

- Vale's Q3 performance was marked by record iron ore output since 4Q18 and an increase in the production guidance for 2024. In copper, ore processed at Salobo 1 & 2 increased by 30% y/y supported by stronger mill performance. In nickel, performance of the Sudbury mines drove a 20% increase in mill throughput y/y.
- Iron ore production reached 91.0 Mt, 4.7 Mt (+5%) higher y/y, driven by improved performance at S11D, Itabira and Brucutu. As previously announced, Vale has revised its production guidance upward to 323-330 Mt (from 310-320 Mt), reflecting continued improvements on operational stability and asset reliability. Pellets production totaled 10.4 Mt, 1.2 Mt (+13%) higher y/y. Iron ore sales were 81.8 Mt, up 1.3 Mt (+2%) y/y.
- Copper production totaled 85.9 kt, 4.3 kt (+5%) higher y/y, reflecting stronger performance across all operations, which was partially offset by the impact of an incident in a conveyor belt at the Salobo 3 plant in June.
- Nickel production totaled 47.1 kt, 5.0 kt (+12%) higher y/y, mainly reflecting stronger asset performance in Sudbury and the continued ramp-up of Voisey's Bay underground mines.

Highlights

Production Summary

000' metric tons	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y	2024 guidance
Iron ore ¹	90,971	80,598	12.9%	86,238	5.5%	242,395	231,755	4.6%	323-330 Mt
Pellets	10,363	8,895	16.5%	9,175	12.9%	27,724	26,604	4.2%	38-42 Mt ²
Copper	85.9	78.6	9.3%	81.6	5.3%	246.3	227.5	8.3%	320-355 kt
Nickel	47.1	27.9	68.8%	42.1	11.9%	114.4	120.0	-4.7%	153-168 kt ³

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

² Iron ore agglomerates guidance, including iron ore pellets and briquettes.

³ Nickel guidance was updated on September 11, 2024, to reflect the impact of PTVI deconsolidation, following the partial divestment completed in June 2024.

Sales Summary

000' metric tons	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Iron ore	81,838	79,792	2.6%	80,559	1.6%	225,456	210,591	7.1%
Fines ¹	69,344	68,512	1.2%	69,714	-0.5%	190,402	178,904	6.4%
Pellets	10,143	8,864	14.4%	8,613	17.8%	28,232	25,556	10.5%
ROM	2,351	2,416	-2.7%	2,232	5.3%	6,822	6,132	11.3%
Copper	75.2	76.1	-1.2%	73.8	1.9%	228.1	210.3	8.5%
Nickel	40.7	34.3	18.7%	39.2	3.8%	108.1	119.6	-9.6%

¹ Including third-party purchases.

Price Realization Summary

US\$/t	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Iron ore fines (CFR/FOB, wmt)	90.6	98.2	-7.7%	105.1	-13.8%	96.1	103.7	-7.3%
Iron ore pellets (CFR/FOB, wmt)	148.2	157.2	-5.7%	161.2	-8.1%	158.7	161.3	-1.6%
Copper ¹	9,016	9,202	-2.0%	7,731	16.6%	8,651	7,969	8.6%
Nickel	17,012	18,638	-8.7%	21,237	-19.9%	17,477	23,203	-24.7%

¹ Average realized price for copper operations only (Salobo and Sossego). Average realized copper price for all operations, including copper sales originated from nickel operations, was US\$ 9,053/t in 3Q24.

Iron ore and pellets operations

- **Northern System:** production increased by 1.9 Mt y/y, driven by S11D's robust performance at 22.1 Mt (+2.7 Mt y/y), making this the seventh quarter of y/y production improvements. Serra Norte's output was slightly lower y/y (-0.5 Mt y/y), in line with the production plan. Shipments from the Ponta da Madeira port set a quarterly record since 2021, totaling 50.6 Mt, reflecting enhanced operational stability.

- **Southeastern System:** production increased by 3.6 Mt y/y, driven by (i) enhanced performance at the Conceição 1 & 2 plants in Itabira, as a result of reduced maintenance downtime following the concentration of activities in the first semester, during the rainy season, and (ii) higher output at Brucutu, attributed to the resumption of three wet processing lines last year and the commissioning of a fourth line in September this year, with the site achieving its highest quarterly production since 2019.

- **Southern System:** production was 0.9 Mt lower y/y, primarily due to (i) lower third-party purchases and (ii) reduced high-silica products output at the Vargem Grande complex due to market conditions. These effects were partially offset by increased production at Viga, following maintenance works in the 3Q23. In September, the commissioning of wet processing operations in the Vargem Grande 1 Project started. This will allow the Vargem Grande complex to resume approximately 15 Mtpa of iron ore production and improve the average quality by approximately 2% of contained iron.

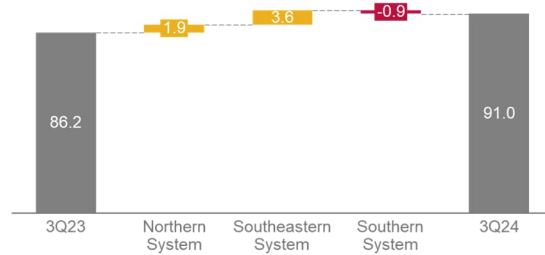
- **Pellets:** production was 1.2 Mt higher y/y, achieving its highest quarterly production since 2018, driven by higher pellet feed availability from the Brucutu and Itabira mines, increasing pellet production at the Tubarão site.

- **Iron ore sales were 1.3 Mt higher y/y, totaling 81.8 Mt, supported by 18% higher pellet sales.** Considering the higher pellet production and healthy demand in the quarter, pellet sales increased to 10.1 Mt (+18% y/y), supporting overall iron ore sales, which totaled 81.8 Mt (+2% y/y). The 5.5 Mt inventory build-up was mainly due to cargos in transit along the supply chain as production seasonally increased in Q3. These inventories will be converted into sales in Q4.

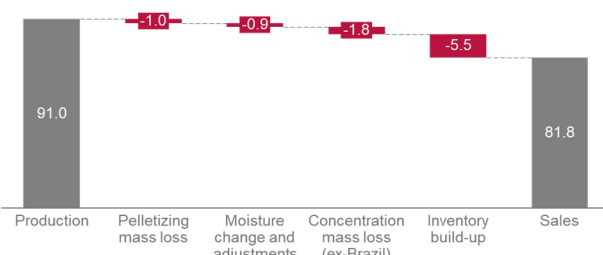
- **The all-in premium improved by US\$ 1.8/t q/q, totaling US\$ 1.7/t¹,** driven by higher average quality of the product portfolio. This improvement is a result of the increased availability of high-quality products, mainly from the Northern System, allowing for higher BRBF sales and the proactive decision to reduce direct sales of high-silica products, due to market conditions.

- **The average realized iron ore fines price was US\$ 90.6/t, US\$ 7.6/t lower q/q** despite iron ore reference prices having decreased by US\$ 12.0/t in the period. The lower decline vs. the reference price is attributed to an enhanced product portfolio and the positive effect from provisional pricing adjustments, given higher-than-average forward prices in the last day of the quarter. **The average realized iron ore pellet price was US\$ 148.2/t, US\$ 9.0/t lower q/q,** due to lower iron ore prices.

Iron ore production, Mt (3Q24 vs. 3Q23)



Iron ore production-to-sales, Mt (3Q24)

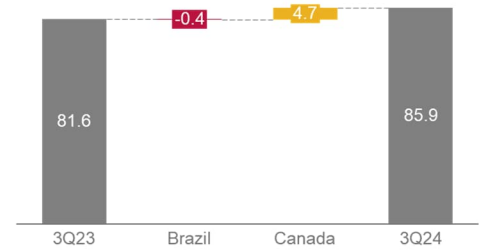


¹ Iron ore fines premium of US\$ -1.9/t and the weighted average contribution of the pellet business of US\$ 3.6/t.

Copper operations

- **Salobo: copper production decreased by 3.0 kt y/y**, mainly reflecting the impact of the conveyor belt fire that occurred at the Salobo 3 plant and lower feed grades, as per plan. Salobo 1&2 plants continue to perform well, reporting a 30% increase in ore processed y/y.
- **Sossego: copper production increased by 2.6 kt y/y**, mainly because of higher mined volumes and higher feed grade to the mill, as per the plan. Sequentially, production increased by 4.3 kt as the mine's operational license was reestablished, enabling the processing of higher-feed grades from mined material.
- **Canada: copper production increased by 4.7 kt y/y**, mainly reflecting improved mining performance in Sudbury and shorter mine and mill maintenance periods y/y. Also, production was positively impacted by the ramp-up of VBME and higher copper precipitates output in Thompson.
- **Payable copper sales² totaled 75.2 kt in the quarter, up 1.4 kt y/y**, mainly reflecting higher production. Sales in the quarter were lower than production, mainly due to in-transit volumes and Vale Base Metals' commercial strategy.
- **The average copper realized price was US\$ 9,016/t, 2.0% lower q/q**, mainly due to lower LME reference prices.

Copper production, kt (3Q24 vs. 3Q23)

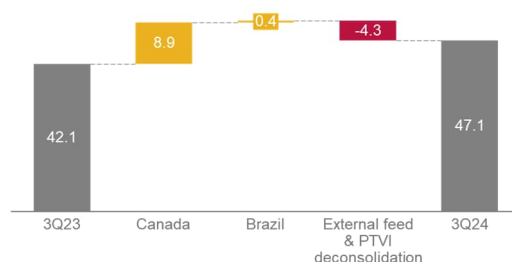


² Sales volumes are lower than production volumes due to payable copper vs. contained copper: part of the copper contained in the concentrates is lost in the smelting and refining process, hence payable quantities of copper are approximately 3.5% lower than contained volumes.

Nickel operations

- **Sudbury-sourced ore:** finished nickel production increased by 5.6 kt y/y, resulting from the improved performance of the mine-mill-smelter-refinery flowsheet. **Sudbury mines and mill performed well, with a 20% increase in ore production and mill throughput y/y.** On a sequential basis, production increased by 9.2 kt as smelter and refinery operations resumed after biennial maintenance.
- **Thompson-sourced ore:** finished nickel production was 1.1 kt higher y/y, mainly because of the higher availability of the Long Harbour refinery.
- **Voisey's Bay-sourced ore:** finished nickel production increased by 2.2 kt y/y, driven by the availability of Voisey's Bay-sourced feed at Long Harbour, as higher nickel grade from underground mines continued to ramp-up, as well as higher availability of the Long Harbour refinery.
- **Onça Puma:** nickel production increased by 0.4 kt y/y, as in 3Q23 the furnace was operating at a lower rate in preparation for the furnace rebuild. The operation has been running steadily since the conclusion of the furnace rebuild. The plant has experienced a power disruption after a severe windstorm has damaged the local utility company's transmission line on October 5th.
- **External feed:** finished nickel production from external feed was 19.3 kt in the quarter. Third-party feed decreased by 2.5 kt y/y, as planned. PTVI-sourced production decreased by 1.9 kt y/y, mainly reflecting the deconsolidation³ of PTVI, partially offset by higher nickel production at the Matsusaka refinery.
- **Nickel sales totaled 40.7 kt, 1.5 kt higher y/y,** driven by higher production. In the quarter, nickel sales were 6.4 kt lower than production due to an inventory build-up, as well as due to Vale Base Metals' sales strategy.
- **The average nickel realized price was US\$ 17,012/t, down 9% q/q,** due to lower LME reference prices, partially offset by higher realized premiums.

Nickel production, kt (3Q24 vs. 3Q23)



³ Starting from 3Q24, PTVI sourced production is reported as "External feed" and reflects solely the 80%-offtake attributable to Vale Base Metals processed at downstream facilities. Before, PTVI production was 100% consolidated by Vale.



Annex 1: Production and sales summary

Iron ore

'000' metric tons	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Northern System	50,137	39,534	26.8%	48,187	4.0%	125,600	124,115	1.2%
Serra Norte and Serra Leste	28,044	20,012	40.1%	28,833	-2.7%	66,273	69,283	-4.3%
S11D	22,094	19,522	13.2%	19,355	14.2%	59,327	54,832	8.2%
Southeastern System	24,000	21,228	13.1%	20,350	17.9%	64,779	60,748	6.6%
Itabira (Cauê, Conceição and others)	9,492	8,003	18.6%	7,619	24.6%	25,094	23,185	8.2%
Minas Centrais (Brucutu and others)	7,250	6,152	17.8%	5,939	22.1%	19,799	18,071	9.6%
Mariana (Alegria, Timbopeba and others)	7,258	7,073	2.6%	6,791	6.9%	19,886	19,492	2.0%
Southern System	16,833	19,836	-15.1%	17,701	-4.9%	52,016	46,892	10.9%
Paraopeba (Mutuca, Fábrica and others)	7,103	7,970	-10.9%	8,214	-13.5%	21,598	19,982	8.1%
Vargem Grande (VGR, Pico and others)	9,730	11,866	-18.0%	9,488	2.6%	30,418	26,910	13.0%
Iron Ore Production¹	90,971	80,598	12.9%	86,238	5.5%	242,395	231,755	4.6%
Own production	84,063	73,282	14.7%	79,073	6.3%	222,358	215,584	3.1%
Third-party purchases	6,908	7,316	-5.6%	7,165	-3.6%	20,037	16,171	23.9%
Iron Ore Sales	81,838	79,792	2.6%	80,559	1.6%	225,456	210,591	7.1%
Fine Sales ²	69,344	68,512	1.2%	69,714	-0.5%	190,402	178,904	6.4%
IOCJ	11,709	13,180	-11.2%	14,758	-20.7%	34,290	39,599	-13.4%
BRBF	34,797	30,528	14.0%	36,454	-4.5%	91,018	89,134	2.1%
Pellet feed – China (PFC1) ³	3,328	3,337	-0.3%	4,234	-21.4%	9,201	10,056	-8.5%
Lump	1,971	1,782	10.6%	2,367	-16.7%	5,562	5,626	-1.1%
High-silica products	8,050	11,372 ⁴	-29.2%	6,131	31.3%	26,584 ⁴	18,090	47.0%
Other fines (60-62% Fe)	9,489	8,313 ⁴	14.1%	5,770	64.5%	8,256 ⁴	16,399	-49.7%
Pellet Sales	10,143	8,864	14.4%	8,613	17.8%	28,232	25,556	10.5%
Rom Sales	2,351	2,416	-2.7%	2,232	5.3%	6,822	6,132	11.3%
Sales from 3 rd party purchase	7,118	7,122	-0.1%	6,646	7.1%	19,888	15,764	26.2%

¹ Including third party purchases, run-of-mine and feed for pelletizing plants. Vale's product portfolio Fe content reached 62.3%, alumina 1.4% and silica 5.9% in 3Q24.

² Including third-party purchases.

³ Products concentrated in Chinese facilities.

⁴ Restated from historical figures.

Pellets

'000' metric tons	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Northern System	818	489	67.3%	1,037	-21.1%	2,074	2,486	16.6%
São Luis	818	489	67.3%	1,037	-21.1%	2,074	2,486	16.6%
Southeastern System	5,978	4,789	24.8%	4,403	35.8%	15,620	13,705	14.0%
Itabasco (Tubarão 3)	908	761	19.3%	801	13.4%	2,227	2,756	-19.2%
Hispanobras (Tubarão 4)	531	729	-27.2%	720	-26.3%	1,948	777	150.7%
Nibrasco (Tubarão 5 and 6)	1,935	1,261	53.4%	837	131.2%	4,350	3,175	37.0%
Kobrasco (Tubarão 7)	1,071	489	119.0%	557	92.3%	2,412	2,305	4.6%
Tubarão 8	1,532	1,549	-1.1%	1,488	3.0%	4,682	4,692	-0.2%
Southern System	1,238	1,058	17.0%	1,107	11.8%	3,515	3,454	1.8%
Fábrica	-	-	-	-	-	-	-	-
Vargem Grande	1,238	1,058	17.0%	1,107	11.8%	3,515	3,454	1.8%
Oman	2,328	2,557	-9.0%	2,628	-11.4%	6,515	6,960	-6.4%
Pellet Production	10,363	8,895	16.5%	9,175	12.9%	27,724	26,604	4.2%
Pellet Sales	10,143	8,864	14.4%	8,613	17.8%	28,232	25,556	10.5%



Copper - Finished production by source

'000' metric tons	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Brazil	66.3	61.3	8.2%	66.7	-0.6%	188.2	170.5	10.4%
Salobo	46.6	46.0	1.3%	49.6	-6.0%	140.9	125.1	12.6%
Sossego	19.7	15.3	28.8%	17.1	15.2%	47.3	45.4	4.2%
Canada	19.6	17.3	13.3%	14.9	31.5%	58.1	57.0	1.9%
Sudbury	11.6	13.9	-16.5%	9.4	23.4%	42.3	42.4	-0.2%
Thompson	3.2	-	n.a.	1.6	100.0%	3.7	1.8	105.6%
Voisey's Bay	3.6	2.7	33.3%	2.7	33.3%	9.1	7.0	30.0%
Feed from third parties ¹	1.1	0.7	57.1%	1.2	-8.3%	3.0	5.8	-48.3%
Copper Production	85.9	78.6	9.3%	81.6	5.3%	246.3	227.5	8.3%
Copper Sales	75.2	76.1	-1.2%	73.8	1.9%	228.1	210.3	8.5%
Copper Sales Brazil	61.3	58.2	5.3%	61.8	-0.8%	175.9	157.7	11.5%
Copper Sales Canada	13.9	18.0	-22.8%	12.0	15.8%	52.2	52.5	-0.6%

¹ External feed purchased from third parties and processed into copper in our Canadian operation.

Nickel

'000' metric tons	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Finished Production by Source								
Canada	21.5	7.3	194.5%	12.6 ³	70.6%	45.7	43.0 ³	6.3%
Sudbury	12.3	3.1	296.8%	6.7 ³	83.6%	25.6	26.2 ³	-2.3%
Thompson	3.1	1.8	72.2%	2.0 ³	55.0%	7.3	6.8 ³	7.4%
Voisey's Bay	6.1	2.4	154.2%	3.9	56.4%	12.9	10.0	29.0%
Brazil	6.2	3.0	106.7%	5.8	6.9%	9.2	16.4	-43.9%
Indonesia	-	16.2	-100.0%	17.1	-100.0%	34.9	44.3	-21.2%
External feed	19.3	1.4	1,278.6%	6.6	192.4%	9.4	16.3	-42.3%
Feed from third-parties ¹	4.1	1.4	192.9%	6.6 ³	-37.9%	9.4	16.3 ³	-42.3%
PTVI offtake ⁴	15.2	-	n.a.	-	n.a.	15.2	-	n.a.
Finished Production by Site								
Sudbury	17.4	4.6	278.3%	12.8	35.9%	35.8	41.4	-13.5%
Voisey's Bay & Long Harbour	9.5	4.2	126.2%	6.9	37.7%	21.3	19.4	9.8%
Onça Puma	6.2	3.0	106.7%	5.8	6.9%	9.2	16.4	-43.9%
Clydach	8.0	5.5	45.5%	8.6	-7.0%	23.7	20.9	13.4%
Matusaka	5.5	6.3	-12.7%	4.0	37.5%	15.1	11.4	32.5%
Others ²	0.5	4.3	-88.4%	4.0	-87.5%	9.3	10.5	-11.4%
Nickel Production	47.1	27.9	68.8%	42.1	11.9%	114.4	120.0	-4.7%
Nickel Sales	40.7	34.3	18.7%	39.2	3.8%	108.1	119.6	-9.6%

¹ External feed purchased from third parties and processed into finished nickel in our Canadian operations. It does not include feed purchased from PTVI.

² Includes intermediates produced in Thompson and PTVI, tolling and others.

³ Restated from historical figures.

⁴ Starting from 3Q24, PTVI sourced production is reported as "External feed" and reflects solely the 80%-offtake attributable to Vale Base Metals processed at downstream facilities. Before, PTVI production was 100% consolidated by Vale.

Energy Transition Metals by-products - Finished production

	3Q24	2Q24	Δ q/q	3Q23	Δ y/y	9M24	9M23	Δ y/y
Cobalt (metric tons)	714	189	277.8%	452	58.0%	1,384	1,410	-1.8%
Platinum (000' oz troy)	23	17	35.3%	24	-4.2%	71	94	-24.5%
Palladium (000' oz troy)	20	24	-16.7%	24	-16.7%	82	110	-25.5%
Gold (000' oz troy) ¹	103	102	1.0%	117	-12.0%	309	287	7.7%
Total by-Products (000' metric tons Cu eq.)^{2,3}	35	31	12.9%	38	-7.9%	104	111	-6.3%

¹ Includes Gold from Copper and Nickel operations.

² Includes Iridium, Rhodium, Ruthenium and Silver.

³ Copper equivalent tons calculated using average market metal prices for each quarter. Market reference prices: for copper and cobalt: LME spot; for Gold, Silver, Platinum, and Palladium: Bloomberg; for other PGMs: Johnson Matthey.



Annex 2: Energy Transition Metals: Maintenance scheduled in 2024

	Q1	Q2	Q3	Q4
Copper operations				
Salobo				
Salobo I & II	< 1 week	1 week	1 week	1 week
Salobo III	< 1 week	3 weeks	2.5 weeks	<1 week
Sossego				
Sossego	4.5 weeks	4 weeks	1.5 weeks	1 week
Nickel operations				
Sudbury				
Coleman			4.5 weeks	
Creighton		1 week	5.5 weeks	
Copper Cliff North			4 weeks	
Copper Cliff South			2 weeks	
Garson			4 weeks	
Totten			2 weeks	
Clarabelle mill		1 week	3 weeks	
Sudbury Smelter		7 weeks		
Sudbury Refinery		6 weeks		
Port Colborne (Ni, Co & PGMs)		6 weeks		
Thompson				
Thompson mine			4.5 weeks	
Thompson mill			4.5 weeks	
Voisey's Bay & Long Harbour				
Voisey's Bay		2.5 weeks		1 week
Long Harbour Refinery		4.5 weeks		
Standalone Refineries				
Clydach		5.5 weeks		
Matsusaka	6.5 weeks			
Brazil				
Onça Puma	11 weeks ¹	<1 week	<1 week	<1 week
Indonesia				
PTVI (furnaces/kilns only)	0 weeks	1.5 weeks	n.a.	n.a

¹ Refers to the furnace rebuild. The ramp up after maintenance is not included in the number of weeks.

Note: The maintenance schedule may be deliberately adjusted if it proves beneficial for operations and the overall business. The number of weeks is rounded to 0.0 or 0.5 and may involve more than one maintenance activity within the quarter.

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