 3: General Disclosures 2021	3-2: List of material topics		16
	3-3: Management of material topics		37
GRI 401: Employment 2016	401-2: Benefits granted to full-time employees that are not offered to temporary or part-time employees		37











#### SASB

	CODE AND METRIC	COMMENT	PAGE
Greenhouse Gas Emissions	EM-MD-120a.1: Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs), and (4) particulate matter (PM10)		26
	EM-MD-540a.4: Discussion of management systems used to integrate a culture of safety and emergency preparedness across the value chain and throughout project lifecycles		45
	EM-EP-110a.1: Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations		26
Biodiversity impacts	EM-EP-160a.1: Description of environmental management policies and practices for active sites		29
	EM-EP-160a.2: Number and aggregate volume of hydrocarbon spills, volume in Arctic, volume impacting shorelines with ESI rankings 8-10, and volume recovered		30
	EM-EP-160a.3: Percentage of (1) proved and (2) probable reserves in or near sites with protected conservation status or endangered species habitat		28 and 29
Activity Metrics	EM-EP-000.A: Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas		5
	EM-EP-000.B: Number of offshore sites	zero	
	EM-EP-000.C: Number of terrestrial sites		8



### **ADVISORIES & DISCLAIMERS**



### **Unaudited Information and External Verification**

The information presented herein has not been subject to an independent verification or assessment other than with respect to certain financial information audited as part of the audit of the consolidated financial statements for the year ended December 31, 2021 and certain reserves information evaluated as part of the independent reserve assessment and evaluation with an effective date of December 31, 2021. The audited consolidated financial statements and accompany notes of the Company as at and for the years ended December 31, 2021 and December 31, 2020 can be found on SEDAR at www.sedar.com or www.alvopetro.com. Additional information on the Company's reserves as of December 31, 2021 is included in the Annual Information Form for the Company which has also been filed on SEDAR (www.sedar.com) and is also available on www.alvopetro.com.

#### **BOE** Disclosure

The term barrels of oil equivalent ("boe") may be misleading, particularly if used in isolation. A boe conversion ratio of six thousand cubic feet per barrel (6 Mcf/bbl) of natural gas to barrels of oil equivalence is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. All boe conversions in this Report are derived from converting gas to oil in the ratio mix of six thousand cubic feet of gas to one barrel of oil.

### **Forward looking statements**

Certain information provided in this Report constitutes forward-looking statements. The use of any of the words "will", "expect", "intend" and other similar words or expressions are intended to identify forward-looking information. Forward-looking statements involve significant risks and uncertainties, should not be read as

guarantees of future performance or results, and will not necessarily be accurate indications of whether or not such results will be achieved.

A number of factors could cause actual results to vary significantly from the expectations discussed in the forward-looking statements. These forwardlooking statements reflect current assumptions and expectations regarding future events. More particularly and without limitation, this Report contains forward-looking statements concerning the plans relating to the Company's operational activities, potential hydrocarbon pay in the 182-C1 well and the 183-B1 well, exploration and development prospects of Alvopetro, future results from operations, the expected natural gas price, gas sales and gas deliveries under the Company's long-term gas sales agreement, projected financial results, the Company's plans for dividends in the future, future capital and operating costs,

the expected timing and outcomes of certain of Alvopetro's testing activities, future production and sales volumes, proposed exploration and development activities and the timing for such activities, sources and availability of capital, capital spending levels and anticipated royalty reductions.

Forward-looking statements are necessarily based upon assumptions and judgments with respect to the future including, but not limited to, equipment availability, the timing of testing the 182-C1 well and the 183-B1 well and the results from such testing, the success of future drilling, completion, recompletion and development activities, foreign exchange rates, the outlook for commodity markets and ability to access capital markets, the impact of the COVID-19 pandemic, the performance of producing wells and reservoirs, well development and operating performance, the timing of regulatory licences

and approvals, general economic and business conditions, forecasted demand for oil and natural gas, weather and access to drilling locations, the availability and cost of labour and services, environmental regulation, including regulation relating to hydraulic fracturing and stimulation, the ability to monetize hydrocarbons discovered, the regulatory and legal environment and other risks associated with oil and gas operations. Actual results achieved during the forecast period will vary from the information provided herein as a result of numerous known and unknown risks and uncertainties and other factors. In addition, the declaration, timing, amount and payment of future dividends remain at the discretion of the Board of Directors.

Although we believe that the expectations and assumptions on which the forward-looking statements are based are reasonable, undue reliance should not be placed on the forward-looking statements because we can give no assurance that they will prove to be correct. Since forward looking statements address future events and conditions, by their very nature they involve inherent risks and uncertainties. Actual results could differ materially from those currently anticipated due to a number of factors and risks. These include, but are not

limited to, risks associated with the oil and gas industry in general (e.g., operational risks in development, exploration and production; delays or changes in plans with respect to exploration or development projects or capital expenditures; the uncertainty of reserve estimates; the uncertainty of estimates and projections relating to production, costs and expenses, reliance on industry partners, availability of equipment and personnel, uncertainty surrounding timing for drilling and completion activities resulting from weather and other factors, changes in applicable regulatory regimes and health, safety and environmental risks), commodity price and foreign exchange rate fluctuations and general economic conditions.

Certain of these risks are set out in more detail in our Management's Discussion and Analysis ("MD&A") for the year-ended December 31, 2021, and in our 2021 Annual Information Form, both of which have been filed on SEDAR and can be accessed at <a href="www.sedar.com">www.sedar.com</a>. Except as may be required by applicable securities laws, Alvopetro assumes no obligation to publicly update or revise any forward-looking statements made herein or otherwise, whether as a result of new information, future events or otherwise.

### Non-GAAP and other Financial Measures

This Reports contains references to various non-GAAP financial measures, non-GAAP ratios, capital management measures and supplementary financial measures as such terms are defined in National Instrument 52-112 Non-GAAP and Other Financial Measures Disclosure. Such measures are not recognized measures under GAAP and do not have a standardized meaning prescribed by IFRS and might not be comparable to similar financial measures disclosed by other issuers. While these measures may be common in the oil and gas industry, the Company's use of these terms may not be comparable to similarly defined measures presented by other companies.

The non-GAAP and other financial measures referred to in this report should not be considered an alternative to, or more meaningful than measures prescribed by IFRS and they are not meant to enhance the Company's reported financial performance or position. These are complementary measures that are used by management in assessing the Company's financial performance, efficiency and liquidity and they may be used by investors or other users of this document for the same purpose. For more information with respect to

financial measures which have not been defined by GAAP, including reconciliations to the closest comparable GAAP measure, see the "Non-GAAP Measures and Other Financial Measures" section of the Company's MD&A for the three and twelve months ended December 31, 2021 and our most recent MD&A, each of which may be accessed through the SEDAR website at <a href="www.sedar.com">www.sedar.com</a> and also on our website at <a href="www.sedar.com">www.sedar.com</a>.

### Reserves and Resources disclaimer

The Report includes certain information contained in Alvopetro's December 31, 2021 reserves based upon the independent reserve assessment and evaluation prepared by GLJ Ltd. ("GLJ") dated March 7, 2022 with an effective date of December 31, 2021 (the "GLJ Reserves and Resources Report"). The GLJ Reserves and Resources Report disclosure included herein represents only a portion of the disclosure required under NI 51-101.

For additional details, see our news release dated March 8, 2022. Full disclosure with respect to the Company's reserves as at December 31, 2021 is contained in the Company's annual information form for the year ended December 31, 2021 which has been filed on SEDAR (<a href="https://www.sedar.com">www.sedar.com</a>).



All net present values in this press release are based on estimates of future operating and capital costs and GLJ's forecast prices as of December 31, 2021. The reserves definitions used in this evaluation are the standards defined by the Canadian Oil and Gas Evaluation Handbook (COGEH) reserve definitions and are consistent with NI 51-101 and used by GLJ. The net present values of future net revenue attributable to the Alvopetro's reserves estimated by GLJ do not represent the fair market value of those reserves.

Other assumptions and qualifications relating to costs, prices for future production and other matters are summarized herein.

The recovery and reserve estimates of the Company's reserves provided herein are estimates only and there is no guarantee that the estimated reserves will be recovered.

Actual reserves may be greater than or less than the estimates provided herein. Possible reserves are those additional reserves that are less certain to be recovered than probable reserves. There is a 10% probability that the quantities actually recovered will equal or exceed the sum of proved plus probable plus possible reserves.

### **Testing and Well Results**

Data obtained from the 182-C1 well and the 183-B1 well identified in this Report including hydrocarbon shows, open-hole logging, net pay and porosities, should be considered to be preliminary until testing, detailed analysis and interpretation has been completed. Hydrocarbon shows can be seen during the drilling of a well in numerous circumstances and do not necessarily indicate a commercial discovery or the presence of commercial hydrocarbons in a well. There is no representation by Alvopetro that the data relating to the 182-C1 well and the 183-B1 well contained in this Report is necessarily indicative of long-term performance or ultimate recovery. The reader is cautioned not to unduly rely on such data as such data may not be indicative of future performance of the well or of expected production or operational results for Alvopetro in the future.



### **Abbreviations**

The following is a list of abbreviations used in this Report:

**\$** = United States dollar

**2P** = proved plus probable reserves

**ANP** = The National Agency of Petroleum, Natural Gas and Biofuels of Brazil

**boe** = barrels of oil equivalent

**boepd** = barrels of oil equivalent per day

**BRL** = Brazilian Real

**C\$** = Canadian dollar

 $\mathbf{CO_2}\mathbf{e}$  = carbon dioxide equivalent

**ESG** = environmental, social and governance

**GHG** = greenhouse gas

**LNG** = liquified natural gas

**m**<sup>3</sup> = cubic metre

Mcf = thousand cubic feet

**Mcfpd** = thousand cubic feet per day

**MMboe** = million barrels of oil equivalent

**MMBtu** = million British thermal units

**MMcf** = million cubic feet

**MMcfpd** = million cubic feet per day

**MW** = Megawatt

**NGLs** = natural gas liquids

**UPGN Caburé** = Alvopetro's natural gas treatment facility

 $tCO_2e$  = tons of  $CO_2$  equivalent

# CONTINUOUS IMPROVEMENT

GRI 102-3



At Alvopetro, we recognize sustainability reporting as an evolving process, and are committed to continuously improve our transparency with each annual Sustainability Report. We are pleased to share our sustainability priorities and performance metrics through this report, and graciously welcome any feedback via the contact details below.

### **Alvopetro Energy Ltd.**

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Find out more at www.alvopetro.com



**Alvopetro Energy Ltda** 



@alvopetroenergy



@Alvopetro



**Alvopetro Energy** 



Thank you for reading. Further information on this report and on our sustainability initiatives is available by contacting us at <a href="mailto:ESG@alvopetro.com">ESG@alvopetro.com</a>.



TSXV: ALV
OTCQX: ALVOF

