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02/10/2022



Production and Sales Report 2021

The main drivers of 2021 production and sales were (i) the increase in Iron Ore production (5% y/y) and sales (9% y/y) driven by greater production in our Minas Gerais operations (17% y/y) partially offset by weaker performance in S11D (-11% y/y); (ii) the strong benchmark price environment (47% y/y); (iii) the strike in Sudbury, stopping our operations for 70 days and contributing to a 9% decrease in Nickel production and 18% decrease in Copper production; and (iv) the improved performance of coal production in Moatize (45% y/y) together with the signing of a binding agreement to sell the asset.

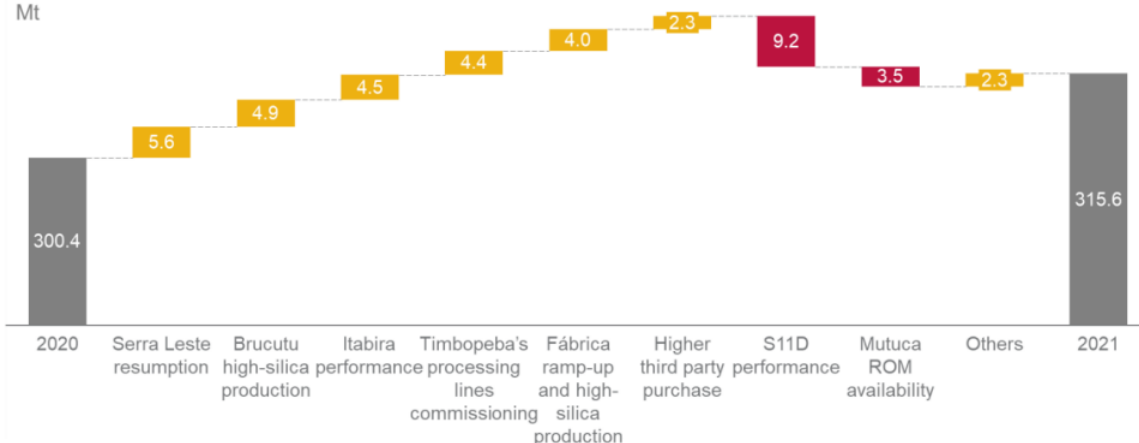
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2021 production and sales performance¹

Vale's iron ore fines production totaled 315.6 Mt² in 2021, 15.2 Mt higher than 2020, as a result of: (i) Serra Leste resumption in late 2020; (ii) production increase of high silica products³ in Brucutu; (iii) improved performance in Itabira complex, despite the restrictions related with tailings disposal; (iv) Timbopoba operating with six beneficiation lines since March 2021; (v) resumption of wet processing production in Fábrica, together with the production of high silica products; and (vi) higher third-party purchase. These improvements were partially offset by (i) S11D's performance, mainly impacted by the higher strip ratio and lower mining productivity during the year, caused by higher incursion of jaspilite materials in the ore body; and (ii) ROM availability in Mutuca, which is under a licensing process.

Iron ore production

Mt



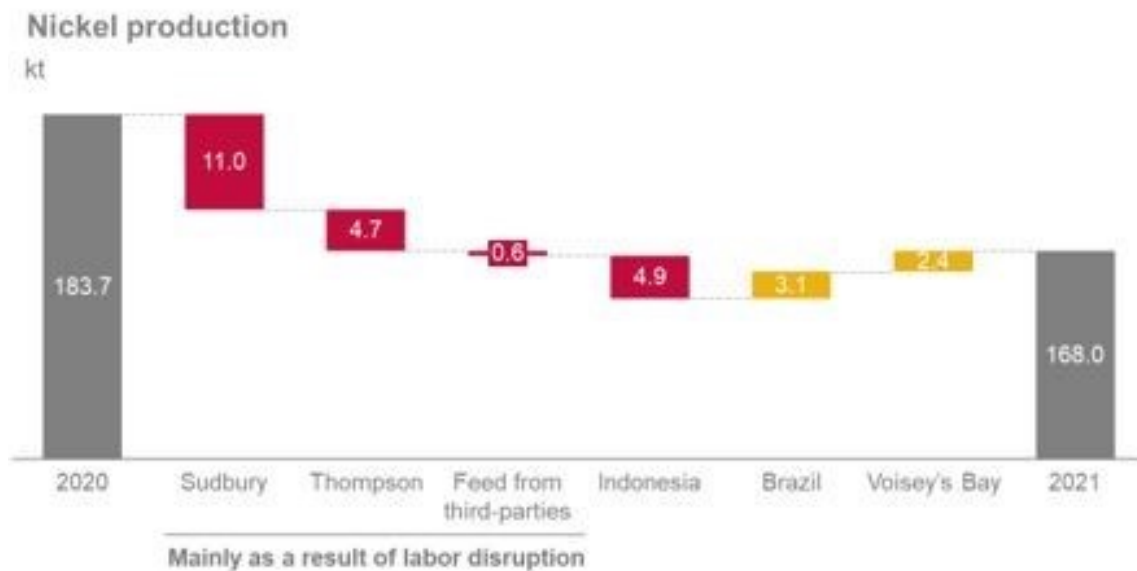
In order to improve S11D performance towards its nameplate capacity, leading to a production of 80-85 Mt in 2022, Vale is sequentially installing four primary crushers and four mobile crushers to process jaspilite materials, all of them to be operational throughout 1H22. In addition, a new crusher is required to process large compact waste blocks, restricting S11D production capacity on around 5 Mtpy until it is operational by 2025.

Vale ended the year with around 340 Mtpy of iron ore production capacity and expects to achieve 370 Mtpy by the end of 2022, after the ramp-up of the tailings filtration plants at Itabira and Brucutu sites and their respective additions in tailings

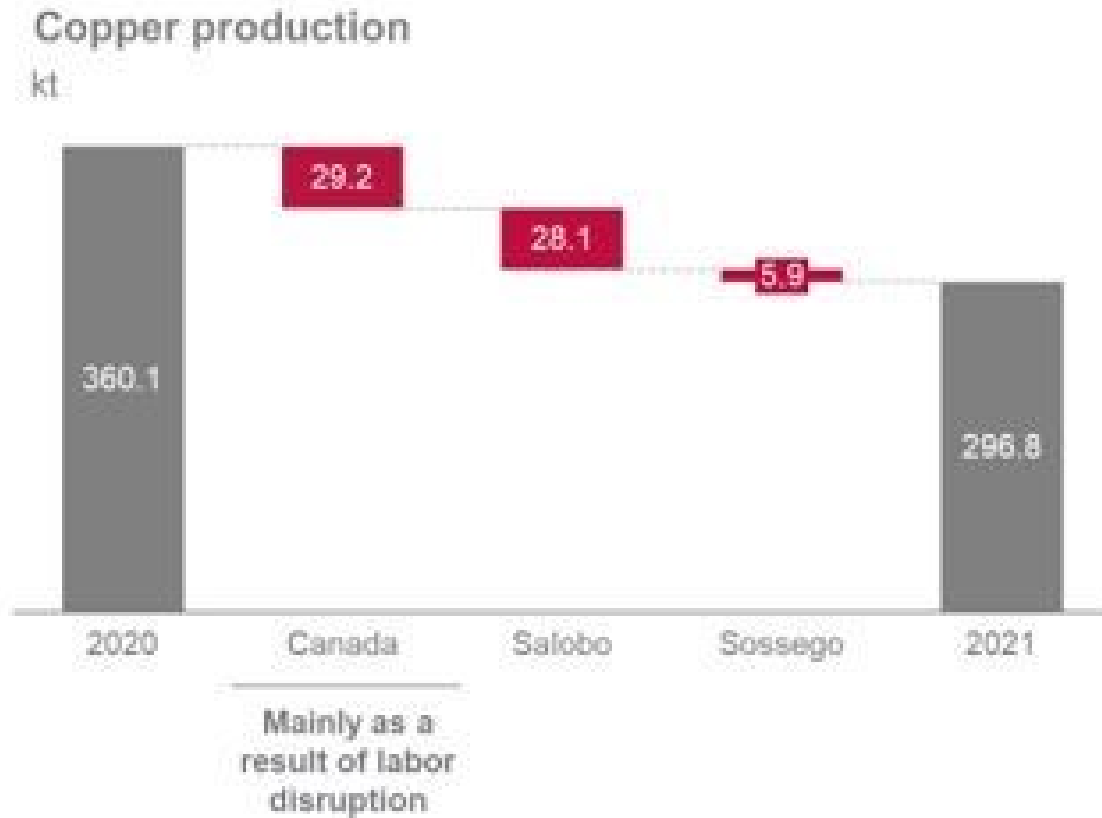
storage capacity (Itabiruçu and Torto dams) during the second half of the year.

All operations in Minas Gerais affected by the heavy rains of early 2022 have already resumed their regular activities after the re-establishment of adequate safety conditions. The stoppages impact on Vale's iron ore production was approximately 2 Mt4, which does not change our production guidance, as it considers the seasonal impact of the rainy season. Vale's pellet production totalled 31.7 Mt in 2021, 2.0 Mt higher than 2020, as a result of the resumption of Vargem Grande pellet plant in January, but still restricted by pellet feed availability in Itabira and Brucutu, which will gradually improve towards the end of 2022 following the start-up of Torto dam and the raising works in Itabiruçu dam.

Sales volumes of iron ore fines and pellets totalled 309.8 Mt in 2021, 23.7 Mt higher than 2020 and in line with 2021's production. Production of finished nickel was 168.0 kt in 2021, 15.7 kt lower than 2020, mainly explained by (i) the labour disruption in Sudbury, which also impacted Thompson sourced concentrates processed at Copper Cliff Smelter; and (ii) lower production from PTVI sourced ore due to reduced matte production rates as COVID-19 travel restrictions demanded the postponement of required furnace maintenance from 2021 to 2022. The positive highlight was the improved performance at Onça Puma, despite extended maintenance performed during the year. In addition, production of Voisey's Bay sourced ore increased due to improved performance at Long Harbour Refinery, achieving best-to-date annual production of 38.1 kt.



Copper production was 296.8 kt in 2021, 63.3 kt lower than 2020, mainly due to (i) the labour disruption in Sudbury; (ii) SAG mill reliability at Sossego operations, that should be addressed after major ongoing maintenance in 1Q22; (iii) review in maintenance routines in early 2021 at Salobo operations which caused delays to planned maintenance, restrictions to mine movement and impacts on feed grade; and (iv) conveyor belt incident limiting production at Salobo in the fourth quarter. Despite the challenges, mine movement continued to improve at Salobo operation and reached pre safety review levels in the end of the year.



On December 21st, 2021, Vale announced (here) the signing of a binding agreement to sell its coal assets in Mozambique, as part of Vale's reshaping to focus on its core businesses. Vale's coal production reached 8.5 Mt, 2.6 Mt higher than in 2020, driven by an improved performance in 2H21 following the ramp up after plant's revamp.

Production summary

000' metric tons	4Q21	3Q21	4Q20	2021	2020	% change		
						4Q21/3Q21	4Q21/4Q20	2021/2020
Iron ore ¹	82,473	89,420	84,508	315,610	300,385	-7.8%	-2.4%	5.1%
Pellets	9,073	8,340	7,117	31,708	29,676	8.8%	27.5%	6.8%
Manganese Ore ²	38	108	119	350	740	-64.8%	-68.1%	-52.7%
Coal	2,819	2,497	1,230	8,497	5,878	12.9%	129.2%	44.6%
Nickel ³	48.0	30.2	50.8	168.0	183.7	58.9%	-5.5%	-8.5%
Copper	77.5	69.2	93.5	296.8	360.1	12.0%	-17.1%	-17.6%
Cobalt ³ (metric tons)	603	452	625	2,519	2,474	33.4%	-3.5%	1.8%
Gold (000' oz troy)	89	93	120	364	469	-4.3%	-25.8%	-22.4%

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

² Vale concluded the sale of its manganese ferroalloy assets in Minas Gerais do the VDL Group. Therefore, from 2022 onwards Vale will not report any activities related to the production and sale of manganese ferroalloys.

³ Historical figures exclude VNC production.

Sales summary

000' metric tons	4Q21	3Q21	4Q20	2021	2020	% change		
						4Q21/3Q21	4Q21/4Q20	2021/2020
Iron ore ¹	83,147	67,844	82,825	277,508	254,865	22.6%	0.4%	8.9%
Pellets	10,351	8,037	8,486	32,306	31,211	28.8%	22.0%	3.5%
Manganese Ore	35	111	461	573	1,378	-68.5%	-92.4%	-58.4%
Coal	2,650	2,640	1,534	7,849	5,866	0.4%	72.8%	33.8%
Nickel ²	44.7	41.8	58.8	181.8	183.1	6.9%	-24.0%	-0.7%
Copper	73.7	65.4	93.0	284.5	346.3	12.7%	-20.8%	-17.8%

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

² Historical figures exclude VNC production

Production guidance

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

¹ 4Q21 performance analyses available at each businesses section.

² Including third-party purchases, run-of-mine and feed for pelletizing plants. Vale's product portfolio Fe content reached 63.1%, alumina 1.3% and silica 5.2%.

³ Taking advantage of higher prices in 2021.

⁴ Including third-party purchases.

More information



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