

# 2022 SUSTAINABILITY REPORT







# MESSAGE FROM OUR PRESIDENT AND CEO GRI 2-22



*"2022 was another record year for Alvopetro and we are now well positioned to execute on our multi-year growth strategy."*

Corey C. Ruttan  
President and CEO

We are pleased to present our second annual sustainability report highlighting our environmental, social and governance ("ESG") practices for the year ended December 31, 2022 and outlining our commitment to sustainability for the future. Alvopetro experienced another exceptional year in 2022, ending the year with over two and half years of continuous operations from our Caburé natural gas field. With rising commodity prices and record average daily sales, we generated funds flow from operations of \$50 million. This allowed us to repay all of our original project financing and increase our dividends to shareholders, all while building a strong balance sheet with cash and working capital of \$15 million as of December 31, 2022. With the strength of our existing operations and our financial resources, we are well poised to execute on our multi-year growth strategy while maintaining our dedication to our capital allocation model that balances stakeholder returns and organic growth, all while continuing our focus on our three key pillars of sustainability:

- » Responsibly supplying energy
- » Strengthening communities and our workforce
- » Minimizing our impact



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RESPONSIBLY SUPPLYING ENERGY

2022 was marked by a global energy crisis that fueled record inflation levels worldwide, exacerbating the need for energy security. Hydrocarbons continue to play a vital role in meeting global energy demand today and for the foreseeable future, ensuring a reliable and affordable source of energy. We believe that natural gas is a critical component of the energy mix, supporting an overall reduction in greenhouse (“GHG”) emissions compared to more carbon-intensive energy sources. Our long-term strategy is focused on building our natural gas platform in Brazil with a view to providing affordable energy for many years to come.

In 2022 our natural gas sales averaged 14.6 million cubic feet per day (“MMcfd”), an increase of 8% compared to 2021 and overall, our average daily sales, including natural gas liquids from condensate and oil, increased to 2,557 barrels of oil equivalent per day (“boepd”). While we are focused on growing our production base, we recognize the importance of doing so efficiently and responsibly. In 2022 we completed an expansion and upgrade of our gas treatment facility. The goal of this was two-fold: to make additional processing capacity available on a long-term and continuous basis and to promote energy efficiency in our midstream processing, which ultimately reduces the natural gas flared and optimizes condensate yields. In addition, we have now installed solar panels for lighting at 11 well sites and facilities which has reduced our reliance on diesel generators and contributes to an overall reduction in emissions.

WE ARE DEDICATED TO BEING

A RESPONSIBLE CORPORATE

CITIZEN AND CONTINUALLY

STRIVE TO MAKING A POSITIVE

DIFFERENCE IN THE COMMUNITIES

WHERE WE OPERATE AND FOR ALL

OF OUR EMPLOYEES



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## STRENGTHENING COMMUNITIES AND OUR WORKFORCE

We are committed to fostering an open and transparent dialogue with our neighboring communities and in supporting these communities in a sustainable way. We operate in rural communities characterized by extreme poverty and we are committed to having a positive impact on the lives of the residents. We look to utilize local suppliers wherever possible and in 2022, 53% of all goods and services were procured locally in Bahia state. In 2022 we focused on expanding our social investment programs, increasing spending 156% from 2021. With increased production levels, we paid \$3.8 million in government and landowner royalties, \$15.4 million in sales taxes and \$1.3 million in income taxes.

We recognize that everything we do would not be possible without the strength of our team. We are focused on building a diverse and inclusive organization and are proud to report that 33% of all of our employees are female and 38% of our senior leadership team is female. We are committed to creating training opportunities for all employees to not only improve the technical capabilities of the organization as a whole but also to ensure enrichment and advancement opportunities for our team. We do all of this while maintaining a safe and healthy work environment and we once again recorded no lost-time incidents in 2022.

## MINIMIZING OUR IMPACT

We firmly believe that minimizing our impact is a core principle that paves the way for long-term sustainable development. We recognize that all upstream development has an environmental impact. Recognizing this reality, our operations are guided by a commitment to minimize, offset, remedy and counteract the environmental consequences of our development. Drilling projects in 2023 at our Murucututu natural gas field include multi-well pad development to ensure greater operational efficiency and to minimize our environmental footprint. In addition, we continue to prioritize measures to preserve biodiversity and our tree and forest protection programs ensure our activities are restricted to already deforested areas wherever possible to ensure preservation of the Atlantic Forest. We have now partnered with a local conservation group to study the northeastern collared sloth and work to conserve and restore the sloth habitat in the Atlantic Forest.

## LOOKING TO THE FUTURE

Our strategy is to responsibly and efficiently supply energy over the long-term, generating shared value for all our stakeholders, while minimizing our impact on the environment. We have already invested in essential infrastructure and are well positioned to execute on our long-term strategy to unlock the natural gas potential in the State of Bahia. As we focus on our next phase of growth, we look forward to extending the already realized benefits for the local economy, communities and our valued shareholders. Our track record speaks for itself and we look forward to delivering on our multi-year growth plan.



**Corey C. Ruttan**  
President and CEO



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# 2022 AT A GLANCE

## 2022 KEY OPERATIONAL AND FINANCIAL HIGHLIGHTS

Record daily sales of 2,557 boepd (+8% from 2021) with **95% from natural gas**



Realized natural gas price of **\$11.07/Mcf** (+70% from 2021) and overall realized sales price of **\$68.04/boe** (+67% from 2022)



**Operating netback of \$59.43 per boe** (+78% from 2021) and operating netback margin of 87%

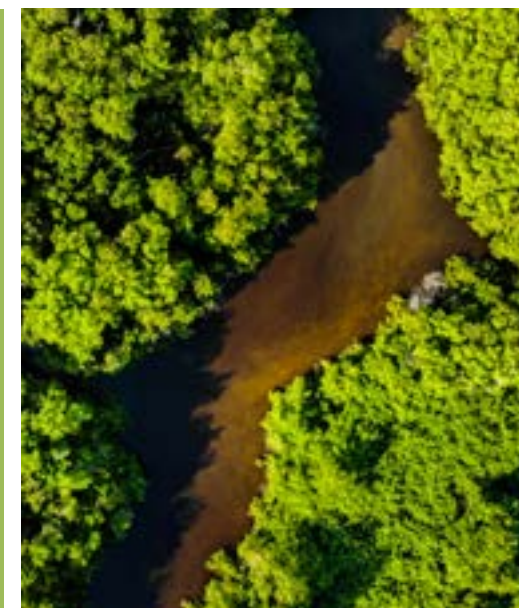


Increased quarterly dividends in Q1 2022 and again in Q4 2022, **declaring total dividends of \$0.36 per share** (+200% from 2021) for **total dividends of \$12.7 million**



Funds flow from **operations of \$49.9 million**

Working **capital increased to \$14.7 million** (+62% from 2021) and credit facility fully repaid





# 2022 AT A GLANCE

Zero

Lost Time  
Incident Rate  
(LTIR)




Social investment and conservation programs with **>600** beneficiaries and **\$0.1 million** in spending, a 156% increase from 2021



**420 hours**  
of training



**Six**  
photovoltaic lighting towers  
installed in 2022 and an additional  
**three**  
towers in 2023



**100%**  
of produced  
water  
reinjected



**Zero**  
environmental  
penalties



## 2022 ESG HIGHLIGHTS



Dedication to diversity,  
with women making up  
**38%**  
of our senior  
leadership team and  
**33%**  
of our executive team



Independent  
Board of Directors  
**5 of 6 members**

**100%**

of workforce trained  
in Code of Conduct



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## We deliver long-term value by focusing on three key pillars:

- » Responsibly supplying energy
- » Minimizing our environmental impact
- » Strengthening our communities and workforce

Our commitment is to achieve long-term success by growing our natural gas and oil 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. Our oil development is focused on minimizing our impact and we firmly believe that Brazil is a top contender for producing some of the world’s cleanest and most responsibly produced hydrocarbons.

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.

GRI 2-2

### GRI 2-28


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. 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



Any questions or comments on the information presented herein or on our sustainability efforts can be directed to [ESG@alvopetro.com](mailto:ESG@alvopetro.com)



	<div><b>RESPONSIBLY SUPPLYING ENERGY</b></div> <div>Our long-term strategy is focused on providing a continuous source of affordable energy for many years to come, meeting demand efficiently and responsibly</div> <div>Strategies</div> <div><ul style="list-style-type: none"><li>» Natural gas focused organic growth</li><li>» Strategic and efficient infrastructure</li><li>» Efficient and reliable operations</li><li>» Transparent and ethical policies and procedures</li><li>» Highest safety standards</li></ul></div>	<div><b>MINIMIZING OUR IMPACT</b></div> <div>Our operations are guided by a commitment to minimize, offset, remedy and counteract the consequences of our development</div> <div>Strategies</div> <div><ul style="list-style-type: none"><li>» Impact assessments</li><li>» Water use efficiency</li><li>» Biodiversity preservation</li><li>» Ecosystem restoration</li><li>» Emissions monitoring &amp; control</li></ul></div>	<div><b>STRENGTHENING OUR COMMUNITIES AND WORKFORCE</b></div> <div>We are dedicated to being a responsible corporate citizen and continually strive to making a positive difference in the communities where we operate and for all of our employees</div> <div>Strategies</div> <div><ul style="list-style-type: none"><li>» Community investment</li><li>» Fair labour practices</li><li>» Developing our team</li><li>» Stakeholder engagement</li><li>» Continuous improvement</li></ul></div>
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## EMPLOYEES

- » Staff meetings
- » Daily interactions
- » Internal communication
- » Quarterly corporate results and goals update



## CUSTOMER(S)

- » Commercial negotiations
- » Routine inter-office communication
- » Field operational interactions



## LENDERS

- » Monthly reports
- » Quarterly certifications
- » Board and Committee meetings
- » Ad hoc



## MEDIA

- » Press releases
- » Corporate website
- » Interviews
- » Emails



## INDUSTRY REGULATORS

- » Official letters
- » Formal regulatory reporting
- » Meetings
- » Public consultations



## PARTNERS

- » Daily interactions
- » Regularly scheduled meetings



## INVESTORS AND ANALYSTS

- » Conferences
- » Earnings calls/webcasts
- » Website
- » Social media
- » Press releases
- » Annual and quarterly reports
- » Annual shareholders' meeting
- » Feedback sessions
- » Direct interactions (emails, phone calls)



## SUPPLIERS

- » Meetings
- » Daily operational interactions



## LOCAL COMMUNITIES

- » Community townhall meetings
- » Community consultation
- » Community hearings
- » Communication campaigns
- » Mobile communication
- » Communication with community leaders
- » Social media
- » Household visits / interviews
- » Emergency hotline



## BRAZIL GOVERNMENT

- » Regulatory reporting
- » Meetings



## LANDOWNERS

- » Household visits
- » Phone calls
- » Community townhall meetings
- » Emergency hotline
- » In-person meetings



## UNION

- » Collective bargaining meetings



# MATERIALITY AND ESG PRIORITIES

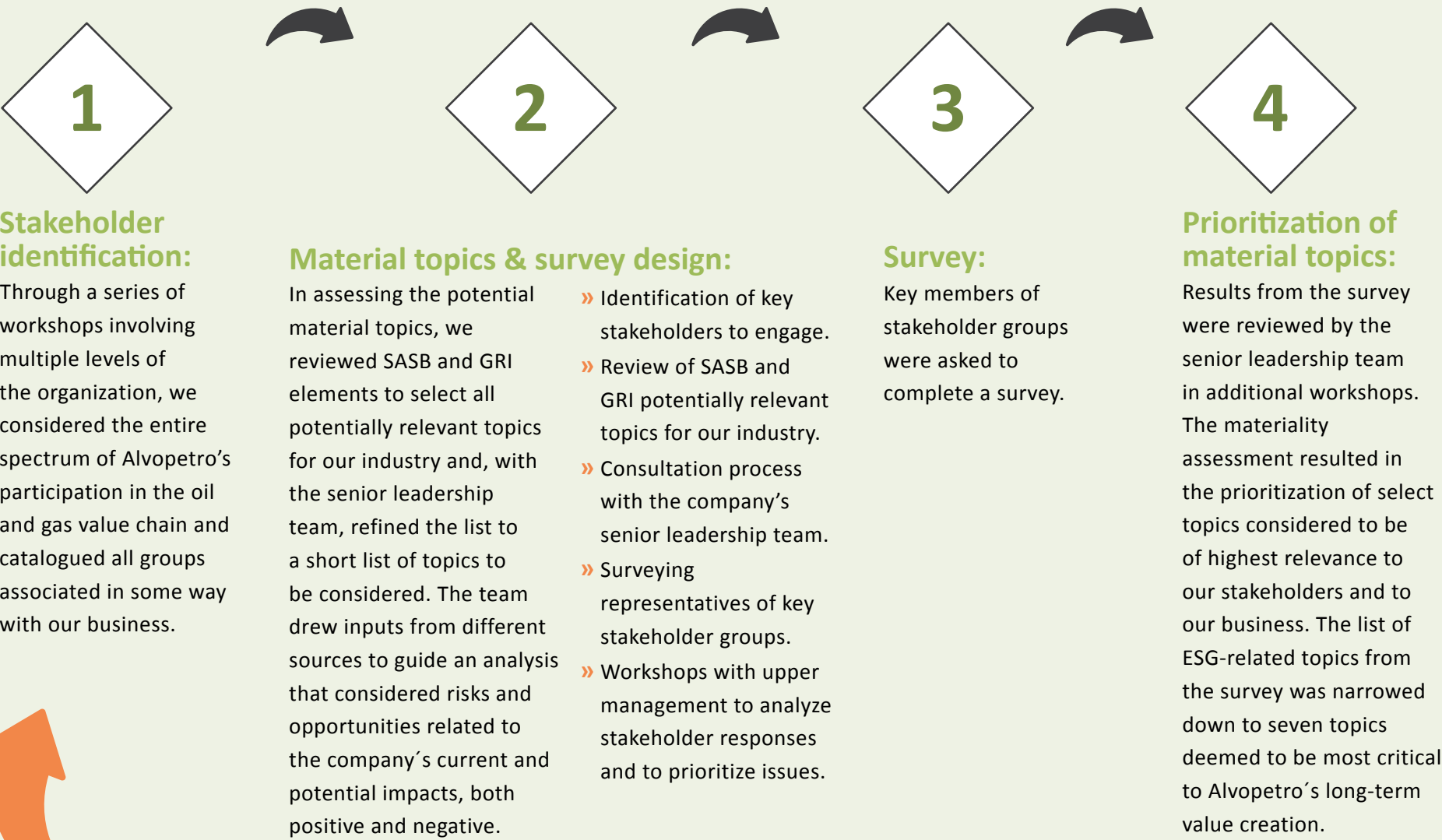
GRI 3-1 | 3-2

We performed our first materiality<sup>1</sup> assessment in 2021 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 and to our industry as a whole. The 2021 materiality assessment was conducted in four main stages.

In the first stage of the materiality assessment in 2021, we looked to identify our key stakeholders. Through a series of internal workshops, stakeholder groups were identified based on various criteria considering Alvopetro’s operations and entire value chain. 12 key groups were identified: employees, customers, investors, local communities, suppliers, lenders, government bodies, regulatory bodies, landowners, unions and partners.

<sup>1</sup> 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 alter 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.

## The materiality assessment was conducted in four main stages:



## 2022 Materiality Assessment Review



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In the second phase of our materiality assessment, we looked to identify material topics for our stakeholder groups. We reviewed different sectoral references and benchmarking involving materials published by companies in the sector (national and international) and guidance from SASB and GRI on potentially relevant topics in our sector. From this analysis, we reviewed the potential list of material topics and through internal consultation and workshops we reduced the potential list of topics for the materiality survey.

In the third stage of the assessment, we conducted the materiality survey with the identified stakeholder groups based on the list of potential material topics identified in the second stage. Stakeholders were asked to complete an anonymous survey and a total of 72 respondents completed the survey.

**Based on the survey results, in the last stage of the process, the senior leadership team reviewed the responses from the stakeholders and seven topics considered most relevant to the stakeholders across the areas of environmental, social and governance and established these topics as key priorities for Alvopetro’s long-term sustainable growth.**

For the 2022 year, we conducted a materiality review session with members of the senior leadership team to review the stakeholders and material topics identified in 2021 and consider whether any adjustments were necessary. It was determined that the seven key priorities identified in 2021 continued to be most relevant to Alvopetro and our stakeholders in 2022.



Alvopetro ESG Priorities





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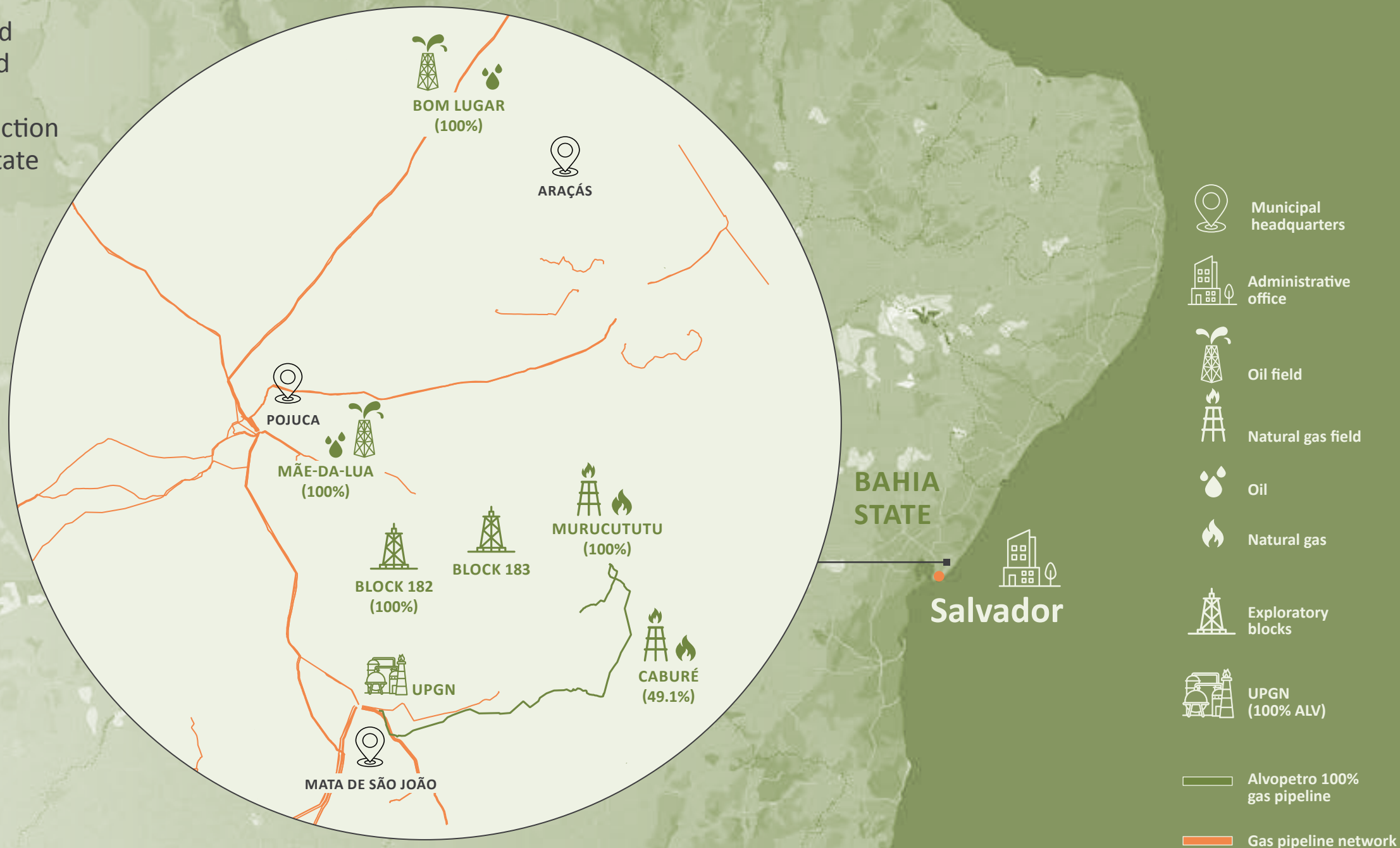
COMPANY OVERVIEW

Alvopetro UPGN

GRI 2-1



While we continue our efforts on growing our natural gas business in Brazil, we are also now focused on oil development at our Bom Lugar field. Whether developing oil or natural gas prospects, our primary goal is to do so responsibly and efficiently, creating shared value for all of our stakeholders, while actively minimizing our impact on the environment. We recognize the importance of integrating sustainable economic performance, environmental stewardship, and social responsibility into our operations. By aligning our actions with these principles, we strive to ensure a sustainable and balanced approach to our operations.





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## UPSTREAM

As at December 31, 2022, Alvopetro held interests in the Caburé and the Murucututu natural gas fields, 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 2022 production was from our Caburé natural gas field, with ongoing development of our Murucututu natural gas field and our Bom Lugar oil field expected to diversify our production base in 2023 and beyond.

**WE ARE COMMITTED TO PROVIDING ACCESSIBLE AND CLEANER ENERGY OPTIONS EVIDENCED BY OUR EFFORTS TO ENHANCE THE NATURAL GAS SUPPLY CHAIN AND CONTRIBUTE TO A MORE SUSTAINABLE ENERGY LANDSCAPE IN BAHIA**

## MIDSTREAM

Alvopetro’s share of natural gas from the Caburé natural gas field and the Murucututu natural gas field is shipped to our natural gas processing facility (the “UPGN”). Our Murucututu natural gas field connects via a 9 kilometre transfer pipeline to our 11 kilometre transfer pipeline from our Caburé field to the UPGN. The UPGN is owned and operated by Enerflex Ltd. (“Enerflex”), a world-leader in natural gas processing 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 the third quarter of 2022, the UPGN was expanded to increase the operational capacity to 500,000 m3/d (17.7 MMcfpd) while also improving the efficiency of the UPGN and reducing the overall natural gas flared on an ongoing basis.

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 agree-

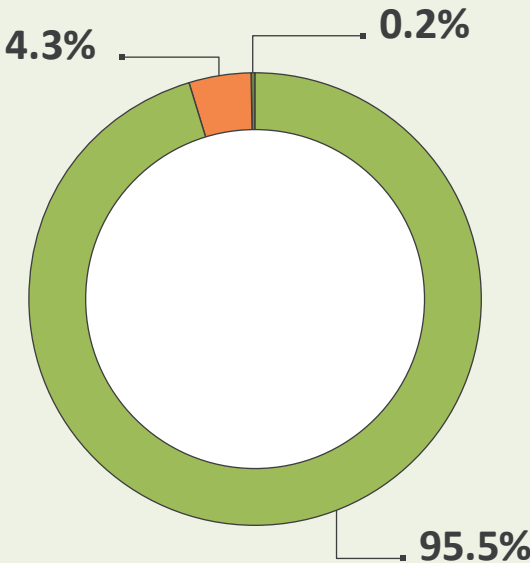
ment (“GSA”). The GSA was signed in May 2018 and commercial natural gas deliveries commenced from our Caburé natural gas field on July 5, 2020. Natural gas deliveries from our Murucututu natural gas field commenced in the third quarter of 2022. Processed natural gas is delivered to Bahiagás by way of a custody transfer and measurement facility (the “Bahiagás citygate”), at our UPGN location. Thereafter, gas is transferred to the distribution network for consumption by various end users, the largest of whom are located in the industrial complex of Camaçari, approximately 15 kilometres to the south of our project area.

From our fields to the Bahiagás citygate, our strategic midstream infrastructure has expanded and diversified the supply of natural gas for the residential and industrial markets in Bahia. This has enabled Alvopetro to provide an affordable source for energy and industrial heating processes, resulting in reduced emissions compared to other fossil fuel alternatives.



Murucututu  
Production Facility

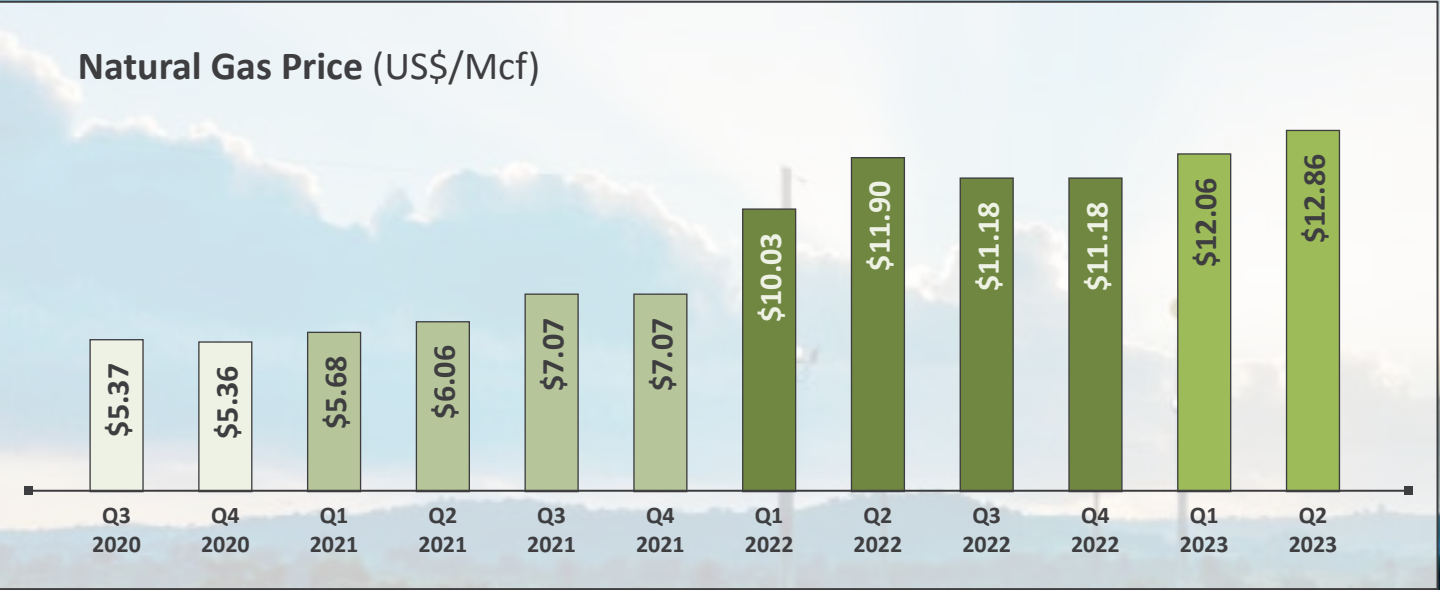
2022 Product Mix  
EM-EP-160a.1



-  **Natural gas**  
LOCAL MARKETS  
Commercial, residential and industrial clients
-  **Natural gas liquids (condensate)**  
LOCAL MARKETS  
Refineries, petroleum product end users
-  **Oil**  
LOCAL MARKETS  
Refineries







Flagship project in Brazil  
1<sup>st</sup> independently controlled UPGN

Breakthrough  
Gas Sales Agreement with local distributor

Operational capacity  
expanded to 500,000 m<sup>3</sup> /d (17.7 MMcfpd)





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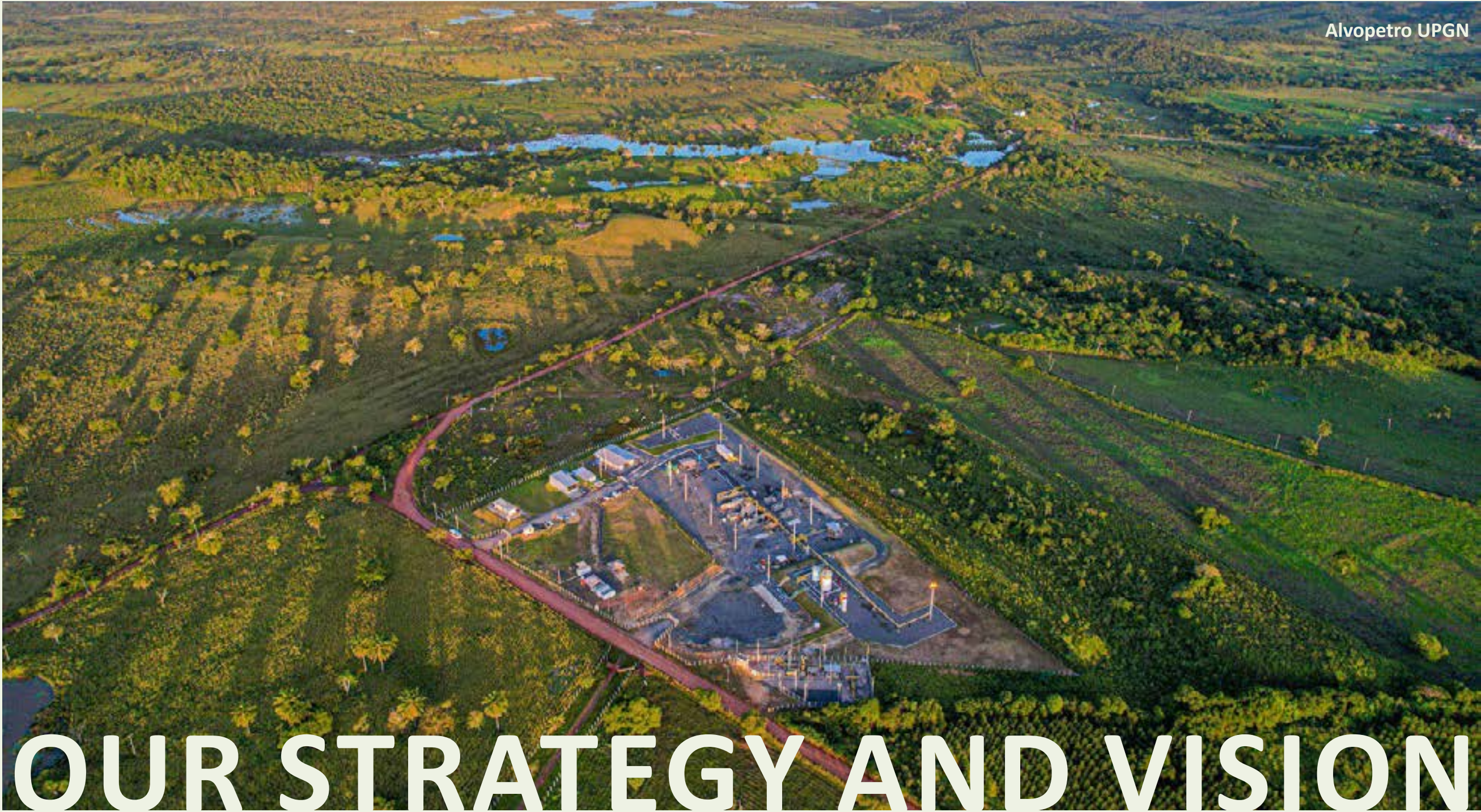
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Alvopetro UPGN



OUR STRATEGY AND VISION





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

Our strategy is to unlock the onshore natural gas potential in the state of Bahia in Brazil, building off the development of our Caburé and Murucututu natural gas fields 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

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. As we look to the future, we are focused on building a resilient business that is flexible and scalable for sustainable long-term growth to create even greater lasting benefits for our stakeholders.

WE ARE FOCUSED ON BUILDING A  
RESILIENT BUSINESS THAT IS FLEXIBLE  
AND SCALABLE FOR SUSTAINABLE  
LONG-TERM GROWTH



2. Non-GAAP Measure – See “Non-GAAP and Other Financial Measures” in the Advisories and Disclaimers section in this report.
3. Includes non-government royalties.
4. Excludes sales taxes of \$15.4 million in 2022 (2021 - \$8.7 million) which are netted against revenues in direct economic value generated.
5. Includes dividends declared to shareholders, interest on outstanding debt and effective interest on capital leases.





An integral part of our innovative culture is one of Alvpetro's core values to focus on continuous improvement and to learn from both our successes and failures. At the conclusion of all projects, we carry out extensive discussions with all team members and service providers to evaluate successes and search for lessons learned and possible improvements.



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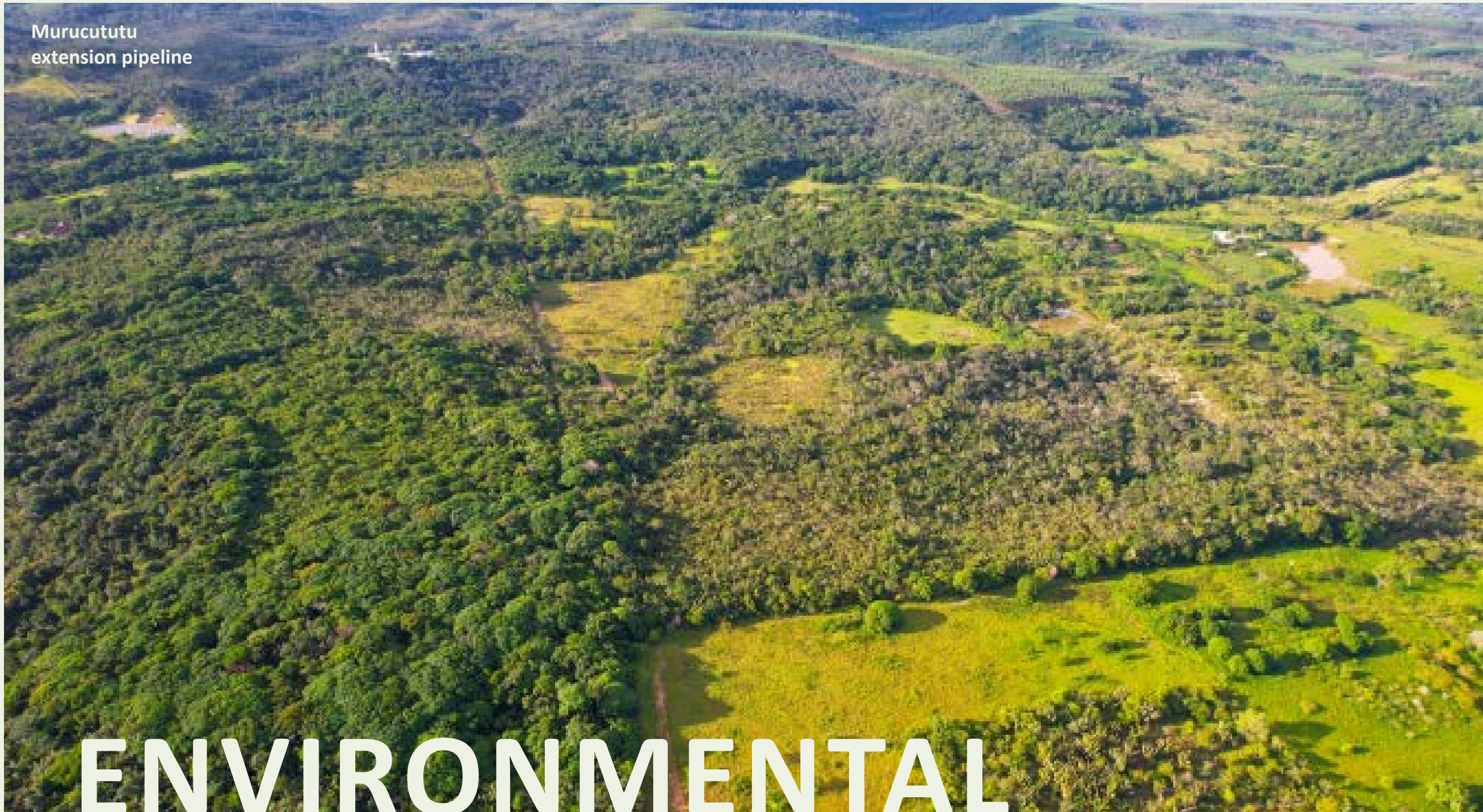
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Murucututu  
extension pipeline

# ENVIRONMENTAL

## BENEFITS OF LOCALLY PRODUCED NATURAL GAS

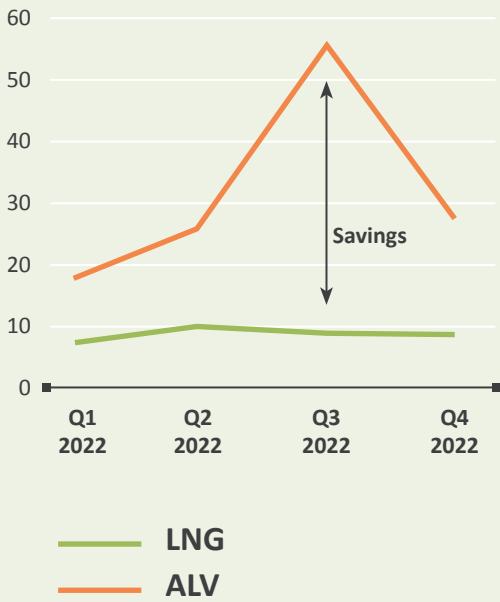
**Increasing local natural gas supply reduces reliance on other forms of more carbon-intensive energy sources and supports an overall reduction in GHG emissions, creating a positive economic and social impact. Gas delivered by Alvopetro into the Bahia state distribution network serves a variety of uses, 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.**

Brazil is the largest oil producer in in South America and the 9th largest globally, yet it is also the largest importer of natural gas in South America, with all imported supplies originating from Bolivia via pipeline and from imported liquified natural gas (“LNG”). In 2022 Brazil imported 34% of all natural gas consumed<sup>6</sup>. And, while natural gas consumption declined slightly in 2022, it is expected to rebound in the coming years and reach an all-time high level by 2030. This past year, the world has grappled with the consequences of rising costs of energy and overall inflationary pressures across all aspects of demanded goods and services.

While importing natural gas and LNG is an important component of Brazil’s energy mix, especially during periods of high demand, such imported gas is typically much more expensive than locally supplied natural gas further aggravating cost concerns in periods of rising costs. While it is expected that Brazil will continue to rely on imported natural gas, any natural gas that can be sourced locally can be significantly beneficial. In 2022, the natural gas supplied by Alvopetro was priced at approximately 43% of what importers paid for LNG through Brazil’s regasification terminals<sup>7</sup>, representing a 57% savings.

LNG VS. ALV (US\$/MMBTU)



**57%** average savings in 2022 on ALV natural gas compared to imported LNG

6. MME, 2022. Boletim de Acompanhamento da Indústria de Gás Natural.

7. MME, 2022. Boletim de Acompanhamento da Indústria de Gás Natural.



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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 such as Alvopetro’s production, 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.

With the anticipated growth in energy demand in Brazil, the availability of natural gas from independent local suppliers, such as Alvopetro, is expected to play a crucial role in driving economic prosperity for the state of Bahia. Alvopetro’s established reputation for providing affordable energy in a safe and reliable manner positions us well to contribute to the region’s development. By expanding the supply of natural gas, Alvopetro aims to bring about positive gains for society at large, ensuring access to a sustainable and efficient energy source that can support economic growth and improve the well-being of the community.



Murucututu  
extension pipeline

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.



EMISSIONS MONITORING AND

CONTROL AND ENERGY EFFICIENCY

GRI 302-1 | 305-1 | 305-2 | 305-4 | 3-3

EM-MD-120a.1 | EM-EP-110a.1

Alvopetro measures 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, flared natural gas and fugitive emissions from processing equipment<sup>8</sup>. Our UPGN was designed and implemented using industry best practices. The UPGN is primarily powered by high-efficiency natural gas-fueled generators or powered from the local electrical grid. Increased fuel gas efficiency means reduced emissions and greater energy availability and affordability. The field also does not currently require compression, minimizing field consumption/shrinkage.

To reduce the volatility and maximize recovery of natural gas liquids, our treatment plant utilizes a condensate stabilization system and VRU, among other technologies. The VRU 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 while also al-



lowing gas that would normally be flared to be recycled back into the process and sold to the market, a win-win cost-efficient solution with environmental and financial benefits.

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.

**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 at all our sites; and**
- **Detect leaks or integrity issues that could lead to fugitive emissions.**

8. 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](https://www.epa.gov/sites/default/files/2020-09/documents/5.3_natural_gas_processing.pdf)



OUR ENVIRONMENTAL IMPACT MITIGATION

EFFORTS PERMEATE ALL PROJECT STAGES,

FROM PLANNING TO DECOMMISSIONING





The data on Flaring, Venting and Energy table may differ from the 2021 report due to recalculations based on methodology changes and clerical errors

ENVIRONMENTAL MANAGEMENT

GRI 3-3

Alvopetro is committed to environmental preservation, the conscientious use of natural resources and to minimizing the negative impacts of our operations and projects on the environment and the communities in which we operate. We use best industry practices and strictly follow the environmental licensing processes and we seek to preserve environmentally sensitive areas beyond what is required by law and environmental licenses. All of our environmental procedures are established by specialists and approved by competent bodies. The results support the environmental licensing processes, presented and approved by regulatory and supervisory government bodies.

Our projects and operations are preceded by environmental impact assessment studies prepared by specialized and multidisciplinary consultants specialized in assessing the impact on water, biological, land, air and socioeconomic environments. The company’s highly experienced environmental team is involved throughout all stages of our projects, from planning to execution, including decommissioning, and works diligently to minimize impacts and protect environmentally sensitive areas, preserving the region’s ecological balance.



OUR MAIN PROGRAMS FOR PROTECTING AND MANAGING THE ENVIRONMENT INCLUDE:

- Solid waste and effluent management program
- Recovery program for impacted areas
- Environmental education program
- Wild Fauna Rescue and Management Program
- Flora Rescue Program
- Erosive Process Control Plan
- Water resources monitoring program

WE SEEK TO PRESERVE ENVIRONMENTALLY SENSITIVE AREAS BEYOND WHAT IS REQUIRED BY LAW AND ENVIRONMENTAL LICENSES





## BIODIVERSITY AND CONSERVATION

GRI 304-1, 3-3

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 and to enhance and restore the biodiversity in ecosystems where we operate. 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 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. One of the critical components of our conservation strategy is implementing less invasive construction methods. In pipeline construction, wherever possible, we follow existing rights-of-way for pipelines or utilize directional boring, which is a method of installing a gas pipeline that does not use trenches, which significantly reduces the environmental impact of the project.



In order to promote the maintenance and conservation of the fauna diversity present in the region of our projects, we implemented our Wild Fauna Rescue and Management Program. This program starts with training for employees involved in the project, aiming to raise awareness about the topic, inserting and expanding the network of actors in the participation and efficiency of the rescue and translocation of species. A thorough wildlife impact assessment is completed prior to commencing operations 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. If any animals are encountered, trained biologists are engaged to facilitate manual rescue with the help of appropriate equipment and are taken to a legally protected reserve area that will not suffer interventions.



We minimize tree and vegetation removal wherever possible and where plant specimens must be removed, our Flora Rescue Program ensures such specimens are subsequently replanted in areas of permanent preservation with similar ecological characteristics. The entire process is supervised by a qualified professional, following current regulations and technical protocols, and care is taken to minimize the impact on the flora.

### Preserving Biodiversity in our Projects

In 2022, we completed the 3.3 km extension of our Murucututu pipeline and completed the Mur-

cututu facility installation and construction, both of which are located in the Atlantic Forest Biome. When planning projects, a dedicated team of environmental specialists evaluated ways to mitigate our impact and we used 59.5% of grazing area and kept 21.1% of area preserved. Along the route of the gas pipeline, the environmental team cataloged 82 species of fauna and 16 species of plants and vegetation. The sighted species were left untouched in their natural habitat. No species classified as Critically Endangered or Endangered by the IUCN Red List were found in the study area.

BIODIVERSITY & CONSERVATION INITIATIVES:	2022	2021
Extent of area studied (total and/or Atlantic Forest vegetation, in hectares)	2,000	1,424
Diversity of species logged during environmental study	68	389
Forested areas preserved in project planning and execution (hectares)	0.2	0.5
Percentage of proved and probable reserves in or near sites with protected conservation status or endangered species habitat	0	0
Area (in hectares) of sites owned, leased or managed in or adjacent to protected areas and/or key biodiversity areas (KBA)	0	0
Sanctions due to environmental non-compliance	0	0
Hectares preserved in the areas of influence of our assets	31.4	19.7

CASE STUDY

Sloth & biodiversity conservation project

The northeastern collared sloth

We make a difference

in biodiversity conservation

Alvopetro is aware of the impacts of our operations on biodiversity and one of the key pillars in our sustainability strategy is minimizing our impact wherever possible. In 2022 we initiated a partnership with Instituto Tamanduá to promote conservation efforts for the northeastern collared sloth and restoration efforts for the sloths’ natural habitat through reforestation in the Atlantic Forest.

The northeastern collared sloth (*Bradypus torquatus*) belongs to one of the oldest groups of mammals. It is a folivorous species, which feeds almost exclusively on the leaves of a relatively small number of plants. They are solitary animals, which are found only in the breeding season. Females give birth to a single pup per year, which is attached to the mother’s body for months, until it is ready to live alone. The sloth is classified as endangered, in the “Vulnerable” category, by the International



Union for Conservation of Nature (IUCN). Deforestation, expansion of agricultural areas, pastures and urban expansion – with the consequent loss of its habitat – are the main threats to the species. Its area of occurrence is restricted to the Atlantic Forest of northeastern Brazil, where its distribution is discontinuous. Currently, the south of the state of Bahia is the main stronghold of the species.

There is still little information about the biology, ecology and genetics of the different populations of the species. Therefore, collecting data on biology, ecology, biometrics, genetics and the main threats that affect the collared sloth in Bahia is essential to review the conservation status of the species for Brazil. Alvopetro, in partnership with the Tamanduá Institute, implemented the northeastern collared sloth conservation project. The Project aims to study the main threats that the species suffers in the region and put into practice priority conservation strategies, thus aiming to reduce the risk of extinction of this animal.

The activities carried out in this project will include efforts focused on reforestation, essential for the conservation of sloths and several other species of the Atlantic Forest in the northeast, the construc-



tion of fauna crossings on highways, the creation of a germplasm bank of the species and the environmental education of the community that lives in the area where the collared sloth occurs, using this beloved animal as a symbol for the preservation of the Atlantic Forest.



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## Water Stewardship

GRI 303-5 | 3-3

### We have a duty towards responsible water management

Alvopetro recognizes that water is a shared local resource and that we have a duty to manage it responsibly, minimizing our impact on local water availability. Although Alvopetro’s operations are not primarily located in areas characterized by high levels of water scarcity<sup>9</sup>, our region’s microbasins are critical to ensuring water security as Brazil potentially faces increasing levels of water stress and longer periods of drought. In strict compliance with environmental regulations, Alvopetro does not directly extract water from surface water bodies and the water used in our administrative and production processes is purchased from companies licensed by the environmental agency.

Understanding our water use patterns helps us identify possible inefficiencies and impacts to water supply at a regional level. While our operations do not have a significant impact on the availability of water in the region, water is integral throughout all aspects of our operations. Our daily practices require the responsible use of water as well as disposal of water. The main impact to water associated with our operations is the potential release of effluents with a concentration of salinity, chlorine and hydrocarbons in the water resources surrounding our areas of operation. Therefore, special attention is given to avoiding contamination through storage tank safety de-

vices, as well as maintenance of the drainage system. In addition, Alvopetro will periodically monitor the quality of surface and groundwater around our projects, strictly complying with operational and legal requirements.

In our projects, we implement the Erosive Process Control Plan which requires measures to control erosion and carry-over to new and existing sites to avoid impact on drainage basins and waterways, or any nearby water source. 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. 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. In the operation phase, these inspections continue as routine practice. The erosion control measures implemented by Alvopetro include permanent rainwater drainage systems, trench breakers during trenching, water diversion ditches, outlet dissipators and silt barriers.

**In 2022 our water usage increased to 3.7 megalitres (from 0.6 megalitres in 2021) as a result of drilling operations in the year.**



WATER	2022	2021
Water usage (Megalitre)	3.7	0.6



9. Per WRI’s Water Risk Atlas Tool

### REINJECTION OF PRODUCED WATER

Produced water from our operated wells is reinjected into our disposal well in the Bom Lugar field, where we also receive produced water from third parties for disposal. 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 metered for discharge reporting in compliance with applicable state and federal regulations.

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## WASTE AND EFFLUENT MANAGEMENT AND SPILL PREVENTION

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. Examples of 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. 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. Our HSE team is responsible for classifying waste to determine which procedure to follow and all stages of waste



management are monitored by the HSE team. The team ensures any hazardous waste is carefully documented at the point of generation and transported by licensed third parties to licensed sites for proper disposal. 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. The collection, transport and final destination of our solid waste and effluents are carried out by outsourced companies, duly qualified by the corresponding environmental agency, in accordance with a solid waste management program that supports our environmental management license processes. A portion of domestic effluents from our operations is treated through a biodigestion system licensed by the environmental agency, with the remaining effluent sent Empresa Baiana de Águas, the sewage treatment network. Industrial effluents are sent to an effluent treatment station, with the requirement of proof of licensing to carry out the activity and proof that the final destination complies with the legislation.

The majority of waste generated from our activities are drilling cuttings and the associated effluents. With three exploration wells drilled in 2022, our hazardous waste increased to 2,179 metric tons compared to 9 metric tons in 2021. The

WASTE & EFFLUENTS	2022	2021
Hazardous waste (metric tonnes)	2,179	9
Effluents Generated (metric tonnes)	1,407	19

drilling cuttings are generated and carried out of the well through the “drilling mud”, which is composed of chemically prepared fluids, with specific properties to carry the cuttings, cool the drilling bit and react to the conditions of the geological formations intersected by the well. Outside the well, the drilling cutting go through a sieving and centrifugation process, with the purpose of separating the solid residue from the liquid effluent. Drilling fluid is continuously re-used during the drilling process as much as possible which is both cost effective and also reduces waste and effluents generated. The separated cuttings, characterized as hazardous class I waste, are sent to an environmentally qualified and licensed landfill for safe disposal. The effluent, once it can no longer be reused in the drilling process, is sent to an industrial effluent treatment station, which performs a chemical treatment, proceeding with a further separation of the fluid and the mud. The mud is sent to the class I industrial landfill, like cuttings, and the remaining fluid is treated in accordance with regulations prior to disposal.

We are committed to preventing spills of hazardous waste, oil and condensate and have procedures in place to prevent spills from occurring and also to prepare appropriate responses to mitigate the impact of any spills should they occur despite our best efforts. In 2022 we had no reportable spills of hazardous waste, oil or condensate.

### RECLAMATION

We have a comprehensive abandonment and decommissioning program for all wells and facilities and follow strict environmental regulations in place in Brazil. All abandonment and reclamation efforts also include land restoration efforts to restore all sites to their original condition, remediating soil and replanting native vegetation.



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At the core of our daily interactions is an overarching conviction that we have a duty to be a good corporate citizen. We are committed to upholding the strongest ethical standards, actively supporting our team and the local communities where we operate, all while fostering meaningful relationships that positively impact the well-being of society as a whole.

## OUR TEAM

GRI 2-7 | 2-30 | 401-1 | 405-1 | 3-3

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



Alvopetro Headcount (Net full-time employees), as of December 31, 2022



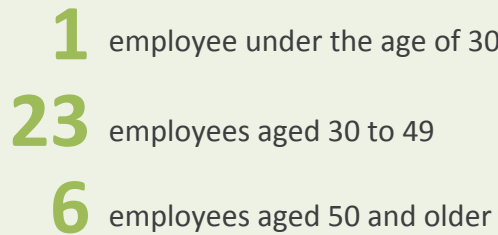
100%  
of employees in Brazil  
are covered by a collective  
bargaining agreement



“We recognize our team is our greatest asset and we foster a workforce that thrives on fairness, inclusivity and diversity”

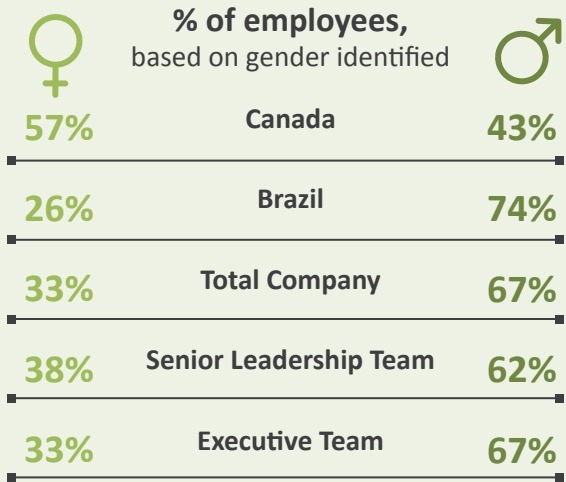
Frederico Oliveira  
Country Manager, Brazil

Age of Alvopetro employees, as of December 31, 2022



The median  
age of Alvopetro  
employees is  
43 years old

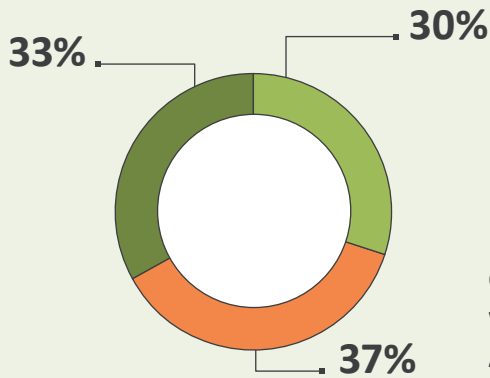
### Gender diversity



38%  
of our Senior  
Leadership Team  
are women

33%  
of our Executive  
Team are women

### Years of Service



33%  
of our employees have  
worked continuously for  
Alvopetro for over 10 years

< 5 years
 5 - 9 Years
 > 10 years



## HEALTH AND SAFETY

GRI 403-1 | 403-3 | 403-5 | 403-6 | 403-9 | 3-3



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. Our health and safety management system is constantly evolving, in order to incorporate the best practices to ensure a healthy and safe work environment and continuously improve our safety culture. Leaders, employees and our contractors and other third parties actively participate in improving the conditions of safety and well-being in the work environment. Everyone has the right to interrupt any activity or operation based on the perception of risk or threat to safety. We act preventively to mitigate or eliminate risks at their source and maintain a risk management process that covers all our projects and operations, with the development of Hazard and Operability Studies (HAZOPs), Risk Identification studies (HAZIDs) and performing task-risk analyzes (APR).

All incidents are investigated thoroughly and corrective and comprehensive actions are defined to prevent their recurrence. In this context, the Company works hard to increasingly deepen and improve the quality of investigations, seeking every day greater assertiveness and effectiveness of the actions implemented.

Alvopetro minimizes health and safety risks by implementing processes and engaging in positive practices that assist the team in their identification and mitigation. Our HSE management system is also applicable to all of our contractors.



Processes and practices undertaken include, but are not limited to:

- Daily safety meetings with employees, contractors and other suppliers at the workplace;
- Hazard Operability Studies (HAZOPs);
- Work permit system (PT);
- Preliminary Risk Analyses;
- Management of change reviews;
- Incorporating lessons learned;
- Integrity assessments in the construction of wells with rigorous inspections;
- Systemic verification of the integrity of pipelines through routine pigging operations;
- Integrity assessment of facilities through inspection programs and continuous leak detection;
- Employee training to execute routine tasks and make safe decisions in their day-to-day activities;
- Conducting safety tours and inspections in operational areas by leadership in order to promote a safety culture;
- BDS – Daily bulletin containing all information related to project safety, such as deviations, incidents, opportunities for improvement;
- POB – Workers’ shift compliance control to ensure that the shift allowed by law is not exceeded;
- Pre-Spud – Meeting with all contractors involved in the projects, with the aim of presenting Alvopetro's policies and promoting a culture of safety;
- Post-Spud – Presentation of the results obtained in the "lessons learned" from projects.

## 2022 highlights



100 safety training hours



2,002 hours of safety conversations



1,705 preliminary risk analyses conducted



393 safety inspections conducted by Alvopetro contractors



3 tabletop emergency simulations with Alvopetro employees



16 emergency simulations by Alvopetro contractors

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HEALTH AND SAFETY METRICS	ALVOPETRO EMPLOYEES		CONTRACTORS	
	2022	2021	2022	2021
Total Recordable Incident Rate (TRIR)	4	0	5	0
Hours	48,032	36,054	395,381	177,157
Accidents with Lost Time	0	0	0	0
Accidents without Lost Time	0	0	0	0
Lost time injury frequency (LTIF) – per million hours worked	0	0	0	0
Number of emergency simulations – Tabletop and in-person	3	0	16	3
Number of internal workforce incidents (OHS)	1	0	9	0
Number of fatalities (excluding illness fatalities)	0	0	0	0
Fatal Accident Rate (excluding illness fatalities)	0	0	0	0

Our operations are audited by an independent company to verify compliance with the guidelines. Identified nonconformities are addressed and monitored by operational leadership and the HSE team.

We periodically hold critical analysis meetings and lessons learned from projects, with the participation of top management, managers, the HSE team and contracted companies, to assess our indicators and establish actions for continuous improvement for our system. All incidents or near accidents are investigated and corrective and comprehensive actions are defined to prevent their recurrence.

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. In 2022 we further expanded our Operational Safety Management System, including improved documentation, safety audit team formation and training and planning for internal audits of suppliers and contractors. Internal audits were carried out in partnership with our Caburé operating partner and Enerflex and other third party service companies. We also continually participate in external safety audits as part of regulatory inspections.

ZERO LOST-TIME

INCIDENT RATE

IN 2022

CASE STUDY

Internal Accident

Prevention Committee



Alvopetro has an internal accident prevention committee (Comissão Interna de Prevenção de Acidentes, “CIPA”), which meets once a month to review risks or concerns raised by the team, discuss incidents and conduct follow-ups, site inspections, accident investigations and ensure regulatory compliance. The committee includes four members, two of which are elected members by other employees and two of which are appointed by the Company.

“CIPA is a very important tool in preventing accidents and illnesses arising from work. The idea is that employers and employees work together to improve the work environment and preserve the worker's physical and mental health and integrity. One of the responsibilities of CIPA members is knowing how to listen. It means being sensitive to listening and evaluating suggestions or complaints made to you by other employees in relation to risks that could cause accidents or occupational illnesses. I chose to be part of CIPA because I like to contribute to the whole and I believe that collective thinking makes a difference.”

Marconi Araújo,  
elected CIPA member



# TRAINING AND DEVELOPMENT

GRI 404-1 | 3-3

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.

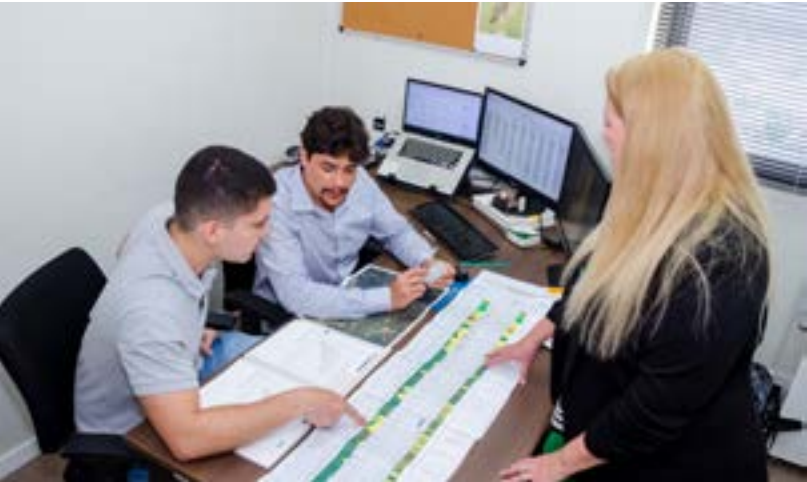
All employees are encouraged to enroll in additional training including in-house workshops and formal professional courses as part of our commitment to continuous growth and development. All employees are also encouraged to participate in language classes to further enhance communication between team members. We foster participation in industry and professional organizations and sponsor employee participation in these organizations.



AVERAGE TRAINING HOURS PER EMPLOYEE	CANADA	BRAZIL	OVERALL
Females	32	11	16
Males	24	10	13
Overall	27	10	14

## FUTURE INITIATIVES

Innovation is a core value at Alvopetro. With a focus on continuous improvement for the entire organization, we strive to ensure all members of our team have the necessary tools to take initiative to find innovative solutions. Alvopetro believes that continuous education and development of our employees is the foundation to creating a culture of innovation. We have developed a multi-year strategy for employee skill development and career planning.



## KEY INITIATIVES INCLUDE:

- Mapping of skill matrix by functional area and identification of skill gaps;
- Customized technical training plans for individual employees;
- Career growth planning for individual employees, including leadership development programs;
- Corporate training for all staff on non-technical matters; and
- Employee engagement strategies
  - » Regular staff meetings for entire organization
  - » Employee surveys to identify areas of improvement







SOW & GROW PROGRAM



Promoting sustainable farming practices in our region

The Semear & Colher Program (“Sow & Grow Program”) is the result of a socioeconomic study of the existing communities in the rural area of Mata de São João where Alvo Petro operates. In this study it was identified that this region has great agricultural potential but suffers from a lack of investments in agriculture and basic sanitation. In addition, this municipality suffers from a lack of opportunities and has above-average violence rates.



The Sow & Grow Program was born in 2021 with the core objective of empowering these communities to enhance their quality of life through a series of measures designed to elevate subsistence family farming practices and increase earnings. Central to this endeavor was the implementation of the Family Biowater system, a technology for the reuse of greywater. In parallel, the Program provides training to the broader community to foster environmental awareness and the use of technical knowledge in agroecology, as a way of promoting the development of local agriculture. The goal of the program is to provide beneficiaries with essential tools and knowledge, fostering a lasting foundation for their sustained progress and growth.



10 families benefited by the Biowater System

150 families of rural farmers assisted by the program in the actions of training, technical assistance and environmental education

30 Institutional and community leaders involved in the project’s actions

9 communities served by the Program

44 technical assistance visits to each family with a Biowater system for a total of 440 technical visits

5 training sessions held: { 2 food and nutrition education workshop, 1 agroecology workshops, 2 classes of associativism and cooperativism course



This Program is carried out in partnership with AVSI do Brasil, a non-governmental organization focused on social programs in Brazil, in nine communities in Mata de São João, Cascata, Conjunto JK, Vila de Camaçari, Vila de Itapecerica e Colina, Serrão, Gameleira , Bebedouro, Lunda Gate and Sunset.

In 2021, the initial objective of the program was helping local farmers to increase their food production and ensure crop resilience through the Biowater systems. The project selected 10 farming families who implemented gray

water reuse systems and participated in technical training and soil diagnosis. In 2022, the Program intensified with training workshops on environmental, food and agroecology education for families and students in Alvopetro’s area of activity, as well as consultancy on associativism and cooperativism.

**In 2023, we have now added a fourth pillar focused on social assistance and the Program now operates on four main fronts:**



CONSERVATORIO DE MÚSICA E ARTES DE MATA DE SÃO JOÃO

(MUSIC AND ARTS CONSERVATORY OF MATA DE SAO JOAO)

*Fostering artistic talent through art, music and dance,  
all while focusing on keeping youth in schools.*

The Music and Art Conservatory is a recognized project implemented by the Mata de São João Cultural Foundation, which was born with the mission of providing artistic training for youth in in the city of Mata de São João. Since 2021, Alvopetro has been the main sponsor of this project, which is in line with our Strategic Corporate Responsibility Plan for developing and promoting quality education through cultural activities.

The project serves 550 direct members, teaching artistic skills while also offering new educational opportunities to these students, valuing talents, cultural traditions and strengthening the sense of collectivity and belonging. 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.



**In the year 2022, the main activities developed by the Conservatory with the support of Alvopetro were focused on:**

**Guitar, Flute, Singing and Ballet Workshops**

Weekly classes for 300 children and young people that take place in a space that has been revitalized, adapted and equipped with support from Alvopetro to meet the needs of students. Classes are conducted by teachers from the city who have already been students of the project and who seek, in addition to teaching musical techniques, to promote skills that directly contribute to the personal development of individuals. Students have their school performance monitored by the project, and in addition to participating in the workshops, they perform in different public spaces at events and commemorative dates.



**New Generation Marching Band**

132 members make up the Marching Band, which is the oldest in Mata de São João. With 28 years of existence, it has been performing fanfare performances in several municipalities in the region, in events such as the celebrations of the independence of Bahia.



**The December 8 Philharmonic**

With 90 years of existence, the Philharmonic is a cultural heritage of Mata de São João. Composed of 55 musicians, it offers theoretical and practical knowledge about various musical instruments and performs in various spaces in the city.







STAKEHOLDER DIALOGUE AND CONSULTATION

GRI 2-29

Establishing a two-way dialogue with our stakeholders is a fundamental element of our shared value creation objective. 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.



GENERATING OPPORTUNITIES  
AND HIRING LOCALLY



When implementing our projects, we understand we play a key role in bringing employment opportunities to the region thus increasing the local workforce’s ability to benefit from new development being brought to the region. This creates economic benefits for the communities where we operate through direct economic benefits from employment as well as long-term benefits through increasing experience and expertise, contributing to improved prosperity. We seek to source local labour in all of our projects wherever possible.

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 | 409-1 | 414-1 | 3-3



Alvopetro recognizes the importance of our suppliers in ensuring the long-term success of our operations. We look to establish longstanding relationships with suppliers who are aligned with our strategic goals, working together to support our local communities. This collaboration aids in fostering economic growth not only for Alvopetro and each supplier but also the broader community. Aligned with our ESG values and approach, we want to drive development in the regions where we operate, ensure compliance across our supply chain, and develop long-term partnerships. As a strategy to achieve these goals, we prioritize the hiring of local service providers and local labour.

53% OF GOODS AND SERVICES PROCURED LOCALLY FROM THE STATE OF BAHIA

ALVOPETRO IS DEDICATED TO ENSURING OUR CONTRACTORS MEET ALL OF OUR POLICIES AND PROCEDURES THROUGH:

- Monthly performance evaluation and expectations alignment meetings.
- Training in Alvopetro policies, procedures and our Code of Conduct.
- Daily Safety Dialogues (DSD) dealing with possible safety concerns in the daily work routine.
- Daily inspecting by managers to verify compliance with requirements to maximize work safety such as: use of personal protective equipment, organization and cleanliness of the workplace, waste management, among others.
- Monitoring compliance with legal, regulatory and all contractual requirements.

Alvopetro consistently screens suppliers prior to contracting to ensure they have established HSE management systems in place. In addition, Alvopetro verifies that the suppliers and contracted companies meet the legal, labor, tax, health, environment, safety and human rights requirements and are in accordance with our standards of excellence and sustainability. Once selected, the contracted company receives all the technical specifications and guidelines on our policies and procedures and upon signing the contract, they must agree to comply, in addition to the technical scope, with the legal requirements and the specific policies and procedures of Alvopetro.

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.

We have also implemented the following practices as part of efforts to intensify our management of contractors:

- **Conducting Safety Tours** – audits in the operational area by leadership in order to promote a safety culture.
- **BDS** – Daily bulletin containing all information related to the contractor's safety, such as deviations, incidents, opportunities for improvement.
- **POB** – Control of working hours of contracted workers, to ensure that the hours permitted by law are not exceeded.
- **Pre-Spud** – Meeting with all contractors involved in the projects, aiming to present Alvopetro's policies, planning and culture.
- **Post-Drill** – Presentation of the results obtained in the “lesson learned” projects.



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GRI 2-9 | 2-10 | 2-11 | 2-12 | 2-13 | 2-14 | 2-17











- Cyber-security training for all employees, commencing with Canadian employees in 2022 and with Brazil employees in 2023
- Cyber risk assessment to be undertaken by third-party firm
- Establish detailed IT security policy
- Other proposed changes as recommended from cyber risk assessment



# EMERGENCY PREPAREDNESS AND RESPONSE

EM-MD-540a.4

Our policy of targeting a zero lost-time incident rate is supported by strict occupational and operational risk control programs that enable 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.



**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**

## 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.



# REPORTING

## GRI CONTENT INDEX

STATEMENT OF USE	Alvopetro Energy
GRI 1 USED	GRI 1: Foundation 2021
APPLICABLE GRI SECTOR STANDARD(S)	GRI 11: Oil and Gas Sector

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	ANSWER	OMISSION		
				REQUIRE- MENT(S) OMITTED	REASON	EXPLANA- TION
General disclosures						
GRI 2: General Disclosures 2021	2-1 Organizational details	13, 15				
	2-2 Entities included in the organization’s sustainability reporting	9				
	2-3 Reporting period, frequency and contact point		Annual			
	2-4 Restatements of information		2021 figures have been restated on page 28 with respect to the tables entitled Scope 1 & 2 GHG Emissions, Flaring and Venting and Energy. Upon detailed review, it was determined that these figures had been computed incorrectly in 2021 as a result of clerical errors and have thus been adjusted and restated for purposes of comparing to 2022 figures.			
	2-5 External assurance		This report was not externally assured			
	2-6 Activities, value chain and other business relationships	15, 17				





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GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	ANSWER	OMISSION		
GRI 2: General Disclosures 2021	2-23 Policy commitments	49, 50				
	2-24 Embedding policy commitments	49				
	2-25 Processes to remediate negative impacts	49, 51				
	2-26 Mechanisms for seeking advice and raising concerns	49				
	2-27 Compliance with laws and regulations	49				
	2-28 Membership associations	9, 10				
	2-29 Approach to stakeholder engagement	45				
	2-30 Collective bargaining agreements	35				
Material topics						
GRI 3: Material Topics 2021	3-1 Process to determine material topics	11				
	3-2 List of material topics	11				
ECONOMIC PERFORMANCE						
GRI 3: Material Topics 2021	3-3 Management of material topics	21, 49				
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	21				
ANTI-CORRUPTION						
GRI 3: Material Topics 2021	3-3 Management of material topics	49				
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	49				
	205-2 Communication and training about anti-corruption policies and procedures	49				
ENERGY						
GRI 3: Material Topics 2021	3-3 Management of material topics	27				
GRI 302: Energy 2016	302-1 Energy consumption within the organization	27				



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GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	ANSWER	OMISSION		
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GRI 3: Material Topics 2021	3-3 Management of material topics	32				
	303-5 Water consumption	32				
BIODIVERSITY						
GRI 3: Material Topics 2021	3-3 Management of material topics	30				
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	30				
EMISSIONS						
GRI 3: Material Topics 2021	3-3 Management of material topics	27				
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	27				
	305-2 Energy indirect (Scope 2) GHG emissions	27				
	305-4 GHG emissions intensity	27				
WASTE						
GRI 3: Material Topics 2021	3-3 Management of material topics	33				
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	33				
SUPPLIER ENVIRONMENTAL ASSESSMENT						
GRI 3: Material Topics 2021	3-3 Management of material topics	46				
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	46				

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GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	ANSWER	OMISSION		
EMPLOYMENT						
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GRI 401: Employment 2016	401-1 New employee hires and employee turnover	35				
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	39				
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GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	36				
	403-3 Occupational health services	36				
	403-5 Worker training on occupational health and safety	36				
	403-6 Promotion of worker health	36				
	403-9 Work-related injuries	36				
TRAINING AND EDUCATION						
GRI 3: Material Topics 2021	3-3 Management of material topics	38				
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	38				
DIVERSITY AND EQUAL OPPORTUNITY						
GRI 3: Material Topics 2021	3-3 Management of material topics	35				
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	35				



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GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	ANSWER	OMISSION		
FORCED OR COMPULSORY LABOR						
GRI 3: Material Topics 2021	3-3 Management of material topics	46				
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	46				
LOCAL COMMUNITIES						
GRI 3: Material Topics 2021	3-3 Management of material topics	40				
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	40				
SUPPLIER SOCIAL ASSESSMENT						
GRI 3: Material Topics 2021	3-3 Management of material topics	46				
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	46				

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)		27
	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		52
	EM-EP-110a.1: Gross global Scope 1 emissions, percentage methane, percentage covered under emissions-limiting regulations 2		27
Biodiversity impacts	EM-EP-160a.1: Description of environmental management policies and practices for active sites		24
Activity Metrics	EM-EP-000.A: Production of: (1) oil, (2) natural gas, (3) synthetic oil, and (4) synthetic gas		16
	EM-EP-000.B: Number of off shore sites	Zero	
	EM-EP-000.C: Number of terrestrial sites		15

# ADVISORIES AND DISCLAIMERS

## UNAUDITED INFORMATION AND EXTERNAL INFORMATION

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 years ended December 31, 2022 and December 31, 2021 and certain reserves information evaluated as part of the independent reserve assessment and evaluation with an effective date of December 31, 2022.

The audited consolidated financial statements and accompany notes of the Company as at and for the years ended December 31, 2022 and December 31, 2021 can be found on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca) or [www.alvopetro.com](http://www.alvopetro.com). Additional information on the Company’s reserves as of December 31, 2022 is included in the Annual Information Form for the Company which has also been filed on SEDAR+ ([www.sedarplus.ca](http://www.sedarplus.ca)) and is also available on [www.alvopetro.com](http://www.alvopetro.com).

## CURRENCY

All monetary amounts in this Report and references to \$ are in United States dollars unless otherwise noted.

## 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 forward-looking statements reflect current assumptions and expectations regarding future events.

More particularly and without limitation, this Report contains forward-looking statements concerning plans relating to the Company’s operational activities, proposed exploration development activities and the timing for such activities, exploration and development prospects of Alvopetro, capital spending levels, future capital and operating costs, plans for dividends in the future, future production and sales volumes, the expected natural gas price, gas sales and gas deliveries under Alvopetro’s long-term gas sales agreement, the expected timing of drilling and testing activities, projected financial results, the expected timing and outcomes of certain of Alvopetro’s testing activities, and sources and availability of capital.

Forward-looking statements are necessarily based upon assumptions and judgments with respect to the future including, but not limited to, expectations and assumptions concerning the timing of regulatory licenses and approvals, equipment availability, the success of future drilling, completion, testing, recompletion and development activities and the timing of such activities, the performance of producing wells and reservoirs, well development and operating performance, expectations regarding Alvopetro’s working interest and the outcome of any redeterminations, environmental regulation, including regulation relating to hydraulic

fracturing and stimulation, the ability to monetize hydrocarbons discovered, the outlook for commodity markets and ability to access capital markets, foreign exchange rates, general economic and business conditions, forecasted demand for oil and natural gas, the impact of global pandemics, weather and access to drilling locations, the availability and cost of labour and services, the regulatory and legal environment and other risks associated with oil and gas operations. The reader is cautioned that assumptions used in the preparation of such information, although considered reasonable at the time of preparation, may prove to be incorrect. 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



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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 MD&A for the year ended December 31, 2022 and in our 2022 Annual Information Form which has been filed on SEDAR+ and can be accessed at [www.sedarplus.ca](http://www.sedarplus.ca). 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 finan-

cial 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, 2022 and our most MD&A, each of which may be accessed through the SEDAR+ website at [www.sedarplus.ca](http://www.sedarplus.ca) and also on our website at [www.alvopetro.com](http://www.alvopetro.com).

OIL AND NATURAL GAS  
RESERVES AND RESOURCES

The Report includes certain reserves and resources information based upon the independent reserves and resources assessment and evaluation prepared by GLJ Ltd. (“GLJ”) dated February 27, 2023 with an effective date of December 31, 2022 (the “GLJ Reserves and Resources Report”). All net present values in this Report are based on estimates of future operating and capital costs and GLJ’s forecast prices as of December 31, 2022. The reserves definitions used in this evaluation are the standards defined in the Canadian Oil and Gas Evaluation Handbook reserve definitions and consistent with National Instrument 51-101 (“NI 51-101”) and used by GLJ. References to the net present value of 2P reserves throughout this Report represents the reserves of Alvopetro for the associated fields and the before-tax net present value of future net revenue attributable to such reserves, discounted at 10%, as evaluated by GLJ in the GLJ Reserves and Resources Report as of December 31, 2022, based on forecast price and cost assumptions. The net present value of future net revenue attributable to Alvopetro’s reserves as disclosed in this Report is stated without provision for interest costs and general and administrative costs, but after providing for estimated royalties, production costs, development costs, other income, future capital expenditures, well abandonment and reclamation costs for only those wells assigned reserves and material dedicated gathering systems and facilities. 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. 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. 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 February 28, 2023. Full disclosure with respect to the Company’s reserves as at December 31, 2022 is contained in the Company’s annual information form for the year ended December 31, 2022 which has been filed on SEDAR+ ([www.sedarplus.ca](http://www.sedarplus.ca)).

TESTING AND WELL RESULTS

There is no representation by Alvopetro that any drilling or test results 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. Data included herein including net pay and porosities should be considered to be preliminary until further testing, pressure transient analysis and other detailed analysis and interpretation has been completed.

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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
- bbls = barrels of oil and/or natural gas liquids (condensate)
- boe = barrels of oil equivalent
- boepd = barrels of oil equivalent (“boe”) per day
- bopd = barrels of oil and/or natural gas liquids (condensate) per day
- BRL = Brazilian real
- C\$ = Canadian dollar
- CO<sub>2</sub>e = carbon dioxide equivalent
- ESG = environmental, social and governance
- GHG = greenhouse gas
- LNG = liquified natural gas
- m<sup>3</sup> = cubic metre
- m<sup>3</sup>/d = cubic metre per day
- Mcf = thousand cubic feet
- Mcfpd = thousand cubic feet per day
- MMBtu = million British Thermal Units
- MMcf = million cubic feet
- MMcfpd = million cubic feet per day
- MW = megawatt
- NGLs = natural gas liquids
- tCO<sub>2</sub>e = tons of carbon dioxide equivalent
- UPGN = Alvopetro’s natural gas treatment facility





# CONTINUOUS IMPROVEMENT

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.

### Calgary, Canada

Suite 1920, 215 – 9<sup>th</sup> Avenue SW  
Calgary, Alberta Canada  
T2P 1K3

### Salvador, Brazil

Rua Ewerton Visco, 290  
Boulevard Side Empresarial  
Sala 2004, Caminho das Árvores  
Salvador, Bahia Brazil

Find out more at [www.alvopetro.com](http://www.alvopetro.com)



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Thank you for reading. Further information on this report and on our sustainability initiatives is available by contacting us at [ESG@alvopetro.com](mailto:ESG@alvopetro.com)

