

# Atlanta Statement of Reserves

DATED DECEMBER 31<sup>ST</sup>, 2021



**Enauta**

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## Enauta releases Reserves Statement of Atlanta Field

Rio de Janeiro, March 17<sup>th</sup>, 2022

“Enauta Participações S.A. (“Company”, B3: ENAT3) provides today an update on the oil reserves at the Atlanta Field as of December 31<sup>st</sup>, 2021, based on a reserves statement prepared by independent consultant Gaffney, Cline & Associates (GaffneyCline) titled “Reserves and Contingent Resources Statement for Atlanta Field, Brazil as of December 31, 2021” issued on March 8, 2022.

Enauta Participações S.A. holds 100% of Enauta Energia S.A. For this Report, Enauta Energia S.A. is referred to as “Enauta” or “Company”.

Please find below an extract, which is part of the GaffneyCline report:

“This Reserves and Contingent Resources statement has been prepared by Gaffney, Cline & Associates (GaffneyCline) and issued on March 08, 2022 at the request of Enauta Energia S.A. (Enauta or “the Client”), operator of and 100% interest participant in the Atlanta Field in the Santos basin, offshore Brazil.

In a press release dated December 21, 2020 Enauta announced that it had entered into an agreement with Barra Energia do Brasil (Barra Energia) to acquire Barra Energia’s 50% working interest to reach a 100% working interest in Block BS-4, where the Atlanta field is located. The transfer of ownership received regulatory approval from by the ANP on June 25, 2021 so as of December 31, 2021, Enauta’s working interest in the Atlanta field was 100% and this report has been prepared on that basis.

GaffneyCline conducted an independent audit examination and estimation, as of December 31, 2021, of the crude oil reserves and contingent resources of the Atlanta field. On the basis of technical and other information made available to GaffneyCline concerning this property unit, GaffneyCline hereby provides the reserves statement in Table 1 and Table 2.

**Table 1: Statement of Crude Oil Reserve Volumes Atlanta Field, Santos Basin, Brazil, as of December 31, 2021**

Category	Oil Gross (100%) Field Volumes			Oil Reserves Net to Enauta’s Interest		
	Developed (MMBbl)	Undeveloped (MMBbl)	Total (MMBbl)	Developed (MMBbl)	Undeveloped (MMBbl)	Total (MMBbl)
1P	7.6	78.0	85.6	7.6	78.0	85.6
2P	7.7	98.0	105.7	7.7	98.0	105.7
3P	7.9	101.8	109.7	7.9	101.8	109.7



**Table 2: Statement of Crude Oil Contingent Resource Volumes Atlanta Field, Santos Basin, Brazil, as of December 31, 2021**

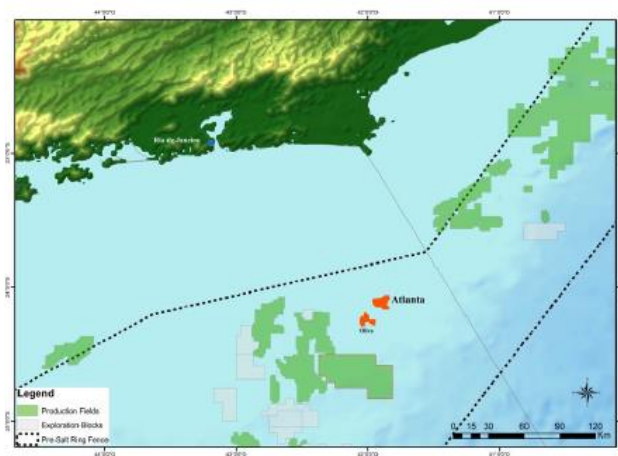
Category	Oil Gross (100%) Field Volumes (MMBbl)	Oil Contingent Resources Net to Enauta's Interest (MMBbl)
1C	0.0	0.0
2C	31.9	31.9
3C	43.1	43.1

Crude oil estimated to be recovered during field separation is reported in millions of barrels (MMstb). Natural gas produced will be used in the field, and it has not been reported as reserves.

## Field Description

The Atlanta field is located in the northern area of the Santos basin, 185 km offshore, southeast of Rio de Janeiro (Figure 1) in approximately 1,550 m water depth.

**Figure 1: Atlanta Field – Location Map**

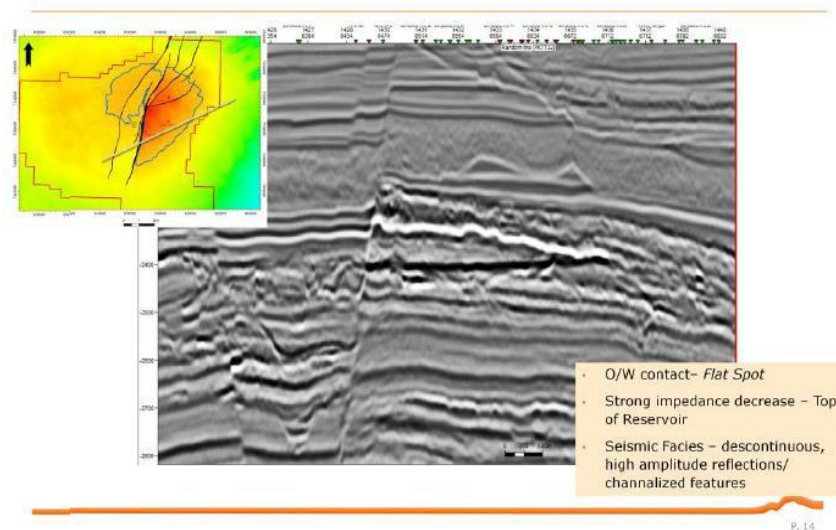


Source: Enauta Energia S.A.

This field is part of the BS-4 Block that was acquired in Round 0 by Petrobras. In 1998, a consortium was formed between Petrobras (40%), Shell (40%, as operator) and Chevron (20%).

The field discovery was made with the 1-SHEL-4-RJS well, which was drilled by Shell in April 2001. The well found heavy oil of 14°API in Eocene turbiditic sandstones at -2,326 m subsea depth. Because of severe washouts in the well, the 1-SHEL-4A-RJS sidetrack was drilled to verify this objective. An oil-water contact was identified by well logs at -2,404 m subsea.

The structure defined by the 3D seismic is a faulted anticline with a main fault running SW to NE. The well is located in the footwall, which has the main prospective interest. The pay zone in the footwall is about 130 m thick, while in the hanging wall it is about 30 m. The oil-water contact also is clearly seen in the seismic image as a flat spot (Figure 2).

**Figure 2: Atlanta Field – Seismic Image**

Source: Enauta Energia S.A.

Shell followed the discovery with an appraisal program, drilling the 3-SHEL-8-RJS well, which was successful. In 2006, Shell drilled extension wells 9-SHEL-19D-RJS, 3-SHEL-20HP-RJS (abandoned) and 3-SHEL-20HPA-RJS (sidetrack). In 2012, Shell and Chevron sold their interests to Enauta (formerly Queiroz Galvão E&P) (30%, as operator) and Barra Energia (30%). In 2013, Dommo (formerly OGX Petróleo e Gás S.A) acquired its 40% from Petrobras. On September 24, 2018, the Arbitral Tribunal in the LCIA Arbitration No. UN173772 decided that the 40% of Dommo's rights and interests under the Concession had been deemed transferred to both Barra and Enauta in the same proportion of 20% for each company as from 11 October 2017. The Arbitral Tribunal's award is final and binding, not subject to appeal. On December 21, 2020, Enauta announced that it had entered into an agreement to acquire Barra's 50% interest in the field. According to the 9th amendment to the Concession Agreement, this transfer was approved by the ANP on June 25, 2021. Therefore, as of December 31, 2021, Enauta held a 100% working interest in Atlanta.

In 2013, Enauta started the field development by drilling the horizontal well 7-ATL-2HP-RJS, which tested a stable flow of 1,250 bopd through a 20/64" choke and a peak flow of 5,000 bopd without choke restriction. In 2014, a second horizontal well was drilled, 7-ATL-3H-RJS, that tested a stable flow of 1,320 bopd through a 16/64" choke and a peak flow of 4,000 bopd without choke restriction.

In 2019, a third well, 7-ATL-4HB-RJS, was drilled.

Production from the field started in 2018 through satellite production lines to a small FPSO processing unit of maximum capacity of 30,000 bopd. Wells 2HP and 3H started production in May 2018, both at rates around 8,000 bopd. Well 4HB was put on stream in June 2019 at rates of about 15,000 bopd.

Oil is exported via ships and all the gas produced is used as fuel. Water is treated and disposed of into the sea. The ESPs installed in 2014 in these wells failed shortly after production started and the wells were kept on production by their backup ESPs installed on the seabed. During 2019, after the drilling and completion of the third well, the two initial wells were intervened for ESP replacement. In late 2020



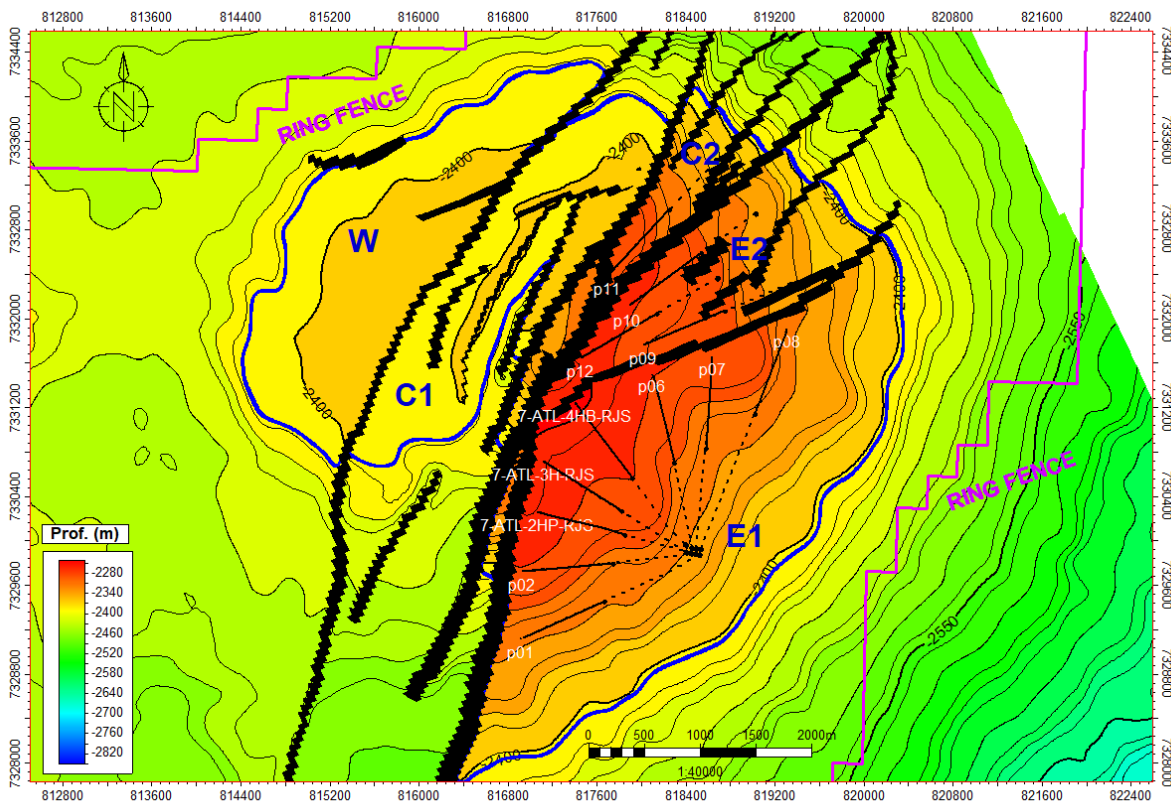
all wells were shut in to effect repairs to the water separation and treatment system. Well 4HB was back online in February 2021, 3H in April and 2HP in July. Well 3H was shut in in November 2021 in order to use its seafloor pump to replace the broken one of well 4HB (which has a higher production potential). Total production at the end of 2021 was 12,600 bopd.

The current small FPSO will be used until around February 2024 to complete what is known as the Early Production System (EPS). At that time the three existing wells will be temporarily abandoned and the current FPSO will be released.

Five new horizontal wells (P06, P09, P10, P11 and P12, Figure 3—note that the other wells shown on the map are not included in the current plan) will be drilled. A larger FPSO (50,000 bopd capacity) is due for installation by June 2024 at which time new well P12 will be tied in for production. P09 will follow in August and P06 in December 2024. The three currently existing wells will be tied in to the new FPSO at the start of 2025. The two remaining new wells are scheduled to be drilled and tied in by the end of 2027.

Note that Enauta will be purchasing the new FPSO rather than leasing it as was the former plan.

**Figure 3: Atlanta Field – Structure and Development Plan**



Source Enauta

Note that the full development program now comprises a total of eight horizontal wells (three existing plus five to be drilled) compared with the total of 12 wells included in the 2019 year-end audit.

Oil is exported via ships and gas is consumed at the FPSO production facility. The concession period expires on December 26, 2033. Enauta is discussing a contract extension with the ANP. Nothing is firm



at the present, so a potential extension for 10 years until the end of 2043 has been assumed. GaffneyCline has estimated Reserves up to the present contract deadline with the remainder of the economically producible production being classified as Contingent Resources. These volumes are candidates to be promoted to the reserves class when the contract extension is granted.

However, as reserves and resources are evaluated periodically, changes in physical, economic or regulatory conditions could prevent the automatic promotion of Contingent Resources to Reserves when the contingency is fulfilled.

## ▲ Reserves and Contingent Resources Assessment

At the end of 2021, the Atlanta field was producing 12,600 bopd from wells 2HP and 4 HB only. Well 3H had been shut in in October in order to use its seafloor ESP for well 4HP (which has a higher production potential). The maximum rate during the year was 16,600 bopd in July, lower than the 30,000 bopd FPSO capacity. The gas-oil ratio remained around the saturation value of about 245 scf/stb.

Enauta estimated future production through reservoir simulation. This simulation considered one geologic model with oil initially in place around 1,221 MMstb because the structure is reasonably well-defined by seismic and the oil-water contact has been identified both on well logs and seismic. The model was history matched with the production history of the existing three wells. GaffneyCline considered that the match is fair, although it is too early for to use the results to define the reservoir parameters definitively. Enauta developed low, best and high simulation forecast cases by varying the most critical parameters.

The three cases (low, best and high) produce total technical recovery estimates very similar to those reported last year which included an analysis of analog fields Peregrino and Argonauta (also heavy oil fields offshore Brazil with more than 10 years of production). For this reason, GaffneyCline has accepted the simulation results as reasonable estimates of future recovery.

## ▲ Basis of Opinion

This document reflects GaffneyCline's informed professional judgment based on accepted standards of professional investigation and, as applicable, the data and information provided by the Client, the limited scope of engagement, and the time permitted to conduct the evaluation.

In line with those accepted standards, this document does not in any way constitute or make a guarantee or prediction of results, and no warranty is implied or expressed that actual outcome will conform to the outcomes presented herein. GaffneyCline has not independently verified any information provided by, or at the direction of, the Client, and has accepted the accuracy and completeness of this data. GaffneyCline has no reason to believe that any material facts have been withheld, but does not warrant that its inquiries have revealed all of the matters that a more extensive examination might otherwise disclose.

The opinions expressed herein are subject to and fully qualified by the generally accepted uncertainties associated with the interpretation of geoscience and engineering data and do not reflect the totality of circumstances, scenarios and information that could potentially affect decisions made by the report's



recipients and/or actual results. The opinions and statements contained in this report are made in good faith and in the belief that such opinions and statements are representative of prevailing physical and economic circumstances.

There are numerous uncertainties inherent in estimating reserves and resources, and in projecting future production, development expenditures, operating expenses and cash flows. Oil and gas resources assessments must be recognized as a subjective process of estimating subsurface accumulations of oil and gas that cannot be measured in an exact way. Estimates of oil and gas resources prepared by other parties may differ, perhaps materially, from those contained within this report.

The accuracy of any reserves or resources estimate is a function of the quality of the available data and of engineering and geological interpretation. Results of drilling, testing and production that post-date the preparation of the estimates may justify revisions, some or all of which may be material. Accordingly, reserves and resources estimates are often different from the quantities of oil and gas that are ultimately recovered, and the timing and cost of those volumes that are recovered may vary from that assumed.

GaffneyCline's review and audit involved reviewing pertinent facts, interpretations and assumptions made by the Client or others in preparing estimates of reserves and resources. GaffneyCline performed procedures necessary to enable it to render an opinion on the appropriateness of the methodologies employed, adequacy and quality of the data relied on, depth and thoroughness of the reserves and resources estimation process, classification and categorization of reserves and resources appropriate to the relevant definitions used, and reasonableness of the estimates.

## ▲ Definition of Reserves and Contingent Resources

Reserves are those quantities of petroleum that are anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria, based on the development project(s) applied: discovered, recoverable, commercial and remaining (as of the evaluation date).

Reserves are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by development and production status. All categories of reserves volumes quoted herein have been derived within the context of an economic limit test (ELT) assessment (pre-tax and exclusive of accumulated depreciation amounts) prior to any Net Present Value (NPV) analysis.

Contingent Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development because of one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no evident viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

GaffneyCline has not undertaken a site visit and inspection because it was not included in the scope of work. As such, GaffneyCline is not in a position to comment on the operations or facilities in place, their appropriateness and condition, or whether they are in compliance with the regulations pertaining to



such operations. Further, GaffneyCline is not in a position to comment on any aspect of health, safety, or environment of such operation.

This report has been prepared based on GaffneyCline's understanding of the effects of petroleum legislation and other regulations that currently apply to these properties. However, GaffneyCline is not in a position to attest to property title or rights, conditions of these rights (including environmental and abandonment obligations), or any necessary licenses and consents (including planning permission, financial interest relationships, or encumbrances thereon for any part of the appraised properties).

GaffneyCline is not aware of any potential changes in regulations applicable to these fields that could affect the ability of the Client to produce the estimated reserves.

GaffneyCline is not aware of any carbon pricing impost or GHG emissions related regulations that are applicable to the evaluation of the assets that are the subject of this report. GaffneyCline has also not included the impact of any potential carbon pricing scheme or regulatory compliance costs for GHG emissions that may be implemented in the future.

## ▲ Qualifications

In performing this study, GaffneyCline is not aware that any conflict of interest has existed. As an independent consultancy, GaffneyCline is providing impartial technical, commercial, and strategic advice within the energy sector. GaffneyCline's remuneration was not in any way contingent on the contents of this report.

In the preparation of this document, GaffneyCline has maintained, and continues to maintain, a strict independent consultant-client relationship with Enauta. Furthermore, the management and employees of GaffneyCline have no interest in any of the assets evaluated or related with the analysis performed, as part of this report.

Staff members who prepared this report hold appropriate professional and educational qualifications and have the necessary levels of experience and expertise to perform the work"



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