

# Production & Sales 3Q23



*FPSO Anita Garibaldi  
First oil in august 2023*

## Highlights on production and sales in 3Q23

### Rio de Janeiro, October 26, 2023

In 3Q23, average production of oil, NGL and natural gas reached 2.88 MMboed, 9.1% higher than in 2Q23, mainly due to the better operational performance of the pre-salt platforms and the lower losses with stoppages and maintenance, besides the ramp-up of platforms P-71 in the Itapu field, FPSO Almirante Barroso in the Búzios field and FPSO Anna Nery in the Marlim field. The start-up of FPSO Anita Garibaldi in the Marlim and Voador fields and the start-up of new wells in complementary projects in Campos and Santos Basins also contributed to the 3Q23 performance. These effects were partially offset by the natural decline of mature fields and divestments.

Production in pre-salt reached a new quarterly record of 2.25 MMboed, equivalent to 78% of Petrobras total production, surpassing the previous record of 2.06 MMboed in 2Q23. Total operated production by Petrobras also reached a record with 3.98 MMboed in the same period, 7.8% above 2Q23.

On August 16, FPSO Anita Garibaldi in Campos Basin, the second unit in the Marlim and Voador fields revitalization project to start up, produced its first oil. The FPSO has the capacity to produce up to 80 Mbpd of oil and process 7 MMm<sup>3</sup> of natural gas per day, and will operate simultaneously in the post-salt and pre-salt of the aforementioned fields.

FPSO Sepetiba arrived in Brazil in early September to be installed in the Mero field, in Santos Basin pre-salt. The platform is already at its final location, and mooring and connection activities are currently underway. This will be the second definitive system out of four to be installed in the Mero field and it will have the capacity to produce 180 Mbpd of oil and 12 MMm<sup>3</sup>/d of gas. The FPSO is equipped with innovative technologies that combine increased efficiency and reduced greenhouse gas emissions, including CCUS (Carbon Capture, Utilization and Storage), which involves reinjecting CO<sub>2</sub>-rich gas into the reservoir, reducing emissions to the atmosphere. The unit is expected to start up in 4Q23.

On October 24, FPSO Almirante Barroso reached the project's nominal capacity of 150,000 bpd, with 3 producing wells, just 4.7 months after the first oil, a record in the pre-salt. The previous record was held by FPSO P-76, operating in the Búzios field, which had reached its nominal capacity in 7.7 months. *"Búzios is the largest deepwater field in the world. The achievement of the record shows the high productivity of the wells in the field, and the asset also stands out for its low level of emissions, its substantial reserves and the high quality of the oil produced"*, said Exploration and Production Director Joelson Mendes.

The utilization factor of Petrobras refining facilities reached 96% in 3Q23, the highest quarterly figure since 2014. This high utilization level made it possible to meet demand with reliability and operational availability, reaching total production of oil products of 1,829 Mbpd in 3Q23. The production of diesel, gasoline and jet fuel represented 69% of total production, an increase of 2 p.p. compared to 2Q23. *"The optimization of our processes is allowing us to increase production in our facilities and the supply of products to the domestic market with profitability"*, commented the Director of Industrial Processes and Products, William França.

Sales of S-10 diesel in 3Q23 represented 62% of diesel sales, setting a new record with 496 Mbpd. Along with sales, S-10 diesel production reached a record of 464 Mbpd in 3Q23, the result of actions to optimize production processes and investments.

We highlight in the period the completion of the adaptation of REDUC HDT, the first completed project of the so-called S-500 diesel phase-out, which will gradually replace Petrobras road diesel production with S-10 diesel. This project adjusted production capacity by 28 Mbpd of S-10 diesel, almost double the previous potential to supply this fuel at REDUC, meeting market demands as well as environmental requirements.

We strengthened the energy transition with more efficient use of energy consumption and reduced greenhouse gas emissions, achieving the best quarterly results of the refineries in Energy Intensity (101.7) and Greenhouse Gas Emission Intensity (36.2 kgCO<sub>2</sub>eq/CWT), the result of the constant operational focus on energy performance and investments in the RefTOP Program (World Class Refining). Also noteworthy in July was the start-up of the electrostatic precipitator project at REFAP, which prevents the emission of around 30 tons/month of fine particulates into the environment.

In September, the gas processing units at Caraguatatuba and Cabiúnas reached the highest monthly figure in history for pre-salt gas processing. There were 28.96 million m<sup>3</sup>/d of gas offloaded through Routes 1 and 2, surpassing the previous record of 27.27 million m<sup>3</sup>/d achieved in March 2022.

#### **Disclaimer**

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## 1 - Exploration & Production

Thousand barrels of oil equivalent per day (Mboed)	3Q23	2Q23	3Q22	9M23	9M22	Variation (%)		
						3Q23 X 2Q23	3Q23 X 3Q22	9M23 X 9M22
Crude oil, NGL and natural gas - Brazil	2,843	2,603	2,609	2,696	2,660	9.2	9.0	1.4
Crude oil and NGLs (Mbpd)	2,318	2,102	2,115	2,188	2,153	10.3	9.6	1.6
Onshore and Shallow water	34	48	71	46	75	(29.2)	(52.1)	(38.7)
Post-salt - deep and ultra deep	412	346	434	380	445	19.1	(5.1)	(14.6)
Pre-salt	1,872	1,708	1,609	1,761	1,633	9.6	16.3	7.8
Natural gas (Mboed)	525	501	494	508	507	4.8	6.3	0.2
Crude oil, NGL and natural gas - abroad	34	35	35	35	37	(2.9)	(2.9)	(5.4)
<b>Total (Mboed)</b>	<b>2,877</b>	<b>2,637</b>	<b>2,644</b>	<b>2,731</b>	<b>2,697</b>	<b>9.1</b>	<b>8.8</b>	<b>1.3</b>
<b>Total - comercial (Mboed)</b>	<b>2,537</b>	<b>2,312</b>	<b>2,329</b>	<b>2,401</b>	<b>2,373</b>	<b>9.7</b>	<b>8.9</b>	<b>1.2</b>
<b>Total - operated (Mboed)</b>	<b>3,982</b>	<b>3,693</b>	<b>3,647</b>	<b>3,807</b>	<b>3,620</b>	<b>7.8</b>	<b>9.2</b>	<b>5.2</b>

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 3Q23, we had a good operational performance, with average production of oil, NGL and natural gas reaching 2,877 Mboed, 9.1% higher than in 2Q23.

Oil production in the pre-salt was 1,872 Mbpd, 9.6% higher than in 2Q23, mainly due to the production ramp-up of FPSO P-71 in the Itapu field and FPSO Almirante Barroso in the Búzios field. The lower volume of losses due to shutdowns and maintenance also contributed to the result.

Post-salt production was 412 Mbpd, 19.1% higher than in 2Q23, mainly due to the ramp-up of FPSO Anna Nery, the start-up of 1 well of a complementary project in the Campos Basin (in Marlim Leste) and the lower volume of losses due to shutdowns and maintenance.

Onshore and shallow water production was 34 Mbpd, 14 Mbpd lower than 2Q23, due to higher losses from shutdowns and maintenance, as well as divestments at the Potiguar Cluster and the natural decline in production.

Overseas production was 34 Mboed, from fields in Bolivia, Argentina and the United States, in line with 2Q23.

## 2 – Refining, Transportation and Marketing

Operational (Mbpd)	3Q23	2Q23	3Q22	9M23	9M22	Variation (%)		
						3Q23 X 2Q23	3Q23 X 3Q22	9M23 X 9M22
<b>Total sales volume in the domestic market</b>	<b>1,821</b>	<b>1,723</b>	<b>1,798</b>	<b>1,747</b>	<b>1,739</b>	<b>5.7</b>	<b>1.3</b>	<b>0.5</b>
Diesel	801	721	784	746	750	11.1	2.2	(0.5)
Gasoline	416	434	405	422	394	(4.1)	2.7	7.1
Jet Fuel	105	98	99	103	97	7.1	6.1	6.2
Naphtha	74	61	80	68	76	21.3	(7.5)	(10.5)
Fuel Oil	31	32	35	32	33	(3.1)	(11.4)	(3.0)
Liquefied Petroleum Gas (LPG)	215	212	218	207	211	1.4	(1.4)	(1.9)
Others	179	165	177	169	178	8.5	1.1	(5.1)
<b>Total production volume</b>	<b>1,829</b>	<b>1,808</b>	<b>1,750</b>	<b>1,763</b>	<b>1,749</b>	<b>1.2</b>	<b>4.5</b>	<b>0.8</b>
Diesel	749	721	697	709	698	3.9	7.5	1.6
Gasoline	424	399	391	398	383	6.3	8.4	3.9
Jet Fuel	82	82	73	83	81	-	12.3	2.5
Naphtha	71	74	86	70	84	(4.1)	(17.4)	(16.7)
Fuel Oil	185	240	205	208	215	(22.9)	(9.8)	(3.3)
Liquefied Petroleum Gas (LPG)	130	125	119	123	115	4.0	9.2	7.0
Others	188	167	179	172	173	12.6	5.0	(0.6)
Reference feedstock	1,813	1,842	1,897	1,835	1,897	(1.6)	(4.4)	(3.3)
Fresh processed feedstock	1,706	1,677	1,629	1,637	1,630	1.7	4.7	0.4
Processed feedstock utilization factor (%)*	94%	91%	86%	89%	86%	3 p.p.	8 p.p.	3 p.p.
Total distillation feedstock	1,736	1,709	1,669	1,671	1,671	1.6	4.0	-
Total refining plants utilization factor (%)*	96%	93%	88%	91%	88%	3 p.p.	8 p.p.	3 p.p.
Processed feedstock **	1,755	1,725	1,674	1,685	1,675	1.7	4.8	0.6
Domestic crude oil as % of total processed feedstock	91%	91%	90%	91%	91%	0 p.p.	1 p.p.	0 p.p.

Sales of oil products in 3Q23 increased 5.7% compared to 2Q23, mainly diesel, which grew 11.1% in the period due to the seasonality of consumption, higher in the third quarter due to the planting of the summer grain crop and increased industrial activity.

Jet Fuel and LPG sales also increased compared to 2Q23, up 7.1% and 1.4% respectively, due to seasonal consumption.

In relation to gasoline sales, there was a 4.1% drop in 3Q23 compared to 2Q23, mainly due to the loss in share of gasoline over hydrous ethanol in the supply of flex-fuel vehicles. However, it is worth noting that in the first nine months gasoline sales were the highest in the last six years for this period, even with the divestment of some refineries. This is explained by the fact that, for most of 2023, there was a gain in the share of gasoline over hydrous ethanol in flex-fuel vehicles and by the increase in the Otto cycle market. In addition, we had the best asphalt sales for 3Q23 since 2014, of 738,600 tons.

Oil products output increased by 1.2% in 3Q23 compared to 2Q23 and by 4.5% compared to 3Q22. This increase was due to higher refinery utilization, resulting in increases of 3.0 p.p. in utilization compared to 2Q23 and 8.0 p.p. compared to 3Q22. This higher utilization and the operational availability of the refineries enabled the increase in diesel and gasoline production, while operational optimization increased the production of asphalt and reduced the production of fuel oil.

Gasoline production in 3Q23 reached 423 Mbpd, the highest level since 2013, with an increase of 6.3% compared to 2Q23, as well as diesel production in 3Q23 of 749 Mbpd, the highest volume since 2015, which represents an increase of

\* Processed feedstock utilization factor is calculated only with oil and C5+. Total refining plants utilization factor considers the entire load in the distillation units, consisting of oil, C5+, waste, reprocessing, including terminals. Processed feedstock consists of oil and NGL.

\*\* Processed feedstock equals fresh processed feedstock plus NGL (Natural Gas Liquids).

3.9% compared to 2Q23, taking into account the seasonality of diesel in the third quarter. The reduction in fuel oil production was 22.9% in 3Q23 compared to 2Q23 and 741,000 tons of asphalt were produced in 3Q23, the highest since the fourth quarter of 2014, in response to high market demand.

We have launched new products, CAP Pro AP (High Penetration Petroleum Asphalt Cement) and the new Petrobras Podium carbon neutral gasoline. CAP Pro AP, produced at REVAP, has great capacity for recycling aged asphalt, allowing for environmental gains. Petrobras Podium carbon neutral gasoline, produced at RPBC, is the first gasoline on the Brazilian market to have its greenhouse gas emissions fully offset through carbon credits, as well as having a lower sulphur content and higher-octane rating.

This quarter we made progress with the plan to market Diesel R5 (diesel with 5% renewable content) under the BioRefining program, with record sales of 8.3 million liters in September. In addition, we established a commercial partnership to supply this product, contributing to the development of the market in the direction of the low carbon economy.

### 3 - Gas & Power

	3Q23	2Q23	3Q22	9M23	9M22	Variation (%)		
						3Q23 X 2Q23	3Q23 X 3Q22	9M23 X 9M22
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	381	498	379	398	732	(23.5)	0.5	(45.6)
Sale of inflexible electricity committed in auctions - average MW	69	52	59	144	122	32.7	16.9	18.0
National gas delivery (MM m <sup>3</sup> /day)	35	33	35	33	35	6.1	-	(5.7)
Regasification of liquefied natural gas (MM m <sup>3</sup> /day)	1	3	5	1	7	(83.3)	(90.0)	(85.7)
Import of natural gas from Bolivia (MM m <sup>3</sup> /day)	13	15	15	16	17	(13.3)	(13.3)	(5.9)
Sales volume of natural gas - MM m <sup>3</sup> /day	48	50	54	49	59	(4.0)	(11.1)	(16.9)

In 3Q23, the volume of thermal availability at auction remained stable when compared to 2Q23. Sales of electricity were 18.2% lower in 3Q23, mainly due to steam demand.

Sales of natural gas were 4% lower when compared to 2Q23 and reflect the lower demand in the thermoelectric and non-thermoelectric segments, due to lower steam demand and greater third parties market share, respectively.

Domestic gas deliveries increased by approximately 1 million m<sup>3</sup>/day, due to the higher volume of pre-salt natural gas produced and processed in 3Q23. Regarding the volume of imported natural gas (LNG and Bolivian), there was a reduction from 18 to 14 million m<sup>3</sup>/day (-22%) in 3Q23, due to the combined effect of lower volume of sales and higher gas supply in the period.

### Exhibit I - Consolidated Sales Volume

Sales volume (Mbpd)	3Q23	2Q23	3Q22	9M23	9M22	Variation (%)		
						3Q23 X 2Q23	3Q23 X 3Q22	9M23 X 9M22
Diesel	801	721	784	745	750	11.1	2.2	(0.7)
Gasoline	416	434	405	422	394	(4.1)	2.7	7.1
Jet Fuel	105	98	99	103	96	7.1	6.1	7.3
Naphtha	74	61	80	68	76	21.3	(7.5)	(10.5)
Fuel oil	31	32	35	32	34	(3.1)	(11.4)	(5.9)
LPG	215	212	218	207	211	1.4	(1.4)	(1.9)
Others	179	165	177	170	177	8.5	1.1	(4.0)
<b>Oil products</b>	<b>1,821</b>	<b>1,723</b>	<b>1,798</b>	<b>1,747</b>	<b>1,738</b>	<b>5.7</b>	<b>1.3</b>	<b>0.5</b>
Alcohols, nitrogenous, renewable and others	4	4	3	4	3	-	33.3	33.3
Petroleum	161	188	202	181	219	(14.4)	(20.3)	(17.4)
Natural gas	222	221	295	225	314	0.5	(24.7)	(28.3)
<b>Total domestic market</b>	<b>2,208</b>	<b>2,136</b>	<b>2,298</b>	<b>2,157</b>	<b>2,274</b>	<b>3.4</b>	<b>(3.9)</b>	<b>(5.1)</b>
Exports of petroleum, oil products and	824	628	528	780	688	31.2	56.1	13.4
Sales of international units	37	60	59	48	59	(38.3)	(37.3)	(18.6)
<b>Total external market</b>	<b>861</b>	<b>688</b>	<b>587</b>	<b>828</b>	<b>747</b>	<b>25.1</b>	<b>46.7</b>	<b>10.8</b>
<b>Grand total</b>	<b>3,069</b>	<b>2,824</b>	<b>2,885</b>	<b>2,985</b>	<b>3,021</b>	<b>8.7</b>	<b>6.4</b>	<b>(1.2)</b>

### Exhibit II - Net imports and exports

Thousand barrels per day (Mbpd)	3Q23	2Q23	3Q22	9M23	9M22	Variation (%)		
						3Q23 X 2Q23	3Q23 X 3Q22	9M23 X 9M22
<b>Net export (import)</b>	529	268	87	440	310	97.4	508.0	41.9
<b>Import</b>	294	358	441	339	378	(17.9)	(33.3)	(10.3)
Petroleum	152	129	145	161	157	17.8	4.8	2.5
Diesel	46	93	171	70	114	(50.5)	(73.1)	(38.6)
Gasoline	41	52	26	44	18	(21.2)	57.7	144.4
GLP	39	66	55	46	66	(40.9)	(29.1)	(30.3)
Other oil products	16	18	44	18	23	(11.1)	(63.6)	(21.7)
<b>Export</b>	823	626	528	779	688	31.5	55.9	13.2
Petroleum	599	411	363	581	478	45.7	65.0	21.5
Fuel oil	171	177	125	160	184	(3.4)	36.8	(13.0)
Other oil products	53	38	40	38	26	39.5	32.5	46.2

In 3Q23, exports increased by 31.5% when compared to 2Q23, mainly because of oil exports, due to higher production, and imports fell by 17.9% due to lower imports of oil products as a result of the increase in refinery production.

In 3Q23, export volumes were diversified among different destinations, as shown in the tables below:

#### Exhibit III - Oil exports\*

Country	3Q23	2Q23	3Q22
China	40%	28%	29%
Europe	32%	20%	29%
Latam	13%	26%	21%
USA	7%	14%	10%
Asia (Ex China)	7%	11%	9%
Caribbean	1%	0%	2%

#### Exhibit IV - Oil products exports\*

Country	3Q23	2Q23	3Q22
Singapore	38%	50%	57%
USA	44%	37%	17%
Others	18%	13%	25%

Considering exports of oil, the development of new markets reached countries such as Finland, Greece and the United Kingdom. We also exported Itapu oil to Portugal for the first time. Additionally, we made new sales of Mero oil, adding new refiners to our portfolio.

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