VALE

4Q23 Operational Preview: To stock or not to stockpile?

LatAm Metals & Mining

Analysts

Igor Guedes
+55 (11) 3206-8286
igor.guedes@genial.com.vc

Lucas Bonventi
+55 (11) 3206-8244
lucas.bonventi@genial.com.vc

Rafael Chamadoira
+55 (11) 3206-1457
rafael.chamadoira@genial.com.vc

Company

VALE US Equity
Buy

Price: US$ 14.17 (26-Jan-2024)
Target Price 12M: US$ 16.75 (NYSE)

VALE3 BZ Equity
Target Price 12M: R$ 82.50 (B3)

Main takeaways:

(i) We expect fines production to fall slightly q/q due to the seasonal effect and rise by +3% y/y; **(ii)** We are targeting the middle of the guidance of 310-320Mt, as announced at Investor Day in December; **(iii)** Continuation of the ramp-up of pellet production to ~10Mt Genial Est. (+11.8% q/q), with finally the expected effect on sales to reach ~11Mt Genial Est. (+25.9% q/q); **(iv)** We anticipate an increase in production q/q for base metals, but expect it to diverge y/y; **(v)** Pace of de-stocking in fines should slow down in 4Q23, in line with what we commented back in September. The remaining volume that was not destocked in 3Q23 over the Ponta da Madeira event could be used to replenish operating inventory that has been lagging since 2021-2022; **(vi)** However, we suspect an additional reason. We believe that the Company stopped reducing the inventory formed in 1Q23 because the **market is not paying the right premium for quality iron ore**; **(vii)** Considering these factors, we are projecting 80.7Mt Genial Est. of fines shipments, representing a rise of +15.8% q/q, but stability of -0.6% y/y; **(viii)** The price of the 62% Fe curve will play a fundamental role in realization, but the dynamics of premiums for fines are very weak; **(ix)** Contractual premiums are worse for pellets, losing strength to the spread of the 65% Fe reference; **(x)** Nickel price following a curve with a sharp downward trend, Copper should remain stable; **(xi)** Trading at **3.95x EV/EBITDA 24E**, we reiterate our **BUY rating**, with a **12M Target Price** of **R$82.50** for **VALE3-B3** and **US$16.75** for **ADRs-NYSE**. This represents an **upside** of **+18.71%**.

Vale will release its **4Q23 production and sales report** today**, January 29th of 2024, after the market closes**. In general terms, we expect **satisfactory production**, with an increase of +3% y/y for iron ore fines, despite the estimated deceleration of -3.4% y/y, due to the seasonal effect naturally linked to the rains, as we explore further throughout the report. We believe that Vale will have no trouble **reaching 315Mt of production**, staying within the guidance of 310-320Mt. Going more into price, the 62% Fe curve should be a major highlight of Vale's result, making up a **very favorable price dynamic** to mark **attractive revenue in 4Q23** (we are projecting US$13.4bn, up +26% q/q and +12% y/y). Although the quality premium for fines is also at very low levels, as the price for 62% Fe has risen significantly, to an average of US$128/t (+12.6% q/q), **we estimate that Vale's realized price for fine iron ore will be close to US$115** (+9.6% q/q; +20.4% y/y).

Table1. Operational Summary (4Q23 Genial Est.)

(Thousand Tonnes - kt)	Genial Est.				
Summary	**4Q23E**	**3Q23A**	**% q/q**	**4Q22A**	**% y/y**
Iron Ore Production	83.312	86.238	**-3,4%**	80.852	**3,0%**
Iron Ore Fines Shipments	80.747	69.714	**15,8%**	81.202	**-0,6%**
Pellets Production	10.260	9.175	**11,8%**	8.261	**24,2%**
Pellets Shipments	10.845	8.613	**25,9%**	8.789	**23,4%**

Source: Genial Investimentos, Vale

For pellets, the ramp-up of the Brucutu (MG) mine, after the commissioning of the Torto dam took place at the beginning of last quarter, should help bring more production... and this time, more sales (something we didn't see in 3Q23). Despite the more favorable volume for agglomerates, the premium on the 65% Fe vs. 62% Fe curve is getting squeezed, solidifying in numbers what we've been saying for some time: The steel market seems to have more appetite for low grade and little interest in higher quality at the moment.

Aligned with **basically flat y/y shipments in fines** and a **substantial improvement in pellet sales**, volume should bring **C1/t down** to within guidance, at US$22.4/t annual basis (excluding third-party purchases), supported by our model, marking the estimate of US$21.7/t in 4Q23 (including third-party purchases). This projection may be revised, subject to our publication after the production and sales report is released.

As for base metals, the situation remains challenging for nickel pricing, due to oversupply from Indonesia. In the case of copper, we expect stability.

Operational Preview 4Q23: Production and sales

We expect fines production to fall slightly q/q due to the seasonal effect and rise by +3% y/y. After a strong production quarter in 3Q23, our estimate is for iron ore production to downtrend marginally q/q in 4Q23. Considering that 3Qs are the best quarters for production, due to the seasonal effect of less rainfall, the arrival of warmer temperatures in the middle of 4Qs usually brings the start of the torrential rain season, which lasts until March of the following year.

As a result, a slight q/q reduction in i.o. fines production is expected. However, if we look at the dynamics on an annual basis, we believe that Vale tends to have a very favorable 4Q23 compared to the same period in 2022, mainly due to the ramp-up of the S11D mine, which has prospects of more than offsetting the depletion of the Serra Norte complex. Our estimate is that the reported figure will be 83.3Mt Genial Est. (-3.4% q/q; +3.0% y/y).

We are aiming for the middle of the 310-320Mt guidance, as announced at the Investor Day in December. During the event held by Vale in London (UK), the company have announced to analysts its projections for the closed year 2023, as well as updates for 2024, 2026 and 2030+ (2025 was not disclosed). Considering that the event took place on December 5th, with more than 2/3 of 4Q23 having already been completed, we believe that the reliability of the data presented for 2023 is quite high, so that the ~315Mt showcased at the time for iron ore fines production seems quite feasible to us.

After conversations we've had with Vale over the last few days, our impression is that the 315Mt figure could even be exceeded. This suggestion is supported by data from the Foreign Trade Brazilian Bureau (SECEX), released in the first week of January for the month of December, indicating a high volume of exports, which could lead to a better primary production condition than we are estimating. Even so, we prefer to adopt a more conservative tone, and project 4Q23 with a slight sequential reduction due to the typical seasonal effect, which would take the year-to-date figure exactly to 315Mt, marking growth of +2.4% y/y, in line with the middle of the guidance of 310-320Mt.

Table2. Production Summary Vale (4Q23 Genial Est.)

Production Summary (Kt)	4Q23E Genial Est.	3Q23 Reported	% q/q	4Q22 Reported	% y/y
Iron Ore[1]	83.312	86.239	-3,4%	80.852	3,0%
Pellets	10.260	9.175	11,8%	8.261	24,2%
Nickel	45	42,1	6,2%	47,3	-5,5%
Copper	96	81,6	18,1%	66,3	45,4%

[1] Including third-party purchases, run-of-mine and feed of other pelletization plants.

Source: Genial Investimentos, Vale

Continued ramp-up of pellet production. The commissioning of the Torto dam in Brucutu (MG) was completed in July, and part of the increase in production was already seen in 3Q23. However, due to the logistical gap involving the arrival of iron ore at the pelletizing plant yard, we believe that the significant increase in pellet sales volume may come with a delay now in 4Q23, along with the continuation of the production ramp-up. We therefore project the gradual upward movement in pellet production after the start-up of the Torto dam, in a low double-digit sequential increase for pellets produced, with a projection of ~10Mt Genial Est. (+11.8% q/q; +24.2% y/y) in 4Q23, to reach the number passed on Investor Day, of ~37Mt in 2023, within the guidance of 36-40Mt.

Finally, the expected effect of pellet sales. In line with the reasoning behind pellet production, we expect to see an increase in the shipments volume of agglomerates, also caused by the logistical delay in the arrival of iron ore at the pelletizing plant yard, at the Tubarão (ES) terminal. Our estimate points to an increase in pellet sales in 4Q23 that will be quite more significant. We therefore project shipments of ~11Mt Genial Est. (+25.9% q/q; +23.4% y/y).

We anticipate an increase in production q/q for basic metals, but expect them to diverge y/y. Although they follow opposite vectors in the y/y, we expect growth on a sequential basis due to the ramp-up of capacity expansion projects at the Salobo mines, especially the Salobo III project, which aims to reach a total capacity of 36Mtpa in 4Q24. Our expectation is that in 4Q23, the company will achieve nickel production of 45Kt Genial Est. (+6.2% q/q; -5.5% y/y), and copper production of 96Kt Genial Est. (+18.1% q/q; +45.4% y/y).

The pace of de-stocking in fines should slow down in 4Q23, in line with what we said back in September. The year 2023 can be considered atypical for Vale for several reasons. In addition to the macro factors that kept investors away from the stock, with uncertainties related to China, from a micro point of view, the logistical setback caused by damage to the port structure at the Ponta da Madeira (MA) terminal wreaked havoc on the company's figures during 1H23. Even after the normalization of shipments at the Ponta da Madeira terminal, we told investors in one of our sector reports, within the Vale chapter, in the version published in September and attached below (Metals & Mining: An x-ray of the fractured Chinese real estate market), of our view that it was unlikely that the disparity between production and sales of fine products formed in 1Q23 (25% vs. 18% of the historical average) would be completely reversed by the end of the year. At the time, we expected Vale to use the Ponta da Madeira eventuality to reinforce part of its inventories.

Our estimates suggested that the company would begin to deplete part of its inventories in 3Q23, which is what actually happened. However, the full reversal was not foreseen in our model for 2H23. At the time, these developments resulted in a reduction of our Target Price by -US$0.25, totaling R$83.00 for VALE3 and US$17.00 for the ADRs. Given the increase in freight costs and the downward revision of the copper guidance, we have priced in a further cut of -US$0.25 in October, resulting in our current 12M Target Price of R$82.50 (US$16.75 for the ADRs).

Even though Vale's argument for increasing the pace of destocking in 3Q23 was that the price of iron ore had risen again in 2H23, ensuring better market conditions for the shipment process, in our most recent conversation with the company, Vale demonstrated its intention to slow down destocking in 4Q23. Although the explanation was that Vale needs to build up operating inventory again, we believe there may be an additional reason (we'll explain this later on the report).

Vale's justification for not continuing the strong pace of destocking seen in 3Q23 is linked to the quantity needed for healthier management in Brazil's ports, as well as the accumulation of volume to be retained in China's ports, enabling the blending process to maximize value by mixing products of different qualities, done close to where customers are located (Chinese steel mills). In 2023, Vale seems to have concentrated ~13Mt in China's ports in volumes that were not counted as shipments (because they were not sold). This figure implies an account of 18-19Mt of fine iron ore production, considering the natural gap formed post-production.

What creates the difference between production and sales? The gap between production and sales is linked to 3 factors. **(i)** In order to produce 1t of pellets, 1.1t of fines must be produced first. In other words, there is a loss of 0.1t for every 1t of pellet in the sintering process. This helps explain part of the difference we see between production and sales in Vale's historical figures. Another point is related to (ii) the higher humidity in extraction vs. the loss of mass in the reduction of humidity throughout the logistics process or subsequent storage. In addition, there is **(iii)** the inventory in transit (non-operational), where part of the production is inside the vessels, but has not yet arrived at the port of destination, so not counting sales but already being within the production figures.

If we consider these three factors and sketch an example where annual production is between 300-310Mt of fine iron ore, there is a natural difference between production and sales of 12-15Mt, without generating any operational inventory. We found that in 2022 and 2021, the gap was ~6Mt in both years, less than half of what it should be. This shows that Vale would have consumed operating inventory to make sales. The price was extremely favorable at the time, with the 62% Fe benchmark surpassing the US$200/t barrier, which would have encouraged the burning of operating inventory.

Why would Vale have decided not to destock 100% of the accumulated 1Q23? According to information gathered through our conversations with Vale, the remaining volume that was not destocked in 3Q23 from the Ponta da Madeira event in 1Q23 could be used to replenish this operating inventory, which has been out of date since 2021-2022, as quoted above. In other words, investors should lower their hopes of a strong sales volume (higher than normal for a 4Q).

We know that some expected a continuation of last quarter movement, with 4Q23 also reducing the historical gap between production vs. sales. However, what we are projecting for 4Q23 is a difference of ~3% between the two volume variables. It should be remembered that due to point (iii) mentioned above, as the 3Qs are the best quarters for production, the inventory in transit ends up causing the gap between production and sales in the 4Qs to be historically reversed, with a ratio between the two volume variables that has sometimes exceeded 100% in this period of the year, if we look at the last 10 years. This means that if there was a stronger destocking in 4Q23, as there was in 3Q23, the ratio between production and sales for the quarter would have to be close to the 104-106% range. But... our estimate is only 97% (100% - 3%).

Table1. Shipments Summary Vale (4Q23 Genial Est.)

Shipments Summary (Kt)	4Q23E Genial Est.	3Q23 Reported	% q/q	4Q22 Reported	% y/y
Iron ore fines	80.747	69.714	15,8%	81.202	-0,6%
Pellets	10.845	8.613	25,9%	8.789	23,4%
ROM	1.963	2.232	-12,1%	1.963	0,0%
Nickel	44,6	39,2	13,8%	58,0	-23,1%
Copper	96,6	73,8	30,8%	72,0	34,1%

[1] Including third-party purchases

Source: Genial Investimentos, Vale

So, what can we expect for sales in 4Q23? We are projecting 80.7Mt Genial Est. of shipments of i.o. fines, representing an increase of +15.8% q/q, but stability on annual basis (-0.6% y/y). Although the argument quoted by Vale in our last meeting makes a lot of sense, we still have another point to throw on the table: the low premium being paid for fines quality above 62% Fe.

We believe that if the premium for Carajás quality were being better absorbed under current market conditions, with benchmark 62% Fe iron ore at ~US$130/t, and with average prices above US$125/t in 4Q23, Vale would have continued to destock the stockpile from the Ponta da Madeira event, even with the lowest operating inventory level since 2021. However, we know that the market has no appetite for high grade iron ore, and since the volume that is shipped through the Ponta da Madeira terminal comes from Carajás, with higher quality than the 62% Fe benchmark, our interpretation is that Vale wants to hold on to inventory because it believes that the market is not paying the appropriate premium for quality. When the appetite for low grade decreases and the premium for quality in iron ore fines returns to more normalized levels, our analysis suggests that this quantity could be shipped.

For the company's other products, the trend should be equivalent to the respective projections for the production of each commodity, with nickel at 44.6kt (+13.8% q/q; -23.1% y/y) and copper 96.6kt (+30.8% q/q; +34.1% y/y).

Price of the 62% Fe curve will play a key role in realization, but premium dynamics for fines are very weak. Closing 4Q23 with an average for 62% Fe iron ore at US$128/t vs. US$114/t in 3Q23, with a strong increase of +12.6% q/q, Vale's price realization in the quarter should show a significant advance sequentially. In addition to the average of the curve, the forward price provisioning part will also play an important role in the composition, considering that the iron ore price continued to rise in the very first days of 2024, topping out at +US$140/t.

Even though after the first week of January the price of the commodity started to fall back, as the first days of 1Q24 were marked by a rise, the forward pricing system will already help with price realization for 4Q23. In our model, the forward has ~40% weight in the pricing system.

That said, we arrived at a projection of US$115.1/t Genial Est. (+9.6% q/q; +20.4% y/y), a figure which we consider to be extremely solid for pointing to 4Q23 as a quarter of good financial performance for Vale. Even so, as we commented above, the price dynamics for premiums on iron ore fines are anemic. It was even negative during some parts of 4Q23. We are disregarding any premium value in fines for 4Q23.

Contract premiums are worse for pellets, losing strength to the 65% Fe reference spread. Following the market trend of a greater appetite for low grade iron ore, the higher quality product is currently in weak demand and not highly valued. This means that the spread on the price curve for the 65% Fe benchmark vs. the 62% Fe benchmark is increasingly losing strength, standing at ~US$14/t (-14.4% q/q) in 4Q23. As if that weren't enough, Vale is also finding it difficult to negotiate premiums for agglomerated products on top of the 65% Fe curve in this tighter demand market.

Although the 65% Fe price curve also steepened in 4Q23, the upward movement was less intense than that observed in the 62% Fe benchmark. While one accelerated by +12.6% q/q, the other saw a less significant rise of +8.7% q/q. The practical effect of this is to shorten the difference between the price of higher quality iron ore and average quality. The fact is that the steel market today (especially in China) doesn't want to buy quality... And that's bad news for Vale because that's where it differentiates itself most from its peers.

We estimate a premium for pellets, based on the 65% Fe curve, clocking in at US$18.5 (vs. ~US$30 in 3Q23). We therefore project a realized price for pellets in 4Q23 of US$161.1/t Genial Est. (-0.1% q/q; -2.7% y/y), reflecting the difficulty of achieving a fairer price for a product with superior quality.

Nickel price to follow steep downward trend, copper to remain stable. We believe that the price of nickel should follow the sequential decline observed during the year and, therefore, we project a significant impact for the last quarter, reaching ~US$19,500/t Genial Est. (vs. US$21,200/t in 3Q23; -8.1% q/q; -7.9% y/y). As for copper, we estimate a marginal increase in price, reaching ~US$7,700/t Genial Est. (+0.5% q/q; -12% y/y), which can be considered a stabilization in relation to 3Q23.

Table 3. Income Statement Vale (3Q23 Genial Est.)

(US$ millions)	4Q23E Genial Est.	3Q23 Reported	% q/q	4Q22 Reported	% y/y
Net Revenue	**13.410**	**10.610**	**26,4%**	**11.963**	**12,1%**
COGS	(6.455)	(6.243)	3,4%	(7.155)	-9,8%
Proforma EBITDA	**7.248**	**4.490**	**61,4%**	**5.024**	**44,3%**
EBITDA Margin (%)	54,0%	42,3%	11,73p.p	42,0%	12,05p.p
Adjusted EBIT	**5.613**	**3.405**	**64,9%**	**3.749**	**49,7%**
EBIT Margin (%)	41,9%	32,1%	9,77p.p	31,3%	10,52p.p
D&A	(884)	(780)	13,4%	(900)	-1,7%
Financial Result	(918)	(421)	118,0%	(658)	39,5%
Net Income	**4.296**	**2.876**	**49,4%**	**3.747**	**14,7%**
Net Margin (%)	32,0%	27,1%	4,94p.p	31,3%	0,72p.p

Source: Genial Investimentos, Vale

Our Take on Vale

To stock or not to stockpile, that is the question. Our takeaway from the report is the destocking rate for fines, which we believe will slow down in 4Q23. Despite having increased sales in 3Q23, reducing the pile of stock formed in the Ponta da Madeira event, we believe it is unlikely that the disparity between production and sales of fines found in 1Q23 will be fully reversed by the end of the year, as we have previously projected since September (we believe we have been reporting this ahead of consensus). As a result, our Target Price decreased -US$0.25 at the time, in a report published almost 4 months ago.

Vale has shown an intention to reduce the pace of destocking in 4Q23, associating it with the need to rebuild operating inventories. However, we suspect an additional reason. Although we see full merit in the storytelling told by Vale when it mentions the years 2021-22 as the rationale for inventory burn and the eventual need for replacement, as we have shown throughout the report, we still believe that the company stopped reducing the inventory formed in 1Q23 because the market is not paying the right premium for quality iron ore. When the premium for quality ore returns to its usual levels, we will have reason to suspect that the quantity will be shipped, regardless of the level of operating inventory.

We expect a strong performance. For 4Q23, given the figures we have presented here in this report on production estimates, shipments and prices, we project revenues of US$13.4bn (+26.4% q/q; +21.1% y/y), EBITDA of US$7.2bn (+61.4% q/q; +44.3% y/y) and Net Income of US$4.2bn (+49.4% q/q; +14.7% y/y), very robust growth figures. We stress that our estimate will be updated as we publish the review report on production and sales, following today's announcement by Vale.

Even with the outlook for weak premiums, Vale's case seems discounted to us. The big issue involving Vale is related to the iron ore gap implicit in the company's valuation. The price of 62% Fe iron ore rose +20% from mid-October to its peak in the first days of January, hitting the US$140/t barrier.

Vale's shares appreciated very close to this figure during this time window. However, in the subsequent 20 days of January, the iron ore price suffered a loss of -11%, in line with what we expected, as can be seen in this sector report published in December, in the chapter "So where does the iron ore price go?" (Metals & Mining: A deep dive into the Chinese government's upcoming stimulus). With the fall trend in iron ore prices, Vale also saw its shares plummet at the start of the year.

In the attached report, we argue that, as much as we expect the economic situation in China to be a little better in 2024 than it was in 2023, the price of iron ore was too high at the end of last year. Even if we consider the low level of supply in China's ports to be one of the major catalysts for iron ore's upward momentum from 2H23 onwards, on the demand side there is still a overpromise and underdeliver data from the real economy to justify the voracity with which the price curve has risen in recent months.

There are some segments with good outlook for further ahead that we've already mentioned a few times, including automotive, infrastructure and social housing. But demand takes time to appear in the real economy, especially in relation to the ¥1 trillion (~US$240b) package promoted by the People's Bank of China (PoC) for low-standard housing. Even though demand has time to enter the real economy, the price of the commodity always seems to be faster. When demand begins to be considered for an upward movement in the future, the price of iron ore already rises by 20%. **This helps to explain the dichotomy we are seeing.** Iron ore, in its standard reference (62% Fe) at a value +30% above the historical average of the last 10 years, but with the quality premium at such ridiculously low levels. There is a problem with supply, but the price is also being driven by demand, which is yet to come. As a result, quality premiums are wilting, as the steel market has no interest in paying more for quality without demand at the top and with margins under pressure (the cost of metallurgical coal has risen well over much of the year).

On the one hand, this does take away some of the shine that Vale has over its peers. If Vale's big differentiator vs. the Australian mining companies (Rio Tinto and BHP) is the Carajás asset, but the market doesn't want to pay the premium, all that's left is the volume they all have to offer. But here comes another interesting point... Today, none of the players are differentiating themselves by volume. We noticed that none of the majors in the sector (Vale, Rio TInto and BHP) have announced any moves to expand production in 2024, so there is reason to believe that on the supply side, there will still be pressure to bring the 62% Fe curve to attractive levels. As we have already explained, we have an estimated average for 1Q24 of US$120/t (still below the current level of ~US$130/t and well below the ~US$140/t of the first week of January).

How much cash flow can Vale generate even if the price of i.o. 62% Fe drops to US$110-120/t? The answer is... a lot. Vale's **24E FCF** yield with our falling commodity curve is **11%**. Even without the distribution of extraordinary dividends, the **24E Dividend Yield is above 10%**. If they were to be distributed, it would be **close to 14%**, in addition to the option via the share buyback program, which Vale has a habit of doing. To arrive at these figures, we are taking into account the provisioning disbursement in the Cash Flow for the payment of compensation for the Mariana (MG) accident in an amount above the guidance given by Vale.

The point is that before iron ore rose to the level we're seeing, when it was still suffering losses due to the consensus disappointment with China's macro data for 2023, the 62% Fe benchmark reached ~112/t (which isn't even that low, just look at the chart for the last 10 years and you'll see), and Vale's shares were completely submerged in pessimism. There, the price gap between Vale and iron ore began to form. Vale then started trading at a discount (considerable, by the way) to the spot price of 62% Fe. For the company to be fairly priced at close to R$70 (for VALE3-B3), the spot iron ore price would have to be US$75/t in our model, but it is ~US$130/t nowadays. We believe that the gap is very large, giving an interesting margin of safety for the stock at current valuation levels.

We admit that the shares did catch a ride when the price of iron ore accelerated back up, but the gap still remained. It was already formed, so if iron ore rose +20% and Vale's shares had a similar rise, the distance to the implied iron ore price remained intact. When the iron ore price fell -11% this year, Vale fell ~10% YTD. So, the gap is still there…

Even with weak premiums for quality in relation to the benchmark, a 62% Fe curve that sails above US$100/t still makes Vale attractive, especially when it trades below ~US$15 (ADRs-NYSE) and ~US$75 for VALE3-B3. In terms of multiples, today we see Vale trading at **3.95x EV/EBITDA 24E**, which seems to us to be discounted considering of the company's capacity to generate cash flow and pay dividends.

So, there are uncertainties about China. There are also uncertainties on other points (who will take over as CEO and the Mariana compensation agreement, for example). Even so, our assumptions for the Mariana agreement are not optimistic, and already incorporate a potential penalty for Vale in relation to the disbursement of an amount greater than the guidance. Regarding the position of CEO, we believe that the possibility of political intervention is minimal, given Vale's pulverized capital structure. Regarding China, we have a downward curve in iron ore prices. As far as we're concerned, our Vale's model can take a lot of things laying down in its assumptions and even so, it continues to indicate an upside vs. the current market price. We continue with our **BUY rating**, confident in our **12M Target Price** of **R$82.50** for **VALE3-B3** and **US$16.75** for **ADRs-NYSE**. This represents an upside of **+18.71%**.

Appendix: Vale

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

Income Statement	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**42.128**	**43.005**	**43.540**	**43.639**	**43.135**	**44.642**
(-) COGS	(22.548)	(25.218)	(26.388)	(27.587)	(28.752)	(29.890)
Gross Profit	**19.580**	**17.788**	**17.152**	**16.052**	**14.383**	**14.752**
(-) Expenses	(3.330)	(4.586)	(3.465)	(3.527)	(3.025)	(3.002)
Adjusted EBITDA	**18.290**	**16.269**	**16.981**	**15.889**	**14.858**	**15.388**
(-) D&A	(3.099)	(3.227)	(3.392)	(3.549)	(3.698)	(3.840)
EBIT	**15.191**	**13.043**	**13.589**	**12.340**	**11.160**	**11.548**
(+/-) Financial Result	(2.171)	(2.727)	(2.639)	(2.611)	(2.760)	(2.609)
(-) Taxes	(2.373)	(978)	(1.029)	(924)	(801)	(851)
Net income	**10.647**	**9.337**	**9.922**	**8.805**	**7.599**	**8.088**
Profitability						
Net margin (%)	25,27%	21,71%	22,79%	20,18%	17,62%	18,12%

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

Cash Flow (FCFF)	2023E	2024E	2025E	2026E	2027E	2028E
Net Revenue	**42.128**	**43.005**	**43.540**	**43.639**	**43.135**	**44.642**
(-) COGS	(22.548)	(25.218)	(26.388)	(27.587)	(28.752)	(29.890)
Adjusted EBITDA	**18.290**	**16.269**	**16.981**	**15.889**	**14.858**	**15.388**
Adjusted EBIT	**15.191**	**13.043**	**13.589**	**12.340**	**11.160**	**11.548**
(-) Taxes	(2.373)	(978)	(1.029)	(924)	(801)	(851)
(+) D&A	3.099	3.227	3.392	3.549	3.698	3.840
(+/-) Δ WK	(440)	(1.229)	690	(553)	-177	(113)
(-) Capex	(5.928)	(6.500)	(6.500)	(6.500)	(6.500)	(6.500)
FCFF	**9.550**	**7.562**	**10.143**	**7.912**	**7.380**	**7.924**

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