



Mass testing in Parauapebas city, in a partnership between Vale and the local government

VALE'S PRODUCTION AND SALES IN 2Q20

www.vale.com

vale.ri@vale.com

Tel.: (5521) 3485-3900

Investor Relations Department

Ivan Fadel

André Werner

Mariana Rocha

Samir Bassil

B3: VALE3

NYSE: VALE

LATIBEX: XVALO

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Production and sales in 2Q20

Adoption of world-class H&S protocols	Iron Ore production run-rate is ramping up	Iron Ore and Base Metals production guidance on track	Pellet production guidance revised
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Rio de Janeiro, July 20th, 2020 – Vale S.A. (“Vale”) faced a challenging 2Q20, which combined the efforts to ramp up production with strong measures to protect our employees and support communities amid the COVID-19 pandemic. Iron ore fines production accelerated towards the end of the quarter, with June production at 25.1 Mt, a 23% increase in comparison to the previous 5-month average. Vale remains on track to deliver its iron ore production guidance, as it enters a seasonally stronger period with growing run rates.

In 2Q20, production across Vale’s businesses faced some impacts due to the COVID-19 pandemic. In high absenteeism operating areas, however, average absenteeism dropped by around one to two thirds from its peak in April. Vale adopted the test-trace-treat protocol, mass testing its employees and putting in quarantine any confirmed symptomatic and asymptomatic cases. In addition, Vale used GPS-based technology to trace and quarantine employees that had contact with each confirmed case. Both procedures created a “forced” absenteeism, with the sole purpose of safeguarding and treating our employees. Vale’s safety measures and the open dialogue with local authorities and communities paved the way for the company’s operational continuity, preserving an adequate contingent of essential personnel at its facilities.

Effects of COVID-19 pandemic on operations		Production loss	Outlook
Iron Ore	<ul style="list-style-type: none"> • 12-day suspension of operations in the Itabira Complex. • Increased quarantine-related absenteeism in Northern System operations from the test-trace-treat approach. • Postponements of maintenance and on resumption of operations¹ impacting 2H20 production. 	<ul style="list-style-type: none"> • 9.8 Mt of iron ore (3.5 Mt in 2Q and 6.3 Mt expected in 2H) 	<ul style="list-style-type: none"> • Further volumes losses related to absenteeism from COVID-19 effects cannot be completely discarded for the upcoming quarters. However, absenteeism levels are at 2/3 of their peak in April, there is an important buffer to help mitigate this risk.

¹ Timbopeba, Fábrica and Vargem Grande Complex.

Effects of COVID-19 pandemic on operations		Production loss	Outlook
Base Metals	<ul style="list-style-type: none"> In Nickel, 3-month care and maintenance at Voisey's Bay Mine was mitigated by Long Harbour refinery sustained operations, sourcing nickel concentrate stockpiles already at site. Social distancing measures require more shaft trips, increasing time to change shifts, impacting productivity in North Atlantic. In Onça Puma, challenges to mobilize workforce to perform maintenance forced the operation to defer work to July. Full capacity expected from August onwards. In Copper, meaningful absenteeism and postponed maintenance works in South Atlantic operations in addition to the idling of Voisey's Bay mining operations led to impacts on production. 	<ul style="list-style-type: none"> 5 kt of nickel 17 kt of copper 	<ul style="list-style-type: none"> Further volumes losses related to absenteeism from COVID-19 effects cannot be completely discarded for the upcoming quarters. However, absenteeism levels are at 2/3 of their peak in April, there is an important buffer to help mitigate this risk. Maintenance work in Base Metals, scheduled in 1Q and 2Q that needed to be deferred, could impact production volumes in 3Q.
Coal	<ul style="list-style-type: none"> Due to lower demand and following a 15-month production record in March, mine and port storage capacity reached their limits. Production temporarily stopped in June, after having slowed down since April. 	<ul style="list-style-type: none"> ~1 Mt 	<ul style="list-style-type: none"> Given current uncertainties, further temporary production stoppages are possible.

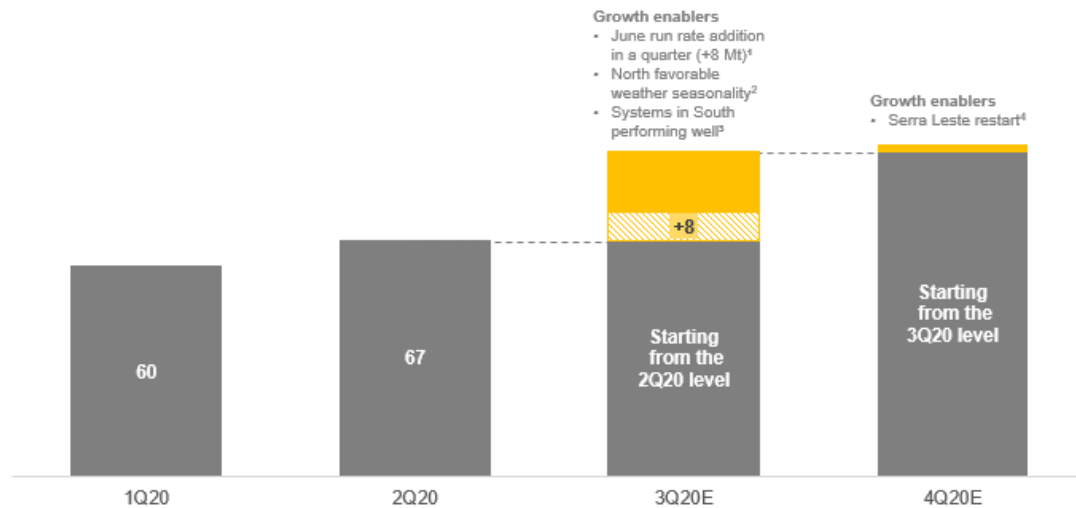
Vale's iron ore fines production² totalled 67.6 Mt, with June production above 25 Mt, displaying strong acceleration from April and May levels, as it enters a seasonally-strong period, with lower rainfall levels. S11D reached a run-rate of 91 Mtpy in June, which is likely to improve in 2H20 towards an annual production slightly over 85 Mt.

Nevertheless, the main effects that weighed on 2Q production were: (i) COVID-19 related impacts of 3.5 Mt; (ii) non-recurring events, such as long-distance conveyor belt maintenance at S11D, with a negative impact of 2.1 Mt; and (iii) the expected stoppage of Fazendão mine in February due to depletion of the licensed mining area, planned to restart operations during 3Q20, with an average monthly production of 0.4 Mt in the rest of the year.

Vale's guidance for iron ore fines production in 2020 is unchanged, at 310-330 Mt, assuming the lower end of the guidance as the most likely scenario. Despite COVID-19 impacts and operational challenges faced in 2Q20, operational performance improved towards the end of the 2Q20 with the end of the rainy season, with June production at 25.1Mt, which represents a quarterly run-rate of 75 Mt (including Timbopeba resumption). Milestones for achieving the guidance include: (i) production close to 200 Mt in 2020 in the Northern System, which includes production at Norther Range (Serra Norte) close to 2H19 level, a solid performance at S11D and Eastern Range (Serra Leste) restart; (ii) operational enhancements in the Itabira Complex, which was impacted by maintenance in 1Q20 and COVID-19 in 2Q20; and (iii) the resumption of Fazendão site in 3Q20.

²Including third party purchases, run-of-mine and feed for pelletizing plants. Vale's product portfolio Fe content reached 63.5%, alumina 1.4% and silica 4.0%.

Iron ore fines production plan (guidance of 310-330 Mt in 2020) Mt



¹ June production was 25.1 Mt, implying a quarter run rate of 75.3 Mt, or +8 Mt compared to 2Q20.

² Northern System is expected to produce close to 200 Mt in 2020 (~118 Mt in 2H20), ~11 Mt above 2019, mainly due to S11D ramp up.

³ Fazendão restart in 3Q20, as well as production stability in Itabira, improve Southern and Southeastern performance.

⁴ Expected to resume in 4Q20 (capacity of 6 Mtpy).

Vale's guidance for pellet production in 2020 was revised to 30-35 Mt from 35-40 Mt, mainly due to: (i) production adjustments reflecting pellet feed availability at Itabira site; (ii) postponement of the resumption of Vargem Grande pellet plant to 2021; and (iii) lower market demand.

Sales volumes of iron ore fines and pellets, with a premium of US\$ 7.5/t³, reached 61.6 Mt in 2Q20, 8% below production, mainly due to logistics lead time between production and CFR sales, with part of 2Q20 production on the move for sale in the coming quarter. In addition, Vale's sales approach follows a strategy of margin maximization, prioritizing blended products in its portfolio, which increases the lead time between production and sales.

Production of finished nickel reached 59.4 kt in 2Q20, mainly due to (i) the strong performance in North Atlantic refineries, (ii) increased Matsusaka and PTVI site production after routine maintenance in 1Q20, offset by lower Indonesian-source ore processed in Clydach, and (iii) higher production from VNC source. **The Nickel business reached 94.2 kt 1H20 production volume ex-VNC, well positioned to reach the 180-195 kt guidance for 2020,** even when considering the expected lower 3Q20 production volumes due to postponed maintenance. VNC refining activities responsible for processing the feed into nickel oxide were ramped down in 2Q20, with only the production of nickel hydroxide cake going forward at increased volumes.

Copper production reached 84.5 kt in 2Q20, lower than previous periods, mainly due to the above-mentioned COVID-19 impacts. **The Copper business produced 179.0 kt in 1H20 and**

³ Iron ore premium of US\$ 5.3/t and weighted average contribution of pellets of US\$ 2.2/t.

is also on track to reach the 360-380 kt production guidance for 2020, as a stronger performance is expected in 2H20 at South Atlantic operations due to the end of the rainy season in Brazil and the resumption of Voisey's Bay operations.

Vale remains cautious amid the COVID-19 pandemic, fully committed to the safety measures adopted at its sites and the resumption and stabilization of production under the highest safety conditions.

Production summary

000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/1Q20	2Q20/2Q19	1H20/1H19
Iron ore ¹	67,598	59,605	64,057	127,203	136,927	13.4%	5.5%	-7.1%
Pellets	7,071	6,926	9,071	13,997	21,245	2.1%	-22.0%	-34.1%
Manganese Ore	149	363	318	512	683	-59.0%	-53.1%	-25.0%
Coal	1,283	1,963	2,370	3,246	4,583	-34.6%	-45.9%	-29.2%
Nickel	59.4	53.2	45.0	112.6	99.8	11.7%	32.0%	12.8%
Nickel Ex-VNC	49.0	45.2	39.1	94.2	87.6	8.4%	25.3%	7.5%
Copper	84.5	94.5	98.3	179.0	192.1	-10.6%	-14.0%	-6.8%
Cobalt (metric tons)	1,318	1,189	1,032	2,507	2,227	10.8%	27.7%	12.6%
Gold (000' oz troy)	114	119	119	233	227	-4.2%	-4.2%	2.6%

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

Sales summary

000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/1Q20	2Q20/2Q19	1H20/1H19
Iron ore ¹	54,615	51,656	61,945	106,271	117,361	5.7%	-11.8%	-9.4%
Pellets	6,950	7,311	8,842	14,261	21,156	-4.9%	-21.4%	-32.6%
Manganese Ore	270	219	92	489	344	23.3%	193.5%	42.2%
Coal	1,385	1,566	2,093	2,913	4,487	-11.6%	-33.8%	-34.2%
Nickel	42.4	44.2	57.5	86.5	107.8	-4.1%	-26.3%	-19.7%
Copper	83.5	89.2	95.0	172.7	185.4	-6.4%	-12.1%	-6.8%

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

Iron ore

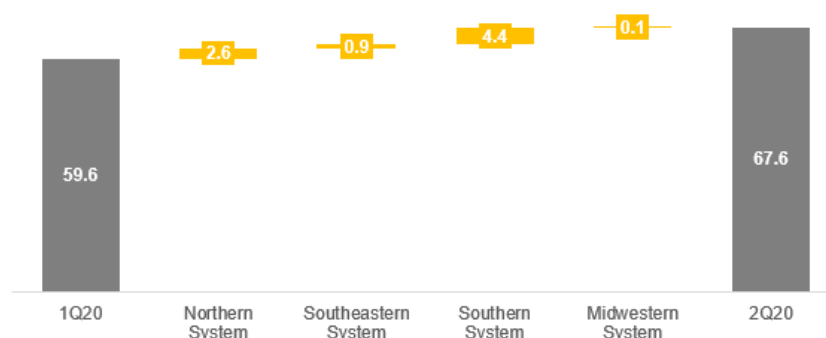
000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/ 1Q20	2Q20/ 2Q19	1H20/ 1H19
Northern System	42,463	39,900	41,576	82,363	82,591	6.4%	2.1%	-0.3%
Northern and Eastern ranges	24,319	21,480	25,838	45,799	48,867	13.2%	-5.9%	-6.3%
S11D	18,144	18,420	15,738	36,564	33,724	-1.5%	15.3%	8.4%
Southeastern System	12,721	11,789	15,856	24,510	35,434	7.9%	-19.8%	-30.8%
Itabira (Cauê, Conceição and others)	5,324	6,007	8,774	11,331	18,066	-11.4%	-39.3%	-37.3%
Minas Centrais (Brucutu and others)	4,190	3,649	5,243	7,839	10,434	14.8%	-20.1%	-24.9%
Mariana (Alegria, Timbopeba and others)	3,207	2,133	1,839	5,340	6,934	50.4%	74.4%	-23.0%
Southern System	11,768	7,356	6,173	19,124	17,949	60.0%	90.6%	6.5%
Paraopeba (Mutuca, Fábrica and others)	5,873	3,648	5,736	9,521	12,531	61.0%	2.4%	-24.0%
Vargem Grande (Vargem Grande, Pico and others)	5,895	3,708	436	9,603	5,416	59.0%	1252.1%	77.3%
Midwestern System	645	559	451	1,204	952	15.4%	43.0%	26.5%
Corumbá	645	559	451	1,204	952	15.4%	43.0%	26.5%
IRON ORE PRODUCTION¹	67,598	59,605	64,057	127,203	136,927	13.4%	5.5%	-7.1%
IRON ORE SALES²	54,615	51,656	61,945	106,271	117,361	5.7%	-11.8%	-9.4%
IRON ORE AND PELLETS SALES	61,565	58,967	70,787	120,532	138,517	4.4%	-13.0%	-13.0%

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

² Including third party purchases and run-of-mine.

Production variation (2Q20 x 1Q20)

Mt



Northern System

The Northern System improved its operational performance in 2Q20 after unusual weather conditions in 1Q20, partially offset by (i) operational restrictions at Northern Range from the postponement of the new Morro 1 mining section start-up, (ii) a 16-day⁴ scheduled and

⁴ In April and May.

unscheduled maintenance period of the long-distance conveyor belt at S11D, and (iii) impacts related to the COVID-19 pandemic.

In June, S11D achieved a solid performance of 91 Mtpy run rate, expected to improve further in 2H20, producing slightly above 85 Mt in 2020. Vale also received authorization to resume operations at Eastern Range (Serra Leste), with 6 Mtpy of production capacity. Maintenance works are ongoing for a safe resumption, expected for 4Q20.

Southeastern System

Southeastern System's improved operational performance in 2Q20 was mainly due to better performance at Alegria Complex and to the restart of Timbopeba dry-processing operations in June, partially offset by the temporary stoppage of Itabira Complex for 12 days in June and the stoppage of Fazendão mine for a full quarter due to depletion of the licensed mining area in February and setting-up for restarting by 3Q20. Vale is applying to expand the licensed mining area of Fazendão; the granting of the concession is expected by the end of July 2020 and will enable the restart of operations.

The Conceição plants are using tailings filtration and tailings disposal at the Onça and Periquito pits as a short-term alternative for the Itabiruçu dam stoppage. These alternatives are expected to continue in 2H20 and part of 2021, limiting Conceição plants production capacity.

Southern System

Superior operational performance in the Southern System in 2Q20 can be mainly attributed to higher production from Vargem Grande Complex and also larger third-party purchases. In 2Q20, wet processing production at the Vargem Grande Complex partially resumed with tailings filtration, using the Maravilhas I dam and Cianita waste dump as a preliminary solution for tailings disposal. The start-up of tailings disposal at Maravilhas III dam as a lasting solution was postponed to 2Q21 from 4Q20 mainly due to COVID-19 related impacts. Wet processing allows for an improvement on the average quality of Vale's portfolio. Increases in production volumes depend on the capacity to flowing production through the TFA⁵ rail terminal.

Operational resumption plan

Actions for resuming Timbopeba, Fábrica, Vargem Grande and Brucutu sites are under implementation, in collaboration with the National Mining Agency (ANM), the Public Prosecutor's Office of the Minas Gerais State (MPMG) and the external audit firms.

COVID-19-related impacts on the works in Timbopeba, Fábrica and Vargem Grande Complex, mentioned below, reflect lower levels of personnel at construction sites and, accordingly, slower

⁵ TFA stands for Terminal Ferroviário de Andaime.

work progression. The pace of works should also be slowed down in the rainy season, expected to start in November.

	Current status	Actions in progress	Timeline for resumption
Timbopeba	<ul style="list-style-type: none"> • May: resumed dry processing operations, enabling production of around 330 kt/mo. • June: received ANM's temporary authorization to dispose of tailings in Timbopeba pit until the end of 2020. • Shifting current production level from dry to wet processing production. 	<ul style="list-style-type: none"> • Application for a final authorization to dispose of tailings at Timbopeba pit. • Project being concluded to adapt the plant's capacity for tailings disposal at Timbopeba pit, which will enable full operational capacity (~1.0 Mt/mo). 	<ul style="list-style-type: none"> • Conclusion expected by 1Q21 due to delays in the construction of the final solution, given restrictions related to COVID-19.
Fábrica	<ul style="list-style-type: none"> • July: TAS⁶ railway terminal operations resumed, after vibration tests, enabling inventory movement. 	<ul style="list-style-type: none"> • Conclusion of required vibration tests (to certify the absence of impacts on the site's structures), depending on the assessment from auditors reporting to the public prosecutors and further approval by the ANM. • Construction of pipeline for tailings disposal at Forquilha V. 	<ul style="list-style-type: none"> • Production resumption postponed to 2Q21 due to COVID-19 and limited by mechanical dismantling. • Pellet plant resumption expected in 3Q21, subject to market conditions.
Vargem Grande Complex	<ul style="list-style-type: none"> • August 2019: dry processing resumed. • January: resumption of operations at TFA railway terminal. • Pellet plant vibration test successfully executed in 2Q20. • June: wet processing partially resumed at VGR and Pico mines with tailings filtration, in June. 	<ul style="list-style-type: none"> • Completion of Maravilhas III dam construction to increase wet processing capacity. • A positive declaration of stability condition (DCE) for Maravilhas III dam operations, relying on the external auditor's assessment. • Studies to debottleneck logistics capacity, mainly limited by impossibility to operate the long-distance conveyor belt in the segment close to the Vargem Grande dam. 	<ul style="list-style-type: none"> • Maravilhas III start-up postponed to 2Q21, mainly due to COVID-19. • Pellet plant resumption expected in 2Q21, subject to market conditions. • Gradual improvement of expedition operating rate throughout 2021.
Brucutu	<ul style="list-style-type: none"> • Operations at 40% capacity since December 2019 through wet processing and tailings filtration. • Short-term alternatives for tailings disposal, such as the optimized use of the Sul dam have not proven feasible. 	<ul style="list-style-type: none"> • Assessment of Norte/Laranjeiras dam geotechnical characteristics. • Completion of Torto dam construction, to upgrade plant capacity to 100%. • A positive declaration of stability condition (DCE) and operating license for Torto dam operations, relying on the external auditor and authorities' assessment. 	<ul style="list-style-type: none"> • Assessment of Norte/Laranjeiras dam expected in 3Q20. • Torto dam construction expected to complete in 2Q21. It will serve Brucutu plant until 2022, achieving 100% capacity.

⁶ TAS stands for Terminal de Água Santa.

Pellets

000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/1Q20	2Q20/2Q19	1H20/1H19
Northern System	919	883	535	1,802	1,756	4.1%	71.8%	2.6%
São Luis	919	883	535	1,802	1,756	4.1%	71.8%	2.6%
Southeastern System	3,537	5,132	6,080	8,669	13,840	-31.1%	-41.8%	-37.4%
Tubarão 1 and 2	-	-	514	-	1,680	-	-100.0%	-100.0%
Itabasco (Tubarão 3)	455	888	740	1,343	1,315	-48.8%	-38.5%	2.1%
Hispanobras (Tubarão 4)	363	629	693	992	1,648	-42.3%	-47.6%	-39.8%
Nibrasco (Tubarão 5 and 6)	842	1,225	1,781	2,067	3,967	-31.3%	-52.7%	-47.9%
Kobrasco (Tubarão 7)	541	810	841	1,351	1,927	-33.2%	-35.7%	-29.9%
Tubarão 8	1,336	1,580	1,511	2,916	3,303	-15.4%	-11.6%	-11.7%
Southern System	129	-	-	129	1,069	n.m	n.m	-87.9%
Fábrica	-	-	-	-	515	-	-	-100.0%
Vargem Grande	129	-	-	129	554	n.m	n.m	-76.7%
Oman	2,485	912	2,456	3,397	4,426	172.5%	1.2%	-23.2%
Others¹	-	-	-	-	154	-	-	-100.0%
PELLETS PRODUCTION	7,070	6,926	9,071	13,997	21,245	2.1%	-22.1%	-34.1%
PELLETS SALES	6,950	7,311	8,842	14,261	21,156	-4.9%	-21.4%	-32.6%

¹ Third party capacity utilization.

Production overview

Vale's pellets production was in line with 1Q20, mainly due to the normalization of pellet feed availability in the Oman pellet plant, partially offset by the lower pellet feed sourcing from the Itabira Complex and production adjustments due to market conditions. In São Luís, despite the restored pellet feed moisture, which was impacted in 1Q20 due to the strong rainy season, the production level was also voluntarily adjusted to current market conditions.

Manganese ore and ferroalloys

000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/ 1Q20	2Q20/ 2Q19	1H20/ 1H19
MANGANESE ORE PRODUCTION	149	363	318	512	683	-59.0%	-53.1%	-25.0%
Azul	-	231	242	231	485	-100.0%	-100.0%	-52.4%
Urucum	131	109	32	240	115	20.4%	309.4%	108.7%
Morro da Mina	18	23	44	41	83	-22.0%	-59.1%	-50.6%
MANGANESE ORE SALES	270	219	92	489	344	23.3%	193.5%	42.2%
FERROALLOYS PRODUCTION	15	28	42	43	83	-45.2%	-64.3%	-48.2%
FERROALLOYS SALES	10	27	39	37	64	-63.0%	-74.4%	-42.2%

Production and sales overview

Manganese ore production decreased mainly due to the suspension of operations at the Azul mine. The decision to halt that operation is mainly based on the contingent of employees considered an at-risk group and to contribute to the levels of key personnel at iron ore production sites in the Northern System. The suspension will likely stand until December 2020, being supported by the current level of inventories that supported 2Q20 sales together with improved shipments in Ponta da Madeira port.

Ferroalloys production and sales volumes decreased mainly due to production slowdown at the Simões Filho plant for the implementation of safety maintenance measures, as well as the temporarily depressed domestic demand as an effect of the COVID-19 pandemic.

Nickel

Finished production by source

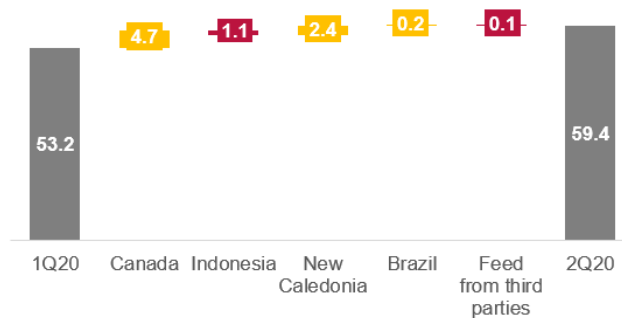
000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/ 1Q20	2Q20/ 2Q19	1H20/ 1H19
Canada	26.6	21.9	20.7	48.5	46.5	21.5%	28.5%	4.3%
Sudbury	13.5	12.0	9.6	25.5	22.2	12.5%	40.6%	14.9%
Thompson	3.6	2.7	2.6	6.3	5.7	33.3%	38.5%	10.5%
Voisey's Bay	9.4	7.3	8.5	16.7	18.7	28.8%	10.6%	-10.7%
Indonesia	17.5	18.6	13.2	36.1	28.9	-5.9%	32.6%	24.9%
New Caledonia ¹	10.4	8.0	5.9	18.4	12.2	30.0%	76.3%	50.8%
Brazil	3.2	3.0	3.9	6.2	8.2	6.7%	-17.9%	-24.4%
Feed from third parties ²	1.7	1.8	1.3	3.5	4.0	-5.6%	30.8%	-12.5%
NICKEL PRODUCTION	59.4	53.2	45.0	112.6	99.8	11.7%	32.0%	12.8%
NICKEL PRODUCTION EX-VNC	49.0	45.2	39.1	94.2	87.6	8.4%	25.3%	7.5%
NICKEL SALES	42.4	44.2	57.5	86.5	107.8	-4.1%	-26.3%	-19.7%

¹ Production at VNC reached 6,800 t in 2Q20, while production of finished nickel from VNC totalled 10,400 t in 2Q20, the differences stemming from the time required for processing into finished nickel.

² External feed purchased from third parties and processed into finished nickel in our Canadian operations.

Production Variation (2Q20 x 1Q20)

kt



Production and sales overview

Production of finished nickel reached 59.4 kt in 2Q20, mainly due to (i) the strong performance in North Atlantic refineries, (ii) increased Matsusaka and PTVI site production after routine maintenance in 1Q20, offset by lower Indonesian-source ore processed in Clydach, and (iii) higher production from VNC source.

Nickel sales reached 42.4 kt in 2Q20, 4.1% lower than 1Q20. The lower sales volumes were mainly due to continued weak demand derived from economic conditions brought about by the COVID-19 pandemic.

Canadian operations

North Atlantic refineries performed well during the quarter despite the lower productivity at the mines due to the impacts of the COVID-19 pandemic, mostly related to workforce availability. Production from Sudbury-source ore reached 13.5 kt in 2Q20, 12.5% higher than 1Q20, mainly due to an increased consumption of Sudbury-source feed by the Clydach refinery. Production from Thompson-source ore reached 3.6 kt in 2Q20, 33.3% sequentially higher, mainly due to the consumption of Thompson source inventories offsetting COVID-19 impacts on the mine performance.

Voisey's Bay mine resumed operations one month earlier than anticipated after the care and maintenance period placed in March 2020. Source ore production reached 9.4 kt in 2Q20 as the Long Harbour Processing Plant continued to operate, given the availability of stockpiled concentrates to feed the refinery.

Indonesian operation (PTVI)

Production of finished nickel from PTVI source reached 17.5 kt in 2Q20, 5.9% lower than 1Q20, mainly due to the reintroduction of feed material from Sudbury being processed by the Clydach refinery, which resulted in less feed from PTVI being processed at Clydach.

Nickel in matte production at the PTVI site reached 18.7 kt in 2Q20, higher than 1Q20, mainly due to more stable operations during the quarter without maintenance interruptions after scheduled maintenance in 1Q20.

New Caledonia operation (VNC)

Production of finished nickel from VNC source reached 10.4 kt in 2Q20, 30.0% higher than 1Q20. The VNC refinery was shut down in 2Q20 and refining activities responsible for processing the feed into nickel oxide were ramped down. Production was higher than in previous periods mainly due to higher nickel hydroxide cake production, which has a shorter route to market. All remaining nickel oxide inventories were sent to Dalian refinery during the VNC refinery ramp down, resulting in a spike in production from VNC source for the period.

Nickel production at the VNC site reached 6.8 kt in 2Q20, with nickel hydroxide cake representing 75% and nickel oxide 25% of the site production. Going forward, VNC site production should be solely comprised of nickel hydroxide cake.

Brazilian operation (Onça Puma)

Production at Onça Puma reached 3.2 kt in 2Q20, in line with 1Q20. Productivity was limited to 50% in 2Q20 due to postponed maintenance activities, which are now taking place with a furnace shutdown during most of July. Processing activities will resume to full capacity from August onwards.

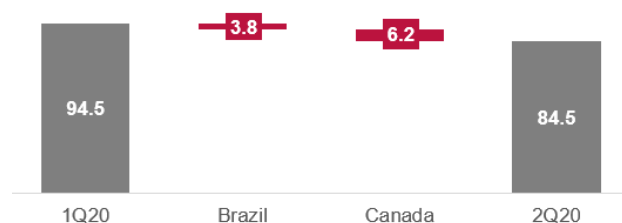
Copper

Finished production by source

000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/ 1Q20	2Q20/ 2Q19	1H20/ 1H19
BRAZIL	60.8	64.6	65.7	125.4	127.1	-5.9%	-7.5%	-1.3%
Salobo	41.3	42.2	45.7	83.5	86.6	-2.1%	-9.6%	-3.6%
Sossego	19.5	22.4	20.0	41.9	40.5	-12.9%	-2.5%	3.5%
CANADA	23.7	29.9	32.5	53.6	64.9	-20.7%	-27.1%	-17.4%
Sudbury	21.9	23.1	24.4	45.0	47.7	-5.2%	-10.2%	-5.7%
Thompson	0.3	0.2	0.2	0.5	0.5	50.0%	50.0%	0.0%
Voisey's Bay	0.5	5.3	6.4	5.8	12.8	-90.6%	-92.2%	-54.7%
Feed from third parties	1.0	1.3	1.6	2.3	4.0	-23.1%	-37.5%	-42.5%
COPPER PRODUCTION	84.5	94.5	98.3	179.0	192.1	-10.6%	-14.0%	-6.8%
COPPER SALES	83.5	89.2	95.0	172.7	185.4	-6.4%	-12.1%	-6.8%
Copper Sales Brazil	59.7	58.5	62.5	118.3	120.8	2.0%	-4.5%	-2.1%
Copper Sales Canada	23.7	30.7	32.5	54.4	64.7	-22.8%	-27.1%	-15.9%

Production Variation (2Q20 x 1Q20)

kt



Production and sales overview

Copper production reached 84.5 kt in 2Q20, with volumes mostly affected by COVID-19 related factors: (i) as scheduled maintenance in Brazil was postponed due to availability of external contractors and cross-border restrictions, and a higher level of absenteeism in the workforce and, (ii) production of copper from Voisey's Bay heavily affected by mining and milling operations being put on care and maintenance due to the COVID-19 pandemic for the full quarter. Voisey's Bay operations resumed on July 3rd and should reach full capacity by August. All Voisey's Bay source copper production in the quarter is derived from existing inventories.

Sales volumes⁷ of copper were 83.5 kt in 2Q20, 6.4% lower than 1Q20 mainly reflecting Voisey's Bay mine being placed in care and maintenance during the quarter due to the COVID-19 pandemic.

⁷ Sales volumes are lower compared to production volumes due to payable copper vs. contained copper content: 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 production volumes.

Cobalt and other by-products

Finished production by source

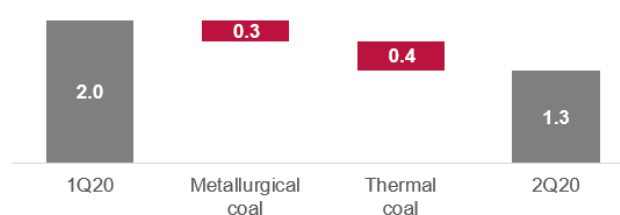
Metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/1Q20	2Q20/2Q19	1H20/1H19
COBALT	1,318	1,189	1,032	2,507	2,227	10.8%	27.7%	12.6%
Sudbury	156	141	139	297	268	10.6%	12.2%	10.8%
Thompson	13	22	20	35	41	-40.9%	-35.0%	-14.6%
Voisey's Bay	433	307	405	740	872	41.0%	6.9%	-15.1%
VNC	653	627	347	1,280	759	4.1%	88.2%	68.6%
Others	64	92	120	156	286	-30.4%	-46.7%	-45.5%
PLATINUM (000' oz troy)	35	48	43	83	78	-27.1%	-18.6%	6.4%
PALLADIUM (000' oz troy)	51	59	52	110	94	-13.6%	-1.9%	17.0%
GOLD BY-PRODUCT (000' oz troy)	114	119	119	233	227	-4.2%	-4.2%	2.6%

Coal

000' metric tons	2Q20	1Q20	2Q19	1H20	1H19	% change		
						2Q20/1Q20	2Q20/2Q19	1H20/1H19
COAL PRODUCTION	1,283	1,963	2,370	3,246	4,583	-34.6%	-45.9%	-29.2%
Metallurgical Coal	698	983	1,136	1,680	2,187	-29.0%	-38.6%	-23.2%
Thermal Coal	585	980	1,234	1,565	2,396	-40.3%	-52.6%	-34.7%
COAL SALES	1,385	1,566	2,093	2,951	4,487	-11.6%	-33.8%	-34.2%
Metallurgical Coal	516	706	1,037	1,222	2,328	-26.9%	-50.2%	-47.5%
Thermal Coal	869	860	1,056	1,729	2,159	1.0%	-17.7%	-19.9%

Production Variation (2Q20 x 1Q20)

Mt



Production and sales overview

Production and sales results reflect the effects of the COVID-19 pandemic. As the seaborne coal demand was severely hit, inventories at mine and port increased until reaching the facilities' storage limits. After reaching a coal production record in March, compared to the previous 15 months, Vale decelerated production in Moatize, starting in April; as the demand constraints endured, the company temporarily stopped production in June. Hence, a production loss of approximately 1 Mt was recorded in 2Q20. As long as unfavourable market conditions persist, additional temporary stoppages may occur, therefore it is not possible to provide a new coal production guidance for 2020.

As previously reported, given the restrictions and uncertainties brought by the COVID-19 pandemic, including on the flow of goods and services and the transportation of people, Vale decided to postpone the 3-month maintenance plan revamp and, therefore, making it impossible to achieve a sustainable ramp-up of the operation still in 2020. Vale is ready to start the necessary revamp as soon as it can guarantee the inbound logistics of equipment and materials to the site, as well as ensure the required safety levels to its employees.