

Vale S.A.  
Form 6-K  
December 06, 2018  
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**United States**  
**Securities and Exchange Commission**

Washington, D.C. 20549

**FORM 6-K**

**Report of Foreign Private Issuer**

**Pursuant to Rule 13a-16 or 15d-16**

**of the**

**Securities Exchange Act of 1934**

**For the month of**

**December 2018**

**Vale S.A.**

**Praia de Botafogo n° 186, 18° andar, Botafogo**

**22250-145 Rio de Janeiro, RJ, Brazil**

(Address of principal executive office)

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

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(Check One) Form 20-F  Form 40-F

(Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1))

(Check One) Yes  No

(Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7))

(Check One) Yes  No

(Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.)

(Check One) Yes  No

(If  Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b). 82- .)

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Rio de Janeiro, December 06th, 2018 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 announces today on the Vale Day event in London the estimates below. The presentation made during the event, containing the estimates, is available at Vale's website [www.vale.com](http://www.vale.com) under the Investors section.

Estimated production volumes

	2018E	2019E	2020E	2021E	2022E	2023E
Iron ore (Mt)	~390	~400	~400	~400	~400	~400
Nickel (kt)	240	244	n/a	n/a	n/a	320
Copper (kt)	420	417	421	436	470	500
Coal (Mt)	12	14	18	20	20	20

Estimated costs

Coal: Pro-forma cost at the Nacala port

US\$/t	2018E	2019E	2020E	2021E	2022E	2023E
Pro-forma operational cost(1)	106	96	85	74	69	64
Net Nacala tariff(2)	19	18	19	20	18	19

(1) Pro-forma operational cost includes mine, plant, railway and port, excluding royalties.

(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.

Iron ore: C1(1) cost reduction of US\$ 1.2/t in 2018 and ranging from US\$ 1.0/t to US\$ 2.0/t from 2019 to 2023.

Freight costs(2): US\$ 18.3/t in 2018 and US\$ 17.7/t in 2023.

Canadian operations: potential US\$ 140 million cost reduction in 2019.

Estimated price realization

Iron ore: realized prices of around US\$ 10.0/t in 2018 and ranging from US\$ 12.0/t to US\$ 12.5/t in 2019.

Estimated gains in supply chain and price realization(3)

Iron Ore: positive impact on EBITDA/t ranging from US\$ 2.5/t to US\$ 3.0/t by 2023, when compared to 2018.

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(1) Based on 2H18 projections. Assumptions: IODEX 62% Fe of US\$ 68.0/t, exchange rate of 3.96 BRL/USD and bunker oil prices of US\$ 466.0/t

(2) Based on US\$ 190/t spread between 2023 (low sulphur fuel oil) and 2018 (high sulphur oil), 110 Mt of new shipping capacity for Valemax 2G and Guaibamax and assuming that vessels with scrubbers will still be allowed to consume high sulphur oil.

(3) Includes freight.

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Estimated EBITDA

Ferrous Minerals business: Adjusted EBITDA of the Ferrous Minerals business (excluding manganese and ferroalloys)(4) ranging from US\$ 39/t to US\$ 40/t in 2H18 and ranging from US\$ 44/t to US\$ 47/t by 2023, equivalent to an estimated increase of up to US\$ 2.9 billion by 2023, when compared to 2018, depending on the following assumptions: (i) US\$ 3.5 - 5/t margin increase related to cost reduction, supply chain optimization and price realization; (ii) potential US\$ 925 million EBITDA increase related to Carajás 240 Mtpy (US\$ 240 million), Pellet Feed Gelado (US\$ 70 million), Pellet Feed Southeastern (US\$ 340 million), Oman (US\$ 60 million), Malaysia (US\$ 35 million) and Ferrous acquisition (US\$ 180 million).

Base Metals business: potential increase of Adjusted EBITDA of the Base Metals business up to US\$ 3.9 billion by 2023 when compared to 2018; depending on the following assumptions: (i) nickel volume growth of 80 kt by 2023; (ii) increase of nickel spot price of US\$ 7,000/t by 2023; (iii) cost reduction of US\$ 2,600/t by 2023; (iv) copper volume growth by 80 kt by 2023.

Coal business: potential increase of Adjusted EBITDA(5) of the Coal business up to US\$ 960 million by 2023 when compared to 2018; depending on the following assumptions: (i) volume growth from 12 Mt in 2018 to 20 Mt by 2023; (ii) pro-forma cost reduction from US\$ 125/t in 2018 to US\$ 83/t in 2023.

Other: potential increase of Adjusted EBITDA in 2023 when compared to 2018 related to the reduction of US\$ 180 million in stoppage and pre-operating expenses.

All the above-mentioned effects create a potential increase of US\$ 7.9 billion in the Adjusted EBITDA by 2023 when compared to 2018.

Estimated cash flow opportunities

Potential increase of Cash Flow in 2023 compared to 2018 relates to all of the potential increase in EBITDA mentioned above, gross debt reduction (US\$ 55 million), liability management (US\$ 65 million), MBR buyback (US\$ 170 million) and Samarco cash outflow (US\$ 360 million).

Estimated capital expenditures

US\$ billion	2018E	2019E	2020 - 2023E(1)
Total Vale	3.7	4.4	4.5

Sustaining(2)	2.8	3.7	3.7
Growth projects	0.9	0.7	0.8

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(1) Average.

(2) Includes replacement capex.

Estimated cash flow simulation

Free cash flow accumulated from 2019 to 2021 ranging from about US\$ 23 billion (annual average available cash of around US\$ 8 billion) to about US\$ 37 billion (annual average available cash of around US\$ 12 billion), depending on the following assumptions:

(i) annual average iron price ranging from US\$ 60/t to US\$ 70/t; (ii) annual average nickel price ranging from US\$ 12,000/t to US\$ 20,000/t; (iii) BRL/USD exchange rate of 3.76 BRL/USD; (iv) includes US\$ 1.3 billion of cash surplus in 2018 to be allocated in the following years to keep net debt level at US\$ 10 billion target; and (v) does not consider dividends, buybacks and bolt-on acquisitions.

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(4) Adjusted EBITDA of Ferrous Minerals (excluding manganese and ferroalloys) normalized by 2H18 projections: Platts IODEX 62% Fe of US\$ 68.0/t, exchange rate of 3.96 BRL/USD and bunker oil of US\$ 466.0/t.

(5) Considers Moatize current margins, 2018 metallurgical coal and thermal coal mix and price estimates.

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Estimated minimum shareholder remuneration

Annual average minimum shareholder remuneration of around US\$ 4.0 billion between 2019 to 2021, to be determined in February and July of each year, according to Vale's remuneration policy.

Sustainability goals

Vale is committed to sustainability, with the following goals to be achieved by 2030: (i) 100% self-generation of clean energy in Brazil; (ii) recover 100,000 ha of degraded land; (iii) reduce new water collection by 10%; (iv) reduce greenhouse gas emissions by 16%.

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.

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.

Forward-looking statements

This press release includes statements about Vale's current expectations about future events or results (forward-looking statements). Many of those forward-looking statements can be identified by the use of forward-looking words such as anticipate, believe, could, expect, expected, should, plan, intend, estimate, estimated, will, goal and potential, among others. All forward-looking statements are subject to various risks and uncertainties. Vale cannot guarantee that these statements will prove correct. These risks and uncertainties include, among others, factors related to: (i) the countries where Vale operates, especially Brazil and Canada; (ii) the global economy; (iii) the capital markets; (iv) the mining and metals prices and their dependence on global industrial production, which is cyclical by nature; and (v) global competition in the markets in which Vale operates. Vale cautions you that actual results may differ materially from the plans, objectives, expectations, estimates and intentions expressed in this press release. Vale undertakes no obligation to publicly update or revise any forward-looking statement, whether as a result of new information or future events or for any other reason. To obtain further information on factors that may lead to results different from those forecast by Vale, please consult the reports that Vale files with the U.S. Securities and Exchange Commission (SEC), the Brazilian Comissão de Valores Mobiliários (CVM), 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.



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The information contained in this press release includes financial measures that are not prepared in accordance with IFRS. These non-IFRS measures differ from the most directly comparable measures determined under IFRS, but we have not presented a reconciliation to the most directly comparable IFRS measures, because the non-IFRS measures are forward-looking and a reconciliation cannot be prepared without unreasonable efforts.

**For further information, please contact:**

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**Signatures**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Vale S.A.  
(Registrant)

Date: December 06, 2018

By: /s/ André Figueiredo  
Director of Investor Relations