Vale’s Performance in 2Q19

Rio de Janeiro, August 1st, 2019
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1. Opening remarks
2. Highlights of Vale’s performance in 2Q19
3. Capital Allocation
4. Business segment performance
Opening remarks
Eduardo Bartolomeo, Chief Executive Officer, commented: "As we progress towards full and effective reparation, 2Q19 has been a transitional quarter for the business, with the Brumadinho dam rupture still impacting volumes, costs and expenses, however our response started to bear fruit to ensure the safety of people and of the company’s operations, as well as to reduce uncertainties and to deliver sustainable results through the supply of a high-quality product portfolio, which will already be reflected in the next quarter."

Vale is committed to repairing damages

People

• We established an agreement with the Public Ministry of Labor of Minas Gerais for the quick and fair indemnification of families of workers deceased.

• In 2Q19, around US$ 200 million was paid in legal agreements, as well as financial contributions to Brumadinho, municipalities and public entities of Minas Gerais.

Environment

• The Ferro-Carvão stream water treatment station is operating (picture).

Infrastructure

• Around 700 km of roads in the region will be maintained and improved. The new Alberto Flores bridge is concluded.
Our safety and risk management has been strengthened

• New Safety and Operational Excellence Executive Director, acting **independently** with direct report to the CEO.

• **Decharacterization of 2 dams** in the first half of 2020 - Fernandinho and 8B.

• The **emergency level was reduced** for the Vargem Grande dam.

• The Geotechnical **Monitoring** Center works **24 hours** a day (picture).

• Investments in video surveillance systems, radars, drones and satellite tracking are accelerating.
We move forward with our strategic pillars

Maximize flight to quality in Iron Ore

- Resumption of the Brucutu mine operation and part of the dry processing production in Vargem Grande.

Discipline in capital allocation

- Our cash generation enabled the resumption of our debt reduction path and strengthened our balance sheet.

Base Metals transformation

- We expect to achieve the first consistent results in Base Metals transformation starting from 4Q19.

New Pact with society

- Our actions must reflect our New Pact with Society. We want to restore society's confidence in our ability to operate with safety while creating shared value.

Safety and Operational Excellence

- The new Safety and Operational Excellence Department, acting independently, strengthens our strategic pillar and our safety and risk management governance.

Vale Day 2018  New Pillars
We move towards greater reliability

Reduction of uncertainties is ongoing

- Better safety and risk management
- Resuming production
- Increased predictability of expenses with Brumadinho

Capital allocation

- Strengthen our balance sheet further
Highlights of Vale’s performance in 2Q19
Progress was made in 2Q19 for reducing uncertainties

Production volumes

Mt

<table>
<thead>
<tr>
<th></th>
<th>Mt</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Halted production 1Q19</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Brucutu</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Vargem Grande DP¹ production</td>
<td>12</td>
<td>~ 50</td>
</tr>
<tr>
<td>Currently halted production</td>
<td>~ 50</td>
<td>20 ~ 30</td>
</tr>
<tr>
<td>Expected DP¹ to be resumed starting by the end of 2019</td>
<td>20</td>
<td>~ 30</td>
</tr>
<tr>
<td>To be recovered in 2-3 years</td>
<td>~ 30</td>
<td></td>
</tr>
</tbody>
</table>

Provisions for all categories of Brumadinho

Total provision of **US$ 1.374 billion** recorded in 2Q19

(i) **US$ 1.190 billion** related to **environmental** measures and related agreements

(ii) **US$ 98 million** related to the **decommissioning** or de-characterization of other small structures not considered in 1Q19

(iii) **US$ 86 million** revision of the provision related to the **Framework Agreements**, including the compensation for collective moral damages, which is part of the terms and conditions set in the **agreement** recently signed with the **Public Ministry of Labor** (Ministério Público do Trabalho – MPT)

¹ Dry Processing
EBITDA proforma increased in 2Q19 due to higher prices and higher Ferrous sales volumes

US$ millions

<table>
<thead>
<tr>
<th>Proforma 1Q19 EBITDA¹</th>
<th>Increase in Brumadinho lost sales²</th>
<th>Increase in Brumadinho stoppage expenses³</th>
<th>Prices</th>
<th>Ferrous offset volumes⁴</th>
<th>Others</th>
<th>Proforma 2Q19 EBITDA¹</th>
<th>Provisions and reparation expenses of Brumadinho⁵</th>
<th>EBITDA 2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,101</td>
<td>644</td>
<td>204</td>
<td>822</td>
<td>742</td>
<td>187</td>
<td>4,630</td>
<td>1,532</td>
<td>3,098</td>
</tr>
</tbody>
</table>

¹ Net of Brumadinho provisions.
² Difference between effects of 1Q19 (US$ 290 million) and 2Q19 (US$ 934 million).
³ Difference between effects of 1Q19 (US$ 160 million) and 2Q19 (US$ 364 million). 2Q19 expenses are related to operations stoppages (US$ 238 million) and extraordinary logistics expenses (US$ 126 million).
⁴ Iron ore and pellets sales volumes excluding volume losses in Brumadinho.
⁵ Out of which US$ 1.374 billion are related to provisions and US$ 158 million to ongoing reparation expenses.
FCF in 2Q19 was driven by higher prices and by the impact of higher sales volumes on revenues and costs

US$ million

- EBITDA 2Q19: 3,098
- Provisions, non-cash¹: 1,093
- Working capital: 87
- Interest on loans: 237
- Income taxes & Refis settlement program: 359
- Capex: 730
- Brumadinho expenses: 222
- Others²: 335
- Free cash flow from operations: 2,221
- Debt repayment and others³: 1,181
- Free cash flow: 1,040

¹ Includes US$ 1.374 billion of provisions related to Brumadinho and US$ 281 million of provision reversal of contingencies not related to Brumadinho.
² Includes derivatives, Samarco, dividends and interest on capital paid to noncontrolling interest and others.
³ Includes US$ 1.3 billion of net debt repayment and US$ 0.1 billion release of frozen funds up to June 30th, 2019.
3

Capital allocation
Cash generation in the quarter enabled to resume the trajectory of debt reduction reaching US$ 9.7 billion in 2Q19

**Net debt / LTM$^1$ EBITDA Ratio**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Net debt / LTM EBITDA Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Q18</td>
<td>0.7</td>
</tr>
<tr>
<td>3Q18</td>
<td>0.7</td>
</tr>
<tr>
<td>4Q18</td>
<td>0.6</td>
</tr>
<tr>
<td>1Q19</td>
<td>1.0</td>
</tr>
<tr>
<td>2Q19</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Net debt in 2Q19: US$ 9.726 billion

Average maturity: 8.4 years

Average cost of debt: 4.96% per annum

As a result of recent court decisions and agreements, R$ 5 billion that were frozen were replaced by other financial guarantees and R$ 1.6 billion were released, leading to a proforma net debt of US$ 8.0 billion

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$^1$ LTM – last twelve months
Recent decisions authorized Vale to replace the R$ 5 billion that were frozen by other financial guarantees and to release R$ 1.6 billion.
Gross debt reduced by US$ 1.3 billion as a result of net debt repayments of US$ 1.3 billion primarily related to new credit lines raised in 1Q19.

Gross debt

US$ billion

<table>
<thead>
<tr>
<th></th>
<th>4Q18</th>
<th>1Q19</th>
<th>2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross debt</td>
<td>15.466</td>
<td>17.051</td>
<td>15.790</td>
</tr>
</tbody>
</table>

Gross debt amortization schedule\(^1\)

US$ billion

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023 onwards</th>
<th>Gross debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amortization</td>
<td>0.4</td>
<td>1.2</td>
<td>1.2</td>
<td>2.5</td>
<td>10.2</td>
<td>15.6</td>
</tr>
</tbody>
</table>

65% of our debt settlement will occur after 2023

\(^1\) As of June 30th, 2019. Does not include accrued charges.
Business segment performance
Ferrous Minerals EBITDA was higher than 1Q19 despite the impacts of abnormal rains and events following the Brumadinho dam rupture.

US$ million

<table>
<thead>
<tr>
<th>EBITDA 1Q19</th>
<th>Increase in Brumadinho lost sales¹</th>
<th>Increase in Brumadinho stoppage expenses²</th>
<th>Prices</th>
<th>Ferrous offset volumes³</th>
<th>Unit cash cost</th>
<th>Others</th>
<th>EBITDA 2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,602</td>
<td>644</td>
<td>204</td>
<td>904</td>
<td>742</td>
<td>309</td>
<td>132</td>
<td>4,223</td>
</tr>
</tbody>
</table>

¹ Difference between effects of 1Q19 (US$ 290 million) and 2Q19 (US$ 934 million).
² Difference between effects of 1Q19 (US$ 160 million) and 2Q19 (US$ 364 million). 2Q19 expenses are related to operations stoppages (US$ 238 million) and extraordinary logistics disbursements (US$ 126 million).
³ Iron ore and pellets sales volumes excluding volume losses in Brumadinho.
Vale’s iron ore CFR realized price was US$ 6.7/t higher than the market reference for the 62% Fe content, totaling US$ 106.8/t in 2Q19

US$/t, 2Q19

Impact of pricing system adjustments

1 Adjustment as a result of provisional prices booked in 1Q19 at US$ 85.1/t.
2 Difference between the weighted average of the prices provisionally set at the end of 2Q19 at US$ 109.9/t based on forward curves and US$ 100.1/t from the 2Q19 62% Fe reference price.
3 Vale price is net of taxes.
C1 increased to US$ 17.6/t, but are expected to decrease about US$ 2.5/t in 3Q19

Iron ore fines cash cost

US$/t, 2Q19

The normalized line-up of vessels at the Ponta da Madeira port combined with lower average production costs in May, June and July, will positively impact COGS in 3Q19, which will translate into a decrease of about US$ 2.5/t in iron ore C1 cash costs in 3Q19¹

¹ Considering Exchange rate of BRL 3.85/USD in 3Q19.
Stoppage and extraordinary logistics expenses related to Brumadinho amounted to US$ 5.7/t, but are expected to decrease by US$ 1.5/t in 3Q19.

**Stoppage expenses**

US$/t, 2Q19

Stoppage and extraordinary logistics expenses related to the Brumadinho dam rupture were US$ 3.0/t higher than 1Q19 mainly as a result of:

1. **a full quarter stoppage** during 2Q19 (vs. about 2 months of stoppage in 1Q19)

2. **provision** of clients’ contractual claims and third-party railway take-or-pay contracts (MRS)

Looking forward, **unitary stoppage expenses** may be **reduced** by about US$ 1.5/t in 3Q19 as a result of the restart of Brucutu and Vargem Grande operations and the dilution effect on the expenses of higher volumes.

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1 Considering Exchange rate of BRL 3.85/USD in 3Q19.
EBITDA break-even was still affected by the unfolding of Brumadinho, but it is expected to decrease in 3Q19 following C1 and expenses reductions.

Iron ore and pellets EBITDA break-even

US$/t, 2Q19

1 Ex-ROM
2 Net of depreciation and includes dividends received.
Base Metals EBITDA was impacted mainly by lower copper prices, as well as by lower VNC production resulting in lower fixed costs dilution.

## Base Metals EBITDA

<table>
<thead>
<tr>
<th></th>
<th>US$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Q18</td>
<td>778</td>
</tr>
<tr>
<td>1Q19</td>
<td>505</td>
</tr>
<tr>
<td>2Q19</td>
<td>465</td>
</tr>
</tbody>
</table>

### Highlights 2Q19

Base Metals operations in the North Atlantic achieved solid performance in the mine-mill-smelting activities in 2Q19. In turn, nickel refining activities were affected by scheduled and unscheduled maintenances which also led to lower cobalt, gold, silver and PGMs’ feed reducing overall by-product credits.

In the upcoming quarters, the performance of the North Atlantic mines in 2Q19 shall be reflected in the refineries’ post-maintenance output in 2H19.
Coal Adjusted EBITDA was mainly impacted by lower sales volumes and prices for metallurgical and thermal coal.

**Highlights 2Q19**

2019 has been a challenging year for the Coal business. Despite some initiatives that resulted in a better availability of mine equipment and an increase in tonnage moved, the lower ROM quality and mix gathered during the opening of new mine sections and higher maintenance at processing plants led to the review of the production guidance and the reassessment of mining plans.
Additional information
**Project execution and sustaining capex**

US$ million

- **2Q19 Highlights**

  Investments totaled US$ 730 million in 2Q19, consisting of US$ 130 million in project execution and US$ 600 million in maintenance of operations.

  The Northern System 240 Mtpy project continued to progress with hiring of contractors and the development of detailed engineering, as well as receiving part of the crushers and mobile equipment throughout 2Q19.

  **The Salobo III project concluded the earthworks in the crushing and plant areas**
Iron ore and pellets sales volumes and sales mix composition

Iron ore¹ and pellets sales volumes (Mt)

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>1Q19</th>
<th>2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pellets</td>
<td>13.2</td>
<td>12.3</td>
<td>8.8</td>
</tr>
<tr>
<td>Iron Ore</td>
<td>73.3</td>
<td>55.4</td>
<td>61.9</td>
</tr>
</tbody>
</table>

Iron ore sales product mix (%)

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>1Q19</th>
<th>2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium products²</td>
<td>77%</td>
<td>81%</td>
<td>86%</td>
</tr>
<tr>
<td>Other products³</td>
<td>23%</td>
<td>19%</td>
<td>14%</td>
</tr>
</tbody>
</table>

¹ Iron ore fines including ROM
² Composed by pellets, Carajás, Brazilian Blend Fines (BRBF), pellet feed and Sinter Feed Low Alumina (SFLA)
³ Composed by standard sinter feed, lump and high silica
Iron ore pricing systems

Pricing system breakdown (%)

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>1Q19</th>
<th>2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged</td>
<td>11%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>Current</td>
<td>61%</td>
<td>78%</td>
<td>67%</td>
</tr>
<tr>
<td>Provisional</td>
<td>28%</td>
<td>13%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Impact of pricing mechanisms

<table>
<thead>
<tr>
<th></th>
<th>US$/t</th>
<th>1Q19</th>
<th>2Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisional - prior quarter</td>
<td>4.2</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Lagged</td>
<td></td>
<td>-1.1</td>
<td>-3.0</td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td>-0.1</td>
<td>-1.2</td>
</tr>
<tr>
<td>Provisional - current quarter</td>
<td>0.3</td>
<td>2.1</td>
<td></td>
</tr>
</tbody>
</table>
Nickel premium/discount by product and sales product mix

Nickel sales product mix (%)

- Class I
- Class II battery-suitable
- Class II
- Intermediates

Vale's average aggregate premiums after adjustments

- Class I: 60%
- Class II battery-suitable: 58%
- Class II: 66%

Other timing and pricing adjustments

- Class I: 26%
- Class II battery-suitable: 25%
- Class II: 21%

Vale's average aggregate premiums after adjustments

- Class I: 7%
- Class II battery-suitable: 7%
- Class II: 6%

Sales product mix (%)

- Class I: 619
- Class II battery-suitable: -200
- Intermediates: -70
- Class II: -2,550

Vale's average aggregate premiums (US$/t)

- Class I: 1,090
- Class II battery-suitable: -70
- Intermediates: 519
- Class II: 619

- Other timing and pricing adjustments: 100

2Q18:
- Class I: 60%
- Class II battery-suitable: 26%
- Class II: 7%
- Intermediates: 7%

1Q19:
- Class I: 58%
- Class II battery-suitable: 25%
- Class II: 7%
- Intermediates: 7%

2Q19:
- Class I: 66%
- Class II battery-suitable: 21%
- Class II: 6%
- Intermediates: 7%
Price realization – copper operations

US$/t, 2Q19

- Average LME copper price: 6,113
- Current period price adjustments: 61
- Copper gross realized price: 6,174
- Prior period price adjustments: 409
- Copper realized price before discounts: 5,765
- TC/RCs, penalties, premiums and discounts: 566
- Average copper realized price: 5,199
Price realization – metallurgical coal

US$/t, 2Q19

- Average reference price 2Q19: 203.2
- Portfolio & quality: 14.6
- Premium, discounts & commercial conditions: 1.9
- Provisional prices in prior quarters: -
- Lagged and current prices: 3.8
- Provisional prices in current quarters: 3.8
- Freight differential: -
- Vale price 2Q19: 186.7

Impact of pricing system adjustments
Price realization – thermal coal

US$/t, 2Q19

Average reference price 2Q19: 66.0
Portfolio & quality: 4.6
Premium, discounts & commercial conditions: 0.3
Provisional prices in prior quarters:

Lagged and current prices: 0.4
Provisional prices in current quarters: 2.3
Freight differential: 0.1
Vale price 2Q19: 59.1

Impact of pricing system adjustments
Debt position breakdown

Debt breakdown by instrument (%)

- Development Agencies: 18%
- Capital Markets: 18%
- Bank Loans: 64%

Debt breakdown by currency (after hedge) (%)

- Hedge to USD: 10%
- USD: 18%
- BRL: 18%
- Others: 71%