



Autonomous stacker reclaimer in Serra Norte stockyard (March 2022)

VALE'S PRODUCTION AND SALES IN 1Q22

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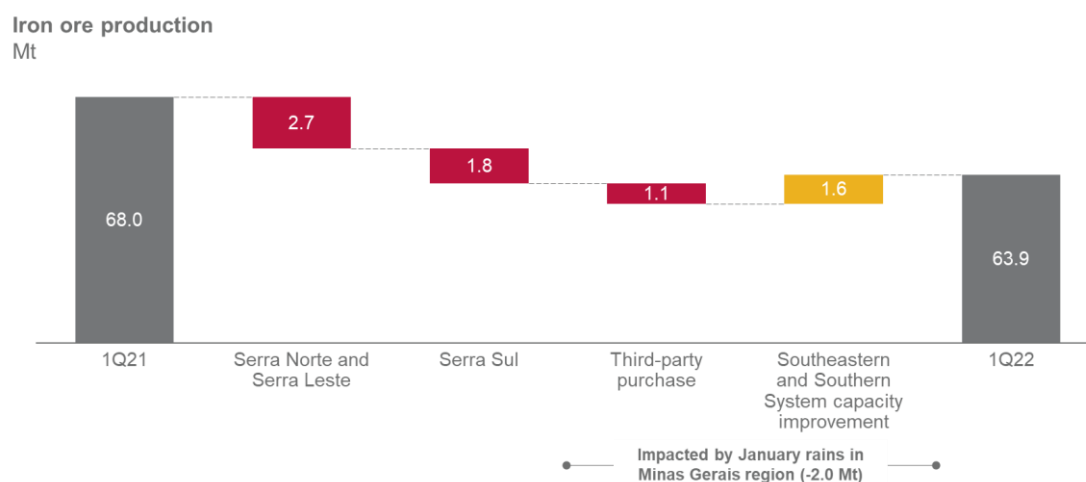
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Production and sales in 1Q22

Rio de Janeiro, April 19th, 2022 – Vale achieved in Iron Ore a solid premium of US\$ 9/t in 1Q22, the highest level since 2Q19, reflecting Vale’s high-quality portfolio and a tight supply-demand balance of high quality and low contaminant ores in the global market. On a quarter over quarter basis, production was lower due to (i) the heavy rainfall level in January in Minas Gerais; (ii) delays in obtaining licenses, impacting ROM availability, mainly in Serra Norte; (iii) a performance below expectation in S11D and Sossego; and (iv) major maintenance which should benefit production on a year to go, allowing Vale to maintain our expected annual Iron Ore production guidance range for the year of 320-335 Mt.

1Q22 production and sales performance

Vale’s iron ore fines production¹ totaled 63.9 Mt in 1Q22, 4.1 Mt lower than in 1Q21 as a result of: (i) lower ROM availability and the need to process more waste in Serra Norte, given licensing delays; (ii) higher strip ratio and tie-in effects due to presence of jaspilite waste in the S11D ore body and the installation of two new primary crushers to process the jaspilite; (iii) four days stoppage of Estrada de Ferro Carajás due to the heavy rains in March²; and (iv) the impact of rainfall in Minas Gerais in January³, temporarily halting the Southern and Southeastern Systems operations, and also impacting the availability of third-party ore purchase. Those issues were partially offset by the improved production capacity of the Southern and Southeastern Systems, after the commissioning and resumption of several assets during 2021.



¹ Including third-party purchases, run-of-mine and feed for pelletizing plants. Vale’s product portfolio Fe content reached 62.6%, alumina 1.2% and silica 6.0%.

² For more information, please access Vale’s release [“Incident causing temporary stoppage of Estrada de Ferro de Carajás railway operations”](#) from March 7th, 2022.

³ For more information, please access Vale’s release [“Vale informs about the impact of rainfall in Minas Gerais”](#) from January 10th, 2022.

Sales volumes of iron ore fines and pellets totaled 60.6 Mt in 1Q22 with a premium of US\$ 9.0/t⁴ in 1Q22, an increase of US\$ 4.3/t compared to 4Q21 due to (i) higher spread of 65% Fe and low alumina ore indexes vs. 62% Fe benchmark index; and (ii) better quality mix of products as some high silica ores are being concentrated in Chinese beneficiation plants before the final sale⁵. These effects were partially offset by the lagged price effect on pellet price realization and the absence of the seasonal dividends from our pellet's JVs.

Production of finished nickel was 45.8 kt in 1Q22, 5.4% lower than 1Q21, explained by (i) Sudbury mines ramping up during 1Q22 after the labor disruption, (ii) the remaining impact of the incident at Totten mine, (iii) the ramp-up of VBME project, and (iv) unscheduled maintenance on Onça Puma electric furnace. This was partially offset by higher production from PTVI and Thompson sourced ore and higher third-party sourced feed. Third-party sourced feed is planned to grow in the coming quarters in order to maximize our downstream utilization during a transitional period between the depletion of Ovoid mine and full production of the Voisey's Bay underground project.

Despite that, Sudbury mines achieved pre-strike rates in February with Totten mine resuming operations in the quarter. Also, Onça Puma maintained a similar performance q/q. **As a result, we expect our Nickel production for the year to be in line with our guidance of 175-190 kt.**

Sales of nickel were 18.8% lower than 1Q21, mainly due to lower production and an inventory strategy to cover sales commitments during the period of planned maintenance on Sudbury surface plant, in 2Q22. This also explains the difference between sales and production in the quarter.

Production of copper was 56.6 kt in 1Q22, 26.0% lower than 1Q21. The decrease was largely caused by lower Sossego production, which operated for 24 days during the quarter, due to scheduled SAG mill maintenance. The maintenance, which was originally scheduled to be completed in 1Q22, is now planned to be concluded by mid-May, in order to bring forward the replacement of the SAG mill discharge trunnion, which was planned for a future maintenance. Salobo production was relatively stable, despite corrective maintenance of the mill liners during the quarter. Production of copper as by-product was in line with lower nickel production from our Canadian operations as discussed above in the results for nickel operations.

Given additional unplanned maintenance required at Sossego, **at this point we expect copper production to be closer to the low end of our guidance of 330-355 kt of copper in 2022.**

⁴ Iron ore premium of US\$ 4.4/t and weighted average contribution of pellets of US\$ 4.6/t.

⁵ As announced in Vale Day 2021, Vale has been developing partnerships with concentration facilities in China in order to develop beneficiation capacity in the region for Vale's products. Across the process, there is a mass loss, which ranges from 30% to 35%, depending on iron ore input, to achieve a pellet feed with more than 63% Fe and priced accordingly.

Production summary

000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
Iron ore ¹	63,928	82,473	68,031	-22.5%	-6.0%
Iron ore (ex-Midwestern System) ¹	63,128	81,678	67,531	-22.7%	-6.5%
Pellets	6,924	9,073	6,287	-23.7%	10.1%
Coal	2,044	2,819	1,090	-27.5%	87.5%
Nickel	45.8	48.0	48.4	-4.6%	-5.4%
Copper	56.6	77.5	76.5	-27.0%	-26.0%
Cobalt (metric tons)	755	603	710	25.2%	6.3%
Gold (000' oz troy)	71	89	86	-20.2%	-17.4%

¹ Including third-party purchases, run-of-mine and feed for pelletizing plants.

Sales summary

000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
Iron ore ¹	53,603	83,147	59,298	-35.5%	-9.6%
Iron ore (ex-Midwestern System) ¹	52,347	82,356	58,057	-36.4%	-9.8%
Pellets	7,011	10,351	6,271	-32.3%	11.8%
Coal	1,805	2,650	1,015	-31.9%	77.8%
Nickel	39.0	44.7	48.0	-12.8%	-18.8%
Copper	50.3	73.7	71.2	-31.8%	-29.4%

¹ Including third-party purchases and run-of-mine and feed.

Production guidance

	2022
Iron ore ¹ (Mt)	320-335
Pellets (Mt)	34-38
Nickel (kt)	175-190
Copper (kt)	330-355

¹ Including Midwestern System volumes.

Iron ore

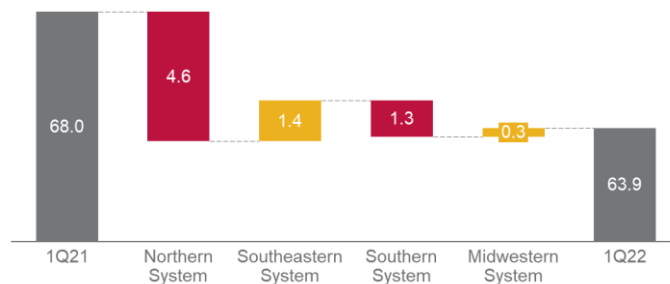
000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
Northern System	37,732	50,021	42,293	-24.6%	-10.8%
Serra Norte and Serra Leste	22,586	30,958	25,300	-27.0%	-10.7%
S11D	15,147	19,062	16,993	-20.5%	-10.9%
Southeastern System	14,955	18,659	13,529	-19.8%	10.6%
Itabira (Cauê, Conceição and others)	6,198	7,987	5,681	-22.4%	9.1%
Minas Centrais (Brucutu and others)	3,569	4,664	3,456	-23.5%	3.3%
Mariana (Alegria, Timbopeba and others)	5,188	6,008	4,392	-13.7%	18.2%
Southern System	10,441	12,999	11,708	-19.7%	-10.8%
Paraopeba (Mutuca, Fábrica and others)	4,010	4,892	5,317	-18.0%	-24.6%
Vargem Grande (Vargem Grande, Pico and others)	6,432	8,106	6,391	-20.7%	0.6%
Midwestern System	800	795	500	0.6%	60.0%
Corumbá	800	795	500	0.6%	60.0%
IRON ORE PRODUCTION¹	63,928	82,473	68,031	-22.5%	-6.0%
IRON ORE SALES²	53,603	83,147	59,298	-35.5%	-9.6%
IRON ORE AND PELLETS SALES²	60,614	93,498	65,569	-35.2%	-7.6%
IRON ORE PRODUCTION (ex-Midwestern System)	63,128	81,678	67,531	-22.7%	-6.5%
IRON ORE SALES (ex-Midwestern System)¹	52,347	82,356	58,057	-36.4%	-9.8%
IRON ORE AND PELLETS SALES (ex-Midwestern System)²	59,358	92,706	64,328	-36.0%	-7.7%

¹ Including third party purchases, run-of-mine and feed for pelletizing plants
Including third-party purchases and run-of-mine.

The 22.5% q/q iron ore production decline is mainly attributed to the usual weather seasonality.

Production variation (1Q22 x 1Q21)

Mt



Northern System

Production decreased 11% vs. 1Q21, largely explained by (i) licensing delays in Serra Norte; and (ii) higher jaspilite waste occurrence in the S11D ore body coupled with the tie-in effect of the installation of two primary crusher to process jaspilite material in S11D. The installation of one was completed during January and February, causing 38 days of interruption in one

processing line. Another primary crusher started the installation in March and is expected to be concluded in April.

In 2Q22, Vale expects to start and conclude the installation of the last primary crushers to process jaspilite materials, before the end of the rainy season, when the impact of interventions and maintenances on production is minimized. Together with the four mobile crushing plants installed in 1Q22, Vale expects to increase S11D's performance throughout 2022 to around 80 Mt.

Southeastern System

Performance increased 11% vs. 1Q21, despite the strong rainfall event in January, mainly due to (i) the higher and above-expected productivity in Itabira filtration process, especially Conceição plants, after the start-up of the filtration plants in December; (ii) the stronger production in Timbopeba site, after the commissioning of three beneficiation lines in March 2021; and (iii) the production of high-silica products, some of which are being concentrated in Chinese beneficiation plants, improving margins.

Brucutu's tailings filtration plant was commissioned in April and Vale expects to start up Torto dam by the end of 2022. The achievement of Brucutu's full capacity also depends on the continuous licensing and preparation of areas to receive dry tailings and mining waste.

Vale expects to start the raising works of Itabiruçu dam in April and the first stages of the raising should be completed in 4Q22, which should allow for the capacity increase in Itabira complex and its pellet feed production.

Southern System

The Southern System was the most affected by the heavy rains in January, which, together with lower ROM availability in Mutuca, mostly explain the production decrease of 11% vs. 1Q21. On the positive side, Vargem Grande complex improved performance in February and March, after the start-up of several initiatives throughout 2021, such as the tailings filtration plant, Maravilhas III dam and the conveyor belt operations resumption. Production also increased in Fábrica site due to wet processing resumption in 2Q21.

Midwestern System

On April 6, Vale announced a binding agreement to sell the Midwestern System in line with its strategy of portfolio simplification and focusing on the main businesses and growth opportunities, guided by a disciplined capital allocation. The completion of the transaction is subject to certain customary condition precedents, including regulatory approvals.

Pellets

000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
Northern System	738	895	961	-17.5%	-23.2%
São Luis	738	895	961	-17.5%	-23.2%
Southeastern System	3,689	4,807	3,609	-23.3%	2.2%
Itabasco (Tubarão 3)	310	1,089	583	-71.5%	-46.8%
Hispanobras (Tubarão 4)	-	-	169	-	-100.0%
Nibrasco (Tubarão 5 and 6)	1,064	1,052	699	1.1%	52.2%
Kobrasco (Tubarão 7)	969	989	607	-2.0%	59.6%
Tubarão 8	1,346	1,677	1,551	-19.7%	-13.2%
Southern System	679	745	656	-8.9%	3.5%
Fábrica	-	-	-	-	-
Vargem Grande	679	745	656	-8.9%	3.5%
Oman	1,818	2,625	1,061	-30.7%	71.3%
PELLETS PRODUCTION	6,924	9,073	6,287	-23.7%	10.1%
PELLETS SALES	7,011	10,351	6,271	-32.3%	11.8%

Production overview

Pellet production increased 10% vs. 1Q21, due to higher performance in Oman plant as result of less maintenances activities carried out in the period, which was partially offset by São Luis performance due to lower pellet feed availability and a longer-than-expected scheduled maintenance in Tubarão 3 plant.

Nickel

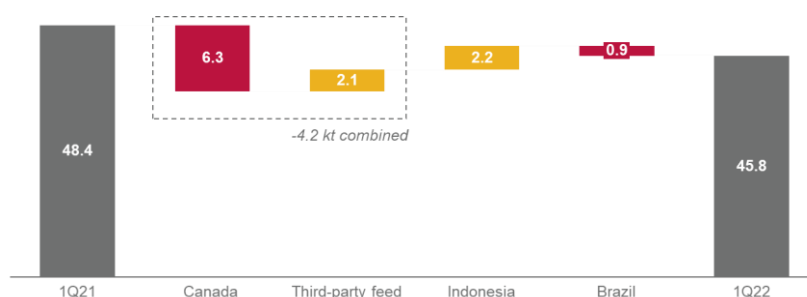
Finished production by source

000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
Canada	18.9	18.3	25.2	3.3%	-25.0%
Sudbury	8.6	8.8	12.0	-2.3%	-28.3%
Thompson	2.9	1.2	2.8	141.7%	3.6%
Voisey's Bay	7.5	8.4	10.4	-10.7%	-27.9%
Indonesia	17.6	21.7	15.4	-18.9%	14.3%
Brazil	5.4	5.4	6.3	0.0%	-14.3%
Feed from third-parties ¹	3.7	2.6	1.6	42.3%	131.3%
NICKEL PRODUCTION	45.8	48.0	48.4	-4.6%	-5.4%
NICKEL SALES	39.0	44.7	48.0	-12.8%	-18.8%

¹ External feed purchased from third parties and processed into finished nickel in our Canadian operations.

Production Variation (1Q22 x 1Q21)

kt



Canadian operations

Production from Sudbury sourced ore was 28.3% lower than 1Q21 mainly due to the impact of Totten mine shaft repair and continued ramp-up of Ontario mines during the quarter. Production at Totten mine resumed in February and have achieved pre-incident rates. In addition, Ontario mines achieved pre-labour disruption run rates in February. The 2.3% q/q decrease is mainly due to in-process inventory drawdown in 4Q21 which was rebuilt in 1Q22 and labour shortages due to COVID-19 protocols.

Production from Thompson sourced ore was relatively flat y/y and increased 142% when compared to 4Q21 as part of Thompson concentrates starting to be processed at Long Harbour.

Production from Voisey's Bay sourced ore reached 7.5 kt in 1Q22, 27.9% lower than 1Q21 and 10.7% lower than 4Q21 due to continued ramp-up of Voisey's Bay underground project, which is replacing Ovoid mine in depletion.

Indonesian operation (PTVI) & Asia Pacific operations

Nickel in matte production at PTVI site reached 13.8 kt in 1Q22, 18.8% lower than 4Q21 and 9.2% lower than 1Q21, due to planned furnace rebuild which started in December and is expected to be finished in 2Q22.

Production of finished nickel from PTVI source has increased 14.3% y/y, mainly due to reallocation of direct matte sales to third parties from 2Q22 to 1Q22. However, production was 18.9% lower sequentially due to annual scheduled maintenance shutdown at the Matsusaka Refinery for 31 days, as well as lower nickel matte production in PTVI due to the ongoing furnace rebuild.

Brazilian operation (Onça Puma)

Production at Onça Puma was 5.4 kt in 1Q22, 14.3% lower than 1Q21 in line with 4Q21. The operations were affected by a required 7-day maintenance on the electric furnace in February.

Feed from third parties

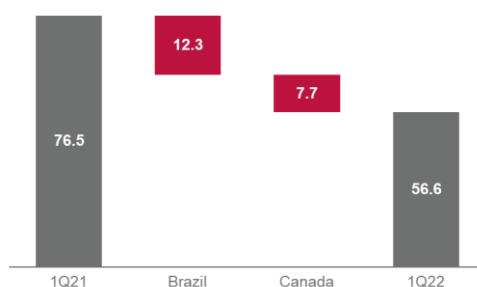
Finished nickel produced from third parties increased 131% and 42% in 1Q21 and 4Q21, respectively. This planned increase aims to maximize the utilization and performance of our downstream operations during a transitional period between the depletion of Ovoid mine and full production of the Voisey's Bay underground project. During this period Vale has adjusted feed source ratios throughout the flowsheet and leveraged third-party feed to supplement short-term needs.

Copper

Finished production by source

000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
BRAZIL	37.7	57.7	50.0	-34.7%	-24.6%
Salobo	33.9	33.8	34.1	0.3%	-0.6%
Sossego	3.8	24.0	15.9	-84.2%	-76.1%
CANADA	18.9	19.7	26.6	-4.1%	-28.9%
Sudbury	13.9	12.9	19.4	7.8%	-28.4%
Thompson	0.3	0.2	0.2	50.0%	50.0%
Voisey's Bay	3.1	5.1	6.1	-39.2%	-49.2%
Feed from third parties	1.6	1.6	1.1	0.0%	45.5%
COPPER PRODUCTION	56.6	77.5	76.5	-27.0%	-26.0%
COPPER SALES	50.3	73.7	71.2	-31.8%	-29.4%
Copper Sales Brazil	34.1	52.7	45.4	-35.3%	-24.9%
Copper Sales Canada	16.2	21.0	25.8	-22.9%	-37.2%

Production Variation (1Q22 x 1Q21) kt



Copper production totalled 56.6 kt in 1Q22, 26.0% and 27.0% below 1Q21 and 4Q21 respectively. Production was mainly impacted by the 84% quarter-on-quarter decrease in production at Sossego, due to the scheduled SAG Mill maintenance during 1Q22.

Salobo production was 33.9kt, similar to 1Q21 and 4Q21. During the quarter, Salobo operations were impacted by both planned and corrective maintenance in the mill liners. In addition, higher-than-average seasonal rain level in the region during 4Q21 impacted 1Q22 mine plans, with no anticipated impact to overall 2022 production.

Production of copper from Canadian sourced ore was 18.9 kt in 1Q22, 28.9% and 4.3% lower than 1Q21 and 4Q21 respectively, as Voisey's Bay underground project continues to ramp-up. In comparison to 4Q21, this effect was partially offset by the continued recovery of Ontario mines to pre labour disruption run rates.

Copper sales⁶ were 50.3 kt, 29% and 32% lower than 1Q21 and 4Q21 respectively, mainly due to lower production.

⁶ Sales volumes are lower compared to production volumes due to payable copper vs. contained copper: part of the copper contained in the concentrates is lost in the smelting and refining process, hence payable quantities of copper are approximately 3.5% lower than contained volumes.

Base Metals by-products

Finished production

	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
COBALT (000' metric tons)	755	603	710	25.2%	6.3%
PLATINUM (000' oz troy)	23	17	30	35.3%	-23.3%
PALLADIUM (000' oz troy)	29	19	39	52.6%	-25.6%
GOLD (000' oz troy) ¹	71	89	86	-20.2%	-17.4%
TOTAL BY-PRODUCTS (000' metric tons Cu eq.)^{2 3}	32	29	43	10.4%	-27.1%

¹ Includes gold from Copper and Nickel operations.

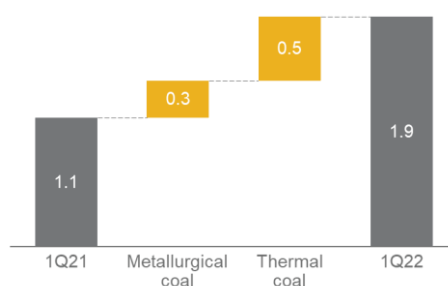
² Includes iridium, rhodium, ruthenium and silver.

³ Copper equivalent tonnes calculated using average market metal prices for each quarter. Market reference prices: for copper, cobalt, gold and silver: LME spot; for Platinum and Palladium: NYMEX spot; for other PGMs: Johnson Matthey.

Coal

000' metric tons	1Q22	4Q21	1Q21	% change	
				1Q22/4Q21	1Q22/1Q21
COAL PRODUCTION	2,044	2,819	1,090	-27.5%	87.5%
Metallurgical coal	887	1,195	558	-25.8%	59.0%
Thermal coal	1,158	1,625	532	-28.7%	117.4%
COAL SALES	1,805	2,650	1,015	-31.9%	77.8%
Metallurgical coal	793	959	474	-17.3%	67.3%
Thermal coal	1,012	1,691	541	-40.2%	86.9%

Production Variation (1Q22 x 1Q21) Mt



Production and sales overview

Coal production was 87.5% higher YoY as a result of the revamp of the plant and the absence of impacts of the COVID-19 pandemic seen on the coal seaborne demand in the 1Q21.

When compared to 4Q21, coal production was 27.5% lower, heavily impacted by weather-related conditions resulting from the Ana cyclone that hit the South of Africa in January and February. The cyclone Ana also affected coal sales in the quarter, restricting rail transportation and limiting inventory management. Weather conditions improved in March, and operations are being normalized.