Vale’s Performance in 2017
Rio de Janeiro, February 28th, 2018
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1. Vale’s performance in 2017
2. Vale’s performance in 4Q17
   a. Highlights
   b. Capital expenditures
   c. Capital structure
Vale’s performance in 2017
Performance highlights in 2017

- **US$ 15.3 bi Total EBITDA** 28%
- **US$ 3.8 bi Capital Expenditures** 26%
- **US$ 330 mi Coal EBITDA** 711%
- **US$ 37.9/t Ferrous Minerals** 24%
- **US$ 8.6 bi Free Cash Flow** 446%
- **US$ 18.1 bi Net Debt** 28%

1 Excluding Manganese and Ferroalloys
EBITDA improved 28% as a result of higher prices, higher premiums and commercial initiatives


- **Market prices**: 1,439
- **Premiums & commercial initiatives**: 725
- **FX**: 409
- **Bunker Oil**: 267
- **Freight**: 215
- **Energy costs**: 299
- **Net of procyclical effects of higher prices in costs**: 1,439

Mainly due to one-off effects of the transition to single furnace in Sudbury and operational issues at Thompson in 1Q17

**EBITDA 2016**: 11,972

**EBITDA 2017**: 15,338

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1 The impact of the increase of market prices (US$ 4.537 billion) is net of impact of the procyclical effects of higher prices in costs (US$ 695 million), as higher commodities prices result in higher pelleting plants' leasing costs, higher royalties, higher costs of feed purchased from third-parties and provision for profit sharing payments to employees.
Ferrous Minerals EBITDA improved as a result of the increase of Platts IODEX and gains in competitiveness


<table>
<thead>
<tr>
<th>Component</th>
<th>EBITDA 2016</th>
<th>IODEX 62% Fe¹</th>
<th>FX</th>
<th>Bunker</th>
<th>Volume</th>
<th>Premiums &amp; commercial initiatives</th>
<th>Freight &amp; distribution costs</th>
<th>Unit costs</th>
<th>Others</th>
<th>EBITDA 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA 2016</td>
<td>10,476</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IODEX 62% Fe¹</td>
<td>2,248</td>
<td>556</td>
<td>409</td>
<td>143</td>
<td>1,439</td>
<td>336</td>
<td>94</td>
<td>281</td>
<td></td>
<td>13,192</td>
</tr>
</tbody>
</table>

Gains in competitiveness: US$ 1.433 billion

¹ The impact of the increase of IODEX 62% Fe (US$ 2.943 billion) is net of impact of higher prices in costs (US$ 695 million)
S11D ramp-up and supply chain optimization were key to counterbalance exogenous factors impacts in C1 cash costs.

C1 cash costs, US$/t, 2017 vs. 2016
Vale is as competitive as its Australian peers despite the geographical distance and higher bunker oil prices

EBITDA per ton, US$/t

Vale is as competitive as its Australian peers despite the geographical distance and higher bunker oil prices.

1 Adjusted EBITDA of Ferrous Minerals excluding manganese ore and ferroalloys for Vale’s figures
Source: Financial reports of Vale and Peers; Bloomberg
Base Metals EBITDA increased 16% vs. 2016, as a result of higher prices


2017 Highlights

Costs were impacted in 2017 by the transition to a simpler and more efficient nickel flowsheet in the North Atlantic operations, to deliver stronger results from 2018 onwards.

Vale’s commitment to value over volume is reflected in the nickel business.

In 2017, Vale carried out a detailed review on a mine-by-mine basis, placing in care and maintenance two mines in Canada and one nickel refinery in Taiwan.
Coal EBITDA achieved its first annual positive result since 2010

2017 Highlights

Adjusted EBITDA for the coal shipped through Nacala port reached US$ 410 million in 2017

The increase in EBITDA was mainly due to higher realized prices and the ramp-up of the mine expansion and of the Nacala Logistics Corridor
Capital expenditures reached the lowest level since 2005

Project and sustaining capex
US$ billion

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth Projects</th>
<th>Sustaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>5.5</td>
<td>2.8</td>
</tr>
<tr>
<td>2016</td>
<td>3.2</td>
<td>2.3</td>
</tr>
<tr>
<td>2017</td>
<td>2.2</td>
<td>1.6</td>
</tr>
</tbody>
</table>

2017 Highlights

Capital expenditures in 2017 totaled US$ 3.8 billion decreasing US$ 1.3 billion vs. 2016, mainly due to the conclusion of the S11D mine and plant project.

2017 is also the first year since 2005 where investments in sustaining exceed investments in growth projects.

Capital expenditures guidance of US$ 3.8 billion for 2018, with CLN S11D the only capital project being developed.
Strong cash generated from operations and lower capex led to a remarkable FCF in 2017

US$ million

<table>
<thead>
<tr>
<th>Cash generated from operations</th>
<th>Interests on loans</th>
<th>Income taxes &amp; Refis settlement program</th>
<th>Derivatives</th>
<th>Capex</th>
<th>Net dividends received/paid</th>
<th>Net disposal/acquisition of assets and investments¹</th>
<th>Others²</th>
<th>Free cash flow³</th>
<th>Effect of exchange rate changes on cash and cash equivalents</th>
<th>Debt repayment, net</th>
<th>Dividends paid to shareholders</th>
<th>Increase (decrease) in cash &amp; cash equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,562</td>
<td>1,686</td>
<td>1,051</td>
<td>240</td>
<td>3,848</td>
<td>101</td>
<td>846</td>
<td>1,080</td>
<td>8,604</td>
<td>60</td>
<td>7,022</td>
<td>1,456</td>
<td>66</td>
</tr>
</tbody>
</table>

¹ Includes the equity transaction of Nacala with Mitsui and the sale of vessels.
² Includes US$ 135 million related to shareholders debentures remuneration, US$ 252 million of cash outflow from the Fertilizers segment, US$ 353 million of payment to Sumic related to the purchase of its equity interest in VNC, US$ 294 million of funds to the Renova Foundation and US$ 141 million to Samarco to fund its working capital.
³ Cash flow before debt additions/repayments and distribution of dividends to shareholders.
Net Debt substantially reduced y-o-y

Debt position
US$ million

2017 Highlights

Net debt decreased by US$ 6.9 billion compared to the end of 2016

The US$ 18.1 billion net debt in 4Q17 is equivalent to a pro forma of US$ 14.4 billion, considering the cash inflows of US$ 3.7 bi from the sale of Fertilizers and from the Project Finance at Nacala Corridor¹

These inflows, together with the continuing cash inflows from operations, will enable us to achieve our US$ 10 billion net debt target in the short term

¹ The cash inflow from the Fertilizers deal with Mosaic occurred in January and from the Nacala Corridor Project Finance will occur on March 21st, 2018
Vale’s performance in 4Q17

Highlights
Despite the reduction of US$ 5.3/t in Platts IODEX, EBITDA remained in line with 3Q17

US$ million, 4Q17 vs. 3Q17
Vale’s CFR iron ore price was US$ 7/t higher than Platts, despite the decrease of market premiums

US$/t, 4Q17

Impact of pricing system adjustments

1 Adjustment as a result of provisional prices booked in 3Q17 at US$ 62.7/t
2 Difference between the weighted average of the prices provisionally set at the end of 4Q17 at US$ 72.8/t based on forward curves and US$ 65.6/t from the 4Q17 IODEX
3 Vale price is net of taxes
When compared to 4Q15, C1 cash cost FOB port in BRL\(^1\) increased only 1.5% despite 10.8% inflation\(^2\)

R$/t

\(^1\)2015 figures were adjusted to the new allocation criteria, as reported in the 4Q15, and include acquisition costs of third party purchased ore

\(^2\) Using the IGP-M (FGV) metric from 4Q15 to 4Q17
In 4Q17, Base Metals had the highest quarterly EBITDA since 1Q11

US$ million, 4Q17 vs. 3Q17

4Q17 Highlights

Base Metals EBITDA increased US$ 221 million q-o-q

Higher nickel and copper realized prices, lower costs and higher by-product prices were the main drivers for the Base Metals EBITDA increase
Free Cash Flow increased considerably vs. 3Q17 as a result of the strong EBITDA and increased sales collections

US$ million

Cash generated from operations 4,298
Interests on loans 352
Income taxes & Refis settlement program 197
Derivatives 17
Capex 977
Net dividends received/paid 122
Net disposal/acquisition of assets and investments 182
Others² 315
Free cash flow³ 2,744
Effect of exchange rate changes on cash and cash equivalents 98
Debt repayment, net 3,035
Increase (decrease) in cash & cash equivalents (389)

¹ Includes the sale of vessels
² Includes US$ 65 million related to shareholders debentures remuneration, US$ 81 million of cash outflow from the Fertilizers segment, US$ 78 million of funds to the Renova Foundation and US$ 25 million to Samarco to fund its working capital
³ Cash flow before debt additions/repayments and distribution of dividends to shareholders
2b

Vale’s performance in 4Q17

Capital expenditures
Capital expenditures decreased by 30% year-on-year

4Q17 Highlights

Total capex was US$ 114 million higher than in 3Q17, following the usual seasonality, but US$ 431 million lower than in 4Q16.

The projects for restarting pellet plants are on schedule, with the start-ups of Tubarão I and São Luis pellet plants envisioned for 2Q18 and 3Q18, respectively. Tubarão II pellet plant has already started up in January 2018.
The physical progress of S11D is on schedule

**Highlights**

- **93% of combined physical progress** in 4Q17 with the mine site concluded and 88% at the logistic infrastructure sites

- The **duplication of the railway reached 80% of physical progress** with 505 km duplicated

- **Port expansion** reached 97% of physical progress
Vale’s performance in 4Q17
Capital structure
Net debt decreased by US$ 2.9 billion compared to the end of 3Q17

Net debt
US$ billion

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q16</td>
<td>25.042</td>
<td></td>
</tr>
<tr>
<td>3Q17</td>
<td>21.066</td>
<td>~14.400</td>
</tr>
<tr>
<td>4Q17</td>
<td>~3.700</td>
<td>~14.400</td>
</tr>
</tbody>
</table>

Cash position on Dec 31\(^{st}\), 2017 US$ 4.346 billion

Highlights 4Q17

Free Cash Flow was US$ 2.7 billion and net debt decreased by US$ 2.9 billion totaling US$ 18.1 billion

The US$ 18.1 billion net debt in 4Q17 is equivalent to a pro forma of US$ 14.4 billion, considering the cash inflows of US$ 3.7 billion from the conclusion of the Fertilizers deal with Mosaic in January and from the Project Finance at Nacala Corridor to be received on March, 21\(^{st}\), 2018
Vale is set to reduce its leverage level

Net debt / LTM\(^1\) EBITDA Ratio

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Net Debt Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q16</td>
<td>2.1</td>
</tr>
<tr>
<td>1Q17</td>
<td>1.6</td>
</tr>
<tr>
<td>2Q17</td>
<td>1.5</td>
</tr>
<tr>
<td>3Q17</td>
<td>1.3</td>
</tr>
<tr>
<td>4Q17</td>
<td>1.2</td>
</tr>
</tbody>
</table>

- **Net debt in 4Q17:** US$ 18.143 billion
- **Cash position in 4Q17:** US$ 4.346 billion
- **Average maturity:** 8.9 years
- **Average cost of debt:** 5.06% per annum

\(^1\) LTM – last twelve months
Efficient liability management led to an amortization schedule with 63% of debt settlement after 2022

US$ billion

Gross debt amortization schedule

As of December 31st, 2017. Does not include accrued interests

1 As of December 31st, 2017. Does not include accrued interests
Additional information
Vale achieved annual records in iron ore, pellets, Salobo, gold and coal

Production highlights 2017

<table>
<thead>
<tr>
<th></th>
<th>Fe</th>
<th>Pellets</th>
<th>Ni</th>
<th>Cu</th>
<th>Coal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total: 366.5 Mt</td>
<td>Total: 50.3 Mt</td>
<td>Total: 288.2 kt</td>
<td>Total: 438.5 kt</td>
<td>Total: 11.3 Mt</td>
</tr>
<tr>
<td></td>
<td>N. System: 169.2 Mt</td>
<td></td>
<td>VNC: 40.3 kt</td>
<td>Salobo: 193.4 kt</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Onça Puma: 24.7 kt</td>
<td></td>
</tr>
</tbody>
</table>
Higher prices and volumes led to higher y-o-y revenues

Net operating revenues by destination in 2017

2017 Highlights

Net operating revenues of **US$ 33.967 billion**

Revenues were 24% higher vs. 2016 mainly due to **higher realized prices** of Ferrous Minerals, Base Metals and Coal and **higher sales volumes** of Ferrous Minerals and Coal

41% sales to China and 10% in Brazil

Ferrous Minerals accounted for 74% of revenues

Base Metals accounted for 20% of revenues
Evolution of iron ore fines cash cost, freight and expenses

US$/t

C1 cash cost FOB port\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>4Q16</th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex-FOB</td>
<td>14.4</td>
<td>14.5</td>
<td>14.6</td>
</tr>
</tbody>
</table>

Freight

<table>
<thead>
<tr>
<th></th>
<th>4Q16</th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13.2</td>
<td>15.0</td>
<td>17.0</td>
</tr>
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</table>

Expenses\(^2\) & royalties

<table>
<thead>
<tr>
<th></th>
<th>4Q16</th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.5</td>
<td>3.5</td>
<td>3.6</td>
</tr>
</tbody>
</table>

\(^1\) Ex-ROM and ex-royalties
\(^2\) Net of depreciation, including dividends received
4Q17 cash break-even cost landed in China for iron ore and pellets

US$/t, 4Q17

- C1 cash cost¹: 14.6
- Freight: 17.0
- Royalties & expenses: 3.6
- Distribution: 0.7
- Moisture: 3.1
- Quality: 3.9
- EBITDA breakeven iron ore fines: 35.2
- Pellet adjustment: 1.3
- EBITDA breakeven (pellets & fines): 33.9
- Sustaining: 3.4
- Iron ore & pellets cash breakeven: 37.3

¹ Ex-ROM
Iron ore pricing systems

Pricing system breakdown

<table>
<thead>
<tr>
<th></th>
<th>4Q16</th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged</td>
<td>10%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Current</td>
<td>45%</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>Provisional</td>
<td>45%</td>
<td>39%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Impact of pricing mechanisms

US$/t

Provisional – prior quarter

<table>
<thead>
<tr>
<th></th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisional</td>
<td>2.7</td>
<td>-0.5</td>
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</table>

Lagged

<table>
<thead>
<tr>
<th></th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Q17</td>
<td>-3.2</td>
<td>-3.2</td>
</tr>
<tr>
<td>4Q17</td>
<td>2.4</td>
<td>2.4</td>
</tr>
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</table>

Current

<table>
<thead>
<tr>
<th></th>
<th>3Q17</th>
<th>4Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Q17</td>
<td>-0.2</td>
<td>-0.2</td>
</tr>
<tr>
<td>4Q17</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Iron ore fines sales composition

4Q17 Highlights

Sales volumes of iron ore fines reached 79.6 Mt in 4Q17 vs. 76.4 Mt in 3Q17, 4.2% higher than in 3Q17, mainly due to the S11D ramp-up.

In 4Q17, some sales were deliberately postponed to 1Q18 for margin optimization.
Evolution of iron ore fines sustaining per ton

US$/t

4Q16: 3.2
1Q17: 3.8
2Q17: 2.8
3Q17: 2.9
4Q17: 3.4

Last twelve months: 3.2
Price realization nickel

US$/t, 4Q17

- Average LME nickel price: 11,584
- Price premium on refined products: 434
- Price discount on intermediate products: 237
- Average nickel realized price: 11,781
Price realization copper

US$/t, 4Q17

- Average LME copper price: $6,808
- Current period price adjustments: $236
- Copper gross realized price: $7,044
- Prior period price adjustments: $242
- Copper realized price before discounts: $7,286
- TC/RCs, penalties, premiums and discounts: $551
- Average copper realized price: $6,735
# Unit cash cost of sales per operation, net of by-product credits

<table>
<thead>
<tr>
<th>Operation (US$ / t)</th>
<th>4Q17</th>
<th>3Q17</th>
<th>4Q16$^4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Atlantic Operations (nickel)$^2$</td>
<td>4,624</td>
<td>4,484</td>
<td>5,125</td>
</tr>
<tr>
<td>PTVI (nickel)$^2$</td>
<td>6,609</td>
<td>5,866</td>
<td>5,770</td>
</tr>
<tr>
<td>VNC (nickel)$^3$</td>
<td>8,420</td>
<td>9,841</td>
<td>11,375</td>
</tr>
<tr>
<td>Onça Puma (nickel)</td>
<td>7,536</td>
<td>7,944</td>
<td>9,204</td>
</tr>
<tr>
<td>Sossego (copper)</td>
<td>3,270</td>
<td>2,951</td>
<td>3,207</td>
</tr>
<tr>
<td>Salobo (copper)</td>
<td>679</td>
<td>792</td>
<td>838</td>
</tr>
</tbody>
</table>

$^1$ North Atlantic figures includes Clydach and Acton refining costs
$^2$ Prior periods restated to include royalties, freight and other period costs
$^3$ Unit cash cost restated for periods prior to 1Q17 to exclude pre-operating and other operating expenses
$^4$ We realigned our unit cash cost of sales methodology in 1Q17 to include all freight, royalty and other costs reported as cost of goods sold and to exclude other operating expenses and pre-operating expenses for certain operations. Considering the previous criteria, the unit cash cost figures would be as follows: North Atlantic, US$ 3.412/t in 4Q16; PTVI, US$ 5.695/t in 4Q16, and; VNC, US$ 11.017/t in 4Q16.
Price realization – metallurgical coal from Mozambique

US$/t, 4Q17

Average reference price 4Q17: 204.7
Quality: 6.2
Current price: 11.1
Fixed, lagged & benchmark prices: 9.6
Provisional price: 6.3
Freight differential: 0.3
Others: 5.3
Vale price: 178.5

Impact of pricing system adjustments
Price realization – thermal coal from Mozambique

US$/t, 4Q17

Impact of pricing system adjustments
Coal proforma production costs through Nacala

US$/t

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Net additional tariffs cost</th>
<th>Operational costs only</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q16</td>
<td>97.8</td>
<td>97.8</td>
</tr>
<tr>
<td>1Q17</td>
<td>84.2</td>
<td>84.2</td>
</tr>
<tr>
<td>2Q17</td>
<td>74.2</td>
<td>74.2</td>
</tr>
<tr>
<td>3Q17</td>
<td>71.3</td>
<td>71.3</td>
</tr>
<tr>
<td>4Q17</td>
<td>92.6</td>
<td>92.6</td>
</tr>
</tbody>
</table>

1 Includes mine and logistics operational costs
2 Includes total tariff charged by the Nacala Logistics Corridor (NLC) excluding its operational costs minus the provision for interests related to Vale’s shareholder loans made to the NLC
Debt position breakdown by currency

Debt position breakdown by currency (before hedge)

Debt position breakdown by currency (after hedge)