

# VALE

## 2Q23 Preview: Bullish on production, bearish on costs

LatAm Metals & Mining

### Main takeaways:

#### Production and Sales Review 2Q23

**(i)** Iron Ore production clocking in at 78,7Mt, slightly above our expectations (vs. +3% Genial Est.); **(ii)** Pellets delivering a production of 9.1Mt (+9.5% q/q; +5.1% y/y); **(iii)** Base metals in line with guidance, with opposite dynamics between nickel and copper; **(iv)** Sales of fines normalizing, but at a slow pace; **(v)** Prices on a downward trajectory (vs. -3.4% Genial Est), premiums for fines disappoint; **(vi)** For pellets, premium dynamics were better (vs. +1% Genial Est.)

#### Financial Preview for 2Q23

**(i)** We project revenue up +15% q/q; **(ii)** Low cost-dilution should still hold back a more significant margin improvement (+0.28p.p q/q Genial Est.); **(iii)** EBITDA will be at recovering pace (+18.5% q/q Genial Est.); **(iv)** Net income should come in considerably stronger (+34.9% q/q Genial Est.); **(v)** Bullish on production (we revise our model assumptions to +2% vs. our previous expectation) but bearish on costs (given the likely failure to meet C1 guidance of US\$20-21/t); **(vi)** We maintain our **BUY rating** with a **12M Target Price** of **US\$17.00** (vs. US\$16.75 previously) for **NYSE ADRs** and **R\$83.00** for **VALE-B3**.

Vale released its 2Q23 Production and Sales report yesterday, on 18<sup>th</sup> of July, after market close, and will release its 2Q23 financial result on 27<sup>th</sup> of July. **Iron ore fines production came in higher numbers q/q and y/y**, as expected, with the normalization of port logistics boosting sales. Therefore, we expect the Company to **report substantially better financial results q/q**, despite a drop in realized price and still partially carrying the high costs of 1Q23.

#### Production and Sales Review 2Q23

**Iron Ore production slightly above our expectations.** Taking advantage of a seasonal effect on ore production, due to a lighter rainfall volume compared to last quarter, 2Q23 presented a fine ore production of 78.7Mt (vs. +3.0% Genial Est.), representing a +17.9% q/q and +6.3% y/y increase. The double-digit sequential evolution originated from the Northern System, which suffered more in 1Q23 from higher rainfall and has now brought record volumes at the S11D mine. In our sector report published in early June, we had commented on Vale's execution capacity to unlock value from the S11D project. Among the measures adopted that we commented on was the use of crushers, which enhance drilling in the region where there is a higher volume of jaspilite (for more details, see the Vale chapter in the past report, which is [attached](#)).

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### Company

#### VALE US Equity

Buy

Price: US\$ 14.03 (18-jul-2023)

Target Price 12M: US\$ 17.00 (NYSE)

#### VALE3 BZ Equity

Target Price 12M: R\$ 83.00 (B3)

The record production for a 2Q at the project is an indication that this measure has been proving effectiveness. In the South and Southeast System, the good performance had a special correlation with the Itabira (MG) complex, due to the higher quality of run-of-mine (ROM) that helped the productivity of the pelletizing plants. We expect the guidance of 310-320Mt in 2023 to be achieved, given the +6% growth in 6M23 vs. 6M22, which if repeated in 2H23, will result in a total production of ~318Mt vs. 315Mt in our previous expectation.

**Pellets to accelerate in 2H23.** Delivering production of 9.1Mt (+9.5% q/q; +5.1% y/y), the number also came in slightly above our estimates. We expect that due to the recent license for the start-up of the Brucutu plant (MG), the guidance for 2023 between 36-40Mt will also be achieved. We should see a higher contribution from Brucutu in 2H23.

**Base metals in line with guidance, with opposite dynamics between nickel and copper.** With downward guidance for annual nickel production, 2Q23 brought numbers in line with our estimates for nickel at 36.9Kt (-10.2% q/q; +6.0% y/y). As for copper, with production guidance of +30-40% y/y, Vale delivered production in 2Q23 at 78.8Kt vs. +1.3% Genial Est. (+17.6% q/q; 41.0% y/y).

**Table1. Production Summary Vale (2Q23 vs. Genial Est.)**

Vale Production Summary (Kt)	2Q23	2Q23E			
	Reported	Genial Est.	% R/E		
Iron Ore <sup>1</sup>	78.743	76.480	3,0%		
Pellets	9.111	8.822	3,3%		
Nickel	37	37	-0,1%		
Copper	79	78	1,3%		

  

Production Summary (Kt)	2Q23	1Q23	% q/q	2Q22	% y/y
	Reported	Reported		Reported	
Iron Ore <sup>1</sup>	78.743	66.774	17,9%	74.107	6,3%
Pellets	9.111	8.319	9,5%	8.672	5,1%
Nickel	37	41,1	-10,2%	34,8	6,0%
Copper	79	67,0	17,6%	55,9	41,0%

<sup>1</sup> Including third-party purchases, run-of-mine and feed of other pelletization plants.

Source: Genial Investimentos, Vale

**Sales of fines normalizing, but at a slow pace.** As expected, the resolution of the logistical adversities at the Ponta da Madeira (MA) terminal led to a volume closer to the historical ratio between production and sales in 2Q23. Although the trend was assertive, and we reinforced in our report that we believed in a more aggressive gap closure only in 3Q23, the reduction of this disproportionality came a little less than we expected, causing a sales volume slightly below our projection (vs. -2.7% Genial Est), reaching 63.3Mt (+38.1% q/q; +0.9% y/y).

Even slightly below our expectation, the number makes up for a considerable growth on a sequential basis, given that last quarter was rather weak in sales due to the one-off. In addition, pellet sales came in at 8.8Mt in 2Q23, up +8.3% q/q and -0.4% y/y, in line with the highs seen for production and with our projections. In the base metals unit, Vale delivered nickel sales at 40.3Kt (+0.5% q/q; +2.5% y/y), while copper came in at 73.8Kt (+17.7% q/q; +41.9% y/y), slightly lower than expected for the unit.

**Table2. Shipments Summary Vale (2Q23 vs. Genial Est.)**

Vale Shipments Summary (Kt)	2Q23		2Q23E	
	Reported	Genial Est.	% R/E	
Iron ore fines	63.329	65.057	-2,7%	
Pellets	8.809	8.896	-1,0%	
ROM	2.239	1.608	39,3%	
Nickel	40	42	-4,7%	
Copper	74	76	-2,4%	

  

Vale Shipments Summary (Kt)	2Q23		1Q23		2Q22	
	Reported	Reported	Reported	% q/q	Reported	% y/y
Iron ore fines	63.329	45.861	38,1%	62.769	0,9%	
Pellets	8.809	8.133	8,3%	8.843	-0,4%	
ROM	2.239	1.665	34,5%	1.550	44,5%	
Nickel	40	40,1	0,5%	39,3	2,5%	
Copper	74	62,7	17,7%	52,0	41,9%	

<sup>1</sup> Including third-party purchases

Source: Genial Investimentos, Vale

**Prices on downward trajectory, premiums for fines disappoint.** With the drop in international benchmark curves for 62% Fe ore, which closed at an average of US\$111.0/t in 2Q23 (vs. US\$125.5/t in 1Q23) Vale's realized price ended up suffering during the quarter, being reported at US\$98.5/t vs. -3.4% Genial Est., leading to a slightly wider sequential reduction than we expected. Our projections were for a premium of US\$1.6/t vs. a reported US\$0.6/t, explaining in large part the stronger sequential reduction than our estimates, as we were already considering a lagged provisioned price bringing positive effects, as indeed it did.

Therefore, we emphasize the poor dynamics of premiums realized on fines by Vale in 2Q23. We know that with the bearish sentiment in the commodity price, the 65% Fe and 62% Fe benchmark curves get squeezed, but even so, we were a bit disappointed. We expected a substantial improvement q/q in the product mix that would provide a premium at a slightly higher level, which does not seem to have occurred.

**For Pellets, better premium dynamics.** As we anticipated, the lagged pricing effect at 30% of sales supported higher realized prices for pellets, with premiums over the 65% Fe ore curve increasing in 2Q23, hitting US\$31.9/t (+43.7% q/q) on the back of a total realized price at US\$160.4/t vs. +1% Genial Est. Looking ahead, 3Q23 trading is showing improvements of +US\$10/t, due to market resilience outside China, which is a big positive for pellet sales revenues, considering that Vale is more exposed to Europe, the US and Japan for this segment, as we already commented in our previous report.

**Base metals suffered with prices.** The metals for energy transition unit picked up more during 2Q23, as expectations of a global economic slowdown weakened demand, with nickel standing at a realized price of US\$23,070/t vs. -2% Genial Est., representing a drop of -8.7% q/q and -12.0% y/y. Copper performed even worse, consolidating at a price of US\$7,025/t vs. -12.2% Genial Est., coming in well below what we expected and representing a sharp drop of -25.8% q/q despite the +12.6% y/y rise.

## Financial Preview 2Q23

**We project revenue to rise 15% q/q.** We believe that the Company's top line will be up q/q, driven by the fine ores part, which despite losing in terms of prices compared to the sequential movement, the normalization of sales volumes post one-off should exert more than enough strength to offset the negative impact of the benchmark curves observed in ferrous metals.

As such, we expect total net revenue of US\$9.7bn Genial Est. (+15.4% q/q; -12.8% y/y), with the share of fine ores recovering strongly, rising +25.2% q/q to reach US\$6.2bn Genial Est, while pellets should show more modest increases, at a projected revenue of US\$1.4bn Genial Est. (+6.9% q/q; -20.6% y/y), despite the realized price of the category having exceeded our initial expectations, unlike the fines category, whose premium disappointed.

As for the base metals' unit, we expect that the continued ramp-up of production should help offset the declines in realized prices, with an estimate of US\$1.5bn for nickel operations, up only gradually sequentially, at +2.1% q/q Genial Est. but with a higher year-on-year growth, reaching +22.1% y/y Genial Est. As for copper operations, we are projecting revenues of US\$477mn Genial Est. (-9.0% q/q; +45.4% y/y).

**Table3. Net Revenue Vale (2Q23 vs. Genial Est.)**

(US\$ millions)	2Q23E	1Q23		2Q22	
	Genial Est.	Reported	% q/q	Reported	% y/y
<b>Net Revenue</b>	<b>9.729</b>	<b>8.434</b>	<b>15,4%</b>	<b>11.157</b>	<b>-12,8%</b>
Iron ore fines	6.238	4.982	25,2%	7.113	-12,3%
Pellets	1.413	1.322	6,9%	1.780	-20,6%
Nickel operations	1.541	1.509	2,1%	1.262	22,1%
Copper operations	477	524	-9,0%	328	45,4%
Others	61	97	-37,1%	674	-90,9%

Source: Genial Investimentos, Vale

**Low cost-dilution should still hold back a more significant margin improvement.** Our estimates are for Vale's costs to remain relatively high in 2Q23, given that **(i)** the problems caused in 1Q23 should still have an effect in this quarter, as we consider a sizable reduction in C1/t unlikely, even if the quarter is exempt from the one-off effects registered at the port of Ponta Madeira (MA). This forecast is mainly based on the lagged reflection observed in inventory sales volumes, which naturally have a minimal cooling effect on the sharp expenditure recorded in the previous quarter, as we have already explained in our last publication. In addition, we highlight that **(ii)** despite representing a sequential improvement in the seasonal rainfall effect, Q2 always lags Q3 and Q4 with respect to volume, which inhibits a more representative dilution power. Another reason for a C1/t at significant levels would be **(iii)** rising freight costs, following the trend of the SSY (Tubarão-Qingdao) benchmark curve, which rose by ~11% q/q as an effect of the acceleration in the Brent barrel price.

Thus, we expect 2Q23 to bring to Vale a dynamic of a very moderate capacity advance in fixed cost dilution in relative terms, with C1 cost projected for fines at US\$25.2/t Genial Est. (-4.5% y/y), above guidance US\$20-21/t, with the Company also suffering effects from freight cost rising sequentially to US\$20.7/t (+16.3% y/y), given the increase in SSY of +US\$3.1/t in the same period. We project a COGS in absolute terms of -US\$2.9bn Genial Est. for the fine's unit, up a strong +36.5% q/q and +0.9% y/y, due to the recovery in shipments, which pull higher variable costs.

For the other units, we expect a stable COGS/t on a quarterly basis, which ends up putting more weight on the volume dynamics when we look at the numbers in absolute terms. In other words, if the volume goes up, the cost goes up, and the opposite is also true. Therefore, we project pellets' COGS of -US\$684mn Genial Est. (+5.5% q/q; -3.3% y/y), with nickel operations at -US\$1.1bn Genial Est. (-1.2% q/q; +68.5% y/y) and copper operations at -US\$325mn Genial Est. (+20.5% q/q; -21.4% y/y).

**Table4. COGS Vale (2Q23 vs. Genial Est.)**

(US\$ millions)	2Q23E	1Q23		2Q22	
	Genial Est.	Reported	% q/q	Reported	% y/y
<b>COGS</b>	<b>(6.061)</b>	<b>(4.949)</b>	<b>22,5%</b>	<b>(5.950)</b>	<b>1,9%</b>
Iron ore fines	(2.998)	(2.197)	36,5%	(2.971)	0,9%
Pellets	(684)	(648)	5,5%	(707)	-3,3%
Nickel operations	(1.099)	(1.112)	-1,2%	(652)	68,5%
Copper operations	(325)	(270)	20,5%	(268)	21,4%
Others	(130)	(109)	19,5%	(575)	-77,4%
D&A	(824)	(613)	34,5%	(777)	6,1%

Source: Genial Investimentos, Vale

**EBITDA will be at a recovering pace q/q.** We expect 2Q23 to bring a consolidated EBITDA recovery q/q, mainly driven by fine ores, which should reach US\$3.1bn Genial Est. (+18.5% q/q; -21.3% y/y). Moreover, still in the iron ore unit, we expect pellets to make an EBITDA of US\$794mn Genial Est., up +19.0% q/q, as a result of the increase in production during the period, as well as a gradual improvement in the premium.

We also expect a declining EBITDA for the base metals' unit, amounting to US\$510mn in 2Q23, mainly due to the expectation that the weaker price dynamics in copper will not be offset by the volume increase in nickel. We thus arrive at a consolidated EBITDA of US\$4.2bn Genial Est., (+18.5% q/q; -21.3% y/y), showing a double-digit recovery on a quarterly basis, but with even weaker commodity price dynamics accounting for the yearly basis decline.

Looking at margins, as we commented above, our expectation of only a modest improvement in cost dilution will still make margin recover slowly. In other words, even with an important signaling of robustness in EBITDA q/q, the margin should move almost nothing in 2Q23. We are projecting an EBITDA margin of around 44%, which would represent a mere +0.28p.p q/q improvement.

**Table5. EBITDA Vale (2Q23 Genial Est.)**

(US\$ millions)	2Q23E	1Q23	% q/q	2Q22	% y/y
	Genial Est.	Reported		Reported	
<b>Adjusted EBITDA</b>	<b>4.280</b>	<b>3.687</b>	<b>16,1%</b>	<b>5.254</b>	<b>-18,5%</b>
Iron ore fines	3.127	2.638	18,5%	3.975	-21,3%
Pellets	723	667	8,4%	1.140	-36,6%
Nickel operations	396	353	12,1%	572	-30,8%
Copper operations	115	220	-47,8%	23	399,2%
Others	(79)	(191)	-58,9%	(456)	-82,8%

Source: Genial Investimentos, Vale

**Net profit should come in considerably stronger q/q.** In the same dynamics as EBITDA, we expect Vale to report a better bottom line q/q, but still struggling to beat y/y. With a financial result also cooler than last quarter, we project a net profit of R\$2.4bn Genial Est., showing a +34.9% q/q rise due to the normalization of the fines unit, after the eventuality of the Ponta da Madeira terminal, but suffering a -39.5% y/y fall due to the strong deceleration in the reference curves for ore, nickel and copper.

**Table6. Income Statement Vale (2Q23 Genial Est.)**

(US\$ millions)	2Q23E	1Q23	% q/q	2Q22	% y/y
	Genial Est.	Reported		Reported	
<b>Net Revenue</b>	<b>9.890</b>	<b>8.434</b>	<b>17,3%</b>	<b>11.157</b>	<b>-11,4%</b>
COGS	(6.061)	(4.949)	22,5%	(5.950)	1,9%
<b>Adjusted Proforma EBITDA</b>	<b>4.280</b>	<b>3.687</b>	<b>16,1%</b>	<b>5.534</b>	<b>-22,7%</b>
EBITDA Margin (%)	43,3%	43,7%	-0,44p.p	49,6%	-6,32p.p
<b>Adjusted EBIT</b>	<b>2.987</b>	<b>2.920</b>	<b>2,3%</b>	<b>4.444</b>	<b>-32,8%</b>
EBIT Margin (%)	30,2%	34,6%	-4,42p.p	39,8%	-9,63p.p
D&A	(867)	(656)	32,1%	(810)	7,0%
Financial Result	(388)	(530)	-26,9%	821	-
<b>Net income</b>	<b>2.478</b>	<b>1.837</b>	<b>34,9%</b>	<b>4.093</b>	<b>-39,5%</b>
Net margin (%)	25,1%	21,8%	3,27p.p	36,7%	-11,63p.p

Source: Genial Investimentos, Vale

## Our Take on Vale

Although everything indicates a sequential upturn in the 2Q23 result, it will still not be a great quarter in terms of results, since the expectation of a double-digit q/q improvement occurs much more due to the excessively weak 1Q23 rather than necessarily indicating a good moment that the company is experiencing today. With the pitiful 1Q23 that Vale faced due to port adversities drastically reducing shipments volume, we believe that 2Q23 will necessarily denote a substantial growth in EBITDA. Still, as we pointed out throughout the report, costs will be a persistent issue for the Company. So, for margin purposes, we expect hardly no progress in 2Q23.

**Our eyes are more focused on the 2H23.** Although we expect only modest progress in margins in this quarter, we believe that 2H23 will actually bring more encouraging numbers, even with a projection following a downward trajectory in iron ore meeting our estimate of US\$95/t by the end of the year, which already considers the effect of the increase in supply, expected by the market in the coming quarters, in calibrating the commodity prices. This expectation of improvement in the Company's results is due to the normalization in the dilution capacity, mainly in C1, which represents ~50% of the COGS of fine ores. We expect a higher dilution considering that Q3 is the quarter that Vale historically produces the most and Q4 is the quarter that it sells the most. In addition, there are other indications that make our expectations for the coming quarters more optimistic.

In addition to the natural seasonality that involves the quarters and favors the second half of the year, among the other factors that we see for a more robust improvement in 2H23 is the authorization of the Torto dam in Brucutu (MG), which was recently granted and should compose more representatively the operation at the end of 3Q23. The Torto Dam was built using the downstream method (different from the upstream method, typical of Mariana and Brumadinho), which will allow part of the tailings to be stacked dry, providing a higher safety standard. With this dam in operation, we believe Vale is ready to significantly raise the quality of its product mix. This improvement will result from the creation of agglomerates such as pellets and briquettes at the Brucutu mill. These agglomerates will increase the average concentration of iron ore in Vale's portfolio and consequently bring higher premiums.

We believe that obtaining the license for production at the Brucutu plant consolidates the company's forecast of generating 36-40Mt of agglomerates in 2023. This validates that despite licensing challenges for fine ore expansion, agglomerates (which command higher premiums) are registering improvements.

**Bullish on production, bearish on costs.** Although our projections indicate a gain in dilution power in 2H23 due to the natural advent of seasonality, we do not believe that Vale will be able to adhere to the C1 guidance of US\$20-21/t, due to the unforeseen events that occurred during 1Q23, and which in addition to having an effect on 2Q23, should reflect negatively on C1 when they are sold throughout 2H23. For us, it will be very challenging for Vale to meet this cost target for the year.

As for production, it is a different story. We like the ramp-up of both fine ores and pellets that was delivered in 1H23, causing our previous estimates for annual production to be exceeded in case of no news. We had already been beating the drum that Vale is showing positive signs for 2023 in this specific regard, and the numbers released yesterday confirm our bias, which was generally slightly above consensus.

We again comment that it seems to us that a relevant portion of the market is placing expectations of a weaker operational performance for Vale than in fact is being realized by the Company so far. Without a doubt, we do not deny that the effects of the obstruction of activities at the Ponta da Madeira terminal that occurred last quarter will have consequences for Vale by the end of the year, especially with regard to costs. However, production continues to surprise positively. Even with expectations slightly above consensus, Vale exceeded our production estimates in 2Q23, a fact that also occurred last quarter. Thus, we revise our model assumptions to a 23E production volume of 320Mt Genial Est., reflecting an increase of +2% vs. our previous expectation.

**A little more micro, with a little less macro.** We continue to see Vale at a good entry point, given that **(i)** the sale of 10% of the Base Metals unit would result in the ferrous part of the Company trading at an **EV/EBITDA 23E multiple of 3.55x** vs. a historical average of **4.84x**, according to (still unofficial) data from the deal with the Saudi Arabian public investment fund; **(ii)** its **extensive share buyback program** has generated a quite shareholder adding value, by repurchasing ~16% of total shares in the last 3 years, and **(iii)** a cumulative **dividend yield** in the same period of ~50% of its current market value, with an expectation of an **additional 9.2% in 2023E** that we project **to still be paid**.

It is undeniable that the collapse of Vale's share price, in addition to being linked to the consequences of a shorter operation in the Ponta da Madeira terminal last quarter, also occurred (and still occurs) due to macroeconomic issues involving China. And for us, **especially regarding the Chinese real estate market, investors will have to be content with lower growth from now on**. We are assuming that a slower growth in the sector will be the "new normal", so mining stocks cannot be so much at the mercy of the news flow linked to this specific segment of the Chinese economy, as there are other positive dynamics, often linked to the micro and not the macro.

Although we must admit that it is difficult to look at a commodity company and try to partially abstract the macro scenario, the case of Vale's valuation level at the stage it is today seems different to us and deserves special attention from the investors. We have demonstrated in successive analyses, either of sensitivities in variables in our model, or through multiples, that led us to the conclusion that the Company is trading at a great discount.



Regarding the sensitivity analysis we performed, we purposely forced a pessimistic scenario in variables such as **(i)** exchange rate (BRL/USD), **(ii)** iron ore price, **(iii)** premiums in relation to the reference curve, **(iv)** production ramp-ups of fines, pellets and base metals. Even in the face of numbers that seemed completely out of reality in these four categories, our model for Vale still generated upside relative to the current trading price. This analysis can be found in the chapter on Vale in the attached report ([Metals & Mining: Has the Bearish Scenario been fully priced in?](#)) It is natural that the pessimism about the macro scenario brings a question mark to the investor and opens gaps for short movements on the stocks, as we commented in the sector report already published. But still, we assess that the ideal time to form a long position, especially considering the cyclical environment, occurs when the Company is discounted, and not when the commodity curve has already appreciated, and the price asymmetry has been eliminated.

Seeing this asymmetry at a level that compensates the risk, considering the other adding-ups, such as dividend yield and responsibility in capital allocation, we maintain our **BUY rating**. As we are more optimistic about production for 2023, which will improve the product mix brought by the start of operation of the Torto dam in Brucutu, the update of our assumptions led to a small increase in the **12M Target Price** to **US\$17.00** vs. US\$16.75 previously, for the **NYSE ADRs**. However, as a result of an **appreciating BRL/USD effect** during the last couple of days, this gain was eliminated for **VALE-B3**, which continues with a **Target Price** of **R\$83.00**, leading to an **upside of +23.11%**.

## Appendix: Vale

**Figure 1. Vale – Income Statement in US\$ Millions (Genial Est. 2023-2028)**

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
<b>Net Revenue</b>	<b>40.885</b>	<b>40.844</b>	<b>43.056</b>	<b>44.702</b>	<b>45.003</b>	<b>45.386</b>
(-) COGS	(24.092)	(26.242)	(28.083)	(30.299)	(31.936)	(33.536)
<b>Gross profit</b>	<b>16.793</b>	<b>14.602</b>	<b>14.972</b>	<b>14.403</b>	<b>13.067</b>	<b>11.851</b>
(-) Expenses	(3.816)	(4.305)	(3.112)	(3.194)	(2.758)	(2.685)
<b>Adjusted EBIT</b>	<b>12.977</b>	<b>10.297</b>	<b>11.860</b>	<b>11.209</b>	<b>10.310</b>	<b>9.165</b>
(+/-) Financial Result	(1.838)	(1.683)	(1.594)	(1.430)	(1.426)	(1.116)
(-) Taxes	(551)	(244)	(352)	(299)	(214)	(136)
<b>Net income</b>	<b>10.588</b>	<b>8.370</b>	<b>9.914</b>	<b>9.480</b>	<b>8.670</b>	<b>7.913</b>
<b>Profitability</b>						
Net margin (%)	25,90%	20,49%	23,03%	21,21%	19,26%	17,44%

**Figure 2. Vale– Cash Flow in US\$ Million (Genial Est. 2023-2028)**

Cash Flow	2023E	2024E	2025E	2026E	2027E	2028E
<b>Net Revenue</b>	<b>40.885</b>	<b>40.844</b>	<b>43.056</b>	<b>44.702</b>	<b>45.003</b>	<b>45.386</b>
(-) COGS	(24.092)	(26.242)	(28.083)	(30.299)	(31.936)	(33.536)
<b>Adjusted EBITDA</b>	<b>16.386</b>	<b>13.864</b>	<b>15.571</b>	<b>15.066</b>	<b>14.310</b>	<b>13.299</b>
<b>EBIT</b>	<b>12.977</b>	<b>10.297</b>	<b>11.860</b>	<b>11.209</b>	<b>10.310</b>	<b>9.165</b>
(-) Taxes	(551)	(244)	(352)	(299)	(214)	(136)
(+/-) Provisios and dams	786	(589)	394	(61)	371	197
(+) D&A	3.409	3.567	3.711	3.856	4.000	4.134
(+/-) Δ WK	(1.064)	(234)	635	(295)	(54)	(114)
(-) Capex	(5.878)	(6.020)	(6.173)	(6.217)	(6.217)	(6.217)
<b>FCFF</b>	<b>9.679</b>	<b>6.777</b>	<b>10.075</b>	<b>8.194</b>	<b>8.197</b>	<b>7.029</b>

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<b>under Review</b>	Under review	<b>5%</b>

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