

Production & Sales 1Q23



Highlights on production and sales in 1Q23

Rio de Janeiro, May 03, 2023

In 1Q23, average oil, NGL and natural gas production reached 2.68 MMboed, 1.1% higher than 4Q22, mainly due to the start of the ramp-up of P-71, in Itapu field, in Santos Basin pre-salt, the start-up of 8 new wells in Campos Basin and higher production efficiencies in the platforms.

Pre-salt production reached a new monthly record of 2.13 MMboed in February 2023 and a quarterly record of 2.05 MMboed, equivalent to 77% of Petrobras total production, compared to 75% in 4Q22. Petrobras total operated production reached 3.74 MMboed in the quarter, up 1.1% from the previous quarter.

In February, we also registered a monthly production record on a pre-salt platform at FPSO Guanabara in the Mero field, with an average oil production of 179 Mbpd. *"Achieving another record, this time just 10 months after the unit's first oil and with 4 producing wells, reinforces the enormous potential of the Mero field and is the result of the capacity and commitment of our technical team and partners to overcome challenges,"* said Exploration & Production Director Joelson Mendes.

FPSO Anna Nery is on location and about to start operating in the Marlim field in Campos Basin. The unit has a capacity to produce up to 70 Mbpd and process 4 MMm³/d of natural gas, and will be the first FPSO of the Marlim and Voador revitalization project to start operations.

In 2Q23, we also expect the start-up of FPSO Almirante Barroso. The unit, with a nominal oil production capacity of 150 Mbpd, is already on location in the Búzios field, with final mooring completed and the first producing well connected. This will be the fifth unit to start operating in the Búzios field.

Diesel, gasoline and jet fuel yield in 1Q23 reached 67% of total production, 1 p.p. above 4Q22. Oil product sales in 1Q23 were in line with 1Q22, despite the closing of the REMAN divestment on November 30, 2022.

Total utilization factor of the refining facilities reached 85% in 1Q23, only 1 p.p. below 4Q22, despite relevant scheduled stoppages at the REVAP, REFAP and RPBC refineries. The stoppages at REFAP and RPBC were the largest in the history of these refineries, encompassing more than 800 large pieces of equipment and with more than 10,000 people at peak. The stoppages carried out ensure the reliability and integrity of the refineries, as well as the implementation of projects that increase energy efficiency and process safety.

The results from operational efficiency improvements and RefTOP investments (World Class Refining Program) contributed to the reduction of the Energy Intensity of the whole refinery system to 106.4 in 1Q23, 1.4 lower than in 4Q22, and to the reduction of the Greenhouse Gas Emission Intensity (GHGe) to 37.7 kgCO₂e/CWT, down 0.2 kgCO₂e/CWT compared to 4Q22.

Pre-salt crude accounted for 62% of throughput in 1Q23, up 2 p.p. compared to 4Q22, and contributed to increasing yields of high value oil products and emission reductions.

We made progress in developing more sustainable and efficient products, with the Diesel R certification at REPAR, the launch of the new Premium gasoline, the commercialization exclusively of fuel oil with a maximum 1% sulfur content in the domestic market, and the start of the commercialization of Ultra Low Sulfur Marine Gas Oil. Furthermore, we carried out paving tests with CAP PRO asphalt, a new product that can reduce energy consumption by up to 35% and greenhouse gas emissions by up to 65%, with sales expected to start in the second half of the year.

S-10 diesel sales in 1Q23 represented 63.3% of Petrobras total diesel sales, surpassing the 4Q22 record of 60.3% and setting a new quarterly record.

1 - Exploration & Production

Thousand barrels of oil equivalent per day (Mboed)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Crude oil, NGL and natural gas - Brazil	2,640	2,611	2,757	1.1	(4.2)
Crude oil and NGLs (Mbpd)	2,141	2,111	2,231	1.4	(4.0)
Onshore and Shallow water	56	71	82	(21.1)	(31.7)
Post-salt - deep and ultra deep	383	401	467	(4.5)	(18.0)
Pre-salt	1,702	1,639	1,682	3.8	1.2
Natural gas (Mboed)	499	500	526	(0.2)	(5.1)
Crude oil, NGL and natural gas -Abroad	36	35	39	2.9	(7.7)
Total (Mboed)	2,676	2,646	2,796	1.1	(4.3)
Total - comercial (Mboed)	2,352	2,325	2,462	1.2	(4.5)
Total - operated (Mboed)	3,745	3,703	3,660	1.1	2.3

In 1Q23, we kept a good operating performance, with the average production of oil, NGL and natural gas reaching 2,676 Mboed, 1.1% higher than 4Q22.

Oil production in the pre-salt was 1,702 Mbpd, 3.8% higher than 4Q22, mainly due to the production start-up and beginning of ramp-up of P-71, in Santos Basin, which reached a production level of approximately 50 Mbpd, with 1 production well and 1 injection well, and to the start-up of 4 new wells in Campos Basin (1 in Barracuda, 1 in Caratinga and 2 in the Jubarte Cluster).

Production in the post-salt was 383 Mbpd, 4.5% lower than 4Q22, mainly due to the production shutdown of P-18 and P-20 platforms and divestments in Albacora Leste and Papa-Terra, in addition to the natural production decline, effects that were partially offset by the production start-up of 4 new wells in Campos Basin (3 in Roncador and 1 in the Jubarte Cluster).

Onshore and shallow water production, meanwhile, was 56 Mbpd, 15 Mbpd lower than the previous quarter, mainly due to maintenance and divestments.

Overseas production was 36 Mboed, from fields in Bolivia, Argentina and the United States, in line with 4Q22.

2 - Refining, Transportation and Marketing

Operational (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Total production volume	1,652	1,724	1,726	(4.2)	(4.3)
Total sales volume in the domestic market	1,697	1,796	1,700	(5.5)	(0.2)
Reference feedstock	1,851	1,882	1,897	(1.6)	(2.4)
Processed feedstock	1,527	1,584	1,606	(3.6)	(4.9)
Processed feedstock utilization factor (%)*	82%	84%	85%	(2.0)	(3.0)
Total distillation feedstock	1,566	1,626	1,657	(3.7)	(5.5)
Total refining plants utilization factor (%)*	85%	86%	87%	(1.0)	(2.0)
Processed feedstock	1,573	1,624	1,653	(3.1)	(4.8)
Domestic crude oil as % of total processed feedstock	90%	90%	93%	-	(3.0)

Sales of oil products in 1Q23 decreased by 5.5% compared to 4Q22, mainly diesel and gasoline, whose consumption is seasonally weaker in the first quarter of the year. The divestment of REMAN also impacted the sales performance of these products between quarters.

Oil products output fell by 4.2% in 1Q23 compared to 4Q22, following the reduction in sales, and impacted by the scheduled stoppages at REVAP, REFAP and RPBC. Compared to 1Q22, production decreased by 4.3% due to these stoppages and the sale of REMAN, which represented 2.4% of refining capacity.

As an example of efficiency actions that are being implemented at our Refining segment, we highlight the project to replace heat exchangers in the atmospheric distillation unit carried out during the scheduled stoppage of RPBC, which will allow for the optimization of energy consumption at the refinery, with a reduction in the generation of greenhouse gases estimated at around 31,000 tons CO₂e/year.

2.1 – Diesel

thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Production volume	657	671	684	(2.0)	(3.9)
Sales volume for the Brazilian market	715	769	716	(7.0)	(0.2)

In 1Q23, there was a 2.0% reduction in production compared to 4Q22, following the reduction in economic activity and due to the scheduled stoppages of REVAP, REFAP and RPBC units.

It is worth noting that in January 2023, S-10 diesel sales accounted for 64.9% of total diesel sales, reaching a new monthly record. We also achieved record production of Diesel S-10 at REPAR (48 Mbpd) and REGAP (48 Mbpd) refineries in January and at REPLAN (117 Mbpd) in March.

We received the international Sustainability Carbon & Certification (ISCC) certificate for the production of Diesel R at REPAR. ISCC is applicable to the sustainability of raw materials and products, present in more than 100 countries and widely used to track the production chain of low carbon products. Diesel R is a Petrobras fuel that contains a portion of renewable diesel, which can vary from 5% (Diesel R5) to 10% (Diesel R10), aimed at developing products with lower

* 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.

carbon intensity and, therefore, lower emission of Greenhouse Gases (GHG). The first auction for the sale of the new product was on April 4, when 1,450 m³ of the product were auctioned, and demand is expected to increase over time.

2.2 – Gasoline

thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Production volume	372	401	374	(7.3)	(0.7)
Sales volume for the Brazilian market	414	447	402	(7.4)	3.1

Gasoline sales in 1Q23 decreased by 7.4% compared to 4Q22, mainly due to the typical seasonality with peak consumption in the last quarter of each year. In addition, there was the divestment of REMAN.

Nonetheless, Petrobras gasoline sales in 1Q23 were the highest on record for a first quarter in the last 6 years. Compared to 1Q22, sales grew by 3.1%. This occurred mainly because of the gain in the share of gasoline over hydrous ethanol due to its increased competitiveness in the flex fleet option.

In 1Q23, gasoline production decreased 7.3% compared to 4Q22, following the reduction in economic activity. Lower production was also influenced by scheduled stoppages.

We launched Petrobras' new premium gasoline, produced at REDUC, developed to make better use of high-performance engines. The new premium gasoline has an octane rating of RON 100, which provides greater resistance to fuel detonation, and low sulfur content (maximum 30 mg/kg), which represents a 40% reduction when compared to the specification of existing gasolines on the market.

2.3 – Fuel Oil

thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Production volume	200	216	227	(7.5)	(12.0)
Sales volume for the Brazilian market	33	32	37	3.1	(10.4)

Fuel oil sales in 1Q23 grew by 3.1% compared to 4Q22, mainly due to the maritime segment, with the start of the cruise season and the practice of more competitive prices. In the industrial segment, on the other hand, there was a reduction in deliveries in the North and Northeast regions, in addition to the divestment of REMAN, completed in November 2022, factors that negatively impacted sales in the period.

Compared to 1Q22, sales decreased 10.4% due to the same contractionary factors mentioned above and due to the fact that there was no demand for thermoelectric generation in 2023.

In 1Q23, fuel oil production fell by 7.5% compared to 4Q22 due to the scheduled stoppages at REVAP, REFAP and RPBC. Contributing to the reduction of pollutant emissions by the industry, as of March we started offering to the domestic market solely fuel oil with a maximum sulfur content of 1%, discontinuing the sale of fuel oil with a maximum sulfur content of 2%. Additionally, in the same month, we began selling Ultra Low Sulfur Marine Gas Oil (ULSMGO) in the Port of Santos, a marine fuel with a maximum sulfur content of 0.1%. The new product is produced at the RPBC refinery and

replaces the commercialization of conventional Marine Gas Oil (MGO) with a maximum sulfur content of 0.5%. Fueling with ULSMGO at the Port of Santos reduces the cost and time of travel for ships bound for ports in the Emission Control Areas (ECAs) as it avoids stops for fueling on the way.

2.4 – Naphtha

thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Production volume	64	80	77	(20.3)	(17.2)
Sales volume for the Brazilian market	69	63	75	9.5	(7.7)

Naphtha sales in 1Q23 increased by 9.5% compared to 4Q22, mainly due to increased sales to the Rio Grande do Sul hub.

In 1Q23, naphtha production dropped 20.3% compared to 4Q22, due to the prioritization of gasoline production.

2.5 – Liquefied Petroleum Gas (LPG)

thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Production volume	113	121	112	(6.1)	1.5
Sales volume for the Brazilian market	194	213	199	(8.9)	(2.5)

In 1Q23, LPG sales fell 8.9% compared to 4Q22, due to the greater participation of other agents in the market. Seasonality resulting from higher average temperatures in the first quarter of the year in Brazil, as well as the vacation period in January, also contributed to the reduction in sales compared to 4Q22.

In 1Q23, production decreased by 6.1% compared to 4Q22 due to the scheduled stoppages at REVAP, REFAP and RPBC.

2.6 – Jet Fuel

thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Production volume	85	73	85	16.7	(0.7)
Sales volume for the Brazilian market	107	104	97	2.9	9.9

The 2.9% increase in QAV sales in 1Q23 compared to 4Q22 is mainly due to seasonal factors with increased demand due to vacations and holidays.

In 1Q23, QAV production increased by 16.7% compared to 4Q22, following the trend of increasing sales volume.

3 - Gas & Power

	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Sale of Thermal Availability at Auction- Average MW	1,655	2,052	2,055	(19.3)	(19.5)
Generation of electricity - average MW	595	658	1,765	(9.6)	(66.3)
National gas delivery (MM m ³ /day)	32	34	37	(5.9)	(13.5)
Regasification of liquefied natural gas (MM m ³ /day)	-	1	10	-	-
Import of natural gas from Bolivia (MM m ³ /day)	19	18	20	3.2	(7.1)
Sales volume of natural gas - MM m ³ /day	50	53	66	(5.7)	(24.2)

In 1Q23, electricity generation by Petrobras fell 9.6% when compared to 4Q22, with a reduction of 66 MWMed. In this scenario, power generation was used mainly to supply Petrobras' internal steam demand, as well as for one-off marketing opportunities to export to Argentina. There was also a reduction in the volume of availability at auctions, due to expiration of contracts.

The supply of natural gas decreased 5.9% when compared to 4Q22, due to (a) interventions in natural gas production and processing units during 1Q23 and (b) reduction in the volume purchased by Petrobras from third parties, due to expiration of some purchase contracts. Meanwhile, there was no variation in the imported volume of Bolivian natural gas.

Natural gas sales in 1Q23 were 5.7% lower than 4Q22, due to lower demand in the thermoelectric (-5%) and non-thermoelectric (-6%) segments, the latter driven by lower demand in the industrial segment in the period.

Exhibit I: Consolidated Sales Volume

Sales volume (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Diesel	714	769	716	(7.2)	(0.3)
Gasoline	414	447	402	(7.4)	3.0
Fuel oil	33	32	37	3.1	(10.8)
Naphtha	69	63	75	9.5	(8.0)
LPG	194	213	199	(8.9)	(2.5)
Jet Fuel	107	104	97	2.9	10.3
Others	165	168	174	(1.8)	(5.2)
Total oil products	1,696	1,796	1,700	(5.6)	(0.2)
Alcohols, nitrogenous, renewable and others	4	3	3	33.3	33.3
Petroleum	194	153	198	26.8	(2.0)
Natural gas	231	277	346	(16.6)	(33.2)
Total domestic market	2,125	2,229	2,247	(4.7)	(5.4)
Exports of petroleum, oil products and others	887	793	760	11.9	16.7
Sales of international units	47	50	57	(6.0)	(17.5)
Total external market	934	843	817	10.8	14.3
Grand total	3,059	3,072	3,064	(0.4)	(0.2)

Exhibit II: Net imports and exports

Thousand barrels per day (Mbpd)	1Q23	4Q22	1Q22	Variation (%)	
				1Q23 X 4Q22	1Q23 X 1Q22
Net export (import)	520	357	411	45.7	26.5
Import	367	436	349	(15.8)	5.2
Petroleum	204	183	177	11.5	15.3
Diesel	70	127	75	(44.9)	(6.7)
Gasoline	39	46	21	(15.2)	85.7
GLP	34	54	65	(37.0)	(47.7)
Other oil products	20	26	11	(23.1)	81.8
Export	887	793	760	11.9	16.7
Petroleum	733	614	543	19.4	35.0
Fuel oil	132	174	212	(24.1)	(37.7)
Other oil products	22	5	5	340.0	340.0

In 1Q23 net exports increased by 45.7% compared to 4Q22, because of higher exports of oil mainly due to ongoing exports from the previous quarter and lower oil products imports, caused by the typical demand seasonality.

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