

Vale informs on estimates update

Rio de Janeiro, December 06th, 2017 – Vale S.A. (Vale), pursuant to the provisions set forth in Art. 157, paragraph 4 of the Law 6,404 of December 15, 1976, as amended, and the Instruction of *Comissão de Valores Mobiliários* (CVM) number 358 of January 3, 2002, as amended, informs that it announced today on the Vale Day event in New York the estimates below. The presentation made during the event, containing the estimates, is available at Vale’s website www.vale.com under the Investors section.

Production volumes

	2017E	2018E	2019E	2020E	2021E	2022E
Iron ore (Mt)	~365	~390	~400	~400	~400	~400
Iron ore – S11D (Mt)	~22	50 – 55	70 – 80	90		
Pellets (Mt)	~50	~55	~60	~60	65	65
Nickel (Kt)	287	263	262	268	266	280
Copper (Kt)	438	422	424	433	438	
Coal (Mt)	12	16	18	18	20	20

Costs

Nickel: Unit cash cost per operation

US\$/t	2017E	2018E	2019E
Sudbury	3,287	3,098	1,621
Thompson	10,488	8,094	
Voisey’s Bay	3,206	4,680	
VNC	10,153	9,717	
PTVI	6,463	6,329	
Onça Puma	8,622	7,704	

Coal: Proforma production cash cost at the Nacala port

US\$/t	2017E	2018E	2019E	2020E	2021E	2022E
Production cost ¹	78	70	67	65	59	56
Net Nacala tariff ²	15	26	20	20	19	21
Non-recurring costs		4				

¹ Production cost includes mine, plant, railway, port and royalties of coal shipped through Nacala, excluding inventory movement.

² Net Nacala tariff is composed of investments, working capital, debt service, amortization, taxes and others, net of interest received by Vale related to shareholder loans.

Price realization

- Realized average price premium of the iron ore sales of about US\$ 3.5/t in 2017 and a range from US\$ 3.5/t to US\$ 4.5/t in 2018

EBITDA

- Adjusted EBITDA per ton of the Ferrous Minerals business (excluding manganese and ferroalloys)¹ of US\$ 38/t in 2017 and ranging from US\$ 41/t to US\$ 43/t in 2020, equivalent to an estimated increase of US\$ 1.2 billion to US\$ 2.0 billion in 2020 compared to 2017.

¹ Adjusted EBITDA of Ferrous Minerals (excluding manganese and ferroalloys) normalized by the 3Q17 Platts IODEX 62% of US\$ 70.9/t, exchange rate of 3.35 BRL/USD and bunker oil of US\$ 308/t

- Adjusted EBITDA of the Coal business of US\$ 353 million in 2017 and US\$ 481 million in 2018, assuming average prices of metallurgical coal of US\$ 170/t and thermal coal of US\$ 70/t in 2018
- Adjusted EBITDA of the Base Metals business ranging from US\$ 1.8 billion to US\$ 5.4 billion in 2020, depending on prices of nickel and copper ranging from US\$ 10,000/t to US\$ 20,000/t and US\$ 5,500/t to US\$ 7,500/t respectively
- EBITDA of Vale in 2020 ranging from US\$ 13.0 billion to US\$ 19.0 billion and EBITDA less sustaining of Vale in 2020 ranging from US\$ 10.4 billion to US\$ 16.4 billion, as a result of the following EBITDA less sustaining estimates: (i) iron ore ranging from US\$ 9.3 billion to US\$ 13.0 billion, assuming iron ore prices from US\$ 55/t to US\$ 65/t, (ii) nickel operations ranging from US\$ 0.6 billion to US\$ 1.8 billion, assuming nickel prices from US\$ 10,000/t to US\$ 14,000/t, (iii) copper operations ranging from US\$ 0.7 billion to US\$ 1.3 billion, assuming copper prices from US\$ 6,000/t to US\$ 8,000/t, (iv) coal ranging from US\$ 0.1 billion to US\$ 0.6 billion, assuming coal prices from US\$ 130/t to US\$ 170/t, and (v) others of negative US\$ 0.3 billion

Capital expenditures

US\$ billion	2017E	2018E	2019E	2020E	2021E	2022E
Total Vale	4.1	3.8	4.0	4.2	3.7	3.2
Nickel business	0.9	0.9				

Cash Flow

Cash disbursements

US\$ million	2017E	2018E	2019E	2020E
Samarco	470	393	215	144
Refis	490	490		
Pre-operating expenses	250	110	35	25
Financial expenses	1,600 – 1,700	1,000 – 1,100	600 – 700	550 – 650

- Free cash flow accumulated from 2018 to 2020 ranging from about US\$ 13 billion to about US\$ 25 billion, depending on the following assumptions: (i) iron prices ranging from US\$ 55/t to US\$ 65/t, (ii) nickel prices ranging from US\$ 10,000/t to US\$ 14,000/t, (iii) copper price at US\$ 6,000/t, (iv) divestment proceeds of US\$ 1.5 billion, and (v) BRL/USD exchange rate of 3.35 BRL/USD

Shareholder return

- Total shareholder return per year in 2020, measured as the gain between the market cap as of November 24th, 2017 and the market cap plus dividends scenarios in 2020, ranging from 9% to 34% depending on (i) total EBITDA ranging from US\$ 13 billion to US\$ 19 billion, (ii) enterprise value ranging from US\$ 78 billion to US\$ 133 billion, (iii) net debt of US\$ 10 billion, and (iv) accumulated dividends ranging from US\$ 8 billion to US\$ 20 billion
- EV to EBITDA multiple of 5.5x in 2018
- Return on assets of Vale in 2020 ranging from 16% to 26%, assuming total assets of Vale of US\$ 63.4 billion and EBITDA less sustaining of Vale ranging from US\$ 10.4 billion to US\$ 16.4 billion

Vale informs that will file again in due course the item 11 of its Reference Form, in the period required by the Instruction CVM number 480 of December 7, 2009, as amended.



Press Release

Vale clarifies that the information provided in this document represent only an expectation, hypothetical data that by no means constitute a promise of performance by Vale and/or its management. The estimates presented involve market factors which are not controlled by Vale and, therefore, can be subject to new changes.

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This press release may include statements that present Vale's expectations about future events or results. All statements, when based upon expectations about the future, involve various risks and uncertainties. Vale cannot guarantee that such statements will prove correct. These risks and uncertainties include factors related to the following: (a) the countries where we operate, 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. To obtain further information on factors that may lead to results different from those forecast by Vale, please consult the reports Vale files with the U.S. Securities and Exchange Commission (SEC), the Brazilian Comissão de Valores Mobiliários (CVM) and the French Autorité des Marchés Financiers (AMF), and in particular the factors discussed under "Forward-Looking Statements" and "Risk Factors" in Vale's annual report on Form 20-F.