Vale's Performance in 3Q22

October 28th, 2022

Disclaimer

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1. Opening remarks

Business and Financial highlights

Iron Ore	• Iron ore production increased 21% q/q to 89.7 Mt • C1 cash cost ex-3rd-party purchases decreased US$1.5/t q/q
Base Metals	• Nickel production increased 51% q/q while nickel sales lagged due to 4Q commitments • Copper production increased 33% q/q, following extended maintenance
Climate change	• Sol do Cerrado solar project is commissioning; ramp up until Jul/23 • Two battery-powered 72t off-road trucks delivered • Decarbonization MoU[1] signed with Germany steelmaker Stahl-Holding-Saar
Focusing and strengthening the core	• Opening of the Copper Cliff Complex South Mine Project – Phase 1 (CCM 1) • Onça Puma 2nd furnace approval • Reorganization of base metals in Brazil
Capital allocation	• US$ 3.1 billion dividend paid in September 2022 • 25.2% of current buyback program completed[2]

[1] Memorandum of Understanding. Also includes nondisclosure agreements to decarbonize ironmaking process. [2] As of Oct 28th, 2022. Approximately 126 million repurchased shares (25% of 3rd announced program)

Leading the mining transition

72t electric truck

Powershift: Decarbonizing our fleet

- Two **100% electric offroad trucks** – in Brazil and in Indonesia
- **Second 100% electric** locomotive successfully delivered
- 49 electric vehicles currently in operation in Canada.


Sol do Cerrado Solar Project

Moving to **100% renewable electricity**

- **Sol do Cerrado** commissioning; ramp up until Jul/23
- **766 MWp** – one of the largest solar projects in Latin America
  - **US$ 591 million** investment
  - **16%** of Vale's total electricity demand in Brazil[1].

[1] Estimated demand for Brazil in 2025

We have a distinct portfolio to a low carbon economy

Base Metal: essential to energy transition

1st Quartile in scopes 1&2 CO_2 emissions[1]

Carbon verified Low carbon emissions assurance

40 – 60kg of nickel
for a Ni-rich EV battery vs. 1–2kg for ICE vehicles

~25kg of copper
for a DC fast charger

~4.6t of copper
per MW in solar power systems

Iron ore: committed to low-carbon solutions

Green briquettes:

Tubarão 1&2 plants:
- 6 Mtpy capacity
- 53% complete
- Start-up: 2023

Partnerships with clients

~30 steel companies

~50% of our scope 3 emissions

[1] Nickel and copper products. Source: Skarn, Vale.

Making progress with dam safety

Dam decharacterization program 40% complete

Dique 3, one of the 5 structures eliminated in 2022

12 eliminated since 2019, 40% of the total

No dam at critical safety condition by 2025

~53% tailings removed at B3/B4, one of the critical safety dams, and conclusion anticipated to 2025[2]

7 dams removed from emergency level since the start of the year

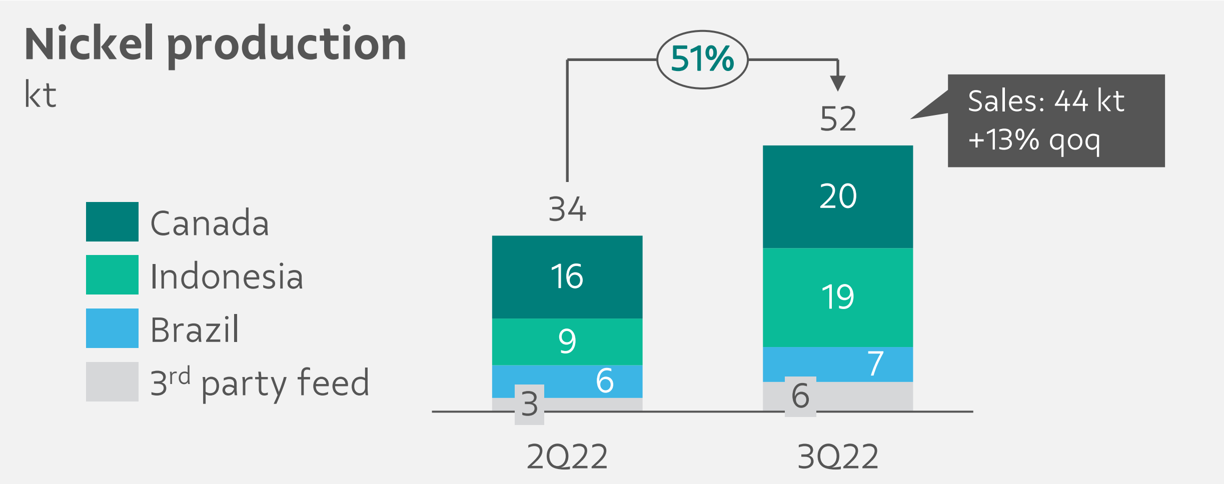
2. Base Metals

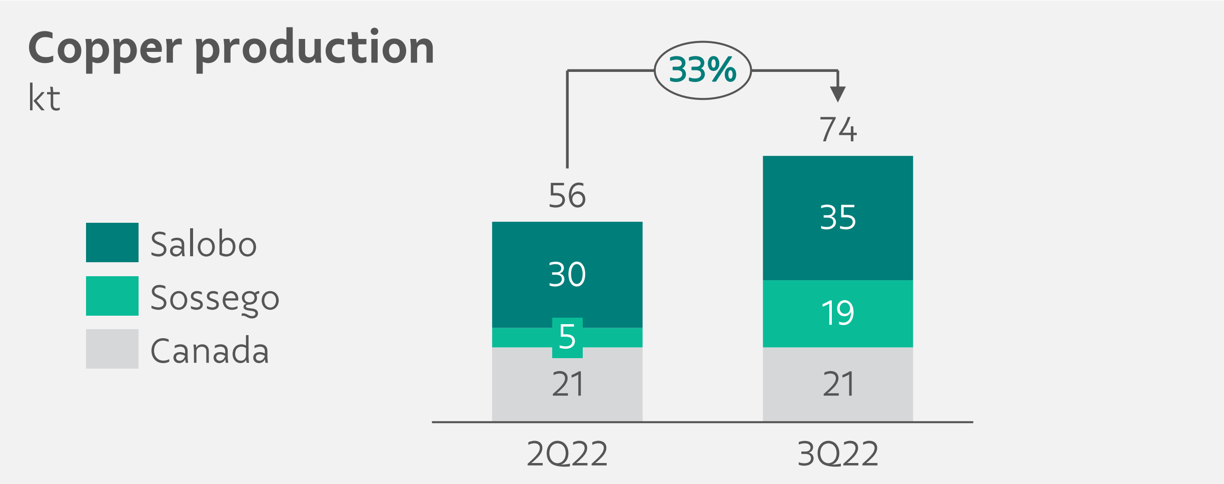
Advancing our Base Metals agenda

CCM 1 *Nickel, Canada*	– CCM south shaft commissioned in August – CCM Phase 1 mine opened in early October
Onça Puma 2nd furnace *Nickel, Brazil*	– Approval of US$ 555 million investment – Adds 12–15 ktpy of nickel – Start-up in 2025
Pomalaa *Nickel, Indonesia*	– Approval to establish the Pomalaa project JV[1] – Project capacity of up to 120 ktpy
Salobo *Copper, Brazil*	– Salobo 3 project ended Q3 98% complete, on track to start up in December – Adds 30–40 ktpy of copper

[1] PTVI to own 100% of the mine and has an option to acquire up to 30% of the plant.

Production recovered in Q3 after maintenance period in Q2





Significant operational improvements

Nickel
- Refineries came back from Q2 maintenance
- Conclusion of furnace 4 rebuild at PTVI

Copper
- Mill maintenance at Sossego in H1
- Improved plant performance at Salobo
- Copper precipitates in North Atlantic

Nickel sales-production gap

- Port congestion in UK
- Challenges in hiring containerships at Vila do Conde
- Inventories held to meet sales commitments

What to expect in Q4

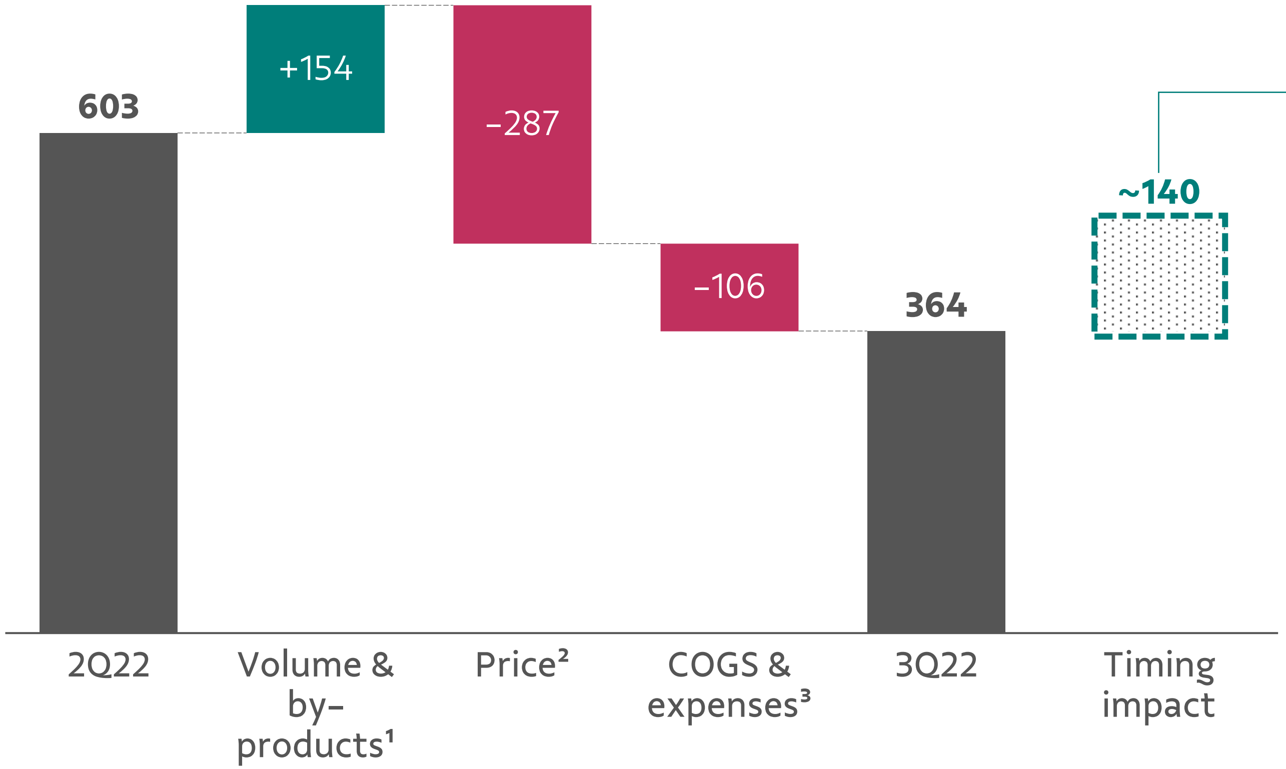
Nickel
- Planned maintenance at Onça Puma, LHPP and Matsusaka
- Sales-production timing gap expected to revert

Copper
- Additional maintenance in South Atlantic

EBITDA largely impacted by lower prices, higher fuel costs and carry-over of inventories costs from Q2

Base Metals EBITDA 2Q22 vs. 3Q22

US$ million



Timing impact

Ni sales-production timing gap — **~90** US$ million

Ni sales lower than production

Carry-over of Ni costs — **~50** US$ million

Refineries and smelter PMP[4] in Q2

Other relevant impacts

Fuel costs

Increase in fuel prices in Indonesia

3rd party feed

Production from 3rd party feed of 6 kt in Q3 vs. 3 kt in Q2

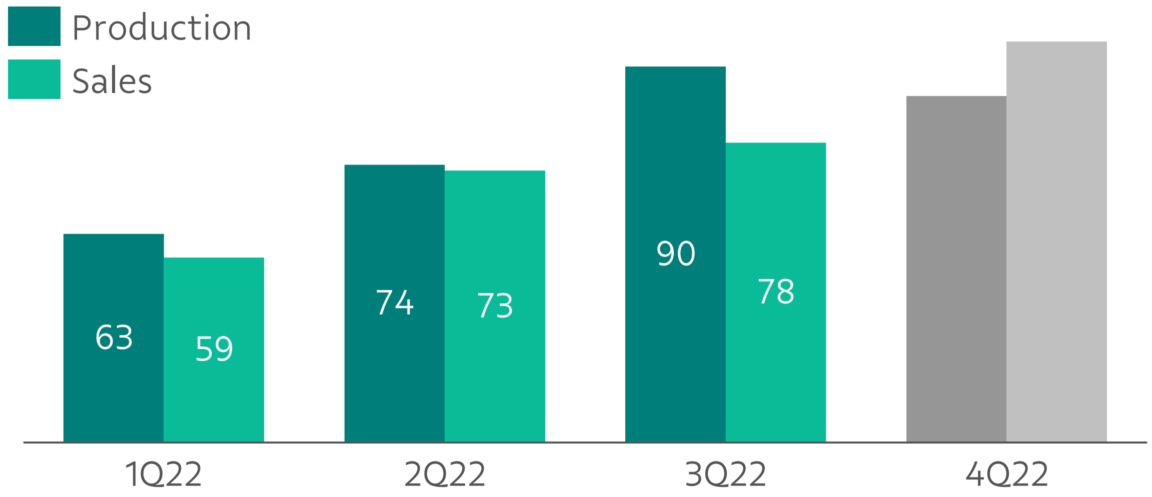
[1]Including volume and price impact from by-products. [2]Excluding by-products price impact. [3]Including FX and fuel costs impact. 4Planned maintenance period.

3. Iron Ore

VALE

We delivered a solid production in Q3

Iron ore production/sales
Mt

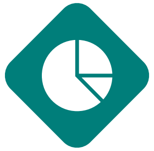


Production YTD: 227 Mt
Sales YTD: 210 Mt

Production guidance 2022: 310–320 Mt

Q3 production/sales gap

Transiting inventories across the supply chain



Larger share of Northern System production

We are progressing on assets debottleneck

Serra Norte

- **Gelado project:** start-up phase 1 expected in 4Q22 and ramp-up in 2023
- **N3:** previous license granted, and start-up expected in 2024
- Applying for **rolling licenses** to sustain production level

S11D

- **New crushers, mobile plants and +10 Mtpy project** (start-up in 4Q22) supporting production increase in 2023, but still limited by jaspilite restrictions
- **Jaspilite restrictions:** waste crusher required to process large compact blocks

Itabira

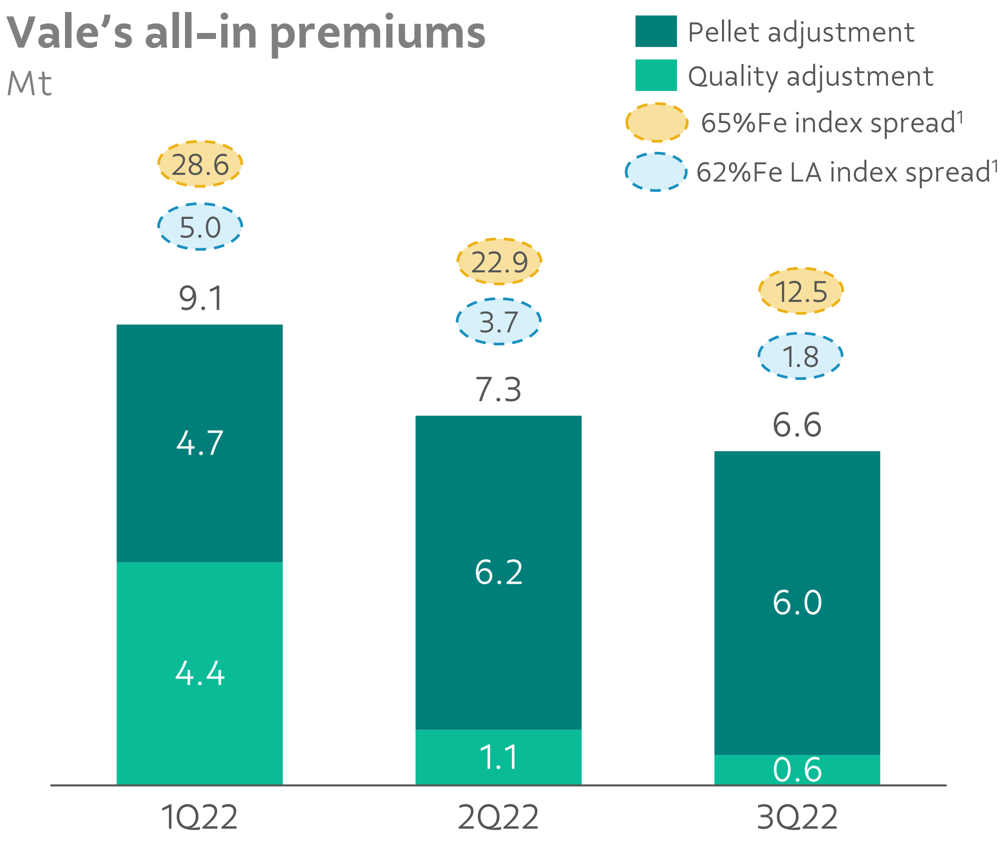
- **Itabiruçu dam:** first phase raising works concluded in 3Q22 and second phase in 2Q23
- **Licensing and development of tailings/waste stockpiles** areas

Brucutu

- **Torto dam:** works completed, pending licensing to start-up
- **Licensing and development of tailings/waste stockpiles** areas

VALE

Market conditions impacting short-term premiums, but long-term trend is intact



2022 YTD

- Lower quality market premiums driven by lower steel margins
- Undersupply in the pellet market

Medium & long term

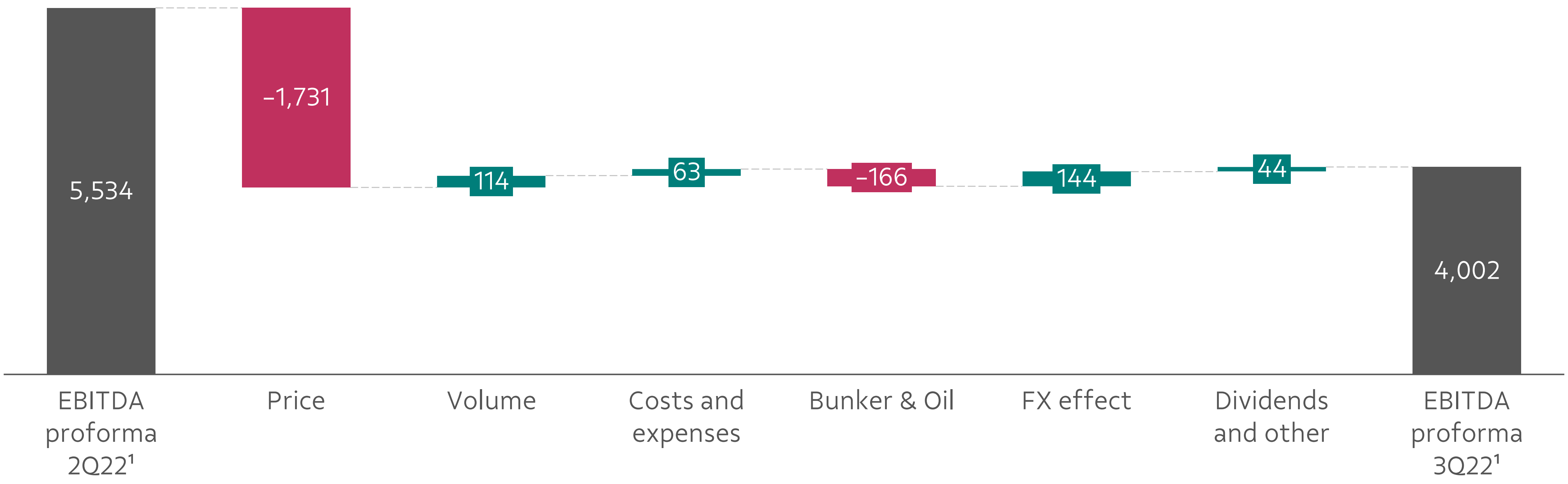
- Industry's lower availability of low alumina products
- Transition to more direct reduction demand and carbon pricing
- Structural higher premiums

[1] Vs. 62%Fe reference price index.

4. Finance

EBITDA mainly impacted by lower realized prices

EBITDA – 3Q22 vs. 2Q22
US$ million



[1] Net of Brumadinho expenses

C1 cash cost reduction partially offset by freight increase and lower premiums

Iron ore fines & pellets EBITDA break-even – 3Q22

US$/t

	2Q22	3Q22
Vale's C1 cash cost ex-third-party purchase cost	20.9	19.4
Third-party purchases cost adjustments	3.3	3.4
Vale's iron ore cash cost (ex-ROM, ex-royalties), FOB	**24.2**	**22.8**
Iron ore fines freight cost	21.3	22.4
Iron ore fines distribution cost	2.2	2.2
Iron ore fines expenses & royalties	6.9	5.8
Iron ore fines moisture adjustment	4.9	4.7
Iron ore fines quality adjustment	(1.1)	(0.6)
Iron ore fines EBITDA break-even (US$/dmt)	**58.4**	**57.3**
Iron ore fines pellet adjustment	(6.2)	(6.0)
Iron ore fines and pellets EBITDA break-even (US$/dmt)	**52.2**	**51.3**

- Exchange rate: – US$ 1.0/t
- Fixed costs dilution: – US$ 1.0/t
- Demurrage: – US$ 0.4/t
- Consumption of Q2 inventories: + US$ 0.5/t
- Diesel: + US$ 0.5/t

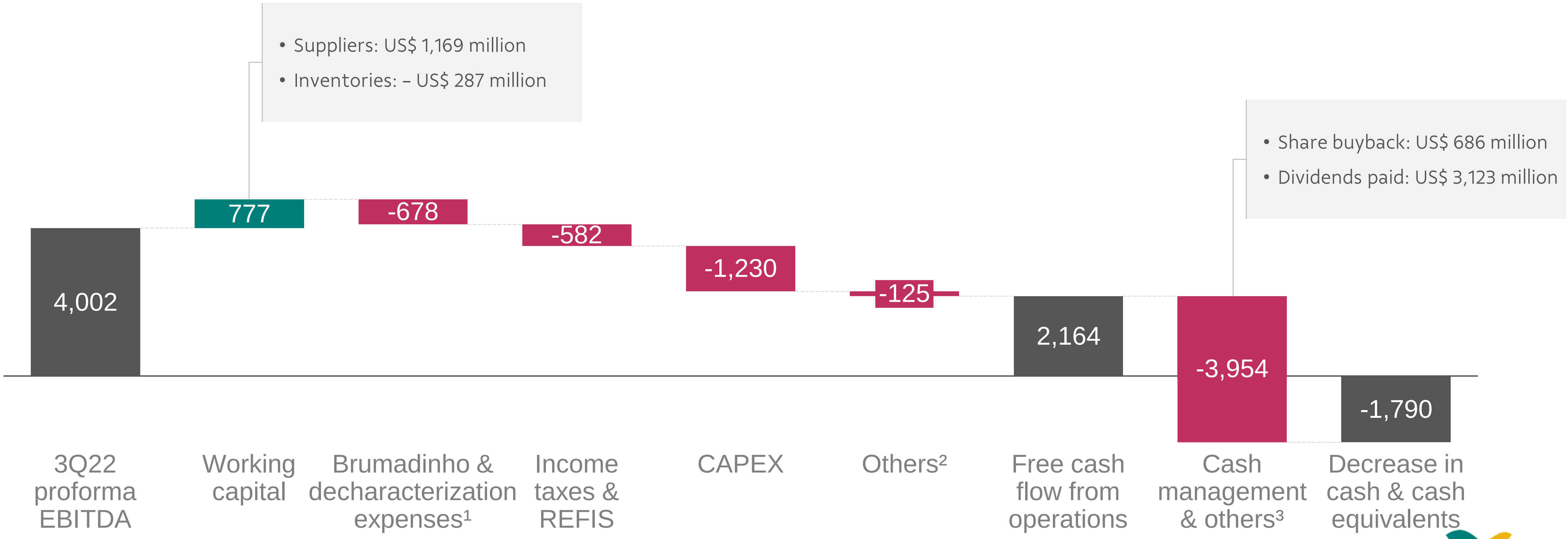
- Seasonally larger spot affreightment: + US$ 1.4/t
- Lagged effect of higher bunker costs: + US$ 0.4/t
- Lower spot freight rates: – US$ 0.7/t
- US$ 5.6/t of cost avoidance by scrubbers' installation

- Lower unit market premiums: US$ 1.4/t
- Positive mix effect: US$ 0.9/t

- Record contractual pellet premium
- Lower 65%Fe index spread
- Absence of dividends received

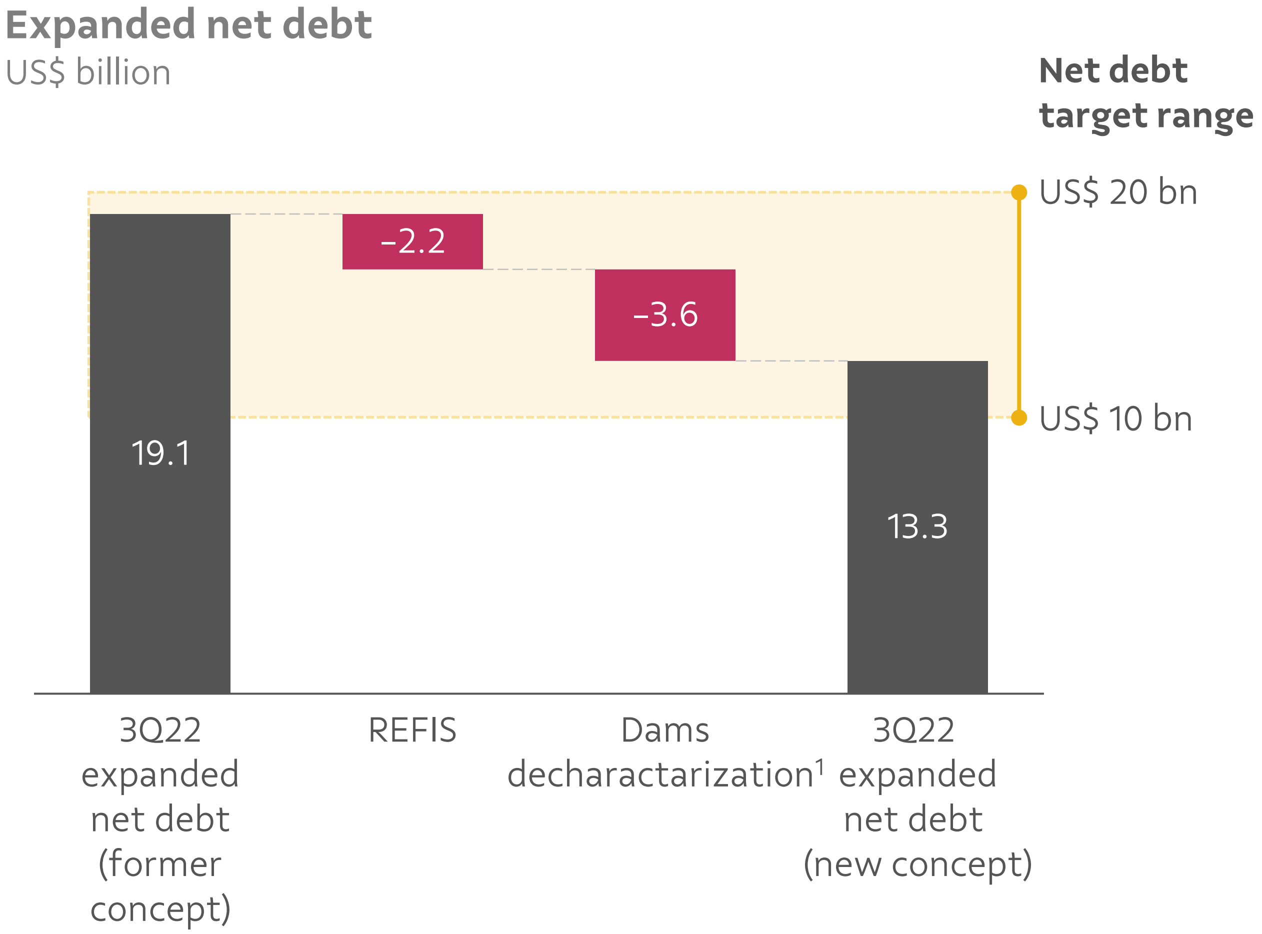
US$ 3.8 billion allocated through dividends and buybacks

Free cash flow – 3Q22
US$ million



[1] Includes US$ 518 million of disbursement of Brumadinho provisioned expenses and US$ 160 million of Brumadinho incurred expenses. [2] Includes interest on loans, derivatives, leasing, dividends paid to noncontrolling interest and others. [3] Includes US$ 686 million of share buyback, US$ 3,123 million of dividends paid, US$ 298 million of debt repurchased and US$ 153 million from the sale of Midwestern System.

Expanded net debt: capital discipline and allocation



- Greater leveling of the concept with the market
- Maintenance of items with relevant disbursement in the short-term
- Exclusion of commitments linked to operational and regulatory obligations that are spread over several years

[1] Includes US$ 191 million of Germano dam decharacterization provision.

Closing remarks

Substantial production increase in Iron Ore, Nickel and Copper

40% on de-characterization agenda concluded

Delivering on product portfolio to supply the energy transition

Capital discipline and return to shareholders to remain a priority

VALE

Vale's performance in Q3 2022

Rio de Janeiro, October 27th, 2022. *"Our operational performance in the quarter was solid across our portfolio, with iron ore production reaching 90Mt and nickel and copper greatly increasing volumes. While the world is facing growing inflationary pressures, we remain focused on cost discipline and improving operational reliability. In Sudbury, our nickel production reached the highest quarterly level since 1Q21. We have also made progress in growing our supply of low-carbon nickel and other critical minerals for the energy transition. We have successfully delivered the first phase of the Copper Cliff Complex South Mine Project, which will nearly double ore production at Copper Cliff Mine. We achieved an important milestone in safety by delivering on the commitment to de-characterize 5 dams this year, totaling 12 structures so far, 40% of our program. We are delivering on our commitments to a safer and more reliable company.",* commented Eduardo Bartolomeo, Chief Executive Officer.

Selected financial indicators

US$ million	3Q22	2Q22	3Q21
Net operating revenues	9,929	11,157	12,330
Total costs and expenses (ex-Brumadinho and de-characterization of dams)	(6,730)	(6,504)	(5,917)
Expenses related to Brumadinho event and de-characterization of dams	(336)	(280)	(161)
Adjusted EBIT from continuing operations	2,891	4,444	6,257
Adjusted EBIT margin (%)	29%	40%	51%
Adjusted EBITDA from continuing operations	3,666	5,254	6,906
Adjusted EBITDA margin (%)	37%	47%	56%
Proforma adjusted EBITDA from continuing operations[1]	4,002	5,534	7,077
Net income from continuing operations attributable to Vale's stockholders	4,455	4,093	5,477
Net debt [2]	6,980	5,375	2,207
Capital expenditures	1,230	1,293	1,199

[1] Excluding expenses related to Brumadinho and donations associated with COVID-19.

[2] Including leases (IFRS 16).

Highlights

Business Results

- Proforma adjusted EBITDA from continued operations of US$ 4.002 billion, US$ 1.532 billion lower than 2Q22, mainly reflecting the decline in iron ore and nickel prices.

- Free Cash Flow from Operations of US$ 2.164 billion, stable q/q, reaching a cash conversion of 54% of the proforma EBITDA, versus 41% in 2Q22. The better cash conversion is mainly explained by the positive impact of working capital in the quarter and the lower income tax paid.

Disciplined capital allocation

- Capital expenditures of US$ 1.230 billion, including growth and sustaining investments, down US$ 63 million from 2Q22, mainly due to lower disbursement in Sol do Cerrado solar project due to equipment deliveries last quarter.

- Gross debt and leases of US$ 12.204 billion as of September 30, 2022, US$ 404 million lower q/q, largely due to bank loans amortization (US$ 300 million).

- Expanded Net Debt of US$ 13.3 billion, following a revision of its concept to be more aligned with market practices and better inform management on capital allocation decisions. The revision was to exclude operating and regulatory commitments yet keeping the target leverage range of US$ 10-20 billion.

Value creation and distribution

- Dividends and interest on capital of US$ 3.1 billion paid in September, as part of our Shareholder Remuneration Policy.
- Share buyback 25% complete, with around 126 million shares[1] repurchased, for a total of US$ 1.9 billion, as of the date of this report.

Focusing and strengthening the core

- Approval of the Bahodopi nickel project, in July. The project is expected to start-up in 2025. The RKEF front of the project is a partnership between PTVI, Tisco & Xinhai with 73 ktpy capacity. PTVI ownership in the processing facility is 49%, and 100% of the mine. The mine will supply ore in accordance with PTVI equity stake in the JV. The project estimated CAPEX is around US$2.2 billion[2] for the RKEF plant and around US$ 400 million for the mine.

- Reorganization of base metals operations in Brazil to combine copper and nickel assets into two entities, enabling more efficient processes and management. Both copper and nickel assets will continue to be consolidated and wholly owned by Vale.

- Approval for the construction of Onça Puma's 2nd furnace, with an investment of US$ 555 million for a capacity addition of 12-15 ktpy of nickel. The project is expected to come online in 1H25.

- Opening of the first phase of the C$ 945 million Copper Cliff Complex South Mine Project in Sudbury, Canada. More than 12km of tunnels were developed to reunite the south and north shafts of Copper Cliff Mine. Phase 1 is expected to nearly double ore production at Copper Cliff Mine, adding roughly 10 ktpy of contained nickel and 13 ktpy of copper.

New pact with society

- The upstream dam de-characterization program is 40% concluded. Since 2019, Vale has eliminated 12 structures, 5 in 2022.

- Emergency-level removal of 5 dams in Minas Gerais. The structures also received the declaration of stability (DCE), attesting the safety of the structures. Since the beginning of the year, 7 structures had their emergency level revoked.

- Continued progress on the decarbonization agenda:

  - Sol do Cerrado solar project is commissioning, and its electrification will ramp up until July 2023. The solar park is comprised of 17 sub-parks with an installed capacity of 766 MWp, one of the largest solar energy projects in Latin America. The project meets 16% of Vale's electricity needs in Brazil in 2025 and is part of the initiatives to reduce 33% of scopes 1 and 2 emissions by 2030.

  - Vale and the Germany steelmaker Stahl-Holding-Saar signed a Memorandum of Understanding to pursue solutions focused on carbon-neutral steelmaking process. Since 2021, Vale engaged with around 30 ironmaking clients representing approximately 50% of company's Scope 3 emissions.

  - Vale received in Brazil and Indonesia two battery-powered 72t off-road trucks. Emissions from off-road trucks running on diesel represent about 9% of Vale's total scope 1 and 2 emissions. The electric trucks do not emit CO_2 as they replace diesel with electricity from renewable sources. They also minimize the noise impact to the surrounding communities.

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[1] Related to the April 2022 3rd buyback program for a total of 500 million shares. As reflected in our 3Q22 Financial Statement, until Sep 30, 2022, the Company had repurchased approximately 119.6 million ordinary shares in the total amount of US$ 1.8 billion.

[2] 100% basis. Excluding contingency.

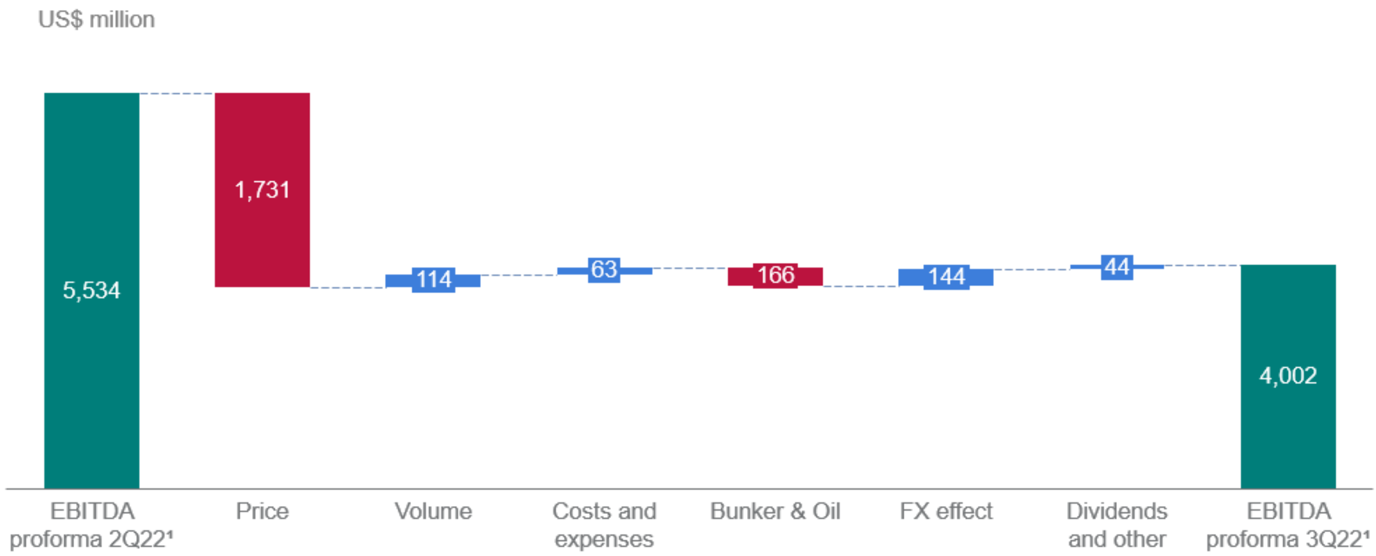
Adjusted EBITDA

Adjusted EBITDA

US$ million	3Q22	2Q22	3Q21
Net operating revenues	9,929	11,157	12,330
COGS	(6,301)	(5,950)	(5,472)
SG&A	(119)	(127)	(114)
Research and development	(170)	(151)	(135)
Pre-operating and stoppage expenses	(89)	(111)	(165)
Expenses related to Brumadinho event & de-characterization of dams	(336)	(280)	(161)
Expenses related to COVID-19 donations	-	-	(10)
Other operational expenses	(51)	(165)	(21)
Dividends and interests on associates and JVs	28	71	5
Adjusted EBIT from continuing operations	**2,891**	**4,444**	**6,257**
Depreciation, amortization & depletion	775	810	649
Adjusted EBITDA from continuing operations	**3,666**	**5,254**	**6,906**
Proforma Adjusted EBITDA from continuing operations[1]	**4,002**	**5,534**	**7,077**
Discontinued operations - Coal	-	-	32
Adjusted EBITDA total	**3,666**	**5,254**	**6,938**
Proforma Adjusted EBITDA total[1]	**4,002**	**5,534**	**7,109**

[1] Excluding expenses related to Brumadinho and COVID-19 donations.

Proforma EBITDA - 3Q22 vs. 2Q22



[1] Net of Brumadinho expenses

Sales & price realization

Volume sold - Minerals and metals

'000 metric tons	3Q22	2Q22	3Q21
Iron ore fines	65,381	62,769	66,185
ROM	3,668	1,550	540
Pellets	8,521	8,843	8,037
Nickel	44	39	42
Copper	71	52	65
Gold as by-product ('000 oz)	79	62	92
Silver as by-product ('000 oz)	346	391	210
PGMs ('000 oz)	65	46	11
Cobalt (metric ton)	569	450	538

Average realized prices

US$/metric ton	3Q22	2Q22	3Q21
Iron ore fines Vale CFR reference (dmt)	103.3	137.9	162.9
Iron ore fines Vale CFR/FOB realized price	92.6	113.3	127.2
Pellets CFR/FOB (wmt)	194.3	201.3	249.9
Nickel	21,672	26,221	18,211
Copper[1]	6,479	6,411	7,933
Gold (US$/oz)	1,748	1,884	1,798
Silver (US$/oz)	17	21	24
Cobalt (US$/t)	49,228	81,915	56,859

[1] Considers operations in Salobo, Sossego and North Atlantic.

Costs

COGS by business segment

US$ million	3Q22	2Q22	3Q21
Ferrous Minerals	4,317	4,248	4,106
Base Metals	1,882	1,424	1,187
Others	102	278	179
Total COGS of continuing operations[1]	**6,301**	**5,950**	**5,472**
Depreciation	752	777	603
COGS of continuing operations, ex-depreciation	**5,549**	**5,173**	**4,869**

[1] COGS currency exposure in 3Q22 was as follows: 50.9% USD, 42.0% BRL, 6.8% CAD and 0.3% Other currencies.

Expenses

Operating expenses

US$ million	3Q22	2Q22	3Q21
SG&A	119	127	114
Administrative	103	103	90
Personnel	42	44	29
Services	28	30	29
Depreciation	9	12	11
Others	24	17	21
Selling	16	24	24
R&D	170	151	135
Pre-operating and stoppage expenses	89	111	165
Expenses related to Brumadinho event and de-characterization of dams	336	280	161
Expenses related to COVID-19 donations	-	-	10
Other operating expenses	51	165	21
Total operating expenses	**765**	**834**	**606**
Depreciation	23	33	46
Operating expenses, ex-depreciation	**742**	**801**	**560**

Brumadinho

Impact of Brumadinho and De-characterization in 3Q22

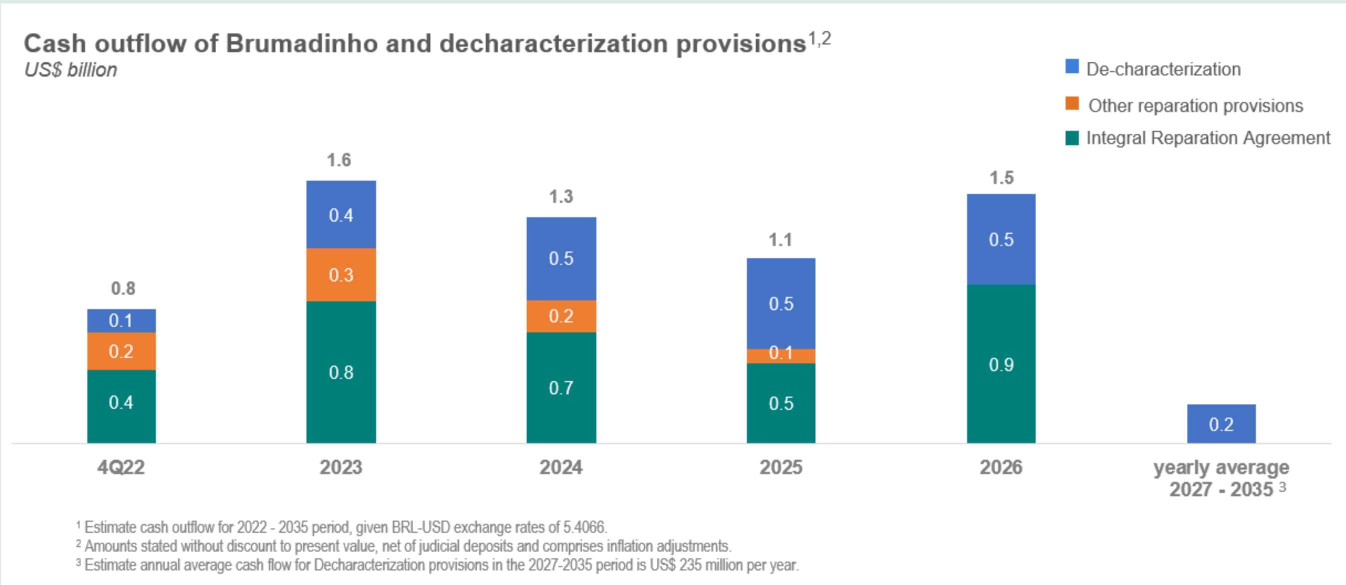
US$ million	Provisions balance 30jun22	EBITDA impact	Payments	FX and other adjustments[2]	Provisions balance 30sep22
De-characterization	3,544	35	(95)	(30)	3,454
Agreements & donations[1]	3,680	141	(423)	(167)	3,231
Total Provisions	**7,224**	**176**	**(518)**	**(197)**	**6,685**
Incurred Expenses	-	160	(160)	-	-
Total	**7,224**	**336**	**(678)**	**(197)**	**6,685**

[1] Includes Integral Reparation Agreement, individual, labor and emergency indemnifications, tailing removal and containment works.
[2] Includes foreign exchange, present value and other adjustments.

Impact of Brumadinho and De-characterization from 2019 until 3Q22

US$ million	EBITDA impact	Payments	PV & FX adjust [2]	Provisions balance 30/sep/22
De-characterization	5,038	(1,036)	(548)	3,454
Agreements & donations[1]	8,524	(4,714)	(579)	3,231
Total Provisions	**13,562**	**(5,750)**	**(1,127)**	**6,685**
Incurred expenses	2,327	(2,327)	-	-
Others	122	-	-	-
Total	**16,011**	**(8,077)**	**(1,127)**	**6,685**

[1] Includes Integral Reparation Agreement, individual, labor and emergency indemnifications, tailing removal and containment works.
[2] Includes foreign exchange, present value and other adjustments



Net income

Reconciliation of proforma EBITDA to net income

US$ million	3Q22	2Q22	3Q21
EBITDA Proforma	**4,002**	**5,534**	**7,109**
Brumadinho event and de-characterization of dams & COVID-19 donations	(336)	(280)	(171)
EBITDA Coal (Discontinued operation)	-	-	32
Adjusted EBITDA from continuing operations	**3,666**	**5,254**	**6,906**
Impairment & disposal of non-current assets	(40)	(82)	(63)
Dividends received	(28)	(71)	(5)
Equity results	89	(108)	99
Financial results	2,347	821	(350)
Income taxes	(804)	(911)	(461)
Depreciation, depletion & amortization	(775)	(810)	(649)
Net income from continuing operations attributable to Vale's stockholders	**4,455**	**4,093**	**5,477**

Financial results

US$ million	3Q22	2Q22	3Q21
Financial expenses	**(221)**	**(372)**	**(240)**
Gross interest	(140)	(162)	(156)
Capitalization of interest	9	17	14
Others	(48)	(188)	(81)
Financial expenses (REFIS)	(42)	(39)	(17)
Financial income	**141**	**137**	**90**
Shareholder Debentures	**470**	**537**	**152**
Financial Guarantee	**-**	**356**	**(34)**
Derivatives[1]	**190**	**(270)**	**(458)**
Currency and interest rate swaps	232	(287)	(472)
Others (commodities, etc)	(42)	17	14
Foreign Exchange	**201**	**464**	**372**
Reclassification of cumulative translation adjustment on to income statement	**1,608**	**-**	**10**
Monetary variation	**(42)**	**(31)**	**(242)**
Financial result, net	**2,347**	**821**	**(350)**

[1] The cash effect of the derivatives was a gain of US$ 100 million in 3Q22.

Main factors that affected net income for 3Q22 vs. 2Q22

	US$ million	
2Q22 Net income from continuing operations attributable to Vale's stockholders	**4,093**	
∆ EBITDA proforma	(1,532)	Lower iron ore and nickel prices.
∆ Brumadinho event and de-characterization of dams & COVID-19 donations	(56)	
∆ Impairment & disposal of non-current assets	42	
∆ Dividends received	43	
∆ Equity results	197	Better results in pelletizing joint-ventures, MRS and VLI.
∆ Financial results	1,526	Reclassification of the cumulative translation adjustment of US$ 1.543 billion after the capital reduction of a wholly-owned subsidiary.
∆ Income taxes	107	
∆ Depreciation, depletion & amortization	35	
3Q22 Net income from continuing operations attributable to Vale's stockholders	**4,455**	

∆: difference between 3Q22 and 2Q22 figures

CAPEX

Growth and sustaining projects execution

US$ million	3Q22	%	2Q22	%	3Q21	%
Growth projects	**375**	**30.5**	**449**	**34.7**	**285**	**23.8**
Ferrous Minerals	200	16.3	199	15.4	136	11.3
Base Metals	81	6.6	90	7.0	113	9.4
Nickel	19	1.5	9	0.7	5	0.4
Copper	62	5.0	81	6.3	108	9.0
Energy and others	94	7.6	160	12.4	36	3.0
Sustaining projects	**855**	**69.5**	**844**	**65.3**	**914**	**76.2**
Ferrous Minerals	497	40.4	477	36.9	583	48.6
Base Metals	341	27.7	343	26.5	325	27.1
Nickel	288	23.4	293	22.7	290	24.2
Copper	53	4.3	50	3.9	35	2.9
Energy and others	17	1.4	24	1.9	6	0.5
Total	**1,230**	**100.0**	**1,293**	**100.0**	**1,199**	**100.0**

Growth projects

Investments in growth projects under construction totaled US$ 375 million in 3Q22, 16% lower q/q, mainly driven by lower disbursements at the Sol do Cerrado project due to equipment deliveries last quarter.

Sol do Cerrado, one of the largest solar energy projects in Latin America, started the commissioning in October and is anticipated to be fully operating in July 2023. The project has an installed capacity of 766 MWp.

Vale's Board of Directors approved the construction of the Onça Puma second furnace and its supporting infrastructure. The furnace is expected to start-up in 1H25, adding 12-15 ktpy to the current nickel capacity of 25 ktpy.

Bahodopi nickel project in Indonesia was approved and it is expected to start-up in 2025. The RKEF plant front is a partnership between PTVI, Tisco & Xinhai with 73 ktpy capacity. PTVI ownership in processing facility is 49% and 100% of the mine that will supply the ore in accordance with its equity stake in the JV. The project estimated capex is US$ 2.2 billion[3] for the RKEF plant and around US$ 400 million for the mine.

Vale and Ningbo Zhoushan Port Company Limited decided to terminate the West III Project due to the change of Chinese national policies. The West III project consisted of expanding the Shulanghu port facilities in China.

Growth projects progress indicator[4]

Projects	Capex 3Q22	Financial progress[1]	Physical progress	Comments
Ferrous Minerals				
Northern System 240 Mtpy *Capacity: 10 Mtpy* *Start-up: 2H22* *Capex: US$ 772 MM*	23	62%	85%[2]	Project has been almost fully commissioned. Silos at the train load out area are expected to be completed by Jan/23. In the logistics front, the environmental license is required for implementation of remaining scope of EFC. The works at the Ponta da Madeira Maritime Terminal are on schedule.
Capanema's Maximization *Capacity: 18 Mtpy* *Start-up: 1H24* *Capex: US$ 913 MM*	29	11%	21%	Work continues on the crushing circuit with concrete work completed at secondary and tertiary crushing. Earthworks have been completed at the primary crusher site. Electromechanical assembly of the screening plant has begun. Construction and assembly was initiated on the long-distance conveyors and the stackers and reclaimers at Capanema site.

[3] 100% basis. Excluding contingency

[4] Pre-operating expenses included in the total estimated capex information, in line with Vale's Board of Directors approvals.

Projects	Capex 3Q22	Financial progress[1]	Physical progress	Comments
Serra Sul 120 Mtpy[3] *Capacity: 20 Mtpy* *Start-up: 2H25* *Capex: US$ 1,502 MM*	55	23%	31%	Earthworks have begun. The civil packages have been awarded and mobilization is in progress.
Briquettes Tubarão *Capacity: 6 Mtpy* *Start-up: 1H23 (Plant 1) and 2H23 (Plant 2)* *Capex: US$ 182 MM*	27	41%	53%	Installation of the two dryers is completed. Welding is in progress for the modules that make up the iron ore silos.
Base Metals				
Salobo III *Capacity: 30-40 ktpy* *Start-up: 2H22* *Capex: US$ 1,056 MM*	60	82%	98%	The primary crushing circuit has been fully commissioned. Hot commissioning of the conveyor system, secondary crushing and grinding circuits is well advanced. Wet commissioning of the flotation circuit is also underway
Onça Puma 2nd Furnace *Capacity: 12-15 ktpy* *Start-up: 1H25* *Capex: US$ 555 MM*	1	3%	0%	Project was approved by Board of Directors in September 2022 and is currently advancing the major work packages.

[1] CAPEX disbursement until end of 3Q22 vs. CAPEX expected.
[2] Considering mine-plant-logistics project front physical progress.
[3] The project consists of increasing the S11D mine-plant capacity by 20 Mtpy.

Sustaining projects

Investments in sustaining our operations totaled US$ 855 million in 3Q22, in line with 2Q22.

Sustaining projects progress indicator[5]

Projects	Capex 3Q22	Financial progress[1]	Physical progress	Comments
Ferrous Minerals				
Gelado *Capacity: 10 Mtpy* *Start-up: 2H22* *Capex: US$ 428 MM*	14	72%	97%	Commissioning at Gelado is near complete. The Gelado project is expected to start-up in 4Q22 with 5 Mtpy capacity in the initial years, as it requires Usina 1 conversion to dry processing to achieve full capacity (10 Mtpy).
Base Metals				
Voisey's Bay Mine Extension *Capacity: 45 ktpy* *Start-up: 1H21[2]* *Capex: US$ 2,690 MM*	137	67%	78%	Surface activities are well advanced with the port fuel tanks and Eastern Deeps mine fresh air infrastructure completed. Installation of the compressors systems for the paste plant is in progress. In the underground, the Reid Brook bulk Material Handling System is advancing on schedule. For Eastern Deeps, lateral development advancement remains the priority.

[1] CAPEX disbursement until end of 3Q22 vs. CAPEX expected.
[2] In 2Q21, Vale achieved the first ore production of Reid Brook deposit, the first of two underground mines to be developed in the project. Eastern Deeps, the second deposit, has started to extract development ore from the deposit and is scheduled to start the main production ramp-up in the second half of 2023.

Sustaining capex by type - 3Q22

US$ million	Ferrous Minerals	Base Metals	Energy and others	Total
Enhancement of operations	248	159	-	407
Replacement projects	20	138	-	158
Filtration and dry stacking projects	66	-	-	66
Dam management	15	4	-	19
Other investments in dams and waste dumps	36	8	-	44
Health and Safety	45	24	-	69
Social investments and environmental protection	34	3	-	37
Administrative & Others	33	5	17	55
Total	**497**	**341**	**17**	**855**

[5] Pre-operating expenses included in the total estimated capex column, in line with Vale's Board of Directors approvals

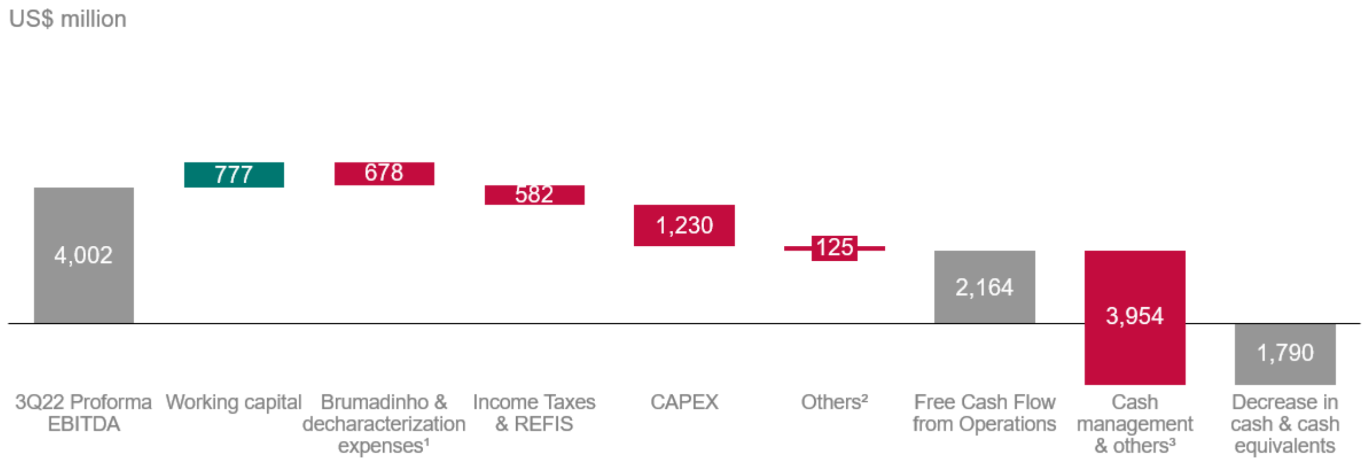
Free cash flow

The Free Cash Flow from Operations reached US$ 2.164 billion in 3Q22, only US$ 131 million lower than in 2Q22 despite the US$ 1.532 billion decrease of the Proforma EBITDA.

The main drivers that allowed for a greater cash conversion in 3Q22 were: (i) working capital initiatives with improvement in days payable outstanding; and (ii) lower income taxes paid (US$ 631million lower vs. 2Q22) as a result of the tax shield from the payment of interest on capital, as part of the shareholders' remuneration.

The cash & cash equivalents position decreased by US$ 1.790 billion in the quarter as Vale distributed US$ 3.123 billion to shareholders and repurchased US$ 686 million of its shares as part of the share buyback program.

Free Cash Flow 3Q22



[1] Includes US$ 518 million of disbursement of Brumadinho provisioned expenses and US$ 160 million of Brumadinho incurred expenses.
[2] Includes interest on loans, derivatives, leasing, dividends paid to noncontrolling interest and others.
[3] Includes US$ 686 million of share buyback, US$ 3,123 million of dividends paid, US$ 298 million from debt repurchased, and US$ 153 million from the sale of Midwestern System.

Debt

Debt indicators

US$ million	3Q22	2Q22	3Q21
Gross debt [1]	**10,666**	**11,031**	**11,951**
Lease (IFRS 16)	1,538	1,577	1,634
Gross debt and leases	**12,204**	**12,608**	**13,585**
Cash, cash equivalents and short-term investments	5,224	7,233	11,378
Net debt	**6,980**	**5,375**	**2,207**
Currency swaps[2]	119	241	786
Brumadinho provisions	3,231	3,680	4,356
Samarco & Renova Foundation provisions[3]	2,954	3,191	2,061
Expanded net debt	**13,284**	**12,487**	**9,410**
Average debt maturity (years)	9.2	9.1	8.7
Cost of debt after hedge (% pa)	5.5	5.0	4.6
Total debt / adjusted LTM EBITDA (x)	0.6	0.5	0.4
Net debt / adjusted LTM EBITDA (x)	0.3	0.2	0.1
Adjusted LTM EBITDA / LTM gross interest (x)	33.7	38.1	43.1

[1] Does not include leases (IFRS 16).

[2] Includes interest rate swaps.

[3] Does not include provision for de-characterization of Germano dam in the amount of US$ 191 million in 3Q22, US$ 195 million in 2Q22 and US$ 202 million in 3Q21.

Gross debt and leases totaled US$ 12.204 billion as of September 30, 2022, US$ 404 million lower q/q, mainly due to bank loans amortization (US$ 300 million).

Expanded Net Debt concept revision

Vale revised the Expanded Net Debt concept, seeking to be more aligned with market practices and have an indicator that better informs management on capital allocation decisions. The revised Expanded Net Debt now encompasses: (i) net debt, lease (IFRS 16) and currency swaps, and (ii) the provisions for the reparation of Brumadinho and Mariana, whose annual cash commitments are more concentrated in the early years. Operating and regulatory commitments previously included, such as the Refis tax renegotiation program and the upstream dam de-characterization provision are now excluded from the Expanded Net Debt concept. Those commitments are expected to have a more stable and longer annual cash outlays. The Expanded Net Debt target range of US$ 10 billion to US$ 20 billion remains unchanged.

Expanded net debt increased by US$ 797 million q/q, to US$ 13.284 billion, mainly due to the US$ 3.1 billion paid to shareholders in dividends and interest on equity and the US$ 686 million used to repurchase Vale's shares. This was partially offset by the non-cash positive effect of the BRL depreciation on Brumadinho, Dam De-characterization and Samarco & Renova provisions.

Performance of the business segments

Proforma Adjusted EBITDA from continuing operations, by business area

US$ million	3Q22	2Q22	3Q21
Ferrous Minerals	**3,773**	**5,147**	**6,690**
Iron ore fines	2,806	3,975	5,280
Pellets	933	1,140	1,384
Other Ferrous Minerals	34	32	26
Base Metals	**364**	**603**	**505**
Nickel	209	580	99
Copper	155	23	406
Others	**(135)**	**(216)**	**(118)**
Total	**4,002**	**5,534**	**7,077**

Segment information 3Q22, as per footnote of financial statements

		Expenses					
US$ million	Net operating revenues	Cost[1]	SG&A and others[1]	R&D[1]	Pre operating & stoppage[1]	Dividends and interest received from associates and JVs	Adjusted EBITDA
Ferrous Minerals	**7,827**	**(3,891)**	**(47)**	**(49)**	**(72)**	**5**	**3,773**
Iron ore fines	6,053	(3,095)	(44)	(46)	(63)	1	2,806
Pellets	1,656	(714)	(7)	(1)	(5)	4	933
Others ferrous	118	(82)	4	(2)	(4)	-	34
Base Metals	**2,042**	**(1,600)**	**(6)**	**(69)**	**(3)**	**-**	**364**
Nickel[2]	1,563	(1,325)	2	(31)	-	-	209
Copper[3]	479	(275)	(8)	(38)	(3)	-	155
Brumadinho event and de-characterization of dams	**-**	**-**	**(336)**	**-**	**-**	**-**	**(336)**
Others	**60**	**(58)**	**(108)**	**(52)**	**-**	**23**	**(135)**
Total	**9,929**	**(5,549)**	**(497)**	**(170)**	**(75)**	**28**	**3,666**

[1] Excluding depreciation, depletion and amortization.

[2] Including copper, by-products from our nickel operations and marketing activities.

[3] Including by-products from our copper operations.

Ferrous Minerals

Selected financial indicators - Ferrous Minerals

US$ million	3Q22	2Q22	3Q21
Net Revenues	7,827	9,025	10,566
Costs[1]	(3,891)	(3,771)	(3,714)
SG&A and Other expenses[1]	(47)	(46)	(32)
Pre-operating and stoppage expenses[1]	(72)	(86)	(75)
R&D expenses	(49)	(46)	(55)
Dividends and interests on associates and JVs	5	71	-
Adjusted EBITDA	**3,773**	**5,147**	**6,690**
Depreciation and amortization	(442)	(497)	(408)
Adjusted EBIT	**3,331**	**4,650**	**6,282**
Adjusted EBIT margin (%)	**42.6**	**51.5**	**59.5**

[1] Net of depreciation and amortization

Ferrous Minerals EBITDA Variation 3Q22 vs 2Q22

		Drivers				
US$ million	2Q22	Volume	Prices	Others	Total variation	3Q22
Iron ore fines	3,975	135	(1,391)	87	(1,169)	2,806
Pellets	1,140	(38)	(72)	(97)	(207)	933
Other	32	-	(13)	15	2	34
Ferrous Minerals	**5,147**	**97**	**(1,476)**	**5**	**(1,374)**	**3,773**

The 27% q/q EBITDA decline is largely explained by lower sales price (US$ 1.476 billion), driven by a 25% decrease of average iron ore reference price.

Revenues

	3Q22	2Q22	3Q21
Volume sold ('000 metric tons)			
Iron ore fines	65,381	62,769	66,185
ROM	3,668	1,550	540
Pellets	8,521	8,843	8,037
Share of premium products[1] (%)	78%	77%	81%
Average prices (US$/t)			
Iron ore - 62% Fe reference price	103.3	137.9	162.9
Iron ore - Metal Bulletin 62% low alumina index	105.1	141.6	164.7
Iron ore - Metal Bulletin 65% index	115.8	160.8	190.4
Provisional price at the end of the quarter	95.2	119.9	117.1
Iron ore fines Vale CFR reference (dmt)	103.3	128.9	143.2
Iron ore fines Vale CFR/FOB realized price	92.6	113.3	127.2
Pellets CFR/FOB (wmt)	194.3	201.3	249.9
Iron ore fines and pellets quality premium (US$/t)			
Iron ore fines quality premium	0.6	1.1	1.9
Pellets weighted average contribution	6.0	6.2	4.7
Total	6.6	7.3	6.6
Net operating revenue by product (US$ million)			
Iron ore fines	6,053	7,113	8,418
ROM	29	29	17
Pellets	1,656	1,780	2,009
Others	89	103	122
Total	**7,827**	**9,025**	**10,566**

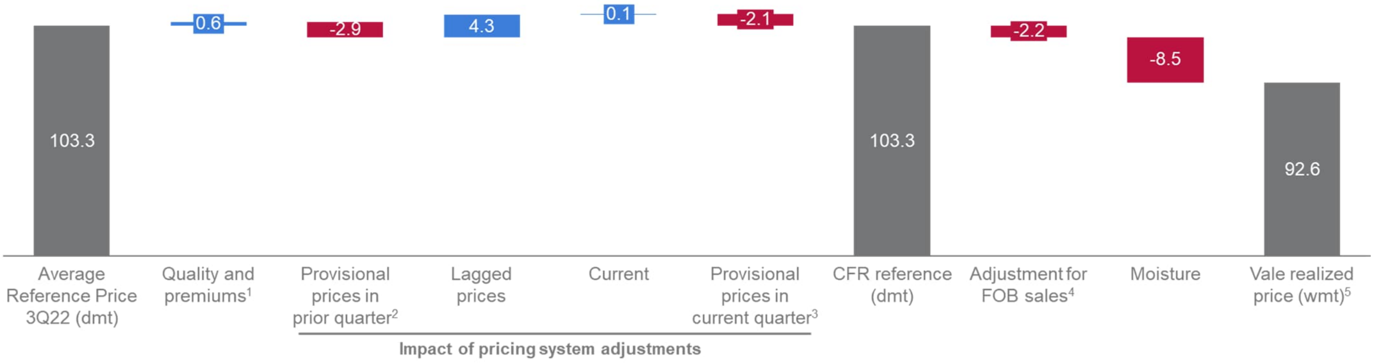
[1] Pellets, Carajás (IOCJ), Brazilian Blend Fines (BRBF) and pellet feed.

The share of premium products in total sales totaled 78% in 3Q22. Iron ore premium totaled US$ 6.6/t (vs. US$ 7.3/t in 2Q22) due to lower market premiums for low-alumina products and the absence of seasonal JV's dividends. The negative effect was partially offset by record contractual pellet premiums and a better mix of high-quality products, with a larger share of blended products.

Iron ore fines, excluding Pellets and ROM

Revenues & price realization

Price realization iron ore fines – US$/t, 3Q22



[1] Includes quality (US$ 0.0/t) and premiums/discounts and commercial conditions (US$ 0.6/t).
[2] Adjustment as a result of provisional prices booked in 2Q22 at US$ 119.9/t.
[3] Difference between the weighted average of the prices provisionally set at the end of 3Q22 at US$ 95.2/t based on forward curves and US$ 103.3/t from the 3Q22 62% Fe reference price.
[4] Includes freight pricing mechanisms of CFR sales freight recognition.
[5] Vale's price is net of taxes.

Vale's realized price totaled US$ 92.6/t, US$ 20.7/t lower than in 2Q22, mainly explained by a lower average reference price (US$ 34.6/t). This was partially offset by a lower impact of pricing system adjustments vs. Q2 (US$ 9.4/t), mainly due to a positive effect of lagged prices, with 13% of sales priced at an average price of US$ 135.9/t vs. US$ 103.3/t average reference price in Q3.

Iron Ore fines pricing system breakdown (%)

	3Q22	2Q22	3Q21
Lagged	13	16	14
Current	61	63	52
Provisional	26	21	34
Total	**100**	**100**	**100**

Costs

Iron ore fines cash cost and freight

	3Q22	2Q22	3Q21
Costs (US$ million)			
Vale's iron ore fines C1 cash cost (A)	1,489	1,520	1,475
Third-party purchase costs[1] (B)	343	302	397
Vale's C1 cash cost ex-third-party volumes (C = A – B)	1,146	1,218	1,078
Sales Volumes (Mt)			
Volume sold (ex-ROM) (D)	65.4	62.8	66.2
Volume sold from third-party purchases (E)	6.2	4.5	4.8
Volume sold from own operations (F = D – E)	59.2	58.2	61.3
Iron ore fines cash cost (ex-ROM, ex-royalties), FOB (US$ /t)			
Vale's C1 cash cost ex-third-party purchase cost (C/F)	19.4	20.9	17.6
Average third-party purchase C1 cash cost (B/E)	55.3	66.6	81.9
Vale's iron ore cash cost (A/D)	22.8	24.2	22.3

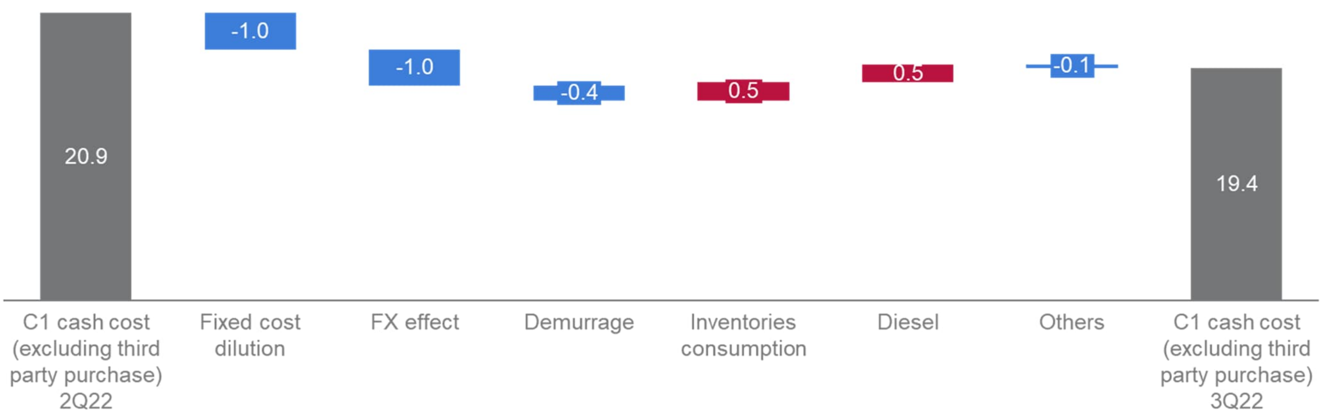
	3Q22	2Q22	3Q21
Freight			
Maritime freight costs (G)	1,230	1,053	1,062
% of CFR sales (H)	84%	79%	80%
Volume CFR (Mt) (I = D x H)	54.9	49.4	53.0
Vale's iron ore unit freight cost (US$/t) (G/I)	22.4	21.3	20.1

[1] Includes logistics costs related to third-party purchases

Iron ore COGS - 2Q22 x 3Q22

		Drivers				
US$ million	2Q22	Volume	Exchange rate	Others	Total variation	3Q22
C1 cash costs	1,520	60	(60)	(31)	(31)	1,489
Freight	1,053	120	-	57	177	1,230
Distribution costs	137	6	-	2	8	145
Royalties & others	261	10	-	(40)	(30)	231
Total costs before depreciation and amortization	**2,971**	**196**	**(60)**	**(12)**	**124**	**3,095**
Depreciation	334	13	(11)	(47)	(45)	289
Total	**3,305**	**209**	**(71)**	**(59)**	**80**	**3,384**

C1 cash cost variation (excluding 3rd party purchases) – US$/t (3Q22 x 2Q22)



Vale's C1 cash cost, ex-third-party purchases, reduced by US$ 1.5/t q/q, mainly driven by (i) stronger production volumes in Q3 allowing for higher dilution of fixed costs; (ii) positive effect of exchange rate; and (iii) seasonally lower demurrage costs. These effects were partially offset by (i) consumption of inventories from Q2 with higher costs; and (ii) higher diesel costs as a lagged effect in Brazil.

The effects from higher third-party purchases in Q3 were immaterial, as they were offset by lower iron ore prices.

Vale's maritime freight cost was US$ 22.4/t in 3Q22, US$ 1.1/t higher q/q. The increase was mainly driven by (i) a seasonally larger spot affreightment (+US$ 1.4/t), increasing the average inventories costs consumed in the quarter; and (ii) a lagged effect of higher bunker fuel costs (+US$ 0.4/t) in the end of Q2, partially offset by lower spot freight rates (-US$ 0.7/t). In line with the lag effect, the market bunker cost decrease noticed in the end of Q3 will be recognize in the Q4 Vale's average freight cost.

CFR sales totaled 54.9 Mt in 3Q22, increasing to 84% of total sales volumes, as a result of higher sales to China. Sales to China are predominantly CFR-based, due to Vale's blending strategy and customers' usual choice.

Expenses

US$ millions	3Q22	2Q22	3Q21
SG&A	**14**	**16**	**18**
R&D	**46**	**45**	**53**
Pre-operating and stoppage expenses	**63**	**74**	**61**
Other expenses	**30**	**32**	**13**
Total expenses	**153**	**167**	**145**

Iron ore pellets

Pellets – EBITDA

US$ million	3Q22	2Q22	3Q21	Comments
Net revenues / Realized prices	1,656	1,780	2,009	Lower sales volumes (-4% q/q). Realized prices averaged US$ 194.3/t in 3Q22 (-US$ 6.9/t q/q), driven by a decline in the 65%Fe price index, which was partially offset by higher contractual pellet premium and positive effect of lagged prices.
Dividends from leased pelletizing plants	4	71	0	
Cash costs (Iron ore, leasing, freight, overhead, energy and other)	(714)	(707)	(612)	Mainly due to higher fuel costs and lower pellet feed availability (+US$ 59 million), partially offset by a positive exchange rate effect (-US$ 25 million). FOB sales totalled 57% of total sales (vs. 63% in 2Q22).
Pre-operational & stoppage expenses	(5)	(6)	(10)	
Expenses (Selling, R&D and other)	(8)	2	(3)	
EBITDA	**933**	**1,140**	**1,384**	
EBITDA/t	**109**	**129**	**172**	

Iron ore fines and pellets cash break-even landed in China[6]

US$/t	3Q22	2Q22	3Q21
Vale's C1 cash cost ex-third-party purchase cost	19.4	20.9	17.6
Third party purchases cost adjustments	3.4	3.3	4.7
Vale's iron ore cash cost (ex-ROM, ex-royalties), FOB (US$ /t)	22.8	24.2	22.3
Iron ore fines freight cost (ex-bunker oil hedge)	22.4	21.3	20.1
Iron ore fines distribution cost	2.2	2.2	1.2
Iron ore fines expenses[1] & royalties	5.8	6.9	7.8
Iron ore fines moisture adjustment	4.7	4.9	4.5
Iron ore fines quality adjustment	(0.6)	(1.1)	(1.9)
Iron ore fines EBITDA break-even (US$/dmt)	**57.3**	**58.4**	**54.0**
Iron ore fines pellet adjustment	(6.0)	(6.2)	(4.7)
Iron ore fines and pellets EBITDA break-even (US$/dmt)	**51.3**	**52.2**	**49.3**
Iron ore fines sustaining investments	6.9	6.8	8.2
Iron ore fines and pellets cash break-even landed in China (US$/dmt)	**58.2**	**59.0**	**57.5**

[2] Net of depreciation and includes dividends received. Including stoppage expenses.

[6] Measured by unit cost + expenses + sustaining investment adjusted for quality. Does not include the impact from the iron ore fines and pellets pricing system mechanism.

Base Metals

Base Metals EBITDA overview – 3Q22

US$ million	Sudbury	Voisey's Bay & Long Harbour	PTVI (site)	Onça Puma	Sossego	Salobo	Others	Subtotal Base Metals	Marketing activities	Total Base Metals
Net Revenues	902	205	309	75	163	316	(236)	1,734	308	2,042
Costs	(826)	(183)	(202)	(46)	(94)	(181)	229	(1,303)	(297)	(1,600)
Selling and other expenses	(5)	(1)	(1)	(1)	(2)	(3)	7	(6)	-	(6)
Pre-operating and stoppage expenses	-	-	-	-	-	(3)	-	(3)	-	(3)
R&D	(20)	(4)	(3)	-	(11)	(1)	(30)	(69)	-	(69)
EBITDA	**51**	**17**	**103**	**28**	**56**	**128**	**(30)**	**353**	**11**	**364**

Nickel operations

Selected financial indicators, ex- marketing activities

US$ million	3Q22	2Q22	3Q21
Net Revenues	1,255	1,262	780
Costs[1]	(1,028)	(652)	(670)
SG&A and other expenses[1]	2	(12)	57
Pre-operating and stoppage expenses[1]	-	-	(52)
R&D expenses	(31)	(26)	(20)
Adjusted EBITDA	198	572	95
Depreciation and amortization	(254)	(192)	(145)
Adjusted EBIT	(56)	380	(50)
Adjusted EBIT margin (%)	(4.4)	30.1	(6.4)

[1] Net of depreciation and amortization

EBITDA variation - US$ million (3Q22 x 2Q22)

		Drivers					
US$ million	2Q22	Volume	Prices	By-products	Others	Total variation	3Q22
Nickel excl. marketing	572	61	(288)	64	(211)	(374)	198

EBITDA by operations, ex-marketing activities

US$ million	3Q22	2Q22	3Q21	3Q22 Comments
Sudbury[1]	51	209	(150)	Decline q/q due to (i) lower nickel realized prices, (ii) higher consumption of third-party feed and (iii) temporary carry over effect of inventories from Q2 (maintenance period), which was partially offset by higher nickel sales volumes and by-product revenues.
Voisey's Bay & Long Harbour	17	125	112	Decline q/q due to lower nickel realized prices partially offset by higher by-products credits
PTVI	103	163	125	Decline q/q due to lower nickel prices and higher fuel costs, partially offset by higher nickel sales volumes
Onça Puma	28	87	30	Decline q/q due to lower nickel realized prices and sales volumes.
Others[2]	(1)	(12)	(22)	
Total	**198**	**572**	**95**	

[1] Includes the Thompson operations and Clydach refinery.

[2] Includes Japanese operations, intercompany eliminations, purchase of finished nickel. Hedge results have been relocated to each nickel business operation..

Revenues & price realization

	3Q22	2Q22	3Q21
Volume sold ('000 metric tons)			
Nickel[1]	44	39	42
Copper	18	17	3
Gold as by-product ('000 oz)	10	10	1
Silver as by-product ('000 oz)	152	198	34
PGMs ('000 oz)	65	46	11
Cobalt (metric ton)	569	450	538
Average realized prices (US$/t)			
Nickel	21,672	26,221	18,211
Copper	5,925	6,240	8,187
Gold (US$/oz)	1,578	1,780	1,798
Silver (US$/oz)	15	19	24
Cobalt	49,228	81,915	56,859
Net revenue by product - ex marketing activities (US$ million)			
Nickel	960	1,032	761
Copper	104	105	9
Gold as by-product (US$/oz)	16	18	2
Silver as by-product (US$/oz)	2	4	1
PGMs	129	65	(20)
Cobalt	28	37	31
Others	16	1	(4)
Total	**1,255**	**1,262**	**780**

[1] Nickel sales volumes were adjusted in the financial report to reflect VNC divestment

Breakdown of nickel volumes sold, realized price and premium

	3Q22	2Q22	3Q21
Volumes (kt)			
Upper Class I nickel	25.1	19.8	22.6
- of which: EV Battery	1.6	1.0	1.0
Lower Class I nickel	5.2	6.8	6.0
Class II nickel	8.7	11.1	9.3
Intermediates	5.3	1.7	3.9
Nickel realized price (US$/t)			
LME average nickel price	22,063	28,940	19,125
Average nickel realized price	21,672	26,221	18,211
Contribution to the nickel realized price by category:			
Nickel average aggregate premium	190	100	(120)
Other timing and pricing adjustments contributions[1]	(581)	(2,819)	(794)
Premium/discount by product (US$/t)			
Upper Class I nickel	1,770	1,540	790
Lower Class I nickel	750	770	200
Class II nickel	(1,920)	(1,880)	(770)
Intermediates	(4,310)	(6,100)	(4,410)

[1] Comprises (i) the Quotational Period effects (based on sales distribution in the prior three months, as well as the differences between the LME price at the moment of sale and the LME average price), with a negative impact of US$ 80 /t , (ii) fixed-price sales, with a positive impact of US$ 44/t (iii) the effect of the hedging on Vale's nickel price realization, with a negative impact of US$ 549/t in the quarter and (iv) other effects with a positive impact of US$ 4/t.

Nickel realized price in 3Q22 decreased 17% q/q mainly due to 24% lower LME nickel average price. This was partially offset by 90% higher nickel average aggregate premium, largely attributed to (i) the higher proportion of Upper Class 1 products in the sales mix, following the resumption of the refineries in North Atlantic and (ii) higher upper Class 1 premium on the back of a rise in market demand for non-Russian material.

Timing and pricing adjustments improved q/q mainly due to a shorter spread between market prices and nickel hedge[7] strike price in the quarter (circa US$ 20,210/t).

[7] In 2022 we started the implementation of the Nickel Revenue Hedging Program for 2023. The nickel realized price for 3Q22 was impacted by strike price in the quarter of circa US$ 20,210/t. The average price for the complete hedge position has increased from US$ 23,117/t to US$ 25,113/t.

Product type by operation

% of source sales	North Atlantic	PTVI	Onça Puma	Total 3Q22	Total 2Q22
Upper Class I	76.3	-	-	56.7	50.3
Lower Class I	15.7	-	-	11.6	17.2
Class II	2.4	43.5	100	19.6	28.1
Intermediates	5.5	50.1	-	12.0	4.4

Costs

Nickel COGS, excluding marketing activities - 3Q22 x 2Q22

		Drivers				
US$ million	2Q22	Volume	Exchange rate	Others	Total variation	3Q22
Nickel operations	652	155	(16)	236	376	1,028
Depreciation	192	46	(4)	20	62	254
Total	**844**	**201**	**(20)**	**256**	**438**	**1,282**

Unit cash cost of sales by operation, net of by-product credits

US$/t	3Q22	2Q22	3Q21	3Q22 Comments
Sudbury[1,2]	19,078	17,879	24,931	Negatively impacted q/q by higher feed from third-party purchased in Q2 and processed in Q3, and temporary carry over effect of inventories from Q2 (maintenance period) partially offset by higher by products credits
Voisey's Bay & Long Harbour[2]	16,704	16,639	5,618	Flat q/q, as the consumption of a higher proportion of feed from Thompson at Long Habour and the VBME ramp-up were offset by higher by-products credits
PTVI	11,637	11,876	7,813	Relatively flat q/q as higher dilution of fixed costs and lower material costs offset the increase in fuel costs
Onça Puma	9,882	10,678	10,928	Decreased q/q mainly due to higher dilution of fixed costs

[1] Sudbury figures include Thompson and Clydach costs.

[2] A large portion of Sudbury, including Clydach, and Long Harbour finished nickel production is derived from intercompany transfers, as well as from the purchase of ore or nickel intermediates from third parties. These transactions are valued at fair market value.

EBITDA break-even[8]

US$/t	3Q22	2Q22	3Q21
COGS[1]	23,214	16,591	16,040
By-product revenues[1]	(6,663)	(5,863)	(456)
COGS after by-product revenues	16,551	10,728	15,584
Other expenses	705	592	334
Total Costs	**17,256**	**11,320**	**15,918**
Nickel average aggregate premium (discount)	**190**	**100**	**(120)**
EBITDA breakeven	**17,066**	**11,220**	**16,038**

[1] Excluding marketing activities

[2] Includes R&D, sales expenses and pre-operating & stoppage

[8] Considering only the cash effect of US$ 400/oz that Wheaton Precious Metals pays for 70% of Sudbury's gold by-product, nickel operations EBITDA break-even would increase to US$ 17,224/t.

Copper operations – Salobo and Sossego

Selected financial indicators - Copper operations, ex-marketing activities

US$ million	3Q22	2Q22	3Q21
Net Revenues	479	328	679
Costs[1]	(275)	(268)	(242)
SG&A and other expenses[1]	(8)	(3)	(6)
Pre-operating and stoppage expenses[1]	(3)	(3)	(1)
R&D expenses	(38)	(31)	(23)
Adjusted EBITDA	155	23	406
Depreciation and amortization	(30)	(35)	(36)
Adjusted EBIT	125	(12)	370
Adjusted EBIT margin (%)	26.1	(3.7)	54.4

[1] Net of depreciation and amortization

EBITDA variation - US$ million (3Q22 x 2Q22)

		Drivers					
US$ million	2Q22	Volume	Prices	By-products	Others	Total variation	3Q22
Copper	23	6	1	23	102	132	155

EBITDA by operation

US$ million	3Q22	2Q22	3Q21	Comments
Salobo	128	110	270	Increased q/q mainly due to lower unit cash costs, as Salobo plant performance improved in the quarter.
Sossego	56	(65)	154	Increased q/q following the conclusion of extended SAG mill maintenance in 2Q22, resulting in lower costs, higher sales volumes and by-product revenues
Others copper[1]	(29)	(22)	(18)	
Total	**155**	**23**	**406**	

[1] Includes US$ 29 million in research expenses related to the Hu'u project in 3Q22.

Revenues & price realization

US$ million	3Q22	2Q22	3Q21
Volume sold (000 metric tons)			
Copper	53	35	62
Gold as by-product	69	52	91
Silver as by-product	194	193	176
Average prices (US$/t)			
Average LME copper price	7,745	9,513	9,372
Average copper realized price	**6,663**	**6,493**	**8,187**
Gold (US$/oz)	1,773	1,904	1,770
Silver (US$/oz)	19	22	26
Revenue (US$ million)			
Copper	353	225	510
Gold as by-product	123	99	164
Silver as by-product	4	4	4
Total	**479**	**328**	**678**

Price realization – copper operations

US$/t	3Q22	2Q22	3Q21
Average LME copper price	7,745	9,513	9,372
Current period price adjustments[1]	(390)	(1,119)	(389)
Copper gross realized price	7,355	8,394	8,983
Prior period price adjustments[2]	(246)	(1,436)	(358)
Copper realized price before discounts	**7,110**	**6,958**	**8,625**
TC/RCs, penalties, premiums and discounts[3]	(452)	(465)	(438)
Average copper realized price	**6,663**	**6,493**	**8,187**

[1] Current-period price adjustments: at the end of the quarter, mark-to-market of open invoices based on the copper price forward curve. Includes a small number of final invoices that were provisionally priced and settled within the quarter.
[2] Prior-period price adjustment: based on the difference between the price used in final invoices (and in the mark-to-market of invoices from previous quarters still open at the end of the quarter) and the provisional prices used for sales in prior quarters
[3] TC/RCs, penalties, premiums, and discounts for intermediate products

Vale's copper products are sold on a provisional pricing basis[9] during the quarter, with final prices determined in a future period, generally one to four months forward.

The negative effects of the prior-period price adjustments of US$ 246/t and the current-period price adjustments US$ 390/t were mainly due to the forward price decrease during the third quarter.

Costs

COGS - 3Q22 x 2Q22

		Drivers				
US$ million	2Q22	Volume	Exchange rate	Others	Total variation	3Q22
Copper operations	268	122	(11)	(104)	7	275
Depreciation	35	11	(1)	(15)	(5)	30
Total	**303**	**133**	**(12)**	**(119)**	**2**	**305**

Copper operations – unit cash cost of sales, net of by-product credits

US$/t	3Q22	2Q22	3Q21	Commments
Salobo	2,343	3,329	700	Increased q/q mainly due to higher dilution of fixed costs.
Sossego	3,491	40,407	1,911	Lower q/q mainly due to higher dilution of fixed costs, following the completion of the extended maintenance in 1H22, and higher by-product revenues.

EBITDA break-even – copper operations[10]

US$/t	3Q22	2Q22	3Q21
COGS	5,170	7,734	3,884
By-product revenues	(2,390)	(2,977)	(2,704)
COGS after by-product revenues	**2,780**	**4,757**	**1,180**
Other expenses[1]	952	1,051	497
Total costs	**3,732**	**5,808**	**1,676**
TC/RCs penalties, premiums and discounts	452	465	438
EBITDA breakeven	**4,184**	**6,273**	**2,114**

The realized price to be compared to the EBITDA break-even should be the copper realized price before discounts (US$ 7,110/t), given that TC/RCs, penalties and other discounts are already part of the EBITDA break-even build-up.

[9] On September 30th, 2022, Vale had provisionally priced copper sales from Sossego and Salobo totaling 59,638 tons valued at an LME forward price of US$ 7,637/t, subject to final pricing over the following months.
[10] Considering only the cash effect of US$ 400/oz that Wheaton Precious Metals pays for 75% of Salobo's gold by-product, copper operations EBITDA break-even would increase to US$ 4,974/t.

WEBCAST INFORMATION

Vale will host a webcast on Friday, October 28, 2022, at 11:00 a.m. Brasilia time (10:00 a.m. New York time; 3:00 p.m. London time). Internet access to the webcast and presentation materials will be available on Vale website at www.vale.com/investors. A webcast replay will be accessible at www.vale.com beginning shortly after the completion of the call. Interested parties may listen to the teleconference by dialing in:
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The Access Code for this call is VALE.

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Except where otherwise indicated, the operational and financial information in this release is based on the consolidated figures in accordance with IFRS. Our quarterly financial statements are reviewed by the company's independent auditors. The main subsidiaries that are consolidated are the following: Companhia Portuária da Baía de Sepetiba, Mineração Corumbaense Reunida S.A., Minerações Brasileiras Reunidas S.A. PT Vale Indonesia Tbk, Salobo Metais S.A, Vale Holdings B.V., Vale Canada Limited, Vale International S.A., Vale Manganês S.A., Vale Malaysia Minerals Sdn. Bhd., Vale Moçambique S.A., Vale Oman Pelletizing Company LLC and Vale Oman Distribution Center LLC.

This press release may include statements about Vale's current expectations about future events or results (forward-looking statements). Many of those forward-looking statements can be identified by the use of forward-looking words such as "anticipate," "believe," "could," "expect," "should," "plan," "intend," "estimate" "will" and "potential," among others. All forward-looking statements involve various risks and uncertainties. Vale cannot guarantee that these statements will prove correct. These risks and uncertainties include, among others, factors related to: (a) the countries where Vale operates, especially Brazil and Canada; (b) the global economy; (c) the capital markets; (d) the mining and metals prices and their dependence on global industrial production, which is cyclical by nature; and (e) global competition in the markets in which Vale operates. Vale cautions you that actual results may differ materially from the plans, objectives, expectations, estimates and intentions expressed in this presentation. Vale undertakes no obligation to publicly update or revise any forward-looking statement, whether as a result of new information or future events or for any other reason. To obtain further information on factors that may lead to results different from those forecast by Vale, please consult the reports that Vale files with the U.S. Securities and Exchange Commission (SEC), the Brazilian Comissão de Valores Mobiliários (CVM) and, in particular, the factors discussed under "Forward-Looking Statements" and "Risk Factors" in Vale's annual report on Form 20-F.

The information contained in this press release includes financial measures that are not prepared in accordance with IFRS. These non-IFRS measures differ from the most directly comparable measures determined under IFRS, but we have not presented a reconciliation to the most directly comparable IFRS measures, because the non-IFRS measures are forward-looking and a reconciliation cannot be prepared without unreasonable effort.

Annexes

Simplified financial statements

Income Statement

US$ million	3Q22	2Q22	3Q21
Net operating revenue	**9,929**	**11,157**	**12,330**
Cost of goods sold and services rendered	(6,301)	(5,950)	(5,472)
Gross profit	**3,628**	**5,207**	**6,858**
Gross margin (%)	36.5	46.7	55.6
Selling and administrative expenses	(119)	(127)	(114)
Research and development expenses	(170)	(151)	(135)
Pre-operating and operational stoppage	(89)	(111)	(165)
Brumadinho event and de-characterization of dams	(336)	(280)	(161)
Other operational expenses, net	(51)	(165)	(31)
Impairment reversal (impairment and disposals) of non-current assets, net	(40)	(82)	(63)
Operating income	**2,823**	**4,291**	**6,189**
Financial income	141	137	90
Financial expenses	(221)	(372)	(240)
Other financial items, net	2,427	1,056	(200)
Equity results and other results in associates and joint ventures	78	(56)	128
Income before income taxes	**5,248**	**5,056**	**5,967**
Current tax	(514)	(1,181)	(2,464)
Deferred tax	(290)	270	2,003
Net income from continuing operations	**4,444**	**4,145**	**5,506**
Net income (loss) attributable to noncontrolling interests	(11)	52	29
Net income from continuing operations attributable to Vale's stockholders	**4,455**	**4,093**	**5,477**
Discontinued operations			
Net income (Loss) from discontinued operations	-	2,058	(1,548)
Net income from discontinued operations attributable to noncontrolling interests	-	-	43
Net income (Loss) from discontinued operations attributable to Vale's stockholders	**-**	**2,058**	**(1,591)**
Net income	**4,444**	**6,203**	**3,958**
Net income (Loss) attributable to Vale's to noncontrolling interests	(11)	52	72
Net income attributable to Vale's stockholders	**4,455**	**6,151**	**3,886**
Earnings per share (attributable to the Company's stockholders - US$):			
Basic and diluted earnings per share (attributable to the Company's stockholders - US$)	0.98	1.32	0.76

Equity income (loss) by business segment

US$ million	3Q22	%	2Q22	%	3Q21	%
Ferrous Minerals	80	92	52	85	58	29
Base Metals	-	-	1	2	-	-
Others	7	8	8	13	140	71
Total	**87**	**100**	**61**	**100**	**198**	**100**

Operating margin by segment (EBIT adjusted margin)

%	3Q22	2Q22	3Q21
Ferrous Minerals	42.6	51.5	59.5
Base Metals	3.9	20.1	20.5
Total	**29.1**	**39.8**	**50.7**

Balance sheet

US$ million	9/30/2122	6/30/2122	9/30/2121
Assets			
Current assets	**13,922**	**16,022**	**19,991**
Cash and cash equivalents	5,182	7,185	10,857
Short term investments	42	48	521
Accounts receivable	2,150	2,148	873
Other financial assets	152	229	1,366
Inventories	5,268	5,154	5,085
Recoverable taxes	858	744	824
Others	270	240	405
Non-current assets held for sale	-	274	60
Non-current assets	**13,354**	**13,931**	**14,790**
Judicial deposits	1,289	1,328	1,221
Other financial assets	236	210	162
Recoverable taxes	1,114	1,147	1,322
Deferred income taxes	9,825	10,360	11,402
Others	890	886	683
Fixed assets	**53,335**	**54,405**	**52,099**
Total assets	**80,611**	**84,358**	**86,880**
Liabilities			
Current liabilities	**12,994**	**12,117**	**16,074**
Suppliers and contractors	4,735	3,664	4,096
Loans, borrowings and leases	447	935	1,345
Other financial liabilities	1,466	1,584	1,557
Taxes payable	303	331	2,594
Settlement program (REFIS)	351	356	330
Provisions	929	835	1,021
Liabilities related to associates and joint ventures	2,027	1,783	1,551
Liabilities related to Brumadinho	1,318	1,060	2,336
De-characterization of dams and asset retirement obligations	700	692	590
Others	718	750	641
Liabilities associated with non-current assets held for sale	-	127	13
Non-current liabilities	**32,945**	**35,259**	**36,717**
Loans, borrowings and leases	11,757	11,673	12,240
Participative stockholders' debentures	2,659	3,219	4,128
Other financial liabilities	1,948	1,820	2,825
Settlement program (REFIS)	1,861	1,976	2,080
Deferred income taxes	1,608	1,759	1,928
Provisions	2,349	2,477	3,505
Liabilities related to associates and joint ventures	1,117	1,603	714
Liabilities related to Brumadinho	1,913	2,620	2,020
De-characterization of dams and asset retirement obligations	5,926	6,238	5,191
Streaming transactions	1,629	1,637	1,936
Others	178	237	150
Total liabilities	**45,939**	**47,376**	**52,791**
Stockholders' equity	**34,672**	**36,982**	**34,089**
Total liabilities and stockholders' equity	**80,611**	**84,358**	**86,880**

Cash flow

US$ million	3Q22	2Q22	3Q21
Cash flow from operations	**4,591**	**5,738**	**10,324**
Interest on loans and borrowings paid	(194)	(277)	(173)
Cash received (paid) on settlement of Derivatives, net	100	(42)	22
Payments related to Brumadinho event	(423)	(319)	(93)
Payments related to de-characterization of dams	(95)	(83)	(93)
Interest on participative stockholders debentures paid	-	(235)	-
Income taxes (including settlement program)	(582)	(1,213)	(991)
Net cash generated from operating activities from continuing operations	**3,397**	**3,569**	**8,996**
Net cash generated (used) in operating activities from discontinued operations	**-**	**-**	**55**
Net cash generated from by operating activities	**3,397**	**3,569**	**9,051**
Cash flow from investing activities			
Short term investment	118	101	424
Capital expenditures	(1,230)	(1,293)	(1,199)
Dividends received from joint ventures and associates	28	71	5
Proceeds from sale of Midwestern System, net of cash	140	-	-
Other investment activities, net	(70)	48	18
Net cash used in investing activities from continuing operations	**(1,014)**	**(1,073)**	**(752)**
Net cash used in investing activites from discontinued operations	**-**	**(65)**	**(49)**
Net cash used in investing actitivies	**(1,014)**	**(1,138)**	**(801)**
Cash flow from financing activities			
Loans and financing:			
Loans and borrowings from third-parties	150	200	-
Payments of loans and borrowings from third-parties	(448)	(1,433)	(111)
Payments of leasing	(48)	(57)	(55)
Payments to stockholders:			
Dividends and interest on capital paid to stockholders	(3,123)	-	(7,391)
Dividends and interest on capital paid to noncontrolling interest	(3)	(4)	(3)
Share buyback program	(686)	(2,596)	(2,841)
Net cash used in financing activities from continuing operations	**(4,158)**	**(3,890)**	**(10,401)**
Net cash used in financing activities from discontinued operations	**-**	**-**	**(3)**
Net cash used in financing activities	**(4,158)**	**(3,890)**	**(10,404)**
Increase (decrease) in cash and cash equivalents	**(1,775)**	**(1,459)**	**(2,154)**
Cash and cash equivalents in the beginning of the period	7,185	9,061	13,649
Effect of exchange rate changes on cash and cash equivalents	(228)	(417)	(638)
Cash and cash equivalents from subsidiaries sold, net	-	-	-
Cash and cash equivalents at the end of period	**5,182**	**7,185**	**10,857**
Non-cash transactions:			
Additions to property, plant and equipment - capitalized loans and borrowing costs	9	17	14
Cash flow from operating activities			
Income before income taxes	**5,248**	**5,056**	**5,967**
Adjusted for:			
Provisions for Brumadinho	141	126	-
Provision for de-characterization of dams	35	-	-
Equity results and other results in associates and joint ventures	(78)	56	(128)
Impairment and disposals of non-current assets, net	40	82	63
Depreciation, depletion and amortization	775	810	649
Financial results, net	(2,347)	(821)	350
Change in assets and liabilities			
Accounts receivable	3	902	3,870
Inventories	(287)	(305)	(588)
Suppliers and contractors	1,169	432	322
Payroll and other compensation	158	73	61
Other assets and liabilities, net	(266)	(673)	(242)
Cash flow from operations	**4,591**	**5,738**	**10,324**

Reconciliation of IFRS and “non-GAAP” information

(a) Adjusted EBIT

US$ million	3Q22	2Q22	3Q21
Net operating revenues	9,929	11,157	12,330
COGS	(6,301)	(5,950)	(5,472)
Sales and administrative expenses	(119)	(127)	(114)
Research and development expenses	(170)	(151)	(135)
Pre-operating and stoppage expenses	(89)	(111)	(165)
Brumadinho event and dam de-characterization of dams	(336)	(280)	(161)
Other operational expenses, net	(51)	(165)	(31)
Dividends received and interests from associates and JVs	28	71	5
Adjusted EBIT from continuing operations	**2,891**	**4,444**	**6,257**

(b) Adjusted EBITDA

EBITDA defines profit or loss before interest, tax, depreciation, depletion and amortization. The definition of Adjusted EBITDA for the Company is the operating income or loss plus dividends received and interest from associates and joint ventures, and excluding the amounts charged as (i) depreciation, depletion and amortization and (ii) impairment reversal (impairmaint and disposals) of non-current assets. However, our adjusted EBITDA is not the measure defined as EBITDA under IFRS and may possibly not be comparable with indicators with the same name reported by other companies. Adjusted EBITDA should not be considered as a substitute for operational profit or as a better measure of liquidity than operational cash flow, which are calculated in accordance with IFRS. Vale provides its adjusted EBITDA to give additional information about its capacity to pay debt, carry out investments and cover working capital needs. The following tables shows the reconciliation between adjusted EBITDA and operational cash flow and adjusted EBITDA and net income, in accordance with its statement of changes in financial position.

The definition of Adjusted EBIT is Adjusted EBITDA plus depreciation, depletion and amortization.

Reconciliation between adjusted EBITDA and operational cash flow

US$ million	3Q22	2Q22	3Q21
Adjusted EBITDA from continuing operations	**3,666**	**5,254**	**6,906**
Working capital:			
Accounts receivable	3	902	3,870
Inventories	(287)	(305)	(588)
Suppliers and contractors	1,169	432	322
Payroll and other compensation	158	73	61
Provisions for Brumadinho	141	126	-
Provision for de-characterization of dams	35	-	-
Others	(294)	(744)	(247)
Cash flow from continuing operations	**4,591**	**5,738**	**10,324**
Income taxes paid - including settlement program	(582)	(1,213)	(991)
Interest on loans and borrowings paid	(194)	(277)	(173)
Payments related to Brumadinho event	(423)	(319)	(93)
Payments related to de-characterization of dams	(95)	(83)	(93)
Interest on participative shareholders' debentures paid		(235)	
Cash received (paid) on settlement of Derivatives, net	100	(42)	22
Net cash generated from operating activities from continuing operations	**3,397**	**3,569**	**8,996**
Net cash generated (used) in operating activities from discontinued	**-**	**-**	**55**
Net cash generated from operating activities	**3,397**	**3,569**	**9,051**

Reconciliation between adjusted EBITDA and net income (loss)

US$ million	3Q22	2Q22	3Q21
Adjusted EBITDA from continuing operations	**3,666**	**5,254**	**6,906**
Depreciation, depletion and amortization	(775)	(810)	(649)
Dividends received and interest from associates and joint ventures	(28)	(71)	(5)
Impairment and disposals (impairment reversal) of non-current assets,net	(40)	(82)	(63)
Operating income	**2,823**	**4,291**	**6,189**
Financial results	2,347	821	(350)
Equity results and other results in associates and joint ventures	78	(56)	128
Income taxes	(804)	(911)	(461)
Net income from continuing operations	**4,444**	**4,145**	**5,506**
Net income (loss) attributable to noncontrolling interests	(11)	52	29
Net income attributable to Vale's stockholders	**4,455**	**4,093**	**5,477**

(c) Net debt

US$ million	3Q22	2Q22	3Q21
Gross debt	10,666	11,031	11,951
Leases	1,538	1,577	1,634
Cash and cash equivalents[1]	5,224	7,233	11,378
Net debt	**6,980**	**5,375**	**2,207**

[1] Including financial investments

(d) Gross debt / LTM Adjusted EBITDA

US$ million	3Q22	2Q22	3Q21
Gross debt and leases / LTM Adjusted EBITDA (x)	0.6	0.5	0.4
Gross debt and leases / LTM operational cash flow (x)	0.9	0.6	0.4

(e) LTM Adjusted EBITDA / LTM interest payments

US$ million	3Q22	2Q22	3Q21
Adjusted LTM EBITDA / LTM gross interest (x)	33.7	38.1	43.1
LTM adjusted EBITDA / LTM interest payments (x)	19.4	23.0	41.3

(f) US dollar exchange rates

R$/US$	3Q22	2Q22	3Q21
Average	5.2462	4.9210	5.2286
End of period	5.4066	5.2380	5.4394

Revenues and volumes

Net operating revenue by destination

US$ million	3Q22	%	2Q22	%	3Q21	%
North America	**562**	**5.7**	**585**	**5.2**	**387**	**3.1**
USA	423	4.3	474	4.2	345	2.8
Canada	139	1.4	111	1.0	42	0.3
South America	**1,086**	**10.9**	**1,434**	**12.9**	**1,848**	**15.0**
Brazil	958	9.6	1,222	11.0	1,582	12.8
Others	128	1.3	212	1.9	266	2.2
Asia	**6,282**	**63.3**	**7,024**	**63.0**	**8,211**	**66.6**
China	4,640	46.7	5,102	45.7	5,602	45.4
Japan	857	8.6	1,014	9.1	1,436	11.6
South Korea	387	3.9	359	3.2	471	3.8
Others	398	4.0	549	4.9	702	5.7
Europe	**1,360**	**13.7**	**1,426**	**12.8**	**1,326**	**10.8**
Germany	377	3.8	315	2.8	350	2.8
Italy	166	1.7	207	1.9	159	1.3
Others	817	8.2	904	8.1	817	6.6
Middle East	**334**	**3.4**	**348**	**3.1**	**136**	**1.1**
Rest of the World	**305**	**3.1**	**340**	**3.0**	**422**	**3.4**
Total	**9,929**	**100.0**	**11,157**	**100.0**	**12,330**	**100.0**

Volume sold by destination – Iron ore and pellets

'000 metric tons	3Q22	2Q22	3Q21
Americas	**11,495**	**9,422**	**8,016**
Brazil	10,334	8,551	6,968
Others	1,161	871	1,048
Asia	**59,353**	**55,498**	**60,020**
China	48,707	43,668	47,350
Japan	5,226	6,666	7,337
Others	5,420	5,164	5,333
Europe	**3,676**	**5,265**	**4,722**
Germany	789	753	1,096
France	669	972	625
Others	2,218	3,540	3,001
Middle East	**1,554**	**1,510**	**486**
Rest of the World	**1,491**	**1,466**	**1,518**
Total	**77,569**	**73,161**	**74,762**

Net operating revenue by business area

US$ million	3Q22	%	2Q22	%	3Q21	%
Ferrous Minerals	**7,829**	**79%**	**9,031**	**81%**	**10,611**	**86%**
Iron ore fines	6,053	61%	7,113	64%	8,418	68%
ROM	29	0%	29	0%	17	0%
Pellets	1,656	17%	1,780	16%	2,009	16%
Others	89	1%	103	1%	122	1%
Base Metals	**2,042**	**21%**	**1,875**	**17%**	**1,574**	**13%**
Nickel	960	10%	1,032	9%	761	6%
Copper	457	5%	330	3%	519	4%
PGMs	129	1%	65	1%	-20	0%
Gold as by-product	139	1%	117	1%	166	1%
Silver as by-product	5	0%	8	0%	5	0%
Cobalt	28	0%	37	0%	31	0%
Others[1]	324	3%	286	3%	112	1%
Others	**60**	**1%**	**257**	**2%**	**190**	**2%**
Total of continuing operations	**9,929**	**100%**	**11,163**	**100%**	**12,375**	**100%**

[1] Includes marketing activities

Projects under evaluation and growth options

Copper		
Alemão	**Capacity: 60 ktpy**	**Stage: FEL3**
Carajás, Brazil	Growth project	Investment decision: 2023
Vale's ownership: 100%	Underground mine	115 kozpy Au as byproduct
South Hub extension	**Capacity: 60-80 ktpy**	**Stage: FEL3[1]**
Carajás, Brazil	Replacement project	Investment decision: 2023
Vale's ownership: 100%	Open pit	Development of mines to feed Sossego mill
Victor	**Capacity: 20 ktpy**	**Stage: FEL3**
Ontario, Canada	Replacement project	Investment decision: 2023-2024
Vale's ownership: N/A	Underground mine	5 ktpy Ni as co-product; JV partnership under discussion
Hu'u	**Capacity: 300-350 ktpy**	**Stage: FEL2**
Dompu, Indonesia	Growth project	200 kozpy Au as byproduct
Vale's ownership: 80%	Underground block cave	
North Hub	**Capacity: 70-100 ktpy**	**Stage: FEL1**
Carajás, Brazil	Growth project	
Vale's ownership: 100%	Mines and processing plant	
Salobo IV	**Capacity: 30 ktpy**	**Stage: FEL1**
Carajás, Brazil	Growth project	
Vale's ownership: 100%	Processing plant	
Nickel		
Pomalaa	**Capacity: 120 ktpy**	**Stage: Definitive feasibility study**
Kolaka, Indonesia	Growth project	Investment decision: 2023 (mine)
Vale's ownership: N/A[2]	Mine and HPAL plant	15 ktpy Co as by-product
Creighton Ph. 5	**Capacity: 20-24 ktpy**	**Stage: FEL2**
Ontario, Canada	Replacement project	Investment decision: 2023-2024
Vale's ownership: 100%	Underground mine	17-20 ktpy Cu as by-product
CCM Pit	**Capacity: 12-15 ktpy**	**Stage: FEL2**
Ontario, Canada	Replacement project	Investment decision: 2023
Vale's ownership: 100%	Underground mine	7-9 ktpy Cu as by-product
CCM Ph. 3	**Capacity: 7 ktpy**	**Stage: FEL2**
Ontario, Canada	Replacement project	9 ktpy Cu as by-product
Vale's ownership: 100%	Underground mine	
CCM Ph. 4	**Capacity: 9 ktpy**	**Stage: FEL2**
Ontario, Canada	Replacement project	9 ktpy Cu as by-product
Vale's ownership: 100%	Underground mine	

Iron ore		
Serra Norte N1/N2	**Capacity: ~50 Mtpy ROM**	**Stage: FEL3**
Northern System (Brazil)	Replacement project	Investment decision: 2024
Vale's ownership: 100%	Open pit mine	
Dry concentration plant	**Capacity: 8 Mtpy DR pellet feed**	**Stage: FEL3**
Oman	Replacement project	Investment decision: 2023
Vale's ownership: N/A	Cleaner to produce DR pellet feed	
Serra Leste expansion	**Capacity: Under evaluation**	**Stage: FEL2**
Northern System (Brazil)	Growth project	
Vale's ownership: 100%	Open pit mine	
S11C	**Capacity: Under evaluation**	**Stage: FEL2**
Northern System (Brazil)	Growth project	
Vale's ownership: 100%	Open pit mine	
Green briquette plants	**Capacity: Under evaluation**	**Stage: FEL3 (two plants)**
Brazil and other regions	Growth project	Investment decision: 2022-2029
Vale's ownership: N/A	Cold agglomeration plant	8 plants under engineering stage, including co-located plants in clients' facilities

[1] Indirect ownership through Vale's 44.34% equity in PTVI. PTVI will own 100% of the mine and has the option to acquire up to 30% of the plant as part of the JV agreement.

[2] Refers to the most advanced projects (Bacaba and Cristalino).

Local Conference Call
Vale S/A(VALE3)
3Q22 Earnings Results
October 28th, 2022

Operator: Good morning, ladies, and gentlemen. Welcome to Vale's conference call to discuss third quarter 2022 results. At this time, all participants are in a listen-only mode. Later, we will conduct a question-and-answer session and instructions will be given at that time. This call is being simultaneously translated to Portuguese.

If you should require assistance during the call, please press the star followed by zero. As a reminder, this conference is being recorded and the recording will be available on the Company's website at: VALE.COM at the Investors link.

This conference call is accompanied by a slide presentation, also available at the Investors link at the Company's website and is transmitted via internet as well. The broadcasting via internet – both the audio and the slides changes – has a few seconds delay in relation to the audio transmitted via phone.

Before proceeding, let me mention that forward-looking statements are being made under the safe harbor of the Securities Litigation Reform Act of 1996. Actual performance could differ materially from that anticipated in any forward-looking comments as a result of macroeconomic conditions, market risks and other factors.

With us today are:

- Mr. Eduardo de Salles Bartolomeo – Chief Executive Officer;
- Mr. Gustavo Pimenta – Executive Vice-President Finance and Investor Relations;
- Mr. Marcello Spinelli – Executive Vice-President Iron Ore;
- Mrs. Deshnee Naidoo – Executive Vice-President Base Metals;

First, Mr. Eduardo Bartolomeo will proceed to the presentation Vale's third quarter 2022 performance, and after that he will be available for Questions and Answers.

It is now my pleasure to turn the call over to Mr. Eduardo Bartolomeo. Sir, you may now begin.

Eduardo Bartolomeo: Thank you very much. Good morning, everyone, I hope you're fine.

I'd like to start guiding you through our main accomplishments in the quarter. We have made significant progress with regards to operational stability. In iron ore, our production was close to 90 million tons, an increase of 21% quarter over quarter. While the world is facing growing inflationary pressures, we remain focused on cost discipline, our C1 cost decreased US$1.5 per ton.

In our base metals business, performance improved significantly after extended assets maintenance. In nickel, production increased 51%, but sales lagged production impacting our EBITDA. Deshnee will give you more details on that later.

Moving to our strategic agenda, we are delivering on our commitments to lead the low-carbon mining. Our solar project Sol do Cerrado is coming online to further reduce our carbon footprint. We are refining our strategy positioning Vale as an iron solutions company and the partner of choice of the energy transition and the EV mega trend.

We continue to strengthen our business to deliver the products essential to a more sustainable future. In this sense, we are making progress in growing our supply of low-carbon nickel and other critical minerals for the energy transition. In Canada, we have successfully concluded the first phase of CCM1 in Sudbury, the project will nearly double our production at Copper Cliff mine. In Brazil, the reconstruction of the Onça Puma second furnace was approved recently by our Board of Directors.

On capital allocation, we stayed committed to returning cash to our shareholders and to our share buyback program. We are shaping the Vale of the future supported by the uniqueness of our assets and resources, our investments in technology and productivity, and in our discipline in capital allocation.

To lead the mining transition, we are promoting solutions to expand the use of electricity to substitute diesel in our operations. We just received 2 electric mining trucks with 72 tons of capacity, we are not only cutting emissions, but also reducing noise, minimizing the impact to our communities.

Our strategy to electrify assets already includes 49 electric vehicles in our Canadian mines and the operation of 2 battery-powered locomotives in the yards of the ports of Vitória and São Luís. To further move our electricity consumption towards clean energy, Sol do Cerrado solar project is coming online this month, as I mentioned, and will ramp up until July 2023. The project has a capacity of 766 MW peak, and will supply 16% of Vale's electricity needs in Brazil. This energy would be enough to power a city of 900,000 houses.

We are delivering on our climate agenda, we are doing that because we are vigilant to the needs of society, but also because sustainability is crucial for the future of mining. Our society expects the mining industry to leave a positive legacy. Mining companies play a key role in addressing global warming by supporting the global energy transition. The transition to a net zero economy will be metal intensive, significant expansion of low-carbon technologies, such wind turbine, solar panels, and electric vehicles will boost demand for the metals needed for these technologies. For instance, producing battery EVs requires 30 to 40 times more nickel than the traditional ones.

So, the carbon footprint of these batteries is very critical, and we have a distinct portfolio for that, our high-quality Class 1 nickel in Canada is the lowest CO2 footprint and we have third-party certification validating it.

Now moving to iron ore. As I mentioned before, we are committed to providing decarbonization solutions for our clients. What do we have different from others?

Assets and technologies. We operate the largest high-grade deposits in the world (Carajás) with 66% Fe content reserves. We are developing products to help decarbonize, such as green briquettes, which can reduce over 10% of the emissions in the BF-BOF route. Our plants are under construction in Brazil with capacity of 6 million tons per year and the startup is expected for the first half of 2023.

With those differentiators, we are a partner of choice for our clients, we're establishing partnership with steel mills to jointly find new solutions that help to decarbonize the industry. We have signed with clients represented almost 50% of our scope 3 emissions.

Finally, shifting gears to dam safety, I'm very proud to announce that we have completed the works in more 3 upstream structures that were eliminated in September. As promised, in 2022 we have eliminated 5 structures, and so far, we have completed 40% of our program to eliminate upstream dams in Brazil. On top of that, we have removed the emergency levels of 5 dams in Minas Gerais, the structures also received Declaration of Stability (DCEs), which attested their safety conditions. Since of the beginning of this year, 7 dams had their emergency levels removed.

As part of our strategy, we have materially de-risked Vale, as well in Brumadinho we are fulfilling our mission to the integral reparation in a quick and a fair way. So, we are delivering on our commitments to a safer and more reliable company. We are building a better Vale.

With that, I now turn the floor over to our Vice-President of Base Metals Deshnee Naidoo, for her remarks, and I'll be back soon to our Q&A session. Thank you, the floor is yours, Deshnee.

Deshnee Naidoo: Thank you, Eduardo, and good morning, everyone.

I would like to start by highlighting the progress we continue to make towards achieving our base metals growth goals. I'm happy to announce, and as Eduardo mentioned, we have approved our Onça Puma second furnace project this quarter, which will see on nickel production grow by 15,000 tons on average per year in South Atlantic and are making progress at PT Vale Indonesia on the approval to establish the Pomalaa 120,000-ton JV with Zhejiang Huayou Cobalt and Ford Motor Company.

Looking at our projects' delivery, we officially opened the CCM South mine refurbishment project earlier this month and are at 98% physical progress at Salobo 3, then we are on track with our commissioning activities. We are also on schedule with our revised VBME project.

The next slide, please. Now looking at the performance in the quarter, on the operational side we recovered production in Q3 for both nickel and copper following the completion of our major plant and some corrective maintenance work in H1, specifically the furnace for rebuild at PT Vale Indonesia and the SAG mill maintenance at Sossego, both safely concluded last quarter.

On the nickel sales, we have an 8,000-ton difference to production this quarter. Some tones were retained to meet Q4 commitments given our scheduled current maintenance at Onça Puma, Long Harbour, and Matsusaka. And linked to global supply chain constraints, we faced challenges to hire containerships at Onça Puma and shipping issues in the UK due to port industrial actions that led to port congestions. These also affected sales.

This timing lag will be trued up at the end of Q4 where we would see higher sales than production volume.

In copper, and as previously highlighted when we revised the copper guidance, we have increased our maintenance activities at our Salobo operations in H2. We're already seeing the results of the work to date translating into improved plant availability and throughput rates. We have improved our throughput by 10% from June to September this year.

The next slide, please. Now turning to our financial performance, we had a significant impact from LME prices quarter-on-quarter, nickel dropped 26% and copper 19%. Nickel price drop had a significant impact on our quarter-on-quarter EBITDA. In copper, however, the quarter-on-quarter price impact was largely neutral as we had a huge adjustment in PPAs in Q2 given the significant backwardation of forward curves from Q1 to Q2, as explained in our call last quarter.

We also had timing impacts on cost this quarter as we had carryover inventory from Q2 priced at a higher cost mainly due to major PMPs. In addition, the Q2 fuel cost increases at PT Vale Indonesia are reflected in our consolidated results this quarter.

As you could see in our latest reports, we are looking at ways of maximizing our downstream capacity whilst we ramp up our projects. This means some portion of our production originated from processing third party material, this quarter alone we produce 6,000 tons of nickel from purchase feed while in Q2 we had produced 3,000 tons. So, there are positive takeaways, the improvement in operational performance would have translated into better financials had we translated all production volumes in Q3 to sales and not seeing the timing impact of price variations.

I now hand over to Marcelo for his comments on our iron ore business. Good morning, Marcelo, over to you.

Marcello Spinelli: Thank you, Desh. Good morning and good afternoon. Good to hear you all again.

I'll start my presentation, give you some colors about our production in Q3 and also Q4. We are back to 90 million tons – that's good news – after some headwinds with the heavy rainy season in the Q1 and the moisture problem in Carajás in Q2. We increased 10 million tons in the Northern System, it is below our expectations in the planning of the beginning of the year due to the delays of some licenses that made us increase the waste movement in that mine.

We have better news in this regard, I'll give you an update in some minutes. Production guidance remains 310 to 320, you may notice the gap between the sales and production, it is the same pattern of previous years related to the seasonality of production and the lead-time to reach China. We may expect higher sales comparing to production in Q4.

Now moving to the next slide, I'll give you now some update about the production plan, we had some important progress. Northern Range, Gelado project, we already started the commissioning of the first phase, and we expect the ramp up next year. N3 project we got the previous license (the LP) after some delay, we are really working close to the agents to get the installation license by the first half of next year, start the construction and bring volumes in the first half of 2024. The rolling licenses, as an example is the vegetal suppression or a redesign of a mine cave, we had a wave of small license in the last month, in September, and we expect another group of license in the first half of next year.

A closer approach with the agencies is helping us to progress in this area, we've been investing in technology, studies, universities, and people to help them increase their capacity to analyze our products in process in terms of quality and also in terms of time.

Moving to S11D, with the improvement of the orebody knowledge, we addressed the small jaspilite with ABONs, you know that, and by the end of 2025 we will be able to bring the bigger crusher that will allow us to move the larger jaspilite. Until there, we have the plus 10 coming online in December and we expect to offset that problem. Plus 20 is under construction and on time.

Southeastern System first phase of Itabiruçu raising works is done, mission accomplished, that will bring flexibility to Itabira to improve the quality. It is a hybrid operation with dams and dry stacking tailing disposals. And this is a point of attention; when you have dry stacking, we need continuous expansion of area to stockpile and that rely on continuous licensing process in Minas Gerais.

In Brucutu, Torto construction is ready for now almost three months that we are still waiting for the final permits., That's a new regulation that came after Brumadinho, that increased a lot of steps and multiple agencies approvals related to the emergency plan, it's taking a longer time, but we still expect the operational license by the end of this year.

So, in summary, I'd like to reinforce some messages here: we are adjusting our production plan based on more realistic expectations about licenses, regulations, and project accomplishments., We are working close to the licensing agencies to improve their capacity to analyze our processes. On the other hand, we always assess the market to understand the demand and the balance of supply demand. There is not an excuse for the headwinds to speed up our production plan, but it is very important to take in consideration.

Finally, moving to the next slide., It is happening a huge transformation in the market regarding the decarbonization and the necessity of high-grade ores. We are in a silent transformation inside Vale, we are running an aggressive action plan to lead the Class 1 market for iron ore with higher premiums. I'll give you more colors in the Vale Day in one month.

In Q3, our fines premiums decreased due to the negative margin in the Chinese market driven mainly by the downstream demand, the downstream sentiment demand, and the pellet premiums stayed in a high level with the strong demand for direct reduction pellets.

Well, I'll be here for further questions. Now I hand over to Gustavo.

Gustavo Pimenta: Thanks, Marcello, and good morning, everyone.

Let me start with our EBITDA performance for the quarter. As you can see, we delivered a US$4 billion EBITDA in Q3, US$1.5 billion lower than Q2. This decline is largely explained by the 20 to 25% decline in the benchmark prices for copper, nickel, and iron ore during the period. The other 2 external factors, bunker and FX, basically offset each other out.

On volumes, we have delivered a strong quarter across the board contributing to better financial performance on a quarter-over-quarter basis. Same for costs and expenses, where we start to see the benefit of the efficiency program, we launched last year.

Just to remind everyone, our objective here is to keep our total fixed cost and sustaining Capex flat versus 2021 in local currency, and we are on track to deliver that.

Now moving to iron ore all-in costs, our C1 cash cost ex-third-party purchase decreased by US$1.5 per ton mostly driven by higher production and the positive effect from the Brazilian real depreciation. Another important component of our all-in cost structure is freight, which went up from US$21.3 per ton to US$22.4 per ton. This is explained by 2 factors: one is the seasonally larger spot affreightment all in the strong production in the quarter as CFR shipments increased over 25%. Some of these cargos are still in transit and should be recognized as sales in Q4.; The other is the lagged effect. It takes about 30 days for the bunker cost to be recognized as cost of goods sold. Therefore Vale Q3 bunker cost has not yet captured the drop in prices observed in September and you should see a benefit in our Q4 performance.; The premiums we earned in our products also played an important role in our all-in cash cost, the average premium decreased by US$0.7 per ton despite the record pellet premiums contracted in Q3 and an improved quality mix within our product portfolio.

This as Marcello explained, is a consequence of lower market premiums for low alumina products and the absence of seasonal dividends from JVs. All in all, our EBITDA breakeven closed at US$51.3 per ton and we continue to expect our Q4 performance to be in line with last year.

Now turning to cash generation., Our EBITDA to cash conversion increased from 41% last quarter to 54% in Q3. The positive working capital variation is mostly due to better days payable outstanding as we continue to improve the efficiency of our working capital management with clients and suppliers. This one is offset by regular uses of cash such as Capex and taxes., And by about US$4 billion of cash return to our shareholders, reinforcing our continued discipline on capital allocation.

Now moving to the next slide., This quarter, we reviewed the expanded net debt concept to be more aligned with the market. And have an indicator that better informs management on capital allocation decisions. As a result, we excluded from the expanded net concept the provisions for REFIS tax renegotiation and the dam decharacterization program. These obligations are distributed over a longer period of time and are operational in nature as compared to the Brumadinho and Mariana provisions and obligations.

This change does not affect our targeted US$10 to 20 billion expanded net debt, which you continue to see as a very adequate through the cycle leverage ratio.

So, before opening up for Q&A, I'd like to reinforce the key takeaways from today's call. We delivered a strong operational quarter across all of our products. On de-risking we have eliminated 5 upstream dams this year reaching 12 structure or 40% since the beginning of the program., We announced the startup of the Copper Cliff Complex South mine project in Sudbury and the approval of Onça Puma second furnace implementation in Brazil.

They are important milestones as we position base metals as a critical supplier for the energy transition. And finally, we remain highly committed to a disciplined capital allocation as evidenced by the US$3.1 billion dividend paid in September in our continuous progress on the highly accretive share buyback program.

With that I would like to open the call for questions.

Question-and-Answer Session

Operator: Thank you. Ladies and gentlemen, we will now begin the question-and-answer session. We advise that the questions should be asked in English.

If you have a question, please press the star key followed by the one key on your touchtone phone now. If at any time you would like to remove yourself from the questioning queue, please press star 2.

Please, restrict your questions to 2 at a time.

And our first question comes from Leonardo Correa, with BTG Pactual.

Leonardo Correa: Yes, good morning, everyone. So, my first question on base metals to Eduardo, the unit is posting results which are below what the company had been doing over the previous years, right, Eduardo? I mean, looking at the annualized EBITDA figures for base metals now the number is slightly above a billion dollars on EBITDA. So, I just wanted to hear more about the sales path to normalization. I mean, I know that several issues have been impacting, we've been seeing maintenance issues and several other issues on the cost side, but I just wanted to hear more about this normalization process and how long you think it can last.

And other similar topic, I mean, does this delay the monetization of this base metals' unit, right? Because, I mean, results being depressed I can imagine this could impact the perceived value of the assets.

Second point on volumes, on iron ore volumes – and maybe we can bring Spinelli into discussion –, Spinelli, there is a big debate on Vale on how this normalizes as well, right, I mean, how iron ore volumes will normalize in the medium term. The company is running on, let's say, 310 million tons of production now, right, your nameplate capacity is 400 million, the market discusses whether 400 million is achievable or whether the effective production would be much lower than that, maybe 340-350.

So, I can understand that you'll give more guidance during Vale Day, December 7th, but can you just help us out understand exactly how the medium-term path on Vale is in terms of production increases and, let's say, what is the more realistic long-term targets for Vale's production? Thank you very much.

Eduardo Bartolomeo: Thanks Leo, thanks for the question. I think I'll try to separate, maybe I'll bring Deshnee to help as well, but anyhow, let's put this way: it's not fair to analyze a quarter like that because, as Deshnee mentioned, there is one… like some carry from one quarter to the other, so it's not the number that you should look at us by the way. But on specifics, some of the first quarter and first half of the year events were largely hangovers from COVID, a lot of maintenance that were postponed. I think we're pretty good, on track on what we're trying to achieve in North Atlantic with the refineries, the underground mines are improving their productivity, I'm pretty comfortable with the nickel production, we've just reached I think the highest quarter since I was there, I think since 19, so pretty well, pretty comfortable with the nickel within the guidance, I don't see issues there.

As Deshnee say, we have to replace the feed, we're doing that very well in Voisey's Bay, so that's not for me a question. On the cooper, yes, more challenges than we expected in Salobo, but Sossego is back on track after this long, the very long maintenance that we had last year.

So, I think going to your second question, I think it's more importantly because this game is about R&R (resources and reserves), and we have the best of all in the world, and this is where the value is. We will fix the asset, it's been fixed, as I mentioned on nickel, I have no doubt about that, in copper, as I said, but the assets are there, the assets are located where it should be, first world jurisdiction like Canada, Brazilian that we know the whereabouts and the Carajás with the growth projects, Salobo I've been there last month, there's 98% complete, Salobo 3, so our growth plan is there, and people that has understanding of value know where the value is.

So, I don't think it changes perspective, then they're not buying past performance; they're buying reserves and resources and future performance. And by the way, that's why we believe that ring fencing the business, bringing a partner will speed up this performance that you're asking us to deliver, and we took 100% deal on that sense, but the value is above and beyond that.

And by the way, of course you cannot annualize this quarter because it doesn't make any sense, you know that, we already had more than what you annualize as result for this year.

But anyhow, I think it's a good point and, again, we're very optimistic, very – how can I say that? – very sure that we are in the right track to fix the assets, the ring fence will help speed up that, but fundamentally the value is in the reserves and resources, and we have the best nickels in the world.

I'll pass to Spinelli to go over the iron ore.

Marcello Spinelli: Leo, thank you for the question. You know, first point, we weren't able actually to predict and to plan the impact after Brumadinho and also Mariana that happened when we changed the way we are mining and disposing the tailing dams in the Southeastern System, but we got it and we are replanning our growth, our recovery plan to the future. So, this is the first point, one side. The other side is we need to change the approach with the agencies, and we just did it and we are closer to them, there is a lack of capacity with a huge amount of license that we need to bring online in all the systems, in Northern system mainly, but also in the Southeastern System, so we're working differently with them, and we bring gradually this volume.

So, we will give you some numbers and colors in the Vale Day.

Operator: Our next question comes from Caio Ribeiro, with Bank of America.

Caio Ribeiro: Yes, good morning, all. Thank you for taking my questions. So, my first question is on the different avenues that you're exploring to unlock value in the base metals business, and I know, Eduardo, that you recently mentioned at the Financial Times conference that IPO in the division was an option that you guys were looking at, but there are other options on the table, right, as you've mentioned in the past, you know, like selling a minority stake in the business, setting up a partnership with another minor.

So, I just wanted to see if you can give us more color on which of these avenues that you tend to be leaning more towards, and also if you can give us a sense of timing, that would also be great.

And then secondly, in regard to your value over volume strategy, iron ore prices they've come under considerable pressure lately and in the fourth quarter of last year similar situation unfolded. So, I wanted to see if this time around you would consider removing lower quality or higher cost (unintelligible) from the market to try and protect prices. Thank you very much.

Eduardo Bartolomeo: Ok, Caio, thanks for your question. Let's see, well, it's true, we've been very clear on the path to unlock value in base metals, as I mentioned in the previous question, is exactly where we see enormous – how can I say that? – amount of value to be delivered. The execution path that we've been discussing – and again, as you mentioned the IPO, I'm going to get back to it in a minute –, we've been very disciplined on that, we've been communicating to you, first of all no decision has been taken within our Board, but we were going to segregate our assets, we did that, so we just announced that very recently because, yes, we see avenues, but the avenues they have a path to that and the path goes back to the execution of our operating assets, the execution of our growth plan. Within that we could see a partnership being built, I think this the most natural and has been, again, voiced by us and even in the event that you mentioned and in our calls, so we have engaged advisors to help us on that if we are able to find partners because one very strong point here for you and for everybody we're not selling base metals, base metals is the best assets in the world, Vale will keep it, so what we want is a partnership eventually to look at these values that you just mentioned.

And then, the word that I used there was "eventually" and might be confusing word for English versus Portuguese. IPO is an optionality, it's not the one that we believe that's going to be happing now because of the previous question, we need to fix the assets still, partnership can be done now because we can find partners that see this value that we see in this business help us deliver to growth, help us deliver the execution, help us creating a new currency, yes, to go after these avenues.

And timewise, I'll pass to Gustavo because he can give you more color on that, then Spinelli can come on the value over volume question.

Gustavo Pimenta: Thanks, Eduardo. So, Caio, on the timing, I think what we've been saying since beginning of the year is that we expected to be able to give you more color at Vale Day, so we continue to work with that time frame, it's going to certainly take some time for execution, probably early next year it's going to be more the ideal time.

So, stay tuned, I think Vale Day we will probably be in a position to share more information in terms of the specifics there.

Marcello Spinelli: Caio, thank you for the question and I'll split the answer in 2 parts: the first one I can address also to Leo from BTG. You know, value over volume we have all the time to check the value part… the volume part of the of the value, so we really have to check the amount that we are bringing to the market to not give a problem to the cost curve and decrease the whole system. So, that's the reason why we must take care about the way we're bringing volumes in near future, and this is important when we are talking about the mid to long-term production plan. We have a window to adjust that, it's important to say that.

And you talked about quality, so all the volume we're bringing to our production plan is related to quality, so we need to address that mid to long-term. Long term we will have a high demand for high-grade ores, even agglomerated products with pellets or briquettes. That's a trend, that's the volume we want to focus on. And every day, Caio, we assess our supply chain, we have a flexibility to hold low grade ores, concentrate later in China, concentrate in our supply chain, and that's what we do.

So, today if you ask me if we have in our supply chain low grade ores, we can hold it, blend it, or concentrate. We're not selling in negative margins.

Operator: Our next question comes from Amos Fletcher, with Barclays.

Amos Fletcher: Yeah, good morning, good afternoon, everyone. Couple of questions. first one for Deshnee. Just looking at the base metal business and the cost base at the Sudbury assets, it seems to have blown out to quite a big degree. If I look at the revenue minus EBITDA numbers at Sudbury reached over a billion dollars in Q3 against the quarterly average for the last few years around 600 million.

My question is what happened there, and should we expect it to mean reverting Q4?

And then second question on Onça Puma. The Capex for the second furnace seems to have gone up quite a bit to 555 million against US$320 million you spoke about previously. Can I then ask why is that? Thanks very much.

Deshnee Naidoo: Thank you, Amos. On the first question regarding the cost, as I guided in the presentation itself and as you said, there's about US$300 million in terms of the quarter-on-quarter increase, 200 million of that actually comes from the purchase of third-party material. So, let me explain that. The third-party material that we buy is actually concentrate that we buy at market prices. Now during Q2, you would recall that the nickel prices were sub… well, actually it was above 26 to US$28,000 per ton and that led to a very high price, so when we consumed that material, about 60,000 tons at 10% grade, that affected our cost about US$200 million in Q3 itself.

Now, to put that number into context and at current LME prices, I will possibly treat about 7,000 tons in the coming quarter and that price is around 120 to US$130 million. So, that's the impact of price. And as we indicated, there was inventory that we priced again at a higher price in Q2 that came into this quarter and that's a one-off of US$15 million. But as with everyone else, we are experiencing inflationary pressure and I did have some inflationary pressure both in a bit of fuel that came into my ops services.

So, on the go-forward, Amos, definitely not seeing those numbers and we should see the numbers from Q1-Q2 to somewhere around the middle of that materializing.

On the next question on Onça Puma furnace two, so you are right, that number is at a higher capital intensity than we were previously planning to, and a big factor there in the last six months when we finalized the estimates, we had a very high inflationary ticket coming into this cost and we approved it within parallel the team working towards relooking at some of those estimates. So, inflation is a big factor there, in addition, I mean, you can't be building furnaces in 2022 without really looking at the greening of these furnaces, so there is money in the capital budget to make sure that we can continue to work on fuel switching and we are looking at using biomass down the line as a fuel option. So, that's the other larger one. And we have put some money into the budget for some of the social obligations we have in the region.

So, this not your typical budget goal from a capital point of view that we would typically see. I think just to also mention that this project does bring a lot of synergies and to the current operation because as you know the complex was built for 40,000 tons, so returning the complex to 40,000 gives us a significant cost benefit and we're seeing that least a 15% reduction in unit cost once the project ramps up.

I hope that gives you sufficient color. Thank you, Amos.

Operator: Our next question comes from Carlos de Alba, with Morgan Stanley.

Carlos de Alba: Yeah, thank you very much. Good morning, everyone. A couple of questions. So, one on iron ore cost that I think Gustavo you mentioned that the expectation for the fourth quarter is for iron ore unit cost to come down to level similar to the fourth quarter last year, but we were a little bit surprised relating to our expectations on the third quarter, so very optimistic outlook for the fourth quarter. What can you talk about the outlook for the cost going forward? Every single mining company in the world is facing inflation pressures, how do you see that iron ore unit cash cost moving into 2023, maybe beyond that? On the one hand, you have the benefit of higher production, but again, the inflation cost, inflation pressures are negative. So, if you can share some color that would be great.

The other would be in terms of the Mariana negotiations. I mean, Vale has done a tremendous effort to basically turn the page and do everything right to repair the damage that was done in Brumadinho, obviously tremendous efforts as well done by your partner Samarco in Mariana, but to finally really move ahead from the situation I think the Mariana situation is to end. So, if you can share any colors there will also be very useful. Thank you.

Gustavo Pimenta: Thanks, Carlos. I'll take both. On cost, yes, we've shown some improvement quarter-over-quarter, US$1.5 per ton, this quarter particularly we had a little higher percentage of third-party purchase, which impacted the all-in in the C1 particularly, which should be normalized in Q4 as I said in my prep remarks, and the all-in you've seen freight coming higher as well, a lot of the drop in cost, especially in September, wasn't yet materialized, but we should see this in Q4. So, overall, we should see a better picture in Q4 as we continue to bring volume and some of those pressures reduce, right?

Looking forward for the next couple of years, look, we'll talk in more detail at Vale Day, certainly I think the entire industry is suffering from high inflation, it's affecting particularly in terms of fuel cost, be in diesel and bunker, so we are seeing some impact on it, but we'll share with more details during Vale Day what is our view for 2023.

I think one thing that we are doing very well is we continue to move on our cost reduction program. Remember we had announced the US$1-billion cost reduction, it's moving super well and that's certainly helping to offset some of those external pressures.

On Mariana, look, we're positive about re-engaging and reaching an agreement I think for all parties here including ourselves, a solution makes sense, and a potential settlement makes sense, so we think we'll be able to sit down again and resolve this. As you said, I think it would be beneficial for Vale and for BHP for sure as well, and you know, we are optimistic that within the next couple of months we'll be able to resume conversations and hopefully reach an agreement that works for everybody.

Operator: Our next question comes from Rafael Barcelos, with Banco Santander.

Rafael Barcelos: Good morning and thanks for taking my question. My first question is a quick follow-up on iron ore production. So, could you, please, elaborate further on your production outlook for S11D operations? And in your view, what are the main challenges for Vale to deliver a better production figure in the Northern System in 2023?

And my second question is related to your new expanded net debt concept. So, could you, please, give us more color on how was the decision process of revising this concept? And as a result, can we assume that Vale will accelerate cash returns to shareholders after this announcement? Thank you.

Marcello Spinelli: Thank you, Rafael, for the question. Well, let's talk about S11D. Nameplate for S11D is 90 million tons, we are below that, and we had that knowledge with the OBK with the founding of the huge amount of jaspilite that made us change the mine planning and the way we are processing the ROM. So, what we can expect in stages here: we have this small jaspilite already done, so to mid-term we expect to solve the problem only by 2025, but we have coming online the plus 10, so plus 10 can offset this nameplate difference between what we're producing today and the nameplate, so that will bring volume for next year so we can consider that, and the plus 20 is under construction, so by 2025 we will have an additional capacity solving definitely the problem of the jaspilite and until there we have an improvement coming from the plus 10.

And in the whole picture for Northern System, the other side Northern Range we are facing the increase of strip ratio because we've been waiting for license, continuous license it is delayed, so it forces us to move more waste, so increase your cost and you decrease your production volume. So, what we have to do: keep the path to reach the license, to bring the license, and it's an ore body, not a big one, but it will be important, we already go up now the LP, the previous license, so we expect to have the final license by the end of next year, so we'll bring volumes in 2024 and we call this small license, so every time we need to have a suppression in the mine or to reduce the ratios close to a cavity that we redesigned the cave that we have, we have to keep the ICMBio and IBAMA agents together to speed up this.

So, we've been doing this, but it is not as fast as we can, so we are adjusting the plan to reflect all this sophistication and the right timeline for that, but that's what we have to do, bring Gelado now this year, N3 and this small license try to be as fast as we can, but in the right planning.

Gustavo Pimenta: So, Rafael, Gustavo here. Just to close on your second question, look, I think the objectives were (i) to make sure we had an indicator more aligned with market, I think that was one of the reasons why we've revisited it; (ii) the second one is to have an indicator that could inform us better in terms of our capital allocation decision. So, the items that we took out of the expanded net debt were very long-term in nature, operational in nature, so we thought it didn't make sense to have them included in our expanded net debt concept, and this at the end just provide us with more financial flexibility, we've been extremely disciplined over the last several years since Eduardo came and you should expect us to continue to be very disciplined and focused on cash return to shareholders.

Operator: Our next question comes from Rodolfo Angele, with JP Morgan.

Rodolfo Angele: Good morning. I think most of my questions were already answered, but I just wanted to insist a little bit on what's happening in the North. So, the issue with the licensing I just wanted to understand exactly what the issue is, cause that operation has been around stable, you had the mining plans defined already, so there should have been a lot of visibility of which areas need to be licensed and just wondering what is happening. Is it the authorities are being tougher or what exactly is the issue and how is it going to be overcome? Thanks.

Marcello Spinelli: Thank you, Rodolfo. Many points here. First one, after Brumadinho we have a huge transformation of mining business in Brazil, and not only regarding the license, environmental license, but all the permits, and this is one point that we must take in consideration. The other point is the capacity of the agencies. So, many times we have to prioritize, it didn´t have enough capacity for that, and that's the main thing that we've been working together with them bringing a priority to the agency and giving them tools and hands to help them to speed up the process to define the license as a whole.

So, the mine plan considers that, but if your mine plan considers to get a license in one year and if you don't get, you have a problem in your mine plan. Every time you have to do this, you made a mess in your mine plans. So, 2 things here, as I mentioned: we need to be more realistic in our mine plan to see that it’s tougher, yes, it's one point; it's after Brumadinho, definitely yes, and don't forget that this is a common (I can say) wave of the environmental props in every place, in every world is getting more sophisticated, you need to bring more studies and that's not a problem only in Brazil, but in every part of the world.

So, the combination of these 3 factors we need to implement a different approach, that's what you're doing, bringing more capability to the agencies.

Operator: Our next question comes from Daniel Sasson, with Itaú BBA.

Daniel Sasson: Hi everyone, good morning. Thanks for taking my questions. My first question maybe to Eduardo, if you could comment a bit, Eduardo, on how you think the entrance of Cosan into your base, shareholders’ base, could help you to develop in your strategic operations or your strategic planning? How have been the first conversations or interactions that you've had with members from Cosan? How you receive this increase or this participation that they just acquired in the market? That would be great.

And maybe my second question to Gustavo or Spinelli, if you could comment a bit on your expectations for China now that the party Congress has finished, and Xi was reelected for a new term. If you could comment a bit on the conditions on the ground that you're seeing for the property sector, just wanted to move a bit the call towards these operational metrics or operational performance. Thank you.

Eduardo Bartolomeo: Thanks, Daniel. Great question because I think we see Cosan moves as a validation of our investment thesis, right. When you look at Cosan with the solid track record that they have on creating growth, people that has this mindset and take this bet on us, makes us extremely positive. Our interactions so far have been great in the sense that they see the uniqueness of our assets, they act… by the way, they sense that, as I mentioned in the beginning of my speech, we have materially de-risked, we are extremely compliant with ESG, so I think it just it's a great movement because somebody with track record that can – obviously within our Board of shareholders – help us see opportunities, help us unlocked value, and see the value, as I mentioned before on my base metals discussion, it's only positive. So, it's, as I mentioned, it's a validation of our investment thesis.

And, Gustavo, right, you want to comment a little bit about confirmation, right?

Gustavo Pimenta: Yeah, I would just say before passing to Spinelli to talk about China you probably saw a recent report from Moody’s reaffirming our rating, but more importantly, or as importantly, giving us an upgrade on the ESG stats. I think this is one very important external validator seeing all the progress that we've done over the last couple of years, and you've seen Cosan talking about that. So, I think the company has evolved a lot in the last several years and we're starting to see some external validations of that progress.

Marcello Spinelli: OK, Daniel. Well, now about China, so let's split this in short-term and mid to long-term, so best phrase for that is cautiously optimistic. Every time Gustavo says that and coming from the Party Congress, we have some mixed feelings, the negative side, the geopolitical messages, you know, no change in the COVID policies in short-term. Some neutrality I think came from the properties, I know that properties is declining the demand, this is a bad thing, but nothing… they are controlling the implementation of the 3 red lines, this is good news, so no disruption is perceived, despite a decline is at least being well-controlled, and the good side for that of the Party Congress is the infrastructure and manufacturing, you can see the FAIs, so they are betting on that and their commitment to the environmental goals that will bring an extra demand for our high-grade ores.

So, this is what we heard from that. Macro numbers, we see GDP last quarter higher than expected, we expect a 5% growth for the GDP next year, we see a decline for properties and an up upside for infra. As a whole, we see this year the CSP (the crude steel production) in 1,020 billion tons, around that, and next year above 1 billion, below this year.

So, we have this macro analysis, and I think anoher point is mid to long-term we see it remains intact. Stability, when the party said stability, it means at least 4 to 4.5% GDP growth in the coming years, CSP around 1 billion, so big market. Tailwinds in this front we see a strong demand coming from the decarbonization, infrastructure with a lot of stimulus, the remaining urbanization we need to keep this on track, we have a huge opportunity in China, and the consumption, the steel intensity in the construction.

So, this together with the environment commitment we see the mid/long-term our thesis remains intact.

Operator: Our next question comes from Tyler Broda, with RBC.

Tyler Broda: Great, thanks. Thanks very much for the call today. I just had a question, the West 3 project you mentioned that that's been halted now, it was the blending facilities in China. I guess on a wider basis, according to our analysis, you would be at record levels of inventory at the moment. I mean, how does that cancel the West 3 project change, your blending strategy? And then secondly, I mean, how much capacity do you have to be able to hold iron ore within the system?

And then the second question I want to ask is just around the base metals progress there in terms of the partnership. I think it sounds much more like this could be someone that's providing more of an industry partnership, I guess. Eduardo, from your thoughts, how do you sort of play off the difference between the benefits from a more financial or downstream partner versus a sort of a peer? Thanks very much.

Marcello Spinelli: Thank you, Tyler. Well, if you see the numbers of inventory in China, actually it is low, so we we're hitting now 130 million tons as a whole in China and our inventories is in the low level also. So, we are confident we don't have any problem to raise any inventory even for operations blending. So, we have spare capacity for that and also we can add the capacity we have in Malaysia in our center.

And regarding the West 3 project that's an expansion in Shulanghu port and the main entrance of the yellow Delta River, so this is more related to a Chinese strategy to reorganize their establishment of the CMR (the China Mineral Resource). So, CMR they have the mandate to expand or to optimize their services and we are really close to them to make this happen.

So, I think they are holding this decision because of their organization, but in terms of strategy and synergies with them, we are totally aligned. But this is not a message of that's enough inventory or capacity, it’s just a question to reorganization of the Chinese side.

Eduardo Bartolomeo: OK, thanks, Spinelli. Tyler, I’ll ask Gustavo to help me, he is leading the process, but just to get clear, I think when you look… again, it's a question of value, right? So, we want people that perceives… we want partners, not selling. We want people that perceives the same value that we do perceive in the asset. Otherwise, we won't do it, by the way.

So, it has to be… I don't see a peer in this case because it doesn't make any sense, but Gustavo can give you more color on that, OK? But we want partners, and partners that thinks like us.

Gustavo Pimenta: Yeah, I think Eduardo covered well. Look, we have a very unique asset base here, we are sitting in tremendous amount of resources in very good jurisdictions, they are very well-positioned for 2 of the most relevant macro trends of our generation, the mobility/EV, electrification, so everybody wants to be closer to us. That's clear and we hear that loud and clear from the market. We are evaluating what is the preferred path, but as Eduardo said, it has to be… if you were to partner with someone, it has to be with someone that believes on those long-term fundamentals, is willing to invest, is willing to create probably the most exciting future facing commodity platforms in the world, and that's what we are after here.

Operator: This concludes today's question and answer session. Mr. Eduardo Bartolomeo, at this time you may proceed with your closing statements.

Eduardo Bartolomeo: Well, thank you, thank you guys, thanks for the interest and I think this quarter it really changed a little bit the perspective, it was a solid one in terms of production, cost came in line, freight, as Gustavo mentioned, eventually disappointed a little bit, but not because is fact-based, it is a question, it is just a moving average. So, I believe we're doing the right things around costs, as Gustavo mentioned, so I think was a solid quarter, we need to do much better, but I think we’re in the right path.

As we've been saying since day one, we will focus on people, on reparation, and safety, we are materially de-risking the company, we have materially de-risked, so the case of the decharacterization on the dams is one evidence of that, the Moody’s changing rates is another certification.

As a lot of the questions were done, I think we are taking profit of the uniqueness of our portfolio, we're able to deliver the Salobo 3, we started Onça Puma, Voisey’s, Carajás, as Spinelli went on discussing how we can improve and accelerate that, but the assets, the resources are there and we're going to get them out on the right time because we have a unique portfolio and a unique time of the world.

We've seen all the geopolitical tensions, but nobody questions that the way we are, humanity has to face the climate change challenge and Vale I believe without any doubt is the one of the best miners, the best-positioned miners in the world because we're good on both. We see this not as a threat, we see this as an opportunity and we want to help the climate agenda, and of course, create value for society. That's why we exist, by the way, otherwise there's no reason to be a miner.

And then lastly, I think not necessarily to reinforce, as has been discussed as well, we will be extremely disciplined. We're here to create value to our shareholders, to our society, to our employees, to all the stakeholders. So, it will take time, and I was used to say when we get after Brumadinho, it's not a sprint, it's a marathon, but it’s a marathon that we still have a lot of gas to get to the final end, and I think our team and our employees are doing what it takes.

And I hope to see and listen to you in the next call. Thanks a lot, keep safe.

Operator: That does […]

Vale's production and sales in 3Q22

Rio de Janeiro, October 17th, 2022

- Iron ore production increased 21% q/q to 89.7 Mt, reflecting the dry season in the Northern System and higher third-party ore purchases and production in the Southern System.
- Sales of iron ore fines and pellets increased 6.0% q/q to 77.6 Mt. The usual production-to-sales gap in Q3 resulted from transiting inventories across the supply chain, which Vale expects to revert in the next quarter, depending on market conditions.
- Nickel production increased 51% q/q to 51.8 kt, as refineries came back from a maintenance period in 2Q22 and the conclusion of the furnace 4 rebuild at PTVI. Nickel sales increased 13% q/q, but lagged production due to sales commitments in 4Q22 during scheduled maintenance, low availability of containerships impacting Onça Puma and shipping congestion in the UK in 3Q22.
- Copper production increased 33% q/q to 74.3 kt, following extended maintenance at Sossego mill in the first half of the year, better plant performance at Salobo in the quarter and the recovery of copper from copper precipitate holding facilities in North Atlantic operations. Copper sales were up 37% q/q, in line with higher production.

Production summary

						% change			
000' metric tons	3Q22	2Q22	3Q21	9M22	9M21	3Q22/2Q22	3Q22/3Q21	9M22/9M21	2022 Guidance
Iron ore[1]	89,701	74,108	88,689	226,937	231,222	21.0%	1.1%	-1.9%	310-320 Mt
Pellets	8,256	8,672	8,341	23,852	22,637	-4.8%	-1.0%	5.4%	34-38 Mt
Nickel[2]	51.8	34.2	30.2	131.8	120.2	51.5%	71.5%	9.7%	175-190 kt
Copper	74.3	55.9	69.2	186.8	219.3	32.9%	7.4%	-14.8%	270-285 kt

[1] Including third-party purchases, run-of-mine and feed for pelletizing plants. Excluding Midwestern System volumes.
[2] Nickel production in 2Q22 was restated from 34.8 kt.

Sales summary

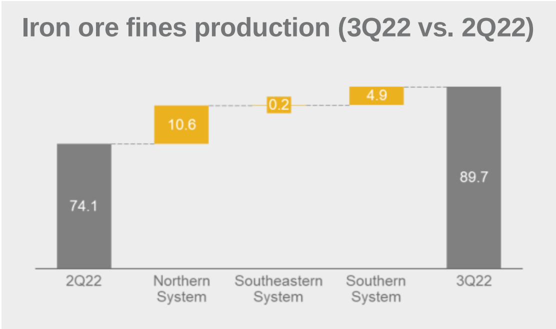
						% change		
000' metric tons	3Q22	2Q22	3Q21	9M22	9M21	3Q22/2Q22	3Q22/3Q21	9M22/9M21
Iron ore[1]	69,049	64,318	66,725	185,713	190,631	7.4%	3.5%	-2.6%
Pellets	8,521	8,843	8,037	24,375	21,955	-3.6%	6.0%	11.0%
Nickel	44.3	39.3	41.8	122.6	137.2	12.7%	6.0%	-10.6%
Copper	70.5	51.5	65.4	172.2	210.8	36.9%	7.8%	-18.3%

[1] Including third-party purchases and run-of-mine. Excluding Midwestern System volumes.

Businesses' highlights in 3Q22

Iron Ore and Pellets operations

- **Northern System production increased q/q** benefiting from the dry weather in third quarter [1]. Performance y/y was mainly impacted by lower ROM availability at Serra Norte, due to slower licensing processes. At S11D, mine movement was flat y/y, but the need to process more waste yielded a lower strip ratio and iron ore production.



- **Southeastern System production was flat q/q**.

- **Southern System production increased q/q** mainly due to (i) higher third-party purchases; (ii) additional production and sales of run-of-mine from Paraopeba Complex; and (iii) solid performance at Vargem Grande, boosted by several productivity initiatives implemented in the previous quarters.

- **Pellets production was slightly lower q/q**. As a result of portfolio optimization and market conditions, Vale decided to prioritize production of direct reduction pellets in Oman plants.

- **All-in premium totalled US$ 6.6/t[2]** (vs. US$ 7.3/t in 2Q22) due to lower market premiums for low-alumina products and the absence of seasonal JV's dividends. The negative effect was partially offset by record contractual pellet premiums and an improved product portfolio quality mix with a larger share of blended products.

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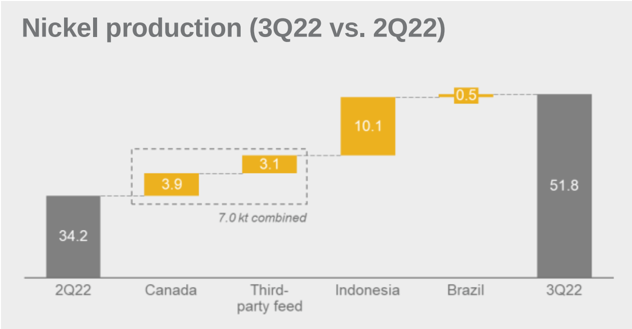
[1] Rainfall level: 31 mm at Serra Norte in 3Q22 (vs. 227 mm in 2Q22) and 36 mm at S11D in 3Q22 (vs. 237 mm in 2Q22).
[2] Iron ore premium of US$ 0.6/t and weighted average contribution of pellets of US$ 6.0/t.

Nickel operations

- **Finished nickel production from Sudbury sourced ore rose 5.1 kt q/q, reaching 12.2 kt, the highest production level since 1Q21.** This was mainly due to a strong performance at Copper Cliff Refinery after scheduled maintenance during 2Q22.



- **Finished nickel production from Thompson sourced ore increased 35% q/q**, as 2Q22 was impacted by scheduled maintenance at Long Harbour Refinery.

- **Finished nickel production from Voisey's Bay sourced ore was 1.8 kt lower q/q** as we proceed with the ongoing transitional period between the depletion of Ovoid mine and ramp-up to full production of the Voisey's Bay underground project.

- **Finished nickel production from third parties increased 3.1 kt q/q** as refineries returned to full operation after maintenance in 2Q22. Consumption of feed from third parties is expected to remain at higher levels than in recent years, aiming to maximize the utilization and performance of our downstream operations.

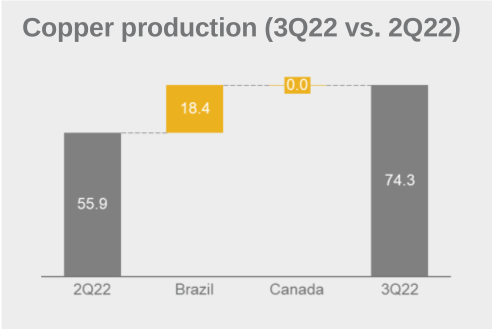
- **Finished nickel production from Indonesia sourced material was 10.1 kt higher q/q**, in line with the 39% increase to 17.5 kt in Nickel in matte production following completion of the furnace 4 rebuild. In addition, both downstream refineries, Clydach and Matsusaka, performed well during the quarter after maintenance during 2Q22.

- **Onça Puma continued to perform well, with nickel production increasing 8% q/q.** The annual maintenance of the kiln is scheduled in 4Q22.

- **Nickel sales were 13% higher q/q but lower than 3Q22 production**. This reflected (i) inventory buildup to meet sales commitments during planned maintenance at Long Harbour and Matsusaka in 4Q22; (ii) logistics issues at Onça Puma resulting from low availability of containerships at Vila do Conde during the quarter; and (iii) shipping congestion at UK ports impacting Clydach. Nickel sales are expected to revert in 4Q22.

Copper operations

- **Sossego copper production** was 13.3 kt higher q/q following the conclusion of extended SAG mill maintenance in June. The y/y performance was negatively impacted by corrective maintenance at the plant in September, which continued into 4Q22.



- **Salobo copper production** increased 5.1 kt q/q, despite additional planned and corrective maintenance performed in 3Q22. Consistent with our focus on plant reliability, planned maintenance activities will continue in 4Q22.

- **Copper production in Canada** was flat q/q, as planned maintenance in Sudbury mines and mill in the quarter was offset by (i) the recovery of metal from copper precipitate holding facilities in Thompson, as part of our approach to sustainable mining; (ii) stable performance at Voisey's Bay mill following planned maintenance in 2Q22; and (iii) higher copper produced from third-party feed, consistent with increased third-party feed consumption.

- **Copper sales[3] were higher q/q,** in line with higher production.

[3] 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.

ANNEX – Production and sales summary

Iron ore

000' metric tons	3Q22	2Q22	3Q21	9M22	9M21	% change 3Q22/2Q22	3Q22/3Q21	9M22/9M21
Northern System	**49,652**	**39,073**	**53,020**	**126,457**	**138,814**	**27.1%**	**-6.4%**	**-8.9%**
Serra Norte and Serra Leste	30,678	22,548	31,961	75,812	84,177	36.1%	-4.0%	-9.9%
S11D	18,974	16,525	21,059	50,646	54,637	14.8%	-9.9%	-7.3%
Southeastern System	**19,725**	**19,557**	**19,532**	**54,237**	**51,121**	**0.9%**	**1.0%**	**6.1%**
Itabira (Cauê, Conceição and others)	7,017	7,061	7,795	20,276	20,709	-0.6%	-10.0%	-2.1%
Minas Centrais (Brucutu and others)	5,845	5,950	5,696	15,364	14,642	-1.8%	2.6%	4.9%
Mariana (Alegria, Timbopeba and others)	6,864	6,547	6,041	18,599	15,770	4.8%	13.6%	17.9%
Southern System	**20,324**	**15,477**	**16,138**	**46,244**	**41,287**	**31.3%**	**25.9%**	**12.0%**
Paraopeba (Mutuca, Fábrica and others)	10,725	6,968	6,867	21,703	18,083	53.9%	56.2%	20.0%
Vargem Grande (Vargem Grande, Pico and others)	9,599	8,510	9,271	24,541	23,204	12.8%	3.5%	5.8%
IRON ORE PRODUCTION[1]	**89,701**	**74,108**	**88,689**	**226,937**	**231,222**	**21.0%**	**1.1%**	**-1.9%**
IRON ORE SALES[2]	**69,049[3]**	**64,318**	**66,725**	**185,713**	**190,631**	**7.4%**	**3.5%**	**-2.6%**
IRON ORE AND PELLETS SALES[2]	**77,569**	**73,161**	**74,762**	**210,088**	**212,586**	**6.0%**	**3.8%**	**-1.2%**

[1] Including third party purchases, run-of-mine and feed for pelletizing plants. Excluding Midwestern System volumes. Vale's product portfolio Fe content reached 62.1%, alumina 1.4% and silica 6.4% in 3Q22.
[2] Including third-party purchases and run-of-mine. Excluding Midwestern System volumes.
[3] Run-of-mine sales totalled 3.7 Mt in 3Q22.

Pellets

000' metric tons	3Q22	2Q22	3Q21	9M22	9M21	% change 3Q22/2Q22	3Q22/3Q21	9M22/9M21
Northern System	**899**	**836**	**1,020**	**2,473**	**2,729**	**7.5%**	**-11.9%**	**-9.4%**
São Luis	899	836	1,020	2,473	2,729	7.5%	-11.9%	-9.4%
Southeastern System	**3,284**	**4,088**	**4,357**	**11,061**	**11,930**	**-19.7%**	**-24.6%**	**-7.3%**
Itabrasco (Tubarão 3)	525	930	972	1,765	2,297	-43.5%	-46.0%	-23.2%
Hispanobras (Tubarão 4)	-	-	-	-	169	-	-	-100.0%
Nibrasco (Tubarão 5 and 6)	349	921	1,069	2,334	2,742	-62.1%	-67.4%	-14.9%
Kobrasco (Tubarão 7)	924	963	826	2,856	2,236	-4.0%	11.9%	27.7%
Tubarão 8	1,485	1,273	1,490	4,104	4,486	16.7%	-0.3%	-8.5%
Southern System	**1,268**	**1,136**	**803**	**3,083**	**2,434**	**11.6%**	**57.9%**	**26.7%**
Fábrica	-	-	-	-	-	-	-	-
Vargem Grande	1,268	1,136	803	3,083	2,434	11.6%	57.9%	26.7%
Oman	**2,805**	**2,612**	**2,161**	**7,235**	**5,544**	**7.4%**	**29.8%**	**30.5%**
PELLETS PRODUCTION	**8,256**	**8,672**	**8,341**	**23,852**	**22,637**	**-4.8%**	**-1.0%**	**5.4%**
PELLETS SALES	**8,521**	**8,843**	**8,037**	**24,375**	**21,955**	**-3.6%**	**6.0%**	**11.0%**

Nickel – Finished production by source

000' metric tons	3Q22	2Q22	3Q21	9M22	9M21	% change 3Q22/2Q22	3Q22/3Q21	9M22/9M21
Canada	**20.0**	**16.1**	**12.4**	**55.1**	**58.0**	**24.2%**	**61.3%**	**-5.0%**
Sudbury[1]	12.2	7.1	2.4	27.9	23.4	71.8%	408.3%	19.2%
Thompson	2.7	2.0	0.6	7.7	4.8	35.0%	350.0%	60.4%
Voisey's Bay	5.1	6.9	9.4	19.5	29.8	-26.1%	-45.7%	-34.6%
Indonesia	**19.2**	**9.1**	**15.1**	**45.9**	**45.0**	**111.0%**	**27.2%**	**2.0%**
Brazil	**6.8**	**6.3**	**2.2**	**18.5**	**13.7**	**7.9%**	**209.1%**	**35.0%**
Feed from third-parties[2]	**5.8**	**2.7**	**0.6**	**12.3**	**3.5**	**114.8%**	**866.7%**	**251.4%**
NICKEL PRODUCTION	**51.8**	**34.2**	**30.2**	**131.8**	**120.2**	**51.5%**	**71.5%**	**9.7%**
NICKEL SALES	**44.3**	**39.3**	**41.8**	**122.6**	**137.1**	**12.7%**	**6.0%**	**-10.6%**

[1] Sudbury nickel production in 2Q22 was restated from 7.7 kt.
[2] External feed purchased from third parties and processed into finished nickel in our Canadian operations.

Copper – Finished production by source

000' metric tons	3Q22	2Q22	3Q21	9M22	9M21	% change 3Q22/2Q22	3Q22/3Q21	9M22/9M21
Brazil	**53.4**	**35.0**	**63.4**	**126.1**	**168.7**	**52.6%**	**-15.8%**	**-25.3%**
Salobo	34.7	29.6	38.0	98.3	110.8	17.2%	-8.7%	-11.3%
Sossego	18.7	5.4	25.4	27.8	57.9	246.3%	-26.4%	-52.0%
Canada	**20.9**	**20.9**	**5.8**	**60.7**	**50.7**	**0.0%**	**260.3%**	**19.7%**
Sudbury	12.3	16.9	1.0	43.1	33.4	-27.2%	1130.0%	29.0%
Thompson	3.6	0.2	-	4.1	0.3	1,700.0%	N/A	1266.7%
Voisey's Bay	3.3	2.5	4.6	8.9	15.2	32.0%	-28.3%	-41.4%
Feed from third parties	1.7	1.3	0.3	4.6	2.0	30.8%	466.7%	130.0%
COPPER PRODUCTION	**74.3**	**55.9**	**69.2**	**186.8**	**219.3**	**32.9%**	**7.4%**	**-14.8%**
COPPER SALES	**70.5**	**51.5**	**65.4**	**172.2**	**210.8**	**36.9%**	**7.8%**	**-18.3%**
Copper Sales Brazil	52.9	34.6	62.3	121.6	163.5	53.0%	-15.0%	-25.6%
Copper Sales Canada	17.6	16.9	3.1	50.6	47.3	4.1%	467.7%	7.0%

Base Metals by-products – Finished production

	3Q22	2Q22	3Q21	9M22	9M21	% change 3Q22/2Q22	3Q22/3Q21	9M22/9M21
COBALT (000' metric tons)	609	541	452	1,906	1,919	12.6%	34.7%	-0.7%
PLATINUM (000' oz troy)	32	21	2	76	62	52.4%	1,500.0%	22.6%
PALLADIUM (000' oz troy)	37	28	4	94	79	32.1%	825.0%	19.0%
GOLD (000' oz troy)[1]	84	60	93	216	275	40.0%	-9.7%	-21.5%
TOTAL BY-PRODUCTS (000' metric tons Cu eq.)[2 3]	**41**	**28**	**23**	**101**	**108**	**46.4%**	**78.3%**	**-6.5%**

[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.

Further information on Vale can be found at: vale.com

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