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Zacks Small-Cap Research

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Alvopetro Energy Ltd (ALVOF-OTCQX)

Increasing monthly production from the Caburé Project portends steady cash flow to repay debt, fund further exploration and reward shareholders with a dividend stream

Utilizing valuation analysis of comparative oil & gas companies, a **target price** for Alvopetro Energy is **$1.08 per share**, which is based on an expected second quartile price-to-sales multiple.

Current Price (01/15/21)	$0.60
Valuation	**$1.08**

OUTLOOK

Operating in **Brazil**, Alvopetro Energy (OTCQX: ALVOF; TSXV: ALV) is an upstream **producer of natural gas** with **midstream assets** (pipeline and gas treatment facility). After several years of development, the company **began producing** a significant amount of **natural gas in July 2020** under an attractive gas sales agreement. The cash flow will help fund management's growth initiatives and future dividends for shareholders.

The company's growth activities include drilling two gas exploration wells in close proximity to the **Caburé natural gas field** and further developing wells in the **Gomo Deep Basin**, which is contiguous to the company's Caburé Block.

SUMMARY DATA

52-Week High	**$0.70**
52-Week Low	**$0.32**
One-Year Return (%)	**5.26**
Beta	**0.72**
Average Daily Volume (shrs.)	**29,099**
Shares Outstanding (million)	**99.629**
Market Capitalization ($mil.)	**$59.78**
Short Interest Ratio (days)	**0.82**
Institutional Ownership (%)	**2.9**
Insider Ownership (%)	**9.3**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/M**
P/E using 2021 Estimate	**8.7**
P/E using 2022 Estimate	**4.3**

Risk Level	**Above Average**
Type of Stock	**Small - Growth**
Industry	**Oil & Gas Extraction & Exploration**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2019	0.13 A	0.09 A	0.10 A	0.30 A	0.62 A
2020	0.08 A	0.06 A	4.88 A	4.96 E	9.97 E
2021	5.50 E	5.60 E			22.64 E
2022					26.80 E

Earnings per share
(EPS is operating earnings before non-recurring items)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2019	-$0.01 A	-$0.01 A	-$0.02 A	-$0.01 A	-$0.05 A
2020	-$0.02 A	-$0.02 A	$0.06 A	$0.02 E	$0.05 E
2021	$0.02 E	$0.02 E			$0.07 E
2022					$0.14 E

Quarterly revenues may not equal annual revenues due to rounding.

Quarterly EPS may not equal annual EPS due to rounding or dilution.

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OVERVIEW

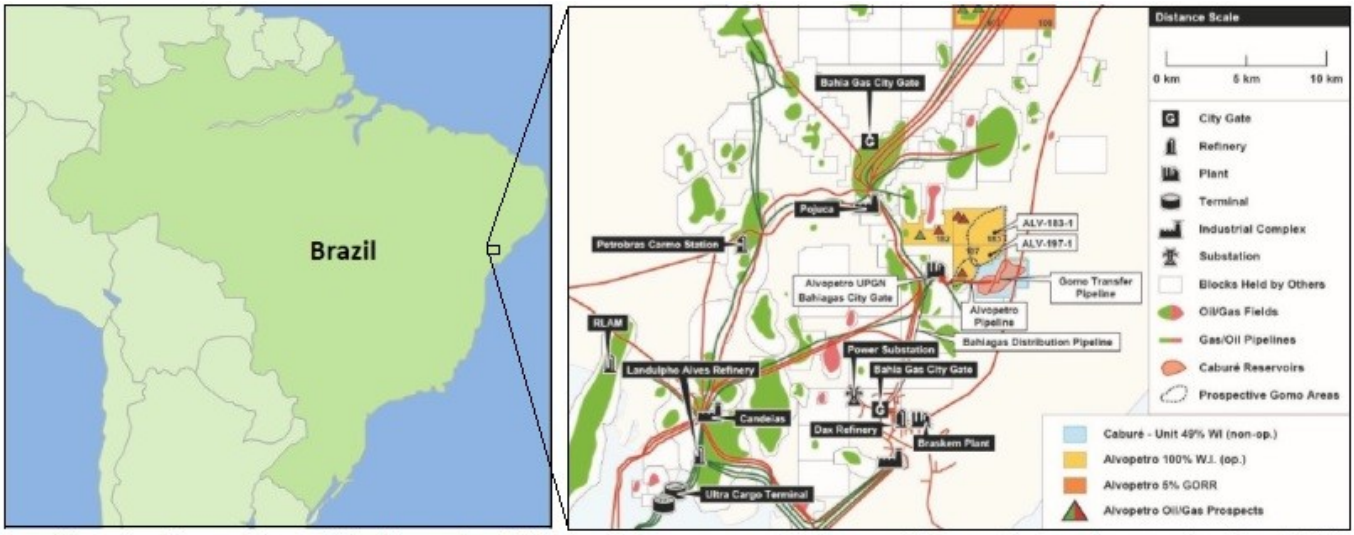
Alvopetro Energy Ltd (OTCQX: ALVOF; TSXV: ALV) is an upstream natural gas **producer** (natural gas production with P-2 reserves), **midstream operator** (pipeline and gas processing facility) and **exploration company** (prospects). The company's natural gas operations are **in Brazil**.

Alvopetro recently (in July 2020) began producing a significant amount of natural gas (now above 11 MMcf/d) when production commenced from the company's **Caburé natural gas field** located in northeast Brazil. This onshore natural gas field is situated in the state of Bahia, north of the city of Salvador. The company also has a developing natural gas project in the **Gomo Deep Basin**, in the concession Blocks immediately north of the Caburé field. Management has been adept in creating business partnerships to advance its Caburé assets to commercial production.

Currently, the **Brazilian Government is promoting investments into the natural gas market** in hopes of lowering gas prices by increasing competition and opening the market to other operators. Part of process includes:

1) breaking the monopoly held by Petrobras (aka Petróleo Brasileiro S.A, Brazil's state-controlled oil company; NYSE: PBR), primarily through divestments and
2) setting guidelines and incentives for a Novo Mercado de Gás (new natural gas market) program so that natural gas can be more attractively priced and thereby stimulate local industrial activity

Through these actions, the Ministry of Economy expects gas production in Brazil to double over the next 10 years.



Alvopetro Energy Presentation November 2020 — Alvopetro Energy Presentation March 2020

Management is focused on creating a platform to develop the natural gas potential of the Recôncavo Basin located in the Brazilian state of Bahia. Through multiple agreements, strategic infrastructure assets have been constructed, which have enabled Alvopetro to **commence commercial natural gas sales from the Caburé Project** and to further develop the company's **Gomo natural gas project**.

Company Milestones in the Commercialization of Caburé Natural Gas Field

Dec. 2014	**Discovered Caburé natural gas field**
April 2018	**Unitized** Caburé natural gas field
May 2018	**Secured gas sales agreement** with Bahiagás

Sept. 2018	Contracted Enerflex to construct and operate the natural gas treatment facility
Nov. 2018	Contracted Tecmaster Engenharia e Construções to construct 11-km transfer pipeline
Jan. 2020	**Completed** construction of 500,000 m³ (17.657 MMCF) per day **11-km transfer pipeline**
May 2020	Amended gas sales agreement with Bahiagás doubling firm contracted deliveries
June 2020	**Commissioned** 500,000 m^3 (17.657 MMCF) per day **gas treatment facility**
July 2020	**Commenced commercial gas sales** from Caburé natural gas field

In order to ensure the sale of future gas production at attractive prices, Alvopetro Energy entered into a **gas sales agreement** with Bahiagás, a major gas distributor in Brazil with a local distribution network servicing the environs of the city of Salvador and 12 surrounding municipalities. Signed in May 2018, the gas sales agreement **set an attractive floor price** in the contract, along with a **firm and flexible delivery volume levels**. Through this well-negotiated agreement, Alvopetro's Caburé natural gas field is now directly connected to Bahiagás' gas distribution network of Bahiagás a City Gate via a gas treatment facility, both of which Bahiagás constructed for the project.

During the first half of 2020, Alvopetro **completed the construction** of an **11-kilometer transfer pipeline** and a **17.6 MMCFPD gas processing plant**. The high-pressure pipeline was completed in January 2020 by Tecmaster, and the gas treatment facility was commissioned in May 2020 under the gas treatment agreement with Enerflex. Alvopetro controls 100% of its midstream business (gas hubs, pipeline and processing facility) and will own the gas treatment facility outright in 10 years for a small payment when the contract expires.



Alvopetro Energy Presentations March & December 2020

Consequently, by having this **midstream infrastructure** constructed, the company **commenced commercial, high-pressure gas production on July 5, 2020** from the unitized Caburé natural gas field, in which the company has a 49.1% working interest. The gas is delivered (via a City Gate and distribution pipeline owned by Bahiagás) to the industrial area of Camaçari, a major area of natural gas consumption in the environs of the city of Salvador in northeast Brazil.

In July 2020, Alvopetro Energy **commenced commercial, high-pressure gas production from the unitized Caburé gas field** (which includes portions of Alvopetro's Blocks 197 and 198) in the Recôncavo Basin and is pursuing natural gas exploration projects 1) on Blocks 182 and 183, just north of the company's gas processing facility and 2) at a deep tight basin natural gas resource in the Gomo Formation (Blocks 197 and 183), just north of the company's existing Caburé wells.

Alvopetro has **seven existing wells** in the Caburé natural gas field, six of which are currently tied-in (2.95 wells net) with one additional development well in the planning stages. Alvopetro's share of **monthly production** (December 2020) has risen to **2,032 BOE per day** (including associated condensate sales), well above management's expectations of 1,800 BOEPD. The volume rate of gas sales alone is at 328,500 m^3 (11.6 MMCFPD).

A stable production profile is expected through 2028 with increasing EBITDA based on the **gas sales agreement** with Bahiagás (at an attractive price point above $5.20 per MMBtu). Despite the

contracted gas price being over twice that currently realized in North America, Alvopetro's gas is being sold to the end customer at a lower price than what is available from other producers (primarily Petrobras) in Bahia. **Management projects** that the company will **generate EBITDA** of **US$17 million in 2021.** The cash flow from the Caburé Field will help fund management's initiatives for future growth and a dividend stream for shareholders.

Gomo Gas Project (Blocks 183 and 197)

Alvopetro is in the process of developing a tight-gas play in the Gomo Deep Basin, which underlies the company's Blocks 183 and 197. **Two wells** (**183-1** and **197-1**) were drilled in 2014. Well 183-1 is in the process of being developed through a production test. The drainage areas around these wells have already been assigned 2P reserves (1.358 MMBOE) by an independent reserve assessment and evaluation consultant. Once 183-1 is declared as commercialized, an 8-kilometer flow-line is expected to be constructed in order to connect the Gomo well to the transfer pipeline in the Caburé gas field.

Additional Exploration Potential

Management has identified oil & gas prospects across the company's Brazilian concessions, which comprise 23,527 acres of land. Alvopetro plans to drill two of these exploration prospects (183-B1 and 182-C1) during 2021. Both of these wells are natural gas prospects in close proximity to Alvopetro's natural gas processing unit (Unidade de Processamento de Gás Natural or UPGN).

Blue Sky Potential – Additional Natural Gas Exploration Prospects

Management is dedicating a portion of the company's operational cash flows for the investment in additional upstream opportunities in Brazil. With the intermediate-term goal of increasing daily gas volumes at its UPGN, management is focusing its initial efforts on natural gas prospects in close proximity to that facility.

Management

In the small cap, junior exploration and production company segment of the oil & gas sector, investors look for assurance that management can effectively execute its strategy. In order to be successful, the **management team** of a junior oil & gas company **needs the technical, development, regulatory, operational** and **financing experience** to navigate the necessary steps of exploring a prospective field (seismic interpretation, regulatory approvals, environmental permitting etc.), conducting production tests (to determine gas reservoir performance), effecting production planning, arranging supporting infrastructure and implementing operational procedures.

Alvopetro Energy has a **leadership team with a proven track record** that has delivered in the past. Several members of Alvopetro's management team (COB, CEO, CFO, VP of Asset Management and Exploration Manager) was also part of management of **Petrominerales** (TSE: PMG), which was developed into a 40,000 BOPD producer in Colombia[i] and which was **acquired for CDN$1.6 billion** (US$1.55 billion)[ii] by Colombia's largest private oil producer, Pacific Rubiales Energy Corp. (TSE: PRE) in 2013. While operating Petrominerales, management acquired a 5% stake in a pipeline, signaling management's insight into the importance of equity ownership in midstream assets. In addition, John Wright, COB of Alvopetro, was the CEO of **Pacalta Resources**, which was developed to a 40,000 BOPD producer in Ecuador and subsequently **sold** to Alberta Energy **for CDN$973 million** in 1999.[iii] To be sure, Alvopetro has the natural gas assets and management experience to walk the same path again.

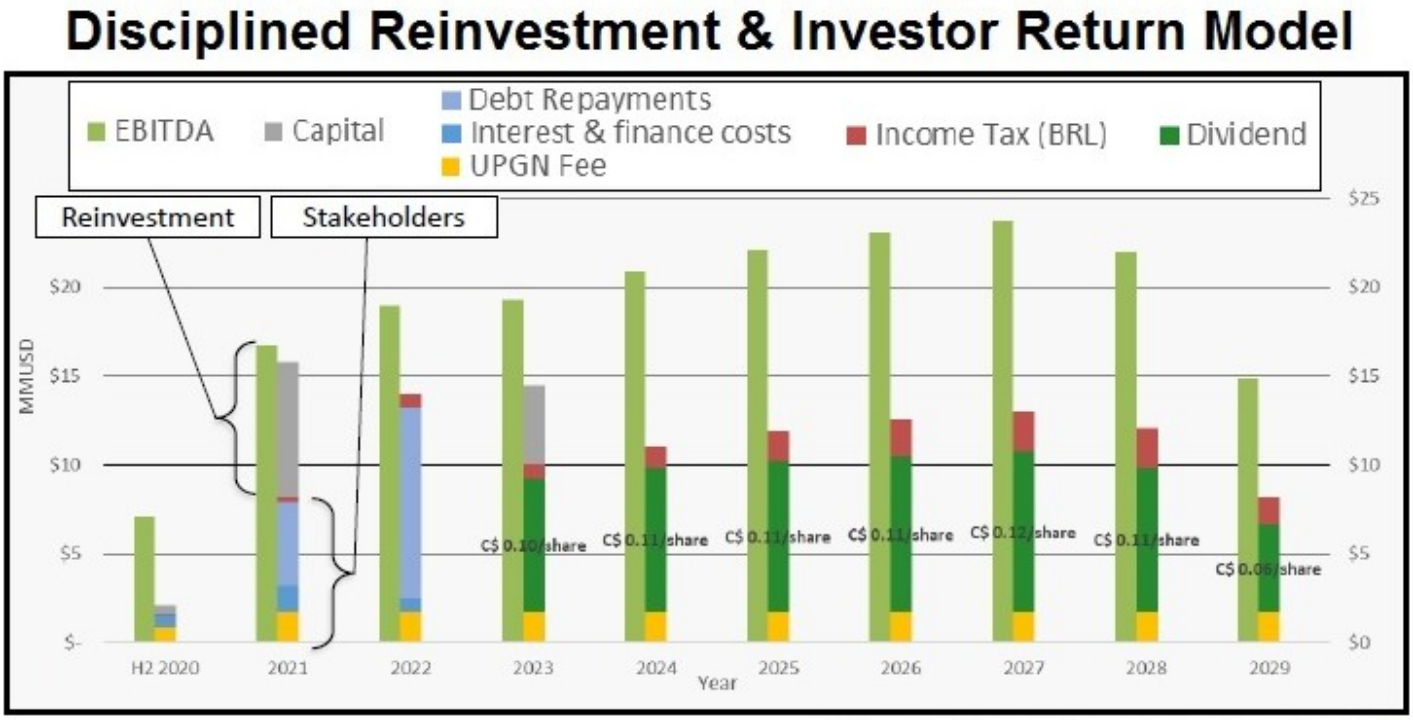
Equity Milestone

On January 15, 2019, the company's shares were **uplisted to the OTCQX Best Market**. Now, ALVOF is Depository Trust Company (DTC) eligible. The OTCQX listing should expand awareness of the company among US investors, both retail and institutional. The company's primary listing continues to be the TSX Venture Exchange (TSXV) under the symbol ALV.

In February, the TSX Venture Exchange announces the Venture 50, a list of 50 companies that ranked the highest in five sectors: Clean Technology and Life Sciences, Diversified Industries, Energy, Mining and Technology. The ranking is based on three equally-weighted, quantitative criteria: year-over-year (YOY) performance in market capitalization growth, share price appreciation and trading volume during the prior calendar year. The objective is to highlight early-stage companies that have performed well. For 2019, **Alvopetro Energy was one of the 10 highest ranked energy companies**.

MANAGEMENT'S STRATEGY

Management's vision is to make Alvopetro Energy a leading independent upstream and midstream gas company in Brazil. **Phase 1** consisted of becoming **commercial producer** of on-shore natural gas producer in the state of Bahia in Brazil, which was **achieved in July 2020**. The cash flow from the production is expected to help fund additional developmental initiatives and return a healthy **dividend** to shareholders.



Alvopetro Energy Presentation December 2020

Based on the development of the company's Caburé's P2 reserves, management has forecasted an EBITDA profile at the floor price in the sales agreement with Bahiagás (light green bars in the above chart). In 2020, it is estimated that the company has generated EBITDA of US$7.5 million, most of which has been either utilized to reduced debt or added to working capital. **For 2021, projected EBITDA is US$17 million**, including the impact of forecasted G&A expenses. In 2021, almost all of the projected EBITDA is anticipated to be consumed by capital expenditure (grey bar), debt principal

repayment (light blue bar), interest costs on debt (dark blue bar), a UPGN fee to Enerflex for the gas facility (yellow bar) and taxes (red bar). By the end of 2022, it is assumed that the entire amount of debt will have been repaid, and thereafter, **between 2023 and 2029, a cumulative amount of CDN$0.74 per share would be available for shareholders**.

Also, over the same time period, CDN$1.09 per share (or US$82 million) would be available for investment in upstream projects (in the Gomo Deep Basin Project and/o in additional exploration prospects) and, at the discretion of the Board, other uses of cash flow, e.g. acquisition of some of the expected divestitures by Petrobras in the Recôncavo Basin, additional dividends to shareholders, share buybacks etc. Management is also considering the renegotiation the company's existing credit facility (in order to lower interest costs), along with extending the maturity of the company's debt, which would permit more funds generated from operations to be allocated to acquisitions, exploration and dividends.

Management's **medium-term objective** (or **Phase 2**) is to **maximize the capacity** of both the **transfer pipeline** and **gas treatment facility** up to full capacity (500,000 m³ or 17.657 MMCF per day), which **would increase** the company's **EBITDA** to **US$31 million** from US$17 million at the floor price.

The capacity of Bahiagás' City Gate is 2.00 million m³ (70.6 MMCF) per day, and management would like to capture as much as a 50% share over the long term. Toward that end, **Phase 3** consists of increasing reserves to support that higher level of production through 1) exploration drilling in 2021 and 2) the additional development of the **Gomo natural gas project**.

- Immediately north of Caburé, the Gomo Natural Gas Project has P2 reserves of 1.358 MMBOE (or 7.62 MMCF) as of the last evaluation (December 31, 2019). These existing reserves have only been assigned to the drainage areas around the two existing wells (183-1 and 197-1). Management plans to drill natural gas prospects on two blocks (183-B1 and 182-C1) in early 2021 in order to prove up the reserves in the Gomo Deep Basin. If successful, the drilling program could potentially double the company's reserves.

- Management is **awaiting the results of the 183-1 well test**, which could prove up additional reserves at the Gomo Project. The decision to proceed with the construction of the project's associated infrastructure (an 8-km tie-in pipeline) hinges on the results of the well test. Being proactive, management already has the environmental approvals in place for the pipeline.

GAS SALES AGREEMENT

On May 7, 2018, Alvopetro Energy entered into a **long-term gas sales agreement** with Bahiagás (Companhia de Gás da Bahia), the largest natural gas distribution company in northeastern Brazil. Founded in 1991, **Bahiagás** (Companhia de Gás da Bahia) is owned by the state of Bahia, Mitsui Gás e Energia do Brasil Ltda. (a wholly-owned subsidiary of **Mitsui & Co.,** Ltd. Japan; TYO: 80310; OTCMKTS: MITSF) **and Petrobras**.

The gas sales agreement has several components:

- a **gas delivery contract** with terms for both volume and pricing
    - a firm delivery contract and an interruptible (non-firm) part
- the construction of **midstream infrastructure**
    - a new **gas receiving station** (aka City Gate)
        - constructed and owned by Bahiagás
    - a **15-kilometer pipeline** connecting the City Gate to Bahiagás' 569-km gas distribution network servicing Salvador and 12 surrounding towns

        - constructed and owned by Bahiagás
    - an **11-kilometer transfer pipeline** to connect Alvopetro's unitized Caburé natural gas field to the gas treatment facility
        - constructed and owned by Alvopetro
            - construction subcontracted to Tecmaster Engenharia e Construções Ltda
    - **natural gas treatment facility**
        - financed, engineered, constructed and initially owned & operated by Enerflex
        - under a 10-year Gas Treatment Agreement (aka BOOM contract) with Alvopetro

Gas Delivery and Sales Contract

Though the initial gas sales agreement was signed in May 2018, subsequently, it was **amended effective May 1, 2020**, just prior to the completion of the three midstream infrastructure projects. Under the amended contract, the volume of the **firm delivery portion** of the contract doubled from 150,000 m^3 (or 5.297 MMcf) per day to **300,000 m^3** (or 10.59 MMcf) **per day** until the end of 2020. Take or pay guarantees are applicable to the firm delivery provision of the sales agreement. The **interruptible volume portion** was reduced from as much as 350,000 m^3 (or 12.360 MMcf) per day to as much as **200,000m^3** (or 7.063 MMcf) **per day**. **In total**, the gas sales agreement provides for deliveries of up to **500,000m^3** (or 17.657 MMcf) **per day**.

The **gas pricing mechanism** is based on a long-term blended average of three pricing benchmarks: Brent crude oil (natural gas equivalent), Henry Hub natural gas and UK NBP natural gas. The price is also bound by **floor and ceiling prices**, currently at $5.23 and $8.89 per MMBtu, respectively (both based on August 1, 2020 re-set). The floor and ceiling prices are also indexed to the U.S. CPI (Consumer Price Index). The natural gas price received is re-set semi-annually on the first of February and August.

NATURAL GAS PROCESSING PLANT

Gas Treatment Agreement

On September 20, 2018, **Alvopetro** and **Enerflex Ltd** entered into a **Gas Treatment Agreement** under which the terms of the construction and operation of a **natural gas treatment facility** are specified. Under the Agreement, **Enerflex constructed** a natural gas processing plant with a **nameplate capacity of 500,000 m^3 of gas per day** (17.657 MMCF per day). Enerflex is also the owner and operator of the processing facility, which includes all responsibilities for contracted gas deliveries and plant maintenance. In exchange, Alvopetro is financially obligated to lease/**rent the equipment** (right-of-use assets) required to operate the facility and pay a monthly integrated **service fee** (equivalent to $2.9 million annually) for the operation and maintenance of the natural gas treatment facility (which includes operational services and maintenance for Alvopetro's 11-kilometer transfer pipeline). The **term of the service fee is 10 years** beginning when the facility became operational (namely, July 5, 2020). The associated lease liability of the right-of-use assets is $8.3 million over the 10-year term. Even though the facility is currently owned and operated by Enerflex, Alvopetro maintains full control of the gas processed within the processing plant. When the Gas Treatment Agreement terminates after 10 years, ownership of the facility transfers to Alvopetro for a small payment related to the compression equipment.



Alvopetro Energy Presentation December 2020

Construction of the Gas Treatment Facility

Under the Gas Treatment Agreement (aka Build-Own-Operate-Maintain or BOOM contract), Enerflex financed, engineered, designed and constructed the processing plant project. The plant is located about 2.2km (or 1.4 miles) NNE of the municipality of Mata de São João or about 58 kilometers (or 36 miles) north of Salvador.

The treatment facility consists of a control room building, pig receiver, mechanical refrigeration plant, three large compressors, suction filters, fuel gas scrubber, S&T (shell & tube) exchanger, line tubes and tanks for condensate storage. Much of the equipment was fabricated in Houston and shipped to Brazil between May and August 2019.

A **natural gas treatment facility removes impurities** from raw, natural gas in order to produce pipeline quality, dry natural gas. The process involves removing contaminants, such as solids, water, higher molecular mass hydrocarbons (oil) and condensates, among others (e.g. carbon dioxide, hydrogen sulfide, mercury, etc.). A critical component is the Mechanical Refrigeration Unit (MRU), which cools the natural gas (reducing the hydrocarbon dew point) in order to condense natural gas liquids (NGLs) and maximize their recovery and hence, maximize the value of the gas stream.

Mechanical Refrigeration Unit



Alvopetro Energy Presentation November 2018

The Alvopetro-Enerflex processing plant delivers **pipeline-quality natural gas** (sales specification standards set by ANP) to Bahiagás' City Gate (a natural gas receiving station to Bahiagás' Salvador distribution network. The Metropolitan Region of Salvador (*Região Metropolitana de Salvador*) is composed of three districts, one of which is **the industrial area of Camaçari**, **a major area of**

natural gas consumption. Camaçari is situated between the city of Salvador and Alvopetro's gas production facility. The population of Salvador is over 3,000,000.

The natural gas processing unit (Unidade de Processamento de Gás Natural or UPGN) was **fully commissioned in May 2020**, and **commercial gas deliveries** to the City Gate **commenced on July 5, 2020** for use by the local market. **Production quickly ramped up** to slightly above 300,000 m^3 (or 10.59 MMcf) per day, the firm delivery rate of the gas delivery contract with Bahiagás. Current production is being derived from three of the six producing wells on the Caburé Unit. At the rate of volume, the UPGN is operating at only 60% of its nameplate capacity.



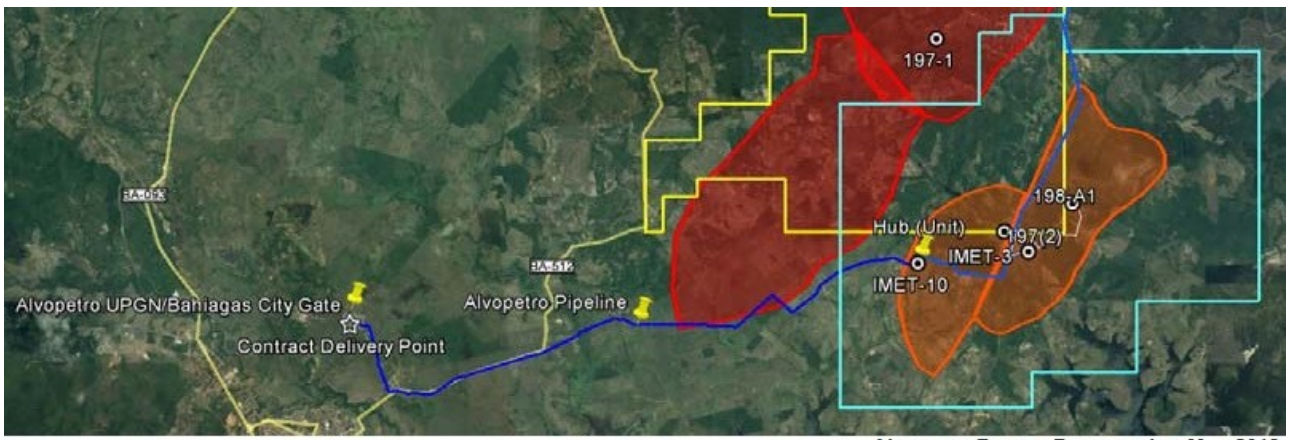
Map data: Google, CNES / Airbus, Maxar Technologies, January 2021

Alvopetro is currently the only company in Brazil, other than Petrobras, that is able to **deliver sales-specified gas** to a gas distribution company.

NATURAL GAS PIPELINE

11-km Transfer Pipeline

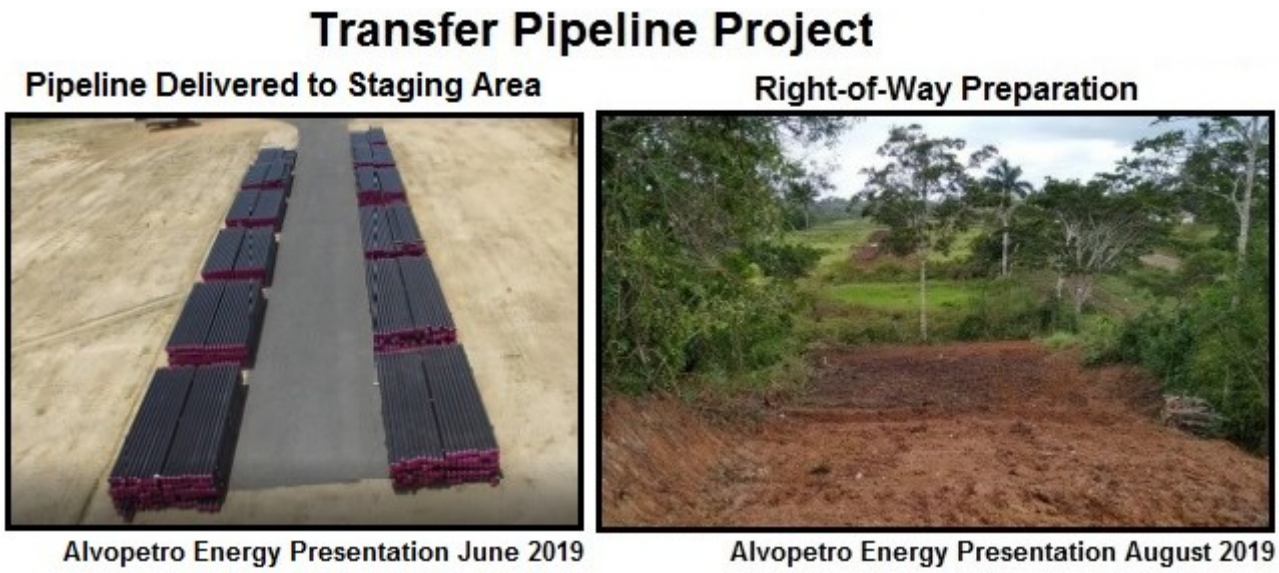
Alvopetro owns an 11 km tie-in pipeline that is capable of transporting 500,000 m^3 (17.657 MMCF) per day of raw, natural gas from the field production facilities (HUB) to the recently commissioned gas treatment facility, which thereby connects the existing wells in the unitized Caburé natural gas field to the gas processing plant. In November 2018, Alvopetro contracted Tecmaster Engenharia e Construções Ltda to construct this transfer pipeline, which was completed in January 2020. The pipeline's operator is Enerflex Ltd under a 10-year service contract that began on July 5, 2020.



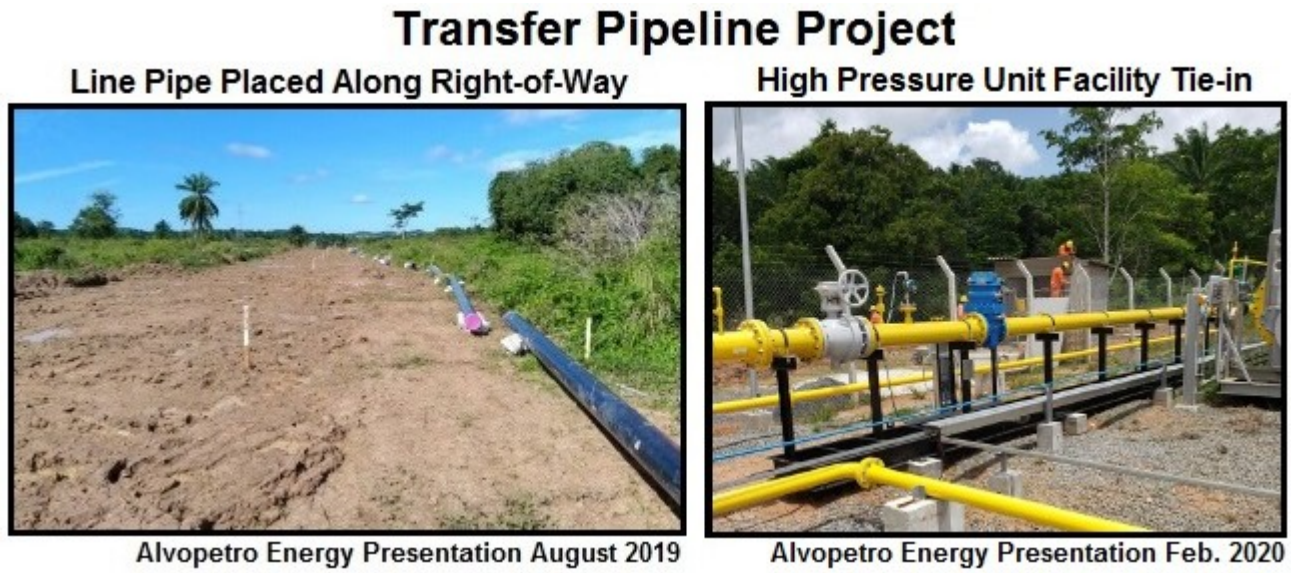
Alvopetro Energy Presentation May 2018

Construction of the 11-km Transfer Pipeline (dark blue line in image above)

On November 16, 2018, Alvopetro **awarded the contract** for the construction of its 10.93-km transfer pipeline **to Tecmaster Engenharia e Construções Ltda**. Founded in December 2000 and headquartered in city of Maceió (about 420 kilometers from the Caburé natural gas field), Tecmaster is an engineering and construction (E&C) company specializing in the construction and maintenance of on-shore oil & gas pipelines with clients throughout Brazil, including Petrobras and Bahiagás.



Alvopetro directly ordered 11 kilometers of **8-inch ANSI Class 300 pipe** for the project **from Vallourec** (OTCMARKETS: VLOUF; FR: VK), a global provider of tubular solutions. The pipes were delivered to a field staging area during the first quarter of 2019. After the **environmental license was received on May 10th** and the National Agency of Petroleum, Natural Gas and Biofuels (ANP) authorized the construction of the pipeline on June 12th, construction of the pipeline commenced immediately thereafter. By August 2019, the majority of the right-of-way had been cleared, after which the pipeline began to be installed, welded and buried. **The transfer pipeline was completed in January 2020**, and subsequently it was inertized in February 2020. The total **cost** of the pipeline project was **US$3.7 million**.



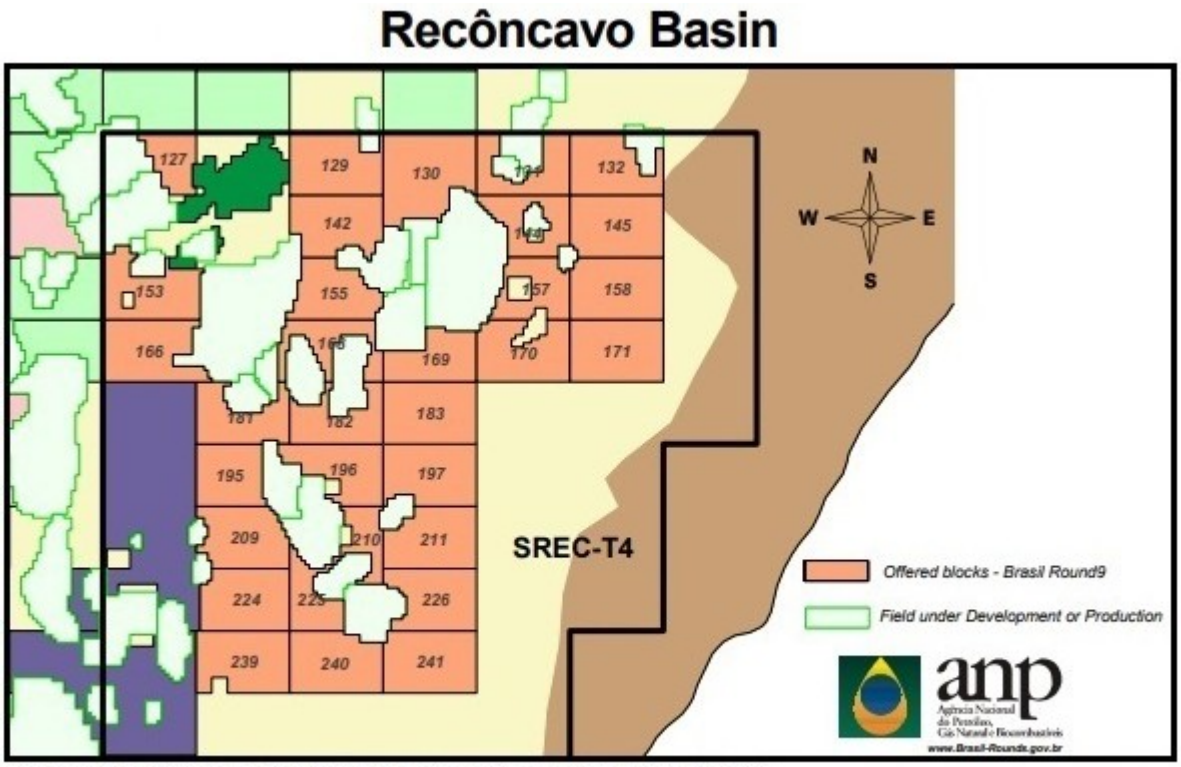
CABURÉ GAS FIELD (49.1% working interest)

Situated in the sedimentary Recôncavo Basin, the Caburé natural gas field was **unitized on April 20, 2018** after several wells defined this natural gas reservoir that straddled multiple license areas. Through an arbitration process conducted by the National Agency of Petroleum, Natural Gas and Biofuels of Brazil (or *Agência Nacional do Petróleo, Gás Natural e Biocombustíveis* aka ANP), the reservoir's reserves were allocated into working interest shares of 50.9% to Imetame Energia and **49.1% to Alvopetro Energy**. With the majority ownership, Imetame is the operator of the unitized field; however, periodically, production allocations against each company's share of 2P reserves are revisited, which may allow for operator responsibilities to be redetermined. The first redetermination is effective on December 31, 2021.

The **Caburé natural gas field** underlies portions of Alvopetro's **Block 197** (2,323 of 5,807 gross acres) and **Block 198** (2,503[iv] of the original 7,739 gross acres),[v] along with parts of Imetame's Blocks 211 and 212. Together, Alvopetro's portions of Blocks 197 and 198 that comprised part of the Caburé natural gas field encompass **4,826 acres**. Currently, the Caburé natural gas field has **six producing wells tied-in to the 11-km transfer pipeline** and another existing well.

Block 197 (2,323 acres)

Alvopetro was awarded **Block 197** during Brazil's 9th Oil & Gas Exploration License Bidding Round in November 2007. The company drilled its first well (197-1) in that block in April 2014. **In December 2014, the Caburé natural gas field was discovered** with the drilling of a second well **(197-2)** in Block197. After successfully encountering three separate intervals of Caruaçu Member of the Maracangalha Formation in 2015, a declaration of commerciality was approved by the ANP in January 2017, which separated the gas discovery from the remainder of the block and resulted in the discovery officially being named the Caburé gas field.



Nacional do Petróleo, Gás Natural e Biocombustíveis of Brazil (ANP)
National Agency of Petroleum, Natural Gas and Biofuels Agencia
rodadas.anp.gov.br/arquivos/Round9/mapas/Reconcavo.pdf ; accessed January 18, 2021

Block 198 (2,503 acres)

Block 198 (7,739 acres) was awarded to Alvopetro during the 12th Oil & Gas Exploration License Bidding Round in November 2013. Block 198 is immediately east of Block 197. In January 2017, the company drilled the 1,480-meter **198-A1 well**, tested it in February and March 2017, and in May, declared the well's commerciality with that portion of the field being named Caburé Leste. The net pay interval is in the Caruaçu Formation with potential in the up-hole Pojuca sands. In May 2017, Alvopetro relinquished 5,236 acres of Block 198 to the ANP, retaining **2,503**[vi] **acres**.

Unitization

In Brazil, as in many other jurisdictions, when a hydrocarbon reservoir extends across concessions (in the case of Brazil, Blocks), it is **mandatory that the discovery be unitized** or pooled (in order to facilitate a fair and orderly exploration and development process) and that the appropriate government agency approve the unitization agreement.

In 2017, through the drilling and testing of four wells (197-2, 198-A1, IMET-3 and IMET-10), it was determined that **the Caburé natural gas field extends across four blocks in the Recôncavo Basin**: Blocks 197 and 198 held by Alvopetro Energy and Blocks 211 and 212 held by Imetame Energia. Imetame was awarded Blocks 210 and 211 during Brazil's 9th Oil & Gas Exploration License Bidding Round in November 2007. From the start of the unitization process, the ANP (National Agency of Petroleum, Natural Gas and Biofuels of Brazil) was involved to help arbitrate the terms of the arrangement.

On April 20, 2018, Alvopetro and Imetame Energia finalized the terms of a unitization agreement, along with a development plan and other related agreements**.** Initially, Imetame would be the operator with a 50.9% working interest and Alvopetro would hold 49.1%. **Each company had a different objective**: Imetame's management wanted to build a thermoelectric plant and Alvopetro planned on building a UPGN (gas process plant) to sell gas into the local distribution network. **Both companies achieved their goals**.

Initial low-pressure production supplied Imetame Energia's well-to-wire 28MW thermoelectric plant (Prosperidade 1), which began operating in 2018. Located in Camaçari, the plant produces electricity and is connected to through transmission lines and substations to the Brazilian National Interconnected System (SIN). According to Imetame's August 2016 presentation, Prosperidade 1 is strategically located close to Imetame's **IMET-3** and **IMET-10** wells. Imetame's share of gas is transported directly from the field to the thermal power project. Starting in September 2018, this early field production totaled 1,447 MMCF of natural gas through March 18, 2020 (or 70,890 cubic meters per day), which was allocated against Imetame's share of 2P reserves.

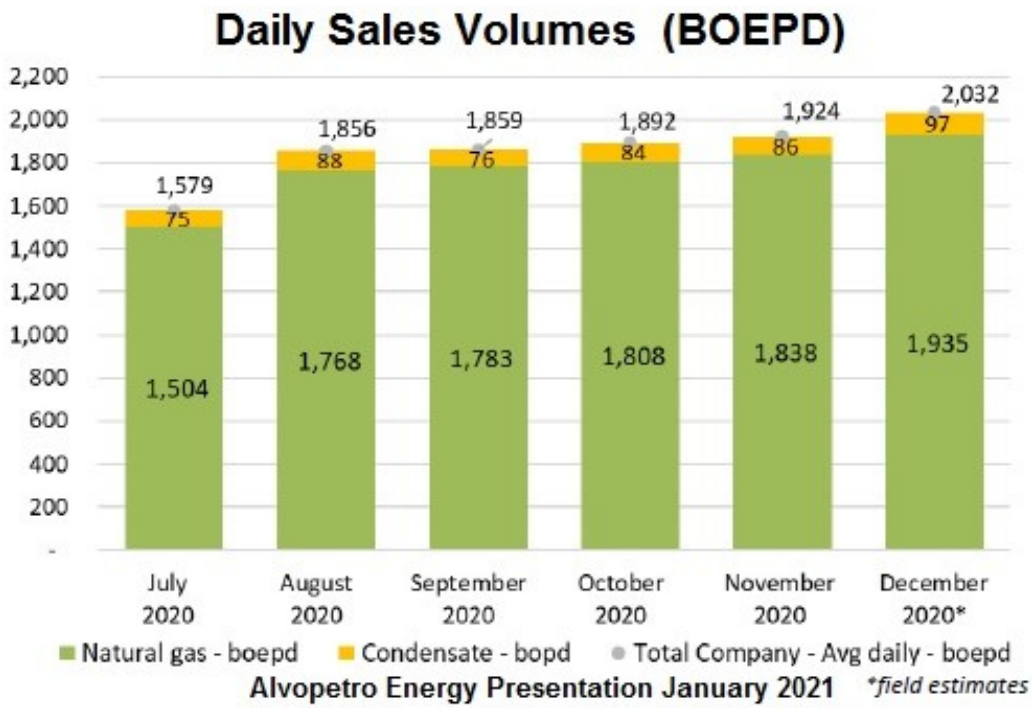
In the meantime, Alvopetro Energy negotiated a gas sales agreement with Bahiagás, constructed a high-pressure gas treatment facility (through an agreement with Enerflex Ltd.) and an 11-km transfer pipeline to transport the raw gas from the field to the gas processing plant. The treatment facility began commercially selling sales-specified gas into the local gas distribution network on July 5, 2020.

Today, the Alvopetro's **Caburé** & **Caburé Leste** fields are collectively known as the **Caburé natural gas field**. The unitized field (which includes Imetame's **Cardeal do Nordeste** and **Cardeal do Nordeste Leste** fields) has **seven existing wells**, six of which are producing wells tied-in to the 11-km transfer pipeline.

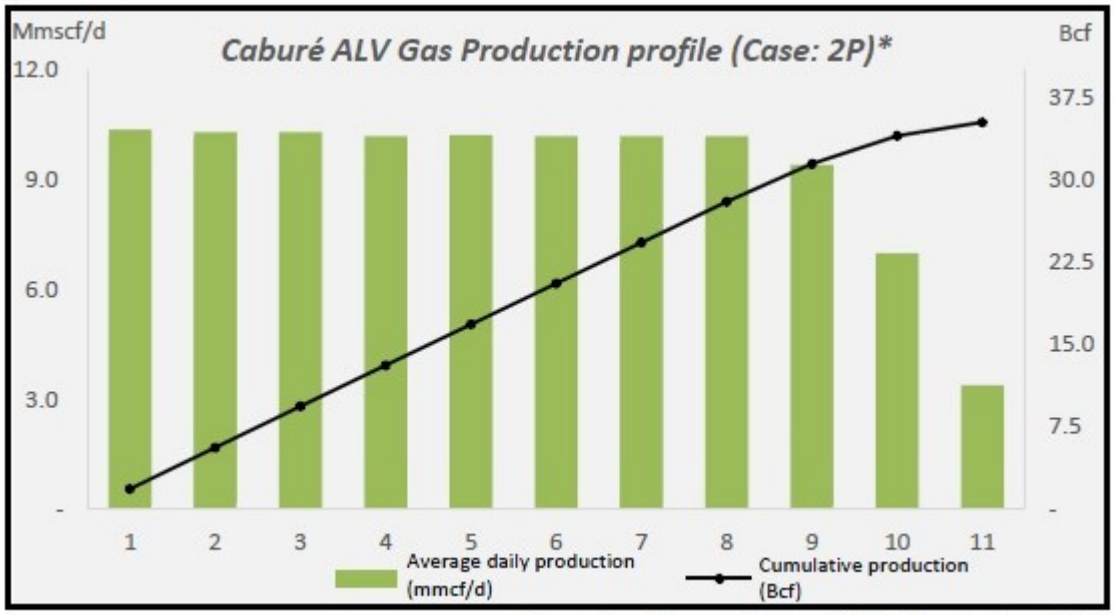
Alvopetro Energy Ltd					
Unitized Caburé Oil Field			**When**		
Existing Wells	**Block**	**Field**	**Spudded**	**Depth**	**Comment**
197-2	197	Caburé (CBE)	Dec. 2014	1,669	discovery well
IMET-3	211	Cardeal do Nordeste (CARN)	2015	2,344	commercialized April 2015
IMET-10D	211	Cardeal do Nordeste (CARN)	2015	2,576	PIG launcher site
198-A1 aka ALV-11	198	Caburé do Leste (CBEL)	Jan. 2017	1,480	commercialized May 2017
IMET-26A	212	Cardeal do Nordeste Leste	Sept.2019	1,549	commercialized March 2020
CARN-1D	211	Cardeal do Nordeste (CARN)	2019	1,739	development well
CBE-1D	197	Caburé (CBE)	2019	1,759	development well

PRODUCTION

Commercial production from the Caburé natural gas field began on July 5, 2020. Alvopetro's interest in daily sales volume, including condensate, quickly rose to a level of over 1,856 BOE and has increased slightly every month thereafter. Sales volumes have exceeded management's initial production forecast of 1,767 BOE/D, which was projected to generate EBITDA of $7.5 million.



Due to the nature of the Caburé natural gas field, **a flat production profile is expected** with little maintenance capital being required on this conventional gas reservoir. Current production is being derived from three wells of the existing seven wells with all remaining wells expected to be in production in 2021. Typically, the production profile of a natural gas well declines steadily after the initial month of production, particularly in unconventional tight gas plays that have short transient flow periods. Management's projected production profile (below) portends a relatively flat trajectory over the first eight years of operation.

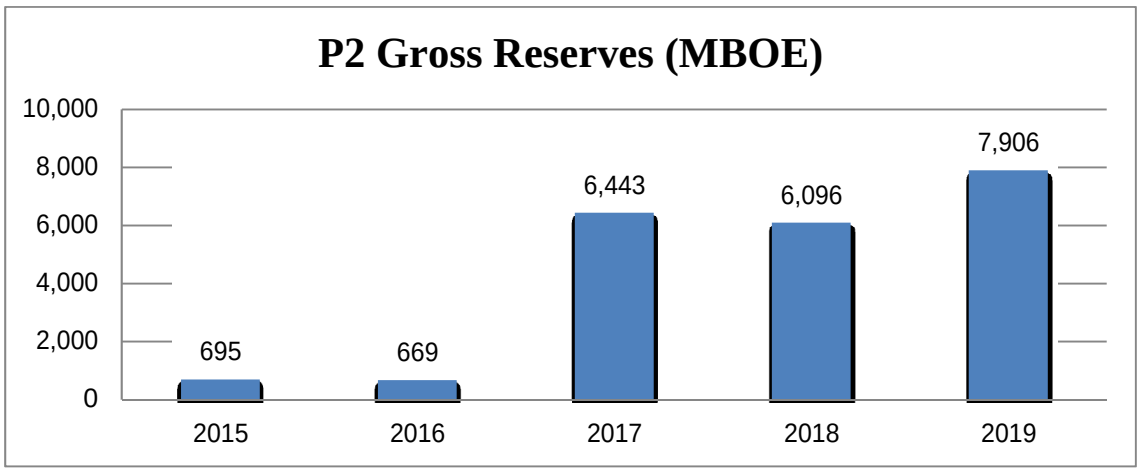


Alvopetro Energy Presentation December 2020

RESERVES

Alvopetro's reserve assessment is composed of the Caburé conventional natural gas pool (located on Blocks 197 and 198), the Gomo natural gas field (Blocks 183 and 197) and two mature oil fields: the 2,238-acre Bom Lugar and 432-acre Mae-da-lua. The Mãe-da-lua field has only one producing well (less than 10 BBL/D) and the last producing well on Bom Lugar was shut-in during January 2019.

Annually, generally in early March, the company provides an **independent reserve assessment and evaluation** (prepared in accordance with NI 51-101). The latest report, which was last prepared by GLJ Petroleum Consultants, is dated March 6, 2020 with an effective date of **December 31, 2019**.



P2 (proved plus probable) **gross reserves increased 29.7% YOY** (year over year) from 6.10 MMBOE to 7.91 MMBOE, which was driven by the drilling of three developmental wells (IMET-26A, CARN-1D and CBE-1D) in the Caburé field in the second half of 2019. Accordingly, the before tax value (discounted at 10%) increased 36.8% to $198.2 million.

Summary of Oil and Gas Reserves - By Field

Effective Dec. 31, 2019	Caburé Natural Gas Field		Gomo Gas Field		Bom Lugar Oil Field		Mãe-da-lua Oil Field		Total	
	Company Gross	Company Net	Company Gross	Company Net	Company Gross	Company Net	Company Gross	Company Net	Company Gross	Company Net
	(Mboe)	(Mboe)	(Mboe)	(Mboe)	(Mboe)	(Mboe)	(Mboe)	(Mboe)	(Mboe)	(Mboe)
Proved										
Producing	-	-	-	-	-	-	3	2	3	2
Developed Non-Producing	4,340	3,814	-	-	-	-	21	18	4,361	3,832
Undeveloped	-	-	412	367	147	138	-	-	560	505
Total Proved	**4,340**	**3,814**	**412**	**367**	**147**	**138**	**24**	**20**	**4,923**	**4,339**
Probable	1,902	1,671	946	835	121	113	14	12	2,983	2,632
Total Proved plus Probable	**6,241**	**5,485**	**1,358**	**1,202**	**268**	**251**	**38**	**32**	**7,906**	**6,971**
Possible	1,629	1,432	1,566	1,378	273	256	16	14	3,484	3,079
Total Proved plus Probable plus Possible	**7,871**	**6,917**	**2,924**	**2,580**	**541**	**507**	**55**	**46**	**11,390**	**10,050**

Alvopetro Energy 2019 Annual Report

Analyzing the increase in reserves on the field level, the company's **net P2 reserves in the unitized Caburé natural gas field increased 35.3%** to 4.06 MMBOE, while the net P2 reserves in the Gomo field natural gas field increased 15.8%.

GOMO NATURAL GAS PROJECT (100% Working Interest)

With management's first priority of commencing production of natural gas having been achieved, the company's initiative to further develop the company's resources in the Gomo Deep Basin can be accomplished, being funded with internally generated cash flow.

The Gomo natural gas project calls for the development of a tight gas play in the Gomo Deep Basin, which underlies the company's Block 183 and portion of Block 197. Block 183 encompasses 7,740 acres. The first **two wells** (**183-1** and **197-1**) were drilled in 2014.

Ownership

Alvopetro was awarded **Block 197** during Brazil's 9th Oil & Gas Exploration License Bidding Round in November 2007.

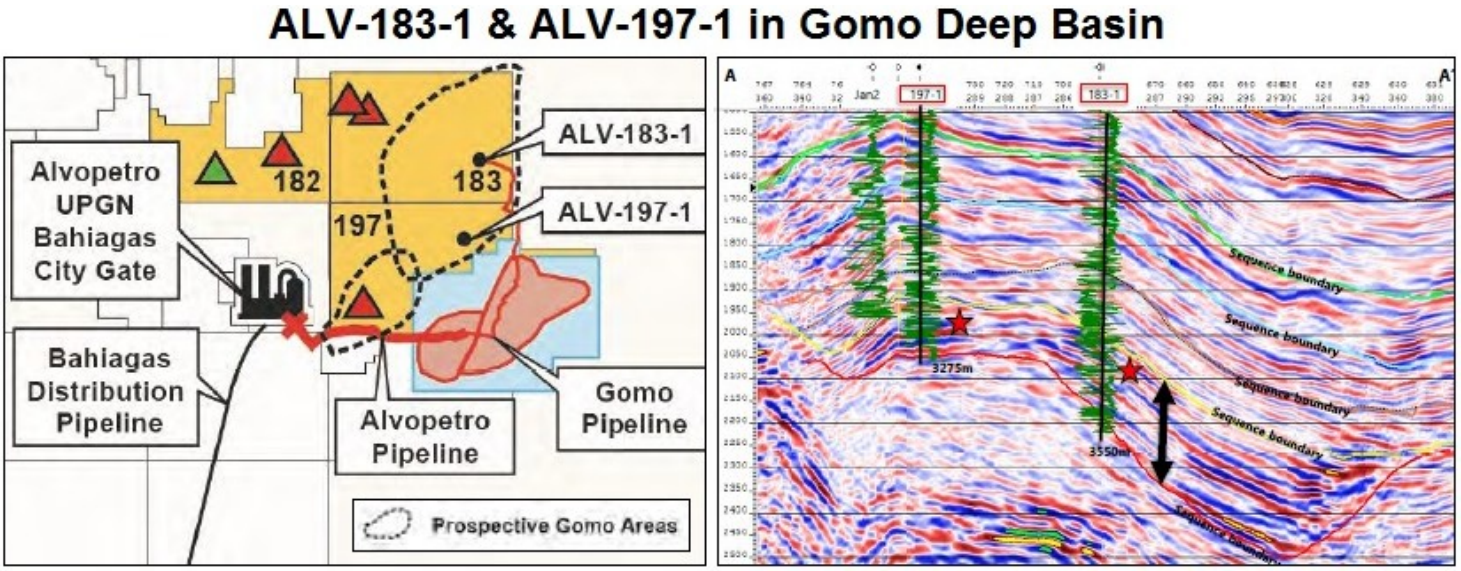
Block 183 was also awarded in Brazil's 9th Oil & Gas Exploration License Bidding Round but to another party. Subsequently, in May 2013, Alvopetro acquired Block 183 through a farm-in agreement.

Well – 183-1 (Gomo Deep Basin)

In October 2014, Alvopetro drilled the **ALV-183-1** exploratory well in the Gomo Deep Basin. ALV-183-1 was drilled to a depth of 3,550 meters. The test well **encountered 168 meters with hydrocarbon shows** over several separate intervals, including 46 meters of net pay in the Upper Gomo and 93 meters in the Lower Gomo.

Subsequently, in February 2018, the company successfully tested the intervals in the **Gomo Member** of the Lower Cretaceous Candeias (Shale) Formation and the **Caruaçu Member** of the Maracangalha Formation. According to ANP, the Gomo Member is a prospective source for unconventional shale oil or gas plays while the Caruaçu Member has potential for the development

of deep tight gas sands resources.[vii] Using the Barnett shale analogy, ANP estimated that the recoverable shale gas resources in the Recôncavo Basin are 20 TCF.[viii]



In the fourth quarter of 2019, a **fracture stimulation test** of well 183-1 targeted an 18-meter zone in the Gomo Member. During the flowback period, the well produced 5.82 MMCF of natural gas and 249 BBL of 56 degree API condensate, which correlates to an average rate of production of 0.734 MMCF/d of natural gas and 31 BBL/d of condensate. A subsequent 6-hour production period during the same test produced at an average rate of 0.919 MMCF/d of natural gas and 27 BBL/d of condensate. However, some difficulties were encountered that hampered the validation of the pressure transient analysis. **A follow-on production test is currently underway** in order to estimate the long-term productivity of the well.

The company's VP of Asset Management is currently conducting this production test in order to determine an indication of potential well productivity through studies of formation permeability and long-term deliverability (gas flow rate).

Well – 197-1 (Gomo Deep Basin)

In April 2014, Alvopetro completed drilling the ALV-197-1 exploratory well in Block 197. The well targeted the Gomo Formation and tested gas at 3,200 meters and 3,600 meters.

Plans for 8-km Flow Line

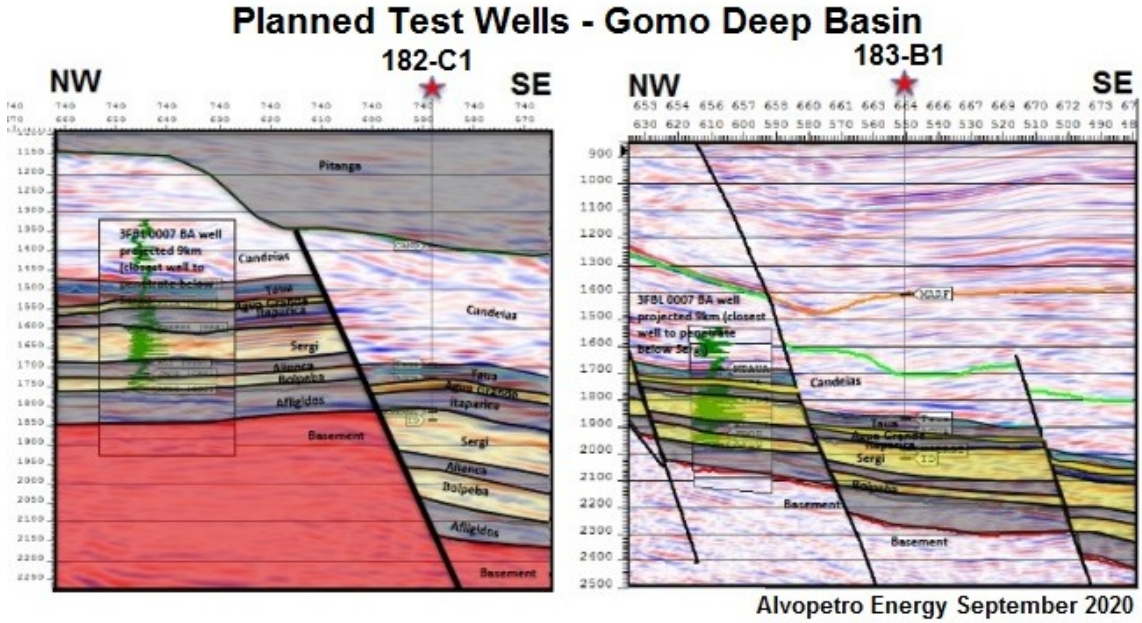
The results of the production test of ALV-183-1 will help management determine the timing of the construction of an **8-km flow line**, which will connect the 183-1 well to Alvopetro's existing 11-km Caburé gas field transfer pipeline. Once 183-1 is declared as commercialized, this 8-kilometer pipeline extension is expected to be constructed. The required environmental permits for the flow line have already been received.

Reserves

In the annual independent reserve assessment and evaluation effective December 31, 2019, the drainage areas around **183-1** and **197-1** have been assigned **2P reserves** (**1.358 MMBOE**) See Reserves section of this report for tables.

Planned Exploration Wells – 183-B1 & 182-C1 (Gomo Deep Basin)

During 2021, management plans to drill two multi-zone prospects: **ALV-183-B1** (3,100 meters) and **ALV-182-C1** (2,900 meters). Both of these exploration wells are licensed. The company has begun civil construction (preparations of the pad site) for these two exploration wells. A capital expenditure budget of $7.4 million is currently allocated to this exploration project.



GLJ Petroleum Consultants has completed independent evaluations of the UPIIP (Undiscovered Petroleum Initially in Place) for the prospective resources of both wells. For those unfamiliar with prospective resource terminology, prospective resources are "those quantities of oil and gas estimated on a given date to be potentially recoverable from undiscovered accumulations" by application of future development projects. "Prospective resources have both an associated chance of discovery and a chance of development," The key elements of prospective resources are that they are undiscovered, yet deemed potentially recoverable since they are considered to be "technically viable and economic to recover" under existing economic conditions, operating methods and government regulations.

Nevertheless, for the **1,300-acre ALV-183-B1 prospect**, GLJ's "best estimate" evaluation of **UPIIP** Prospective Resource is 43.7 BCF (**5.9 MMBOE**) with a 44% chance of discovery. For the **780-acre ALV-182-C1 prospect**, and 4.6 MMBOE GLJ's "best estimate" is 33.5 BCF (**4.6 MMBOE**) with a 47% chance of success.

RECENT NEWS

Third Quarter Results

On November 12, 2020, Alvopetro Energy reported results for the third quarter ending September 30, 2020. **Natural gas and condensate sales were $5.32 million**, a record for the company since just initiated deliveries of high pressure sales volume through its controlled midstream infrastructure. Sequential and year-over year (YOY) comparisons are meaningless since prior sales volumes from the Mãe-da-lua field were *de minimis* (averaging averaged 6 BOPD). **Natural gas sales averaged 10.105 MMCFPD** while **condensate sales averaged 79 BOPD**. Natural gas and condensate production commenced in April and commercial deliveries began on July 5, 2020. Natural gas price realization was $5.37 per MCF, and the realized condensate price was $44.75 per bbl.

G&A expenses declined11.5% YOY which is primarily attributable to staffing reductions.

Quarterly earnings were $6.483 million (or $0.062 per diluted share) versus a loss of $2.321 million (or $0.024 per diluted share) in the comparable quarter last year. The third quarter's earnings benefited from the recognition of the deferred tax asset of $4.893 million. Without the deferred tax asset recognition, earnings for the third quarter would have been $0.534 million (or $0.015 per diluted share).

With the realized sales price at $32.79 per BOE, royalties at $2.81 per BOE and production expenses at $3.99 per BOE, the **operating netback** was **$25.99 per BOE**.

VALUATION

The valuation process for small and mid-cap oil & gas companies can be based upon various valuation methodologies, including comparative analysis, a discounted cash flow (DCF) model and/or a calculation of Net Asset Value (NAV). Usually, the applicable methodology is determined by the company's position within its corporate life cycle: **comparative analysis for producing companies**, a DCF model for unprofitable producing companies and a calculation of NAV for exploration companies that are still in the developmental stage with only prospective resources. Since Alvopetro Energy has achieved commercial production and is profitable on an operational basis, we believe that comparative analysis is the appropriate valuation method.

We use a comparative valuation methodology based on **Price-to-Sales** (P/S) for oil and gas companies due to the cyclical nature of the industry, predominately influenced by the changes in the price of oil over time due to fundamental changes in the supply of and demand for the commodity.

After analyzing a segment of oil & gas companies generating revenues of up to $30 million annually, we identified several **comparable companies**, namely Epsilon Energy (EPSN), Mexco Energy (MXC), PEDEVCO (PED), PHX Minerals (PHX), Royale Energy (ROYL), Tengasco (TGC) and U.S. Energy (USEG). Companies not considered comparable to Alvopetro were those structured as Unit Trust Funds, those with significant oil service operations and those whose stocks are trading below $0.10.

The current P/S valuation range for this group of comparable companies is between 9.75 and 1.86 times TTM revenues with a mean P/S valuation of 4.43 times.

Industry Comparables	**Pr Chg YTD**	**P/E CFY**	**Price/ Book**	**Price/ Sales**	**Market Cap.**
ALVOPETRO ENERGY LTD	2.9	8.7	1.24	3.66	59.8
Industry Mean	14.2	2.5	1.85	4.43	42.5
Industry Median	20.6	2.5	1.59	3.83	14.5
S&P 500	0.3	21.9	4.18	2.75	N/A
EPSILON ENERGY LTD	9.6	N/A	1.33	3.83	89.2
MEXCO ENERGY CORP	20.6	N/A	1.85	6.12	12.9
PEDEVCO CORP	-9.3	N/A	1.01	9.75	99.3
PHX MINERALS INC	23.0	N/A	1.01	2.25	63.4
ROYALE ENERGY INC	22.2	2.5	N/A	2.97	6.0
TENGASCO	12.1	N/A	3.25	4.24	14.5
U.S. ENERGY CORP	20.9	N/A	2.64	1.86	11.9

Alvopetro Energy is entering the emerging growth phase of its corporate history with an increasing revenue stream, which was enabled by the recently constructed gas processing facility and transfer pipeline. Due the character of the company's enterprise, namely a small-capitalization company with a growing revenue profile, we expect Alvopetro to attain at least a second quartile P/S ratio of the comparable companies listed above. Moreover, a common attribute of first and second quartile companies is a stable-to-growing revenue growth profile, which is consistent to Alvopetro's. Also, due the company's recent initiation of commercial sales, we utilized the current run rate of revenues of the last six months of production to project annual revenues.

With the expectation that Alvopetro's stock will trade at a second quartile P/S ratio, our **comparable analysis valuation target** is **$1.08**.

RISKS

- Alvopetro operates in Brazil, a country marked by a history of hyperinflation (1980's through 1995) and currency devaluations (1994 – 2002, 2012 – 2015 and starting again in 2018). The country has also experienced volatile political and economic climates. Then again, oil & gas are commodities, and as such, are influenced by global factors rather than local economic conditions.
- The Brazilian Government, at some time, could restrict the repatriation of capital and/or earnings from Brazil or could alter the regulatory regime, which in extreme and rare circumstances would include the risk of the expropriation of properties without fair compensation.
- Under the gas sales agreement with Bahiagás, there are penalties if Alvopetro fails to supply the firm volumes specified in the contract. Management anticipates that the company's production can fulfill the firm sales commitments; however, if not, the company could purchase third-party gas supplies to meet its commitments or pay the failure penalties.
- Lower gas price and/or reduced demand due to a recession could cause Bahiagás to default on the take-or-pay provision in the gas sales agreement.
- Operationally, all natural resource companies, including oil & gas companies, are at risk from labor disputes.

BALANCE SHEETS

ALVOPETRO ENERGY LIMITED

(in '000 $US except share data)	2016	2017	2018	2019	3Q 2020
Period ending	12/31/2016	12/31/2017	12/31/2018	12/31/2019	9/30/2020
ASSETS					
Cash and cash equivalents	17,788	9,189	7,070	1,215	3,167
Restricted cash	108	106	135	270	112
Trade and other receivables	431	153	284	265	1,944
Prepaid expenditures	196	208	330	370	92
Assets held for sale	410	236	202	332	121
Total Current Assets	**18,933**	**9,892**	**8,021**	**2,452**	**5,436**
Exploration and evaluation assets	53,259	54,585	35,340	35,971	30,526
Property, plant and equipment	4,860	4,238	22,011	30,984	25,277
Right-of-use assets	-	-	-	219	8,322
	-	-	-	-	4,893
Other assets	-	-	-	1,790	1,292
TOTAL ASSETS	**77,052**	**68,715**	**65,372**	**71,416**	**75,746**
Accounts payable & accrued liabilities	1,878	1,111	1,221	3,244	2,383
Lease liabilities	-			101	470
Decommissioning liabilities	78	19	71	80	59
Other liabilities	-			5,728	291
Total Current Liabilities	**1,956**	**1,130**	**1,292**	**9,153**	**3,203**
Lease liabilities	-			62	7,943
Credit facility	-			5,027	15,336
Other liabilities	-		2,348	-	
Decommissioning liabilities	1,321	1,445	1,160	1,300	967
Non-Current Liabilities	**1,321**	**1,445**	**3,508**	**6,389**	**24,246**
TOTAL LIABILITIES	**3,277**	**2,575**	**4,800**	**15,542**	**27,449**
SHAREHOLDERS' EQUITY					
Share capital	151,937	151,937	155,731	156,355	156,686
Contributed surplus	1,558	1,662	1,813	2,790	2,750
Deficit	(60,390)	(67,507)	(71,847)	(76,878)	(73,926)
Accumulated other comprehensive loss	(19,330)	(19,952)	(25,125)	(26,393)	(37,213)
Total Stockholders' Equity	**73,775**	**66,140**	**60,572**	**55,874**	**48,297**
TOTAL LIAB. & STOCKHOLDERS' EQUITY	**77,052**	**68,715**	**65,372**	**71,416**	**75,746**
Shares outstanding	85,166,871	85,166,871	96,670,871	97,849,788	99,122,412

PROJECTED ANNUAL INCOME STATEMENTS

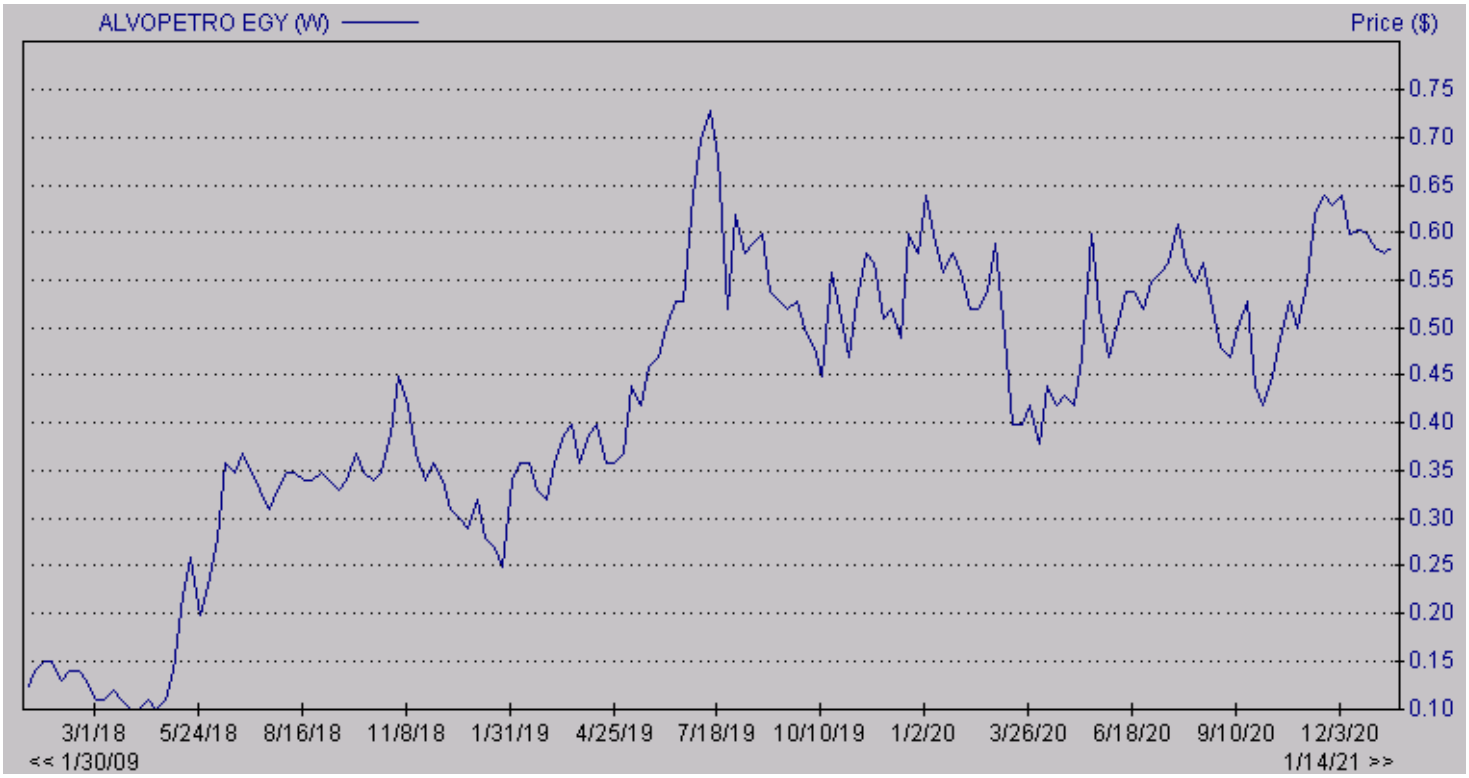
ALVOPETRO ENERGY LIMITED

Income Statement (in '000 $US, except share out. data)	2016 12/31/2016	2017 12/31/2017	2018 12/31/2018	2019 12/31/2019	2020 E 12/31/2020
Natural gas, oil & condensate sales	561	462	519	240	10,831
Royalties and production taxes	(59)	(51)	(55)	(34)	(933)
Net natural gas, oil & condensate rev.	**502**	**411**	**464**	**206**	**9,898**
Other income	109	144	152	194	70
Total revenues & other income	**611**	**555**	**616**	**400**	**9,968**
Production	1,153	824	840	276	1,387
Transportation	33	23	13	-	0
General and administrative	3,523	2,607	2,762	2,793	2,991
Depletion and depreciation	416	205	144	234	1,990
Impairment	7,823	3,661	765	1,645	1,381
Accretion of decommissioning liabilities	28	37	0	0	0
Exploration and evaluation expenses	434	212	209	95	0
Finance expenses	-		41	259	2,337
Share-based compensation	80	85	95	141	188
Foreign exchange (gain) loss	(12)	2	32	6	(9)
Loss (gain) on disposition of assets	41	16	55	(38)	0
Total expenses	**13,519**	**7,672**	**4,956**	**5,411**	**10,265**
Income (loss) before taxes	**(12,908)**	**(7,117)**	**(4,340)**	**(5,011)**	**(296)**
Deferred tax recovery (income tax)	330	0	0	0	5,140
Net income (loss)	**(12,578)**	**(7,117)**	**(4,340)**	**(5,011)**	**4,843**
Other comprehensive income					
Fgn. curr. translation gain (loss)	5,507	(622)	(5,173)	(1,269)	0
Comprehensive income (loss)	**(7,071)**	**(7,739)**	**(9,513)**	**(6,280)**	**4,843**
Diluted income (loss) per diluted share	**(0.1477)**	**(0.0836)**	**(0.0496)**	**(0.0518)**	**0.0460**
Wgted. average shares out. - diluted	85,166,871	85,166,871	87,562,224	96,708,918	105,315,347

PROJECTED QUARTERLY INCOME STATEMENTS

ALVOPETRO ENERGY LIMITED						
Income Statement (in '000 $US, except share out. data)	2019 12/31/2019	1Q 2020 3/31/2020	2Q 2020 6/30/2020	3Q 2020 9/30/20120	4Q E 2020 12/31/2020	Estimate 2020 12/31/2020
Natural gas, oil & condensate sales	240	61	40	5,320	5,410	10,831
Royalties and production taxes	(34)	(8)	(5)	(456)	(464)	(933)
Net natural gas, oil & condensate rev.	**206**	**53**	**35**	**4,864**	**4,946**	**9,898**
Other income	194	24	20	14	12	70
Total revenues & other income	**400**	**77**	**55**	**4,878**	**4,958**	**9,968**
Production	276	44	36	648	659	1,387
Transportation	-	0	0	0	0	0
General and administrative	2,793	640	1,032	654	665	2,991
Depletion and depreciation	234	62	50	931	947	1,990
Impairment	1,645	1,381	0	0	0	1,381
Accretion of decommissioning liab.	0	-		-		0
Exploration and evaluation expenses	95	-		-		0
Finance expenses	259	276	69	996	996	2,337
Share-based compensation	141	28	39	74	47	188
Foreign exchange (gain) loss	6	9	(3)	(15)	0	(9)
Loss (gain) on disposition of assets	(38)	0	0	0	0	0
Total expenses	**5,411**	**2,440**	**1,223**	**3,288**	**3,314**	**10,265**
Income (loss) before taxes	**(5,011)**	**(2,363)**	**(1,168)**	**1,590**	**1,645**	**(296)**
Deferred tax recovery (income tax)	0	0	0	4,893	247	5,140
Net income (loss)	**(5,011)**	**(2,363)**	**(1,168)**	**6,483**	**1,891**	**4,843**
Other comprehensive income						
Fgn. curr. translation gain (loss)	(1,269)	(8,352)	(1,412)	(1,056)	900	(9,920)
Comprehensive income (loss)	**(6,280)**	**(10,715)**	**(2,580)**	**5,427**	**2,791**	**(5,077)**
Diluted income (loss) per diluted share	**(0.0518)**	**(0.0240)**	**(0.0119**	**0.0616**	**0.018(**	**0.046(**
Wgted. average shares out. - diluted	96,708,918	98,307,76(	98,436,50	105,315,347	105,315,347	105,315,34

HISTORICAL STOCK PRICE



DISCLOSURES

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[i] UPDATE 3-Petrominerales buys Colombia pipeline stake, eases transportation worries, Reuters, June 21, 2011
[ii] Colombia's Pacific Rubiales buys rival oil firm Petrominerales for C$1.6 billion, Reuters, September 30, 2013
[iii] AEC eager to get started on Ecuador pipeline, Oil & Gas Journal, September 27, 2000
[iv] Alvopetro 1Q 2017 MDA page 4, footnote 10.
[v] Alvopetro 3Q 2020 MDA page 4
[vi] Alvopetro 1Q 2017 MDA page 4, footnote 10 and table.
[vii] Loureiro**,** Elaine, ANP Brasil 12th Round Oil & Gas Bidding Rounds, Recôncavo Basin, September 2013, Slide 42
[viii] Tassinari, Prof. Dr. Colombo C. G. Tassinari, Unconventional Hydrocarbon Resource Potential in Brazil and 12th Bid Round Overview, December 2013, slide 9