

# Production & Sales 2Q23

*FPSO Almirante Barroso*  
*1<sup>st</sup> oil in May 2023*



## Highlights on production and sales in 2Q23

### Rio de Janeiro, July 26, 2023

In 2Q23, average production of oil, NGL and natural gas reached 2.64 MMboed, 1.5% lower compared to 1Q23, mainly due to higher volume of losses from stoppages and maintenance, the natural decline of mature fields and divestments. Those effects were partially offset by the ramp-up of P-71, in Itapu field, and the startup of FPSOs Almirante Barroso, in Búzios field, in pre-salt Santos Basin and Anna Nery, in Marlim field, in addition to new wells of complementary projects, in Campos Basin.

Pre-salt production set a new quarterly record of 2.06 MMboed, equivalent to 78% of Petrobras total production, surpassing the previous record of 2.05 MMboed in 1Q23. Total production operated by Petrobras reached 3.69 MMboed in the same period, 1.4% below 1Q23.

On May 7, we had the first oil from FPSO Anna Nery, in Marlim Field, in Campos Basin, the first unit of the Marlim and Voador revitalization project to come online. The facility has the capacity to produce up to 70 Mbpd of oil and process 4 MMm<sup>3</sup> of natural gas per day. The second unit of the project, FPSO Anita Garibaldi, is on location, has already completed mooring activities and is expected to start up in 3Q23.

*"The implementation of FPSOs Anna Nery and Anita Garibaldi provides operational continuity for the Marlim and Voador fields, with the expectation of a 20% increase in production and a 60% reduction in greenhouse gas emissions, compared to 2018, when 9 units were in operation in Marlim, in addition to opening an important horizon of learning and knowledge for other revitalization projects",* commented Carlos Travassos, Director of Engineering, Technology and Innovation.

On July 7, we had the first auction for a sustainable decommissioning of a platform. P-32, one of the units being replaced by the two new units in Marlim and Voador fields, will have green recycling in Brazil focusing on value creation and fostering the circular economy, sustainability, safety and respect for people and the environment, in line with the best ESG practices in the global industry.

On May 31, we had the startup of FPSO Almirante Barroso, the fifth unit to come online in Búzios field, with capacity to produce up to 150 Mbpd of oil and 6 MMm<sup>3</sup> of gas daily.

*"Búzios is the largest deepwater field in the world. The platforms installed in the field delivered average operated oil and NGL production of 635 Mbpd in June. We also have 6 more units already procured and undergoing implementation, bringing the number of platforms in operation in the field to 11 by 2027",* commented Joelson Mendes, Exploration and Production Officer.

The utilization factor (FUT) of Petrobras refining facilities reached 93% in 2Q23, and in June it reached 95%, the highest figure since 2015. This outstanding performance was achieved even with scheduled maintenance stoppages at RPBC, REFAP, REDUC and REPLAN, respecting safety, environmental and health requirements. Diesel, gasoline and jet fuel production represented 67% of total production in 2Q23, maintaining the high level of 1Q23.

The processing of pre-salt crude achieved the quarterly record of 67% of throughput. In June, the level went up to 72%, a new monthly record, 5 p.p. above the previous one. The processing of pre-salt crude favors increasing yields of higher value oil products and emissions reductions.

In 1H23, S10 diesel sales had a 62% share in Petrobras total diesel sales, a new semester record. S10 diesel production registered a record in 2Q23 of 419 mbpd, with a monthly peak of 442 mbpd in June. These results stem from continuous operational improvements, processes optimization and production control, aiming to meet the growing demand for oil products.

Pursuing the decarbonization of our activities, we started in June our second test of marine fuel with 24% renewable content. The estimated percentage reduction in greenhouse gas (GHG) emissions was around 17% in volume, compared to the 100% mineral bunker. In addition, we signed the first hybrid support vessel contract, in which batteries will be installed on board, with the expectation of reducing GHG emissions and fuel consumption.

As a result of the RefTOP Program (World Class Refining), the reduction of the energy intensity of the refineries continues to improve, with a result of 105.0 in the first half of 2023, 2.7 points below the same period in 2022, representing a reduction in natural gas consumption of 490 thousand m<sup>3</sup>/day, which is equivalent to approximately twice the consumption of the state of Paraíba. In addition, we achieved the best monthly result of energy intensity in Refining in June, at 102.4 points. The result for 2Q23 was 103.7 points.

As a result of energy efficiency and emission control initiatives at our refineries, in June we recorded the best GHG emission intensity (IGEE) mark since 2019, the year the metric was first measured, reaching a result of 36.7 kg CO<sub>2</sub> per equivalent refining load. In this period, there was a reduction in GHG emissions equivalent to more than 93,000 urban buses running 5 days a week, 200 km per day.

Asphalt sales reached a record 1H23 of 1,148 thousand tons, the highest sales volume in a first half since 2014, representing an increase of 17% over 1H22. If we consider only the current refining facilities, this increase is 27%. We also achieved a record in June of 127.3 thousand tons in the export of Green Petroleum Coke, whose main destination is China.

In May, we approved the new Natural Gas commercial portfolio, with diversified terms, indexation and delivery locations, with the aim of ensuring our competitiveness in the public bids in progress by the state distributors and in the commercialization in the open market. As a result, as of June, we signed new contracts with SCGAS, COPERGAS and COMGAS, reinforcing the commercial partnership between the companies, ensuring the security and reliability of Petrobras supply under competitive commercial conditions that are in line with the reality of the natural gas industry.

## 1 - Exploration & Production

Thousand barrels of oil equivalent per day (Mboed)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Crude oil, NGL and natural gas - Brazil	2,603	2,640	2,616	2,621	2,686	(1.4)	(0.5)	(2.4)
Crude oil and NGLs (Mbpd)	2,102	2,141	2,114	2,121	2,172	(1.8)	(0.6)	(2.3)
Onshore and Shallow water	48	56	71	52	77	(14.3)	(32.4)	(32.5)
Post-salt - deep and ultra deep	346	383	434	364	450	(9.7)	(20.3)	(19.1)
Pre-salt	1,708	1,702	1,609	1,705	1,645	0.4	6.2	3.6
Natural gas (Mboed)	501	499	502	500	514	0.4	(0.2)	(2.7)
Crude oil, NGL and natural gas - abroad	35	36	37	35	38	(2.8)	(5.4)	(7.9)
<b>Total (Mboed)</b>	<b>2,637</b>	<b>2,676</b>	<b>2,653</b>	<b>2,657</b>	<b>2,724</b>	<b>(1.5)</b>	<b>(0.6)</b>	<b>(2.5)</b>
<b>Total - comercial (Mboed)</b>	<b>2,312</b>	<b>2,352</b>	<b>2,334</b>	<b>2,332</b>	<b>2,396</b>	<b>(1.7)</b>	<b>(0.9)</b>	<b>(2.7)</b>
<b>Total - operated (Mboed)</b>	<b>3,693</b>	<b>3,745</b>	<b>3,554</b>	<b>3,719</b>	<b>3,607</b>	<b>(1.4)</b>	<b>3.9</b>	<b>3.1</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 2Q23, we kept a good operating performance, with the average production of oil, NGL and natural gas reaching 2,637 Mboed, 1.5% lower than 1Q23.

Oil production in the pre-salt was 1,708 Mbpd, 0.4% higher than 1Q23, mainly due to the production ramp-up of P-71, in the Itapu field, and the production start-up of FPSO Almirante Barroso, in the Búzios field, in the Santos Basin.

Production in the post-salt was 346 Mbpd, 9.7% lower than 1Q23, mainly due to higher losses from shutdowns and maintenance, the divestment of Albacora Leste and the natural decline in production, effects partially offset by the FPSO Anna Nery 's production and the start-up of 5 new wells from complementary projects in the Campos Basin (1 in Albacora, 1 in Roncador, 1 in Marlim Sul and 2 in Jubarte Pole).

Onshore and shallow water production, meanwhile, was 48 Mbpd, 8 Mbpd lower than 1Q23, also impacted by shutdowns and maintenance in the period, in addition to divestments from the North Capixaba and Potiguar Poles.

Overseas production was 35 Mboed, from fields in Bolivia, Argentina and the United States, in line with 1Q23.

## 2 – Refining, Transportation and Marketing

Operational (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Total production volume	1,808	1,652	1,771	1,730	1,749	9.4	2.1	(1.1)
Total sales volume in the domestic market	1,723	1,697	1,717	1,709	1,707	1.5	0.3	0.1
Reference feedstock	1,842	1,851	1,897	1,846	1,897	(0.5)	(2.9)	(2.7)
Fresh processed feedstock	1,677	1,527	1,656	1,602	1,631	9.8	1.3	(1.8)
Processed feedstock utilization factor (%)*	91%	82%	87%	87%	86%	9.0	4.0	1.0
Total distillation feedstock	1,709	1,566	1,686	1,638	1,672	9.1	1.4	(2.0)
Total refining plants utilization factor (%)*	93%	85%	89%	89%	88%	8.0	4.0	1.0
Processed feedstock **	1,725	1,573	1,697	1,650	1,675	9.7	1.6	(1.5)
Domestic crude oil as % of total processed feedstock	91%	90%	90%	90%	91%	1.0	1.0	(1.0)

Sales of oil products in 2Q23 increased 1.5% compared to 1Q23, mainly gasoline, due to greater competitiveness, and LPG, due to demand seasonality. Sales were in line with 2Q22, even after the divestment of REMAN.

Oil products output increased 9.4% in 2Q23 compared to 1Q23. This increase was supported by a higher availability of refineries, as a consequence of important scheduled shutdowns in 1Q23 (REVAP, REFAP and RPBC units), in addition to the higher FUT of 93% in 2Q23.

### 2.1 – Diesel

thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Production volume	721	657	711	689	698	9.7	1.4	(1.2)
Sales volume for the Brazilian market	721	715	750	718	733	0.8	(3.8)	(2.0)

Diesel sales were 0.8% higher in 2Q23 compared to 1Q23, on par with production volume. The increase in sales is mainly explained by the demand seasonality, usually weaker in the first quarter of each year due to the reduction in economic activity, which was partially offset by the increase in the mandatory biodiesel mandate since April 2023.

In 2Q23, production increased by 9.7% compared to 1Q23, as a result of the greater availability of the refineries' operational capacity, enabling our production to match demand.

In addition to the quarterly record in the production of S-10 Diesel, we achieved a record production of S-10 Diesel at the REGAP refinery (49 mbpd) in May.

As a reflection of the progress of the BioRefining program in our energy transition strategy towards the low-carbon market, we produced in April a new batch of 5.8 million liters of R5 diesel (diesel with 5% renewable content). This volume is enough to supply up to 19,300 conventional buses, with a potential emissions reduction of around 610 tons of greenhouse gases. In the same month, the first tender for the sale of R diesel was held, with about 1.5 million liters of the product purchased. In addition to REPAR, other refineries such as RPBC, REPLAN and REDUC will be adapted in 2023 for the production of Diesel R.

\* 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).

## 2.2 – Gasoline

thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Production volume	399	372	384	385	379	7.4	4.0	1.7
Sales volume for the Brazilian market	434	414	375	424	388	4.8	15.7	9.3

Gasoline sales in 2Q23 grew by 4.8% compared to 1Q23, mainly due to its greater competitiveness compared to our customers' main supply alternatives. Sales in the period were the highest recorded for a second quarter in the last 6 years, even with the divestment of some refineries.

Compared to 2Q22, sales grew 15.7%. This was mainly due to the gain in share of gasoline over hydrous ethanol in the supply of flex-fuel vehicles, as well as the increase in the Otto cycle market. Due to these factors, 1H23 sales were 9.3% higher than 1H22, the highest for a first half in the last 6 years.

In 2Q23, gasoline production increased by 7.4% yoy, in line with market performance and the higher utilization of the refineries' operational capacity.

In June, gasoline production was 421 mbpd, the best result since 2014.

## 2.3 – Fuel Oil

thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Production volume	240	200	213	220	220	20.1	12.6	0.0
Sales volume for the Brazilian market	32	33	30	32	33	(3.0)	7.1	(2.9)

Fuel oil sales in 2Q23 fell 3% compared to 1Q23, mainly due to the reduction in the maritime segment, with the end of the cruise season in April. In the industrial segment, on the other hand, there was an increase in sales due to greater competitiveness in relation to the supply alternatives of customers in the North region.

Compared to 2Q22, sales increased by 7.1%. mainly due to Petrobras' greater competitiveness against customer's alternatives.

Fuel oil production increased 20.1% in 2Q23 compared to 1Q23, with a consequent increase in exports.

REPLAN refinery achieved record bunker production (196 thousand tons) in June.

## 2.4 – Naphtha

thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Production volume	74	64	90	69	84	15.4	(17.8)	(17.6)
Sales volume for the Brazilian market	61	69	74	65	74	(11.6)	(17.8)	(12.6)

Naphtha sales decreased by 11.6% in 2Q23 compared to 1Q23, mainly due to the drop in demand at the São Paulo petrochemical hub. This reason also explains the comparisons of the other periods.

In 2Q23, naphtha production increased 15.4% compared to 1Q23, after the end of the important scheduled maintenance stoppages in 1Q23.

## 2.5 – Liquefied Petroleum Gas (LPG)

thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Production volume	125	113	112	119	112	9.8	10.7	6.1
Sales volume for the Brazilian market	212	194	215	203	207	9.3	(1.4)	(1.9)

The 9.3% increase in LPG sales in 2Q23 compared to 1Q23 is mainly due to seasonality arising from lower average temperatures in the country's main consumer centers in the second quarter, demanding higher energy expenditure, in addition to the seasonal increase in the activity of the manufacturing industry.

In 2Q23, production increased by 9.8% compared to 1Q23, following the higher utilization of the refineries' operational capacity.

## 2.6 – Jet Fuel

thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Production volume	82	85	85	84	85	(2.7)	(2.7)	(1.7)
Sales volume for the Brazilian market	98	107	93	102	95	(8.4)	5.6	7.8

The 8.4% reduction in jet fuel sales in 2Q23 compared to 1Q23 is mainly due to seasonal factors, such as vacations, which increase demand in the first quarter of the year.

Compared to 2Q22, the 5.6% sales increase is mainly due to the continued recovery of the aviation segment after the COVID-19 pandemic. It is worth noting the recovery in sales even with the divestment of REMAN in December 2022.

In 2Q23, there was a decrease in jet fuel production of 2.7% compared to 1Q23, in line with sales.

### 3 - Gas & Power

	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Sale of Thermal Availability at Auction- Average MW	1,655	1,655	2,053	1,655	2,054	-	(19.4)	(19.4)
Generation of electricity - average MW	581	595	562	588	1,160	(2.4)	3.4	(49.3)
National gas delivery (MM m <sup>3</sup> /day)	33	32	34	33	36	3.1	(2.9)	(8.3)
Regasification of liquefied natural gas (MM m <sup>3</sup> /day)	3	-	7	1	8	-	(57.1)	(87.5)
Import of natural gas from Bolivia (MM m <sup>3</sup> /day)	15	19	15	17	18	(19.3)	-	(5.6)
Sales volume of natural gas - MM m <sup>3</sup> /day	50	50	56	50	61	-	(10.7)	(18.0)

In 2Q23, electricity generation by Petrobras was stable compared to 1Q23, mainly aimed at meeting internal demand for steam, with allocation of part of this generation in commercial opportunities related to exports to Argentina. The volume of availability at auction also remained stable, with no new contracts or termination of old contracts between 1Q23 and 2Q23.

Natural gas sales were stable compared to 1Q23, remaining at an average level of 50 million m<sup>3</sup>/day. Domestic gas delivery increased by around 1 million m<sup>3</sup>/day, due to fewer interventions in natural gas production and processing units during 2Q23. The volume of natural gas imports from Bolivia stood at 15 million m<sup>3</sup>/day, 19% lower than 1Q23, according to the contractual curve agreed in an amendment signed in 2022, offset by LNG regasification (3 million m<sup>3</sup>/day) in the period.



## Exhibit I: Consolidated Sales Volume

Sales volume (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
Diesel	721	714	750	717	733	1.0	(3.9)	(2.2)
Gasoline	434	414	375	424	388	4.8	15.7	9.3
Fuel oil	32	33	30	32	33	(3.0)	6.7	(3.0)
Naphtha	61	69	74	65	74	(11.6)	(17.6)	(12.2)
LPG	212	194	215	203	207	9.3	(1.4)	(1.9)
Jet Fuel	98	107	93	102	95	(8.4)	5.4	7.4
Others	165	165	180	165	177	-	(8.3)	(6.8)
<b>Total oil products</b>	<b>1,723</b>	<b>1,696</b>	<b>1,717</b>	<b>1,708</b>	<b>1,707</b>	<b>1.6</b>	<b>0.3</b>	<b>0.1</b>
Alcohols, nitrogenous, renewable and others	4	4	3	4	3	-	33.3	33.3
Petroleum	188	194	256	191	227	(3.1)	(26.6)	(15.9)
Natural gas	221	231	302	226	324	(4.3)	(26.8)	(30.2)
<b>Total domestic market</b>	<b>2,136</b>	<b>2,125</b>	<b>2,278</b>	<b>2,129</b>	<b>2,261</b>	<b>0.5</b>	<b>(6.2)</b>	<b>(5.8)</b>
Exports of petroleum, oil products and others	628	887	778	757	769	(29.2)	(19.3)	(1.6)
<b>Sales of international units</b>	<b>60</b>	<b>47</b>	<b>59</b>	<b>53</b>	<b>58</b>	<b>27.7</b>	<b>1.7</b>	<b>(8.6)</b>
<b>Total external market</b>	<b>688</b>	<b>934</b>	<b>837</b>	<b>810</b>	<b>827</b>	<b>(26.3)</b>	<b>(17.8)</b>	<b>(2.1)</b>
<b>Grand total</b>	<b>2,824</b>	<b>3,059</b>	<b>3,115</b>	<b>2,939</b>	<b>3,088</b>	<b>(7.7)</b>	<b>(9.3)</b>	<b>(4.8)</b>

## Exhibit II: Net imports and exports

Thousand barrels per day (Mbpd)	2Q23	1Q23	2Q22	1H23	1H22	Variation (%)		
						2Q23 X 1Q23	2Q23 X 2Q22	1H23 X 1H22
<b>Net export (import)</b>	268	520	432	394	421	(48.5)	(38.0)	(6.4)
<b>Import</b>	358	367	346	362	348	(2.5)	3.5	4.0
Petroleum	129	204	151	166	164	(36.8)	(14.6)	1.2
Diesel	93	70	96	81	86	32.9	(3.1)	(5.8)
Gasoline	52	39	7	46	14	33.3	642.9	228.6
GLP	66	34	79	50	72	94.1	(16.5)	(30.6)
Other oil products	18	20	13	19	12	(10.0)	38.5	58.3
<b>Export</b>	626	887	778	756	769	(29.4)	(19.5)	(1.7)
Petroleum	411	733	531	571	537	(43.9)	(22.6)	6.3
Fuel oil	177	132	216	155	214	34.1	(18.1)	(27.6)
Other oil products	38	22	31	30	18	72.7	22.6	66.7

In 2Q23 net exports decreased 48.1% compared to 1Q23 due to lower exports of oil, since there was a higher utilization factor in the refining facilities, partially offset by lower oil imports and inventory turnover from 1Q23.

### 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 2Q23 onwards are estimates. The operational data contained in this release is not audited by the independent auditor.