

Production & Sales 4Q23

*FPSO Sepetiba
First oil in
December 2023*

Highlights on production and sales in 4Q23

Rio de Janeiro, February 08, 2024

In 2023, we delivered an excellent upstream operational performance, meeting all production forecasts for the year. Total annual production of oil and natural gas, of 2.782 MMboed, was 3.7% above the production of 2022. Our good results were made possible mainly by the start-up of FPSOs Almirante Barroso, Anna Nery and Anita Garibaldi, as well as the full ramp-up of P-71 and FPSO Guanabara. Another factor that contributed to this result was the start up of new wells in the Campos and Santos Basins. We also achieved an annual record in operated production, with an average of 3.87 MMboed, 6.2% higher than in 2022.

We highlight the start-up of 4 new production systems this year:

- FPSO Anna Nery, on May 7: the first unit of the Marlim and Voador revitalization project to start production, the FPSO has the capacity to produce up to 70 Kbpd of oil and process 4 MMm³ of natural gas per day and has already achieved average oil production of 44 Kbpd in December 2023.
- FPSO Almirante Barroso, on May 31: the fifth unit to start production in the Búzios field, with the capacity to produce up to 150 Kbpd of oil and 6 MMm³ of natural gas per day, the unit, currently with 3 producing wells connected, reached its nominal design capacity in October 2023, less than 5 months after first oil, a record in the pre-salt.
- FPSO Anita Garibaldi, on August 16: the second unit of the Marlim and Voador revitalization project to start production, the FPSO has the capacity to produce up to 80 Kbpd of oil and process 7 MMm³ of natural gas per day and will operate simultaneously in the post and pre-salt of these fields. We currently have 3 producing wells in operation.
- FPSO Sepetiba, on December 31: This is Mero's second permanent production system, with the capacity to produce up to 180 Kbpd of oil per day and process up to 12 MMm³ of gas. The FPSO is equipped with innovative technologies that combine increased efficiency and reduced GHG emissions, including CCUS (Carbon Capture, Utilization and Storage), in which CO₂-rich gas is reinjected into the reservoir, reducing emissions into the atmosphere. "Our project, which combines CCUS with enhanced oil recovery, is the largest in the world in terms of annual CO₂ reinjection capacity, enabling production with lower emissions per barrel. The production start-up of new FPSOs with this technology will help us achieve our commitment to reinject 80 million tons of CO₂ by 2025. Currently, 24 platforms operating in the Santos Basin pre-salt are equipped with CCUS-EOR," said Carlos Travassos, Director of Engineering, Technology and Innovation.

In 2023, we achieved several production records, including the following:

- Total operated production: 3.87 MMboed (previous record of 3.64 MMboed in 2022).
- Petrobras pre-salt production: 2.17 MMboed (previous record of 1.97 MMboed in 2022).
- IUGA (Associated Gas Utilization Index): 97.6% (previous record of 97.3% in 2022).

In 4Q23, average production of oil, NGL and natural gas reached 2.94 MMboed, 2.0% higher than 3Q23, mainly due to the ramp-up of the FPSOs P-71 in the Itapu field, Almirante Barroso in the Buzios field and Anna Nery and Anita Garibaldi in the Marlim and Voador fields. The production start-up of 4 new wells from complementary projects in the Campos and Santos Basins also contributed to 4Q23 results. These effects were partially offset by the natural depletion of mature fields.

Records in 4Q23:

- Total operated production: 4.05 MMboed (previous record of 3.98 MMboed in 3Q23).
- Petrobras pre-salt production: 2.33 MMboed (previous record of 2.25 MMboed in 3Q23), which represents 79% of Petrobras' total production.
- IUGA (Associated Gas Utilization Index): 98.0% (previous record of 97.6% in 1Q22), contributing significantly to the reduction of emissions and greater carbon efficiency.

As for the downstream segment, the total utilization factor (FUT) of the refining facilities was 92% in 2023, 4 p.p higher than 2022, even with significant scheduled shutdowns throughout the year at the REFAP, RPBC, REDUC and REGAP refineries. Compared to 2022, we increased the share of diesel, gasoline and jet fuel by 2 p.p., reaching 68% of total production, as a result of various optimizations. Total production of oil products was 1,772 Kbpd in 2023, 2% higher than 2022. This growth ensured better allocation of domestic oil and made it possible to supply the market with oil products produced in Brazil, reducing imports.

In 2023, we achieved a new record for pre-salt oils processing, which represented 65% of the feedstock in refining, 3 p.p. above 2022 results. The pre-salt has a combination of high productivity, oil with lower carbon footprint and higher yields of diesel, gasoline and jet fuel.

Sales of S-10 diesel reached a new record, accounting for 62% of total diesel sales, of 463 Kbpd. In line with sales, we reached an annual record for S-10 diesel production in 2023, with 428 Kbpd produced.

Due to investments on the RefTOP Program and optimization actions, in 2023 we achieved the best historical results of the refineries in terms of Energy Intensity (103.7 or 3.8 points below the 2022 result), and Greenhouse Gas Emission Intensity (36.8 kg CO₂ eq/CWT, a reduction of 3% compared to 2022), showing the company's commitment in lowering the carbon intensity of its operations.

In the BioRefining Program, we established a new commercial partnership for the supply of diesel with renewable content, which for the first time will allow transportation companies to fill up their vehicles with this fuel at selected service stations. We have expanded the tests in order to increase the production capacity of this fuel in our refining facilities. In addition to REPAR, which already sells the product, we carried out tests at RPBC, REDUC and REPLAN, which are already able to produce R5 diesel. According to the director of Industrial Processes and Products, William França, this is a milestone in Petrobras' decarbonization path. "Consistent with the demands of society and a changing world, we are adapting our refineries with co-processing units, based on renewable streams. We are committed to a just energy transition and an ever-increasing sustainability of our products."

With technology developed by Petrobras, we achieved a historic milestone by processing 100% renewable material for the first time, in partnership with the Riograndense Refinery, generating fully renewable chemical products. It is worth noting that this processing, carried out in a fluid catalytic cracking (FCC) unit, is the first in the world. In addition, we carried out a new test of marine fuel with renewable content, with a percentage reduction in emissions of around 19% when compared to the 100% mineral bunker.

In the Gas and Low Carbon energies segment, we reached the end of 2023 with the best annual historical result for the flaring rate of Natural Gas Processing assets (0.16%). Between 2017 and 2023, there was a 78% reduction in this index, from 0.72% to 0.16%, and from 2022 to 2023 the reduction was 15%. This result shows consistency in the continuous improvement of the index over the period, estimated at 971,000 tons of CO₂ eq of emissions that were avoided since 2017.

We signed new natural gas contracts with the Rio de Janeiro gas distribution companies CEG and CEG RIO, following the conclusion of a settlement agreement. The new contracts aim to regulate the supply of natural gas to the Rio de Janeiro market and are valid until December 2034, with a total estimated value of R\$51.6 billion.

We signed contracts with Equinor Energy do Brasil Ltda. (Equinor) for the Campos Basin Integrated Natural Gas Flow System (SIE-BC) and for access to the Cabiúnas Gas Treatment Unit (UTGCAB). With the signing of these contracts, Equinor will be able to transport natural gas from the Roncador field, located in the Campos Basin, from January 2024 on. With this contract, we have complied with the provisions of the Gas Law, providing negotiated access to infrastructures and enabling the diversification of agents in all links of the natural gas chain, by sharing the infrastructures of the Santos Basin (SIE BS and SIP), Campos Basin, Catu Pole (BA) and Cacimbas Pole (ES).

We signed a new amendment to the natural gas purchase contract with Yacimientos Petrolíferos Fiscales Bolivianos (YPFB), changing the delivery profile of the total volume of gas contracted by Petrobras. The amendment provides for the maximum volume of 20 million m³ per day to be maintained, with greater flexibility in commitments for deliveries and receipts, and brings greater security and predictability to the supply of gas to the market served by Petrobras.

We signed a new 10-year contract with Exceleerate Energy to charter the FSRU Sequoia regasifier, while we resumed operations at the Bahia LNG terminal. The contract allows us to rebuild our fleet with a larger, more efficient vessel.

Disclaimer

This release may include forecasts that are subject to uncertainties. Such forecasts, which address the Company's expected business and financial performance, among other matters, contain words such as "believe," "expect," "estimate," "anticipate," "optimistic," "intend," "plan," "aim," "will," "may," "should," "could," "would," "likely," and similar expressions. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date on which they are made. There is no assurance that the expected events, trends or results will actually occur, therefore future results of the Company's operations may differ from current expectations and the reader should not rely exclusively on the information contained herein. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information or future events or for any other reason. The values reported for 4Q23 onwards are estimates. The operational data contained in this release is not audited by the independent auditor.

1 - Exploration & Production

Thousand barrels of oil equivalent per day (Mboed)	4Q23	3Q23	4Q22	2023	2022	Variation (%)		
						4Q23 X 3Q23	4Q23 X 4Q22	2023 X 2022
Crude oil, NGL and natural gas - Brazil	2.901	2.843	2.611	2.748	2.648	2,0	11,1	3,8
Crude oil and NGLs (Kbpd)	2.361	2.318	2.111	2.231	2.142	1,9	11,8	4,2
Onshore and Shallow water	36	34	71	43	74	5,9	(49,3)	(41,9)
Post-salt - deep and ultra deep	388	412	401	382	434	(5,8)	(3,2)	(12,0)
Pre-salt	1.937	1.872	1.639	1.806	1.635	3,5	18,2	10,5
Natural gas (Mboed)	540	525	500	516	505	2,9	8,0	2,2
Crude oil, NGL and natural gas - abroad	34	34	35	35	37	-	(2,9)	(5,4)
Total (Mboed)	2.935	2.877	2.646	2.782	2.684	2,0	10,9	3,7
Total - comercial (Mboed)	2.572	2.537	2.325	2.444	2.361	1,4	10,6	3,5
Total - operated (Mboed)	4.045	3.982	3.703	3.867	3.641	1,6	9,2	6,2

Note: As of 01/01/2023, we have adjusted the conversion factor for gas from abroad from 1 boe = 6,000 cubic feet to 1 boe = 5,615 cubic feet.

In 4Q23, we had a good operational performance, with average production of oil, NGL and natural gas reaching 2,935 Mboed, 2.0% higher than in 3Q23.

Oil production in the pre-salt was 1,937 Kbpd, 3.5% higher than in 3Q23, mainly due to the production ramp-up of FPSO Almirante Barroso, in the Búzios field, FPSO, P-71, in the Itapu field, and FPSO Anita Garibaldi, in the Marlim and Voador fields, in addition to fewer shutdowns compared to 3Q23.

Post-salt production was 388 Kbpd, 5.8% lower than in 3Q23, mainly due to higher losses from stoppages and maintenance and the natural decline in production, factors partially offset by the ramp-up of FPSO Anna Nery and 2 new wells from complementary projects in the Campos Basin, 1 of them in the Tartaruga Verde field and the other in the Jubarte field.

Onshore and shallow water production was 36 Kbpd, 2 Kbpd higher than the previous quarter, due to lower losses from shutdowns and maintenance.

Overseas production was 34 Mboed, from fields in Bolivia, Argentina and the United States, in line with 3Q23.

2 – Refining, Transportation and Marketing

Operational (Kbpd)	4Q23	3Q23	4Q22	2023	2022	Variation (%) (*)		
						4Q23 X 3Q23	4Q23 X 4Q22	2023 X 2022
Total sales volume in the domestic market	1.733	1.821	1.796	1.744	1.753	(4,8)	(3,5)	(0,5)
Diesel	748	801	769	746	755	(6,6)	(2,7)	(1,2)
Gasoline	407	416	447	418	407	(2,2)	(8,9)	2,7
Jet Fuel	105	105	104	104	98	-	1,0	6,1
Naphtha	70	74	63	68	73	(5,4)	11,1	(6,8)
Fuel Oil	35	31	32	33	34	12,9	9,4	(2,9)
Liquefied Petroleum Gas (LPG)	203	215	213	206	211	(5,6)	(4,7)	(2,4)
Others	165	179	168	169	175	(7,8)	(1,8)	(3,4)
Total production volume	1.798	1.829	1.724	1.772	1.743	(1,7)	4,3	1,7
Diesel	730	749	671	715	691	(2,5)	8,8	3,5
Gasoline	414	424	401	403	388	(2,4)	3,2	3,9
Jet Fuel	88	82	73	84	79	7,3	20,5	6,3
Naphtha	71	71	80	70	83	-	(11,3)	(15,7)
Fuel Oil	204	185	216	207	215	10,3	(5,6)	(3,7)
Liquefied Petroleum Gas (LPG)	122	130	121	123	116	(6,2)	0,8	6,0
Others	169	188	163	172	171	(10,1)	3,7	0,6
Reference feedstock	1.813	1.813	1.882	1.830	1.893	-	(3,7)	(3,3)
Total distillation feedstock ⁽¹⁾	1.711	1.736	1.626	1.681	1.659	(1,4)	5,2	1,3
Total refining plants utilization factor (%) (*)	94%	96%	86%	92%	88%	(2,0)	8,0	4,0
Fresh processed feedstock ⁽²⁾	1.683	1.706	1.584	1.649	1.619	(1,3)	6,3	1,9
LNG processed feedstock	46	48	40	47	43	(4,2)	15,0	9,3
Domestic crude oil as % of total processed feedstock (%) (*)	91%	91%	90%	91%	91%	-	1,0	-
Pre-salt crude oil as % of total processed feedstock (%) (*)	65%	65%	60%	65%	62%	-	5,0	3,0

(*) Variations in percentage points.

Sales of oil products in 4Q23 was 4.8% lower than 3Q23, mainly due to diesel, LPG and gasoline. The 6.6% reduction in diesel sales in 4Q23 compared to 3Q23 was due to the seasonality of consumption, usually higher in the third quarter of the year due to the planting of the summer grain crop and industrial activity. LPG sales also fell by 5.6% due to seasonal factors, such as higher temperatures and lower industrial activity in 4Q23. There was also a 2.2% reduction in gasoline sales, mainly due to the loss in share of gasoline over hydrous ethanol in the supply of flex-fuel vehicles

Oil products output decreased by 1.7% in 4Q23 compared to 3Q23, in line with the market. On the other hand, fuel oil production in 4Q23 was 10.3% higher than in 3Q23 due to lower asphalt production due to the reduction in demand for this product.

In 2023, sales remained stable in relation to 2022. We highlight the increase in gasoline sales by 2.7%, the highest in the last 6 years, impacted by the increase in the Otto cycle market and the gain in share in relation to hydrated ethanol in good part of the year.

Jet fuel followed the same trajectory of increased sales, with 6.1% growth, mainly due to the post-pandemic economic recovery.

⁽¹⁾ Considers all the feedstock in the distillation units, composed by oil, C5+, residues, reprocessing, including from terminals.

⁽²⁾ Fresh processed feedstock consists of oil and C5+.

The 1.2% reduction in diesel sales is mainly associated with the increase in the mandatory biodiesel mandate from 10% to 12% in April 2023 and the exit of REMAN at the end of 2022.

In 2023, there was a 1.7% increase in production compared to 2022, due to the greater use of refineries and operational optimization, which enabled increases in the production of diesel, gasoline, jet fuel and asphalt, to the detriment of fuel oil production and naphtha.

In 2023, we achieved the best sales and production result for asphalt since 2014, with 2.5 million tons of the product sold. We reached an all-time high in coke exports in 2023, totaling 961,000 tons, 614,000 tons more than in 2020, the year of the last record.

Building the most sustainable asphalt product line, we launched Cap Pro W Petroleum Asphalt Cement, which generates energy savings, lower carbon intensity, lower paving costs and better working conditions, in addition to greater durability compared to conventional asphalt and other operational benefits. This product was first delivered to the market at REVAP in December.

3 - Gas & Low Carbon Energies

	4Q23	3Q23	4Q22	2023	2022	Variation (%)		
						4Q23 X 3Q23	4Q23 X 4Q22	2023 X 2022
Sale of Thermal Availability at Auction- Average MW	1.655	1.655	2.052	1.655	2.053	-	(19,3)	(19,4)
Sale of electricity - average MW	760	380	532	489	682	100,0	42,9	(28,3)
National gas delivery (MM m ³ /day)	32	35	34	33	35	(8,6)	(5,9)	(5,7)
Regasification of liquefied natural gas (MM m ³ /day)	3	1	1	2	6	500,0	200,0	(66,7)
Import of natural gas from Bolivia (MM m ³ /day)	16	13	18	16	17	23,1	(11,1)	(5,9)
Sales volume of natural gas - MM m ³ /day	50	48	53	49	57	4,2	(5,7)	(14,0)

In 4Q23, total electricity sales increased by 100% compared to 3Q23, due to the need for greater thermoelectric dispatch to meet peak demand, i.e. thermal generation to meet peak energy consumption and compensate for the drop in supply from solar and wind generation throughout the day. Petrobras' Thermoelectric Plants contribute to increasing the share of renewables in the electricity matrix as they provide energy security by providing flexibility to the National Integrated System.

Deliveries of domestic gas fell by 3 million m³/day in 4Q23 due to interventions carried out on Routes 1 and 2 in October and December, offset by an increase in imports of Bolivian gas and LNG. The sale of natural gas also increased in 4Q23, reflecting the effects of the greater supply of natural gas to the thermoelectric segment.

In 2023, the sale of thermal availability at auction fell by 19% compared to 2022, due to the termination of contracts and the total sale of electricity fell by 28.3%, due to better hydrological conditions and less need for thermoelectric dispatch.

During the year, there was a reduction of 2 million m³/day in the volume of domestic gas delivered by Petrobras compared to 2022, due to the reduction in the volume purchased by Petrobras from other domestic producers. Bolivian gas was imported according to the contracted curve and LNG regasification fell by 67% due to lower demand for natural gas.

Exhibit I - Consolidated Sales Volume

Sales volume (Kbpd)	4Q23	3Q23	4Q22	2023	2022	Variation (%)		
						4Q23 X 3Q23	4Q23 X 4Q22	2023 X 2022
Diesel	748	801	769	746	755	(6,6)	(2,7)	(1,2)
Gasoline	407	416	447	418	407	(2,2)	(8,9)	2,7
Jet Fuel	105	105	104	104	98	-	1,0	6,1
Naphtha	70	74	63	68	73	(5,4)	11,1	(6,8)
Fuel oil	35	31	32	33	34	12,9	9,4	(2,9)
LPG	203	215	213	206	211	(5,6)	(4,7)	(2,4)
Others	165	179	168	169	175	(7,8)	(1,8)	(3,4)
Oil products	1.733	1.821	1.796	1.744	1.753	(4,8)	(3,5)	(0,5)
Alcohols, nitrogenous, renewable and others	5	4	3	4	3	25,0	66,7	33,3
Petroleum	183	161	153	181	202	13,7	19,6	(10,4)
Natural gas	230	222	277	226	305	3,6	(17,0)	(25,9)
Total domestic market	2.151	2.208	2.229	2.155	2.263	(2,6)	(3,5)	(4,8)
Exports of petroleum, oil products and others	885	824	793	806	714	7,4	11,6	12,9
Sales of international units	36	37	50	45	56	(2,7)	(28,0)	(19,6)
Total external market	921	861	843	851	770	7,0	9,3	10,5
Grand total	3.072	3.069	3.072	3.006	3.033	0,1	-	(0,9)

Exhibit II - Net imports and exports

Thousand barrels per day (Kbpd)	4Q23	3Q23	4Q22	2023	2022	Variation (%)		
						4Q23 X 3Q23	4Q23 X 4Q22	2023 X 2022
Net export (import)	621	529	357	485	321	17,4	73,9	51,1
Import	264	294	436	321	393	(10,2)	(39,4)	(18,3)
Petroleum	139	152	183	156	164	(8,6)	(24,0)	(4,9)
Diesel	43	46	127	63	118	(6,5)	(66,1)	(46,6)
Gasoline	24	41	46	39	25	(41,5)	(47,8)	56,0
GLP	40	39	54	45	63	2,6	(25,9)	(28,6)
Other oil products	18	16	26	18	23	12,5	(30,8)	(21,7)
Export	885	823	793	806	714	7,5	11,6	12,9
Petroleum	634	599	614	594	513	5,8	3,3	15,8
Fuel oil	161	171	174	161	181	(5,8)	(7,5)	(11,0)
Other oil products	90	53	5	51	20	69,8	1700,0	155,0

In 4Q23, exports increased by 7.5% and imports fell by 10% compared to 3Q23, especially oil due to an increase in production between the quarters, and gasoline.

In 2023, exports increased by 13% compared to 2022, due to higher exports of oil and gasoline. In the same period, imports fell by 18%, mainly due to lower diesel imports, increased production, and operational optimization of the refineries.

In 4Q23, export volumes were diversified among different destinations, as shown in the tables below:

Exhibit III - Oil exports*

Country	4Q23	3Q23	4Q22
China	44%	40%	45%
Europe	28%	32%	25%
Latam	7%	13%	10%
USA	13%	7%	7%
Asia (Ex China)	8%	7%	7%
Caribbean	0%	1%	2%

Exhibit IV - Oil products exports*

Country	4Q23	3Q23	4Q22
Singapore	35%	38%	70%
USA	50%	44%	16%
Others	15%	18%	14%

Oil exports saw an increase in volume in the second half of 2023. We continue to develop new markets and clients. In 2023, 26 refiner-oil pairs were added to our client portfolio.

* Refers to exports according to the criteria of physical shipment from Brazilian coast.