

Vale S.A.
Form 6-K
May 08, 2014
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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

May 2014

Vale S.A.

**Avenida Graça Aranha, No. 26
20030-900 Rio de Janeiro, RJ, Brazil**

(Address of principal executive office)

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

(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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1.1. Statement and Identification of the Responsible Individual

Name of the individual responsible for the content of the Reference Form **Murilo Pinto de Oliveira Ferreira**
Position of responsible individual Executive Director

Name of the individual responsible for the content of the Reference Form **Luciano Siani Pires**
Position of responsible individual Director of Investor Relations

The above-mentioned directors stated that:

- a. They have reviewed the Reference Form;
- b. All the information contained in the Reference Form complies with Instruction CVM No. 480, in particular with Articles 14 through 19;
- c. All the information contained therein is an accurate, precise and complete representation of the economic and financial situation of the issuer and of the risks inherent to its activities and the securities issued by it.

Table of Contents**2.1/2.2 Identification and remuneration of Auditors:**

Does it have auditor?	YES
CVM (Securities Commission) Code	287-9
Type of Auditor	Domestic
Name/Corporate name	PricewaterhouseCoopers Auditores Independentes
CPF/CNPJ	61.562.112/0002-01
Service start date:	07/24/2009
Service end date:	
Description of the service contracted	Provision of professional services for auditing the annual report from the Company and controlled companies, both for domestic and international purposes, comfort letters for issuance of debts and equities at the Brazilian and international market, certification of internal controls in order to comply with Section 404 of Sarbanes-Oxley Act of 2002; provision of services related to the audit.
Total amount of the remuneration of independent auditors itemized per service	In the fiscal year ended December 31, 2013, the fees received by Company independent auditors for the provision of services to the Company and its affiliates were the following:

	Reais (thousand):
Financial audit:	18,069
Sarbanes-Oxley Act Audit:	3,181
Audit-related services(*):	782
Total independent audit expenses:	22,032
Other (*)	16
Total of services	22,048

Justification for replacement Reason submitted by the auditor in case of disagreement of the issuer justification

(*) These services are retained mostly for periods shorter than one year
Not applicable
Not applicable

Name of the supervisor responsible	Period of provision of service	CPF	Address
João César de Oliveira Lima Junior	06/01/2012	744.808.477-15	Avenida José da Silva de Azevedo Neto nº 200 Bloco 3 - Torre Evolution IV rooms 101, 103 to 108 and 201 to 208, Barra da Tijuca, City and State do Rio de Janeiro-RJ, CEP 22075-556. e-mail: joao.c.lima@br.pwc.com

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Phone: (21) 3232-6112

Marcos Donizete Panassol

07/24/2009 to 05/31/2012

063.702.238-67

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Azevedo Neto, no. 200, bloco 3,

Torre Evolution IV, salas 101,

103 a 108 e 201 a 208, Barra da

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2.3 Other relevant information

At the meeting of November 28, 2013, the Board of Directors of Vale approved hiring the company KPMG Auditores Independentes to provide auditing services for the Company's financial statements for 3 (three) years starting in fiscal year 2014. Services will start with the review of 2014 second quarter information (ITRs).

The Company has specific internal procedures for pre-approval of engagements for their external auditors in order to avoid conflict of interest or loss of objectivity by its independent auditors.

The Company's policies regarding independent auditors and other services unrelated to external auditing are grounded in principles that safeguard their independence. In line with best corporate governance practices, all services provided by the independent auditors are pre-approved by our Supervisory Board, and the independent auditor provide us with an independence letter.

Table of Contents**3.1 Consolidated Financial Information**

(Reais)	Fiscal Year (12/31/2013)	Fiscal Year (12/31/2012)	Fiscal year (12/31/2011)
Shareholders equity	152,122,066,000.00,	152,909,437,000.00,	145,383,333,000.00,
Total Assets	291,880,311,000.00,	266,921,654,000.00,	237,088,552,000.00,
Realized Net Revenue/Temporary Revenue/Insurance Premium	101,489,747,000.00,	91,269,482,000.00,	100,555,680,000.00,
Gross Profit	48,979,108,000.00,	41,514,098,000.00,	59,568,000,000.00,
Net Profit	115,091,000.00,	9,891,696,000.00,	37,825,725,000.00,
Number of Shares, excluding treasury	5,135,374,926	5,135,374,926	5,097,293,079
Asset Value of Share (in R\$/unit)	29.622387	29.570000	28.780000
Earnings per Share	0.02000	1.960000	7.240000

3.2 Non-Accounting measurements**a. value of non-accounting measurements**

The Company uses EBITDA as a non-accounting measurement. In 2013, 2012 and 2011, respectively, the EBITDA of the Company was established in the amount of R\$ 42,386,462, R\$ 23,164,519 thousand and R\$ 58,694,349 thousand respectively.

b. reconciliations between amounts reported and the values of audited financial statements

In R\$ thousands	Year ending on December 31		
	2013	2012	2011
Operating profit - EBIT	33,433,113	15,035,091	52,241,615
Depreciation / Amortization of goodwill	8,953,349	8,129,428	6,452,734
EBITDA (LAJIDA)	42,386,462	23,164,519	58,694,349
Corporate income	(998,830)	(1,240,589)	(1,857,458)
Dividends received	1,836,406	931,620	1,765,736
Loss (gains) from the sale of assets	410,314	1,036,035	(2,492,175)
Loss in calculation and reduction of asset impairment	5,389,114	12,213,468	
CFEM Provisions		1,100,000	
Net gain (loss) from discontinued operations	3,602	132,100	138,584
EBITDA (LAJIDA) - adjusted	49,027,068	37,337,418	56,249,036
Depreciation / Amortization of goodwill	(8,953,349)	(8,129,428)	(6,452,734)
Dividends received	(1,836,406)	(931,920)	(1,765,736)
Reduction in recoverable value of investments	(4,001,986)		
Corporate results	998,830	1,240,589	1,857,458
Loss (gains) in the sale of assets	(410,314)	(1,036,000)	2,492,175
Loss in calculation and reduction of asset impairment	(5,389,114)	(12,213,468)	
Net financial income	(18,443,232)	(8,239,107)	(6,317,528)
Income tax and social contribution	(15,247,845)	2,594,950	(8,504,230)

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Net gain (loss) from discontinued operations	(3602)	(132,300)	(138,584)
Net income/year	(257,964)	9,390,934	37,419,857
Loss (profit) to non-controlling shareholders	373,055	500,762	405,868
Profit to controlling shareholders	115,091	9,891,696	37,825,725

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c. why the Company believes that this measurement is more appropriate for a correct understanding of its financial situation and results of operations

EBITDA is a measure of the company's cash generation, aiming to assist the assessment by the Administration of the performance of operations. The analysis of operating results through EBITDA has the benefit of canceling the effect of non-operating gains or losses generated by financial transactions or the effect of taxes.

We calculate the EBITDA according to the terms set forth in CMV Instruction no. 527, from October 4, 2012 (CVM Instruction 527), as follows: the company's net results, plus the taxes over the profit, of the net financial expenses, of financial revenues, and of depreciation, amortization, and exhaustion.

We also calculate the adjusted EBITDA according to the net EBITDA from the corporate interest, from reduction in the recoverable asset of values, from non-recurrent items, and from depreciations, amortizations and exhaustions, plus dividends from joint ventures and sister companies. We understand that the adjusted EBITDA has a more precise measure of cash generation in the Company, since it excludes non-recurring and non-cash effects.

The consolidated cash generation measured by EBITDA and Adjusted EBITDA is not a measure recognized by BR GAAP or IFRS and does not represent cash flow for the periods presented and therefore should not be considered as an alternative to net income (loss), as an isolated indicator of operating performance or as an alternative to cash flow or as a source of liquidity. The EBITDA definition used by Vale may not be comparable with EBITDA disclosed by other companies, should they not adopt the standard meaning for EBITDA determined by CVM Instruction 527.

3.3 Events subsequent to the latest financial statements

The Company does not provide guidance in the form of quantitative predictions about its future financial performance. The Company seeks to disseminate as much information about its vision of the various markets where it operates, guidelines, and implementation strategies in order to provide investors in the capital markets a basis for the formation of expectations about its performance in the medium and long term.

The Company Consolidated Financial Statements for the year ended December 31, 2013 were issued on February 26, 2014 and filed with the CVM on the same date.

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Below is a description of subsequent events included in the Financial Statements in compliance with the rules in IAS 24, approved by CVM^o 593/09:

- On January 15, 2014, Vale issued infrastructure debentures in the amount of R\$ 1 billion. For further information on this issuing, see item 18.5 in the Reference Form; and
- On January 30, 2014, Vale acquired a funding in the amount of R\$1,816 million from the Canadian agency EDC. To this date, the funding has not been realized yet.

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	Fiscal Year Ended December 31		
	2013	2012	2011
a. Rules on retention of profits	According to Article 43 of the Bylaws, there should be a consideration in the proposal for distribution of profits of the formation of (i) fiscal benefit reserve, to be constituted in the form of current legislation, and (ii) investment reserve for the purpose of ensuring the maintenance and development of activities that constitute the main object of the Company, in an amount not exceeding 50% (fifty percent) of net income distributable up to the maximum capital of the Company.		
b. Values on retention of profits	Of the total of R\$ 115,090,671.19, added with accrued gains from the adoption of new accounting principles issued by the Comissão de Valores Mobiliários (CVM) and the Comitê de Pronunciamentos Contábeis (CPC), in the amount of R\$ 14,627,000.00, the distribution was (i) R\$ 6,485,883.56 to legal reserve and (ii) R\$ 24,161,826.66 (21%) to fiscal benefit reserves.	Of the total of R\$9,733,695,883.37, the distribution was (i) R\$486,684,794.17 to legal reserves and (ii) R\$599,031,296.74 (6.2%) to fiscal incentive reserves. (1) (1) Values above were approved by the General Shareholders Meeting held on April 17, 2013. However, we clarify that, due to adjustments to the IFRS, the net profit was adjusted to R\$ 9,891,696 thousand.	Of the total of R\$ 37,813,724,944.02 after the deduction for the legal reserve in the amount of R\$ 890,686,247.20, the amount of R\$ 25,864,330,899.53 (68.4%), which was allotted for the expansion / investment reserve and R\$ 995,844,040.58 (2.6%) for tax incentive reserves. Of the total for the expansion / investment reserve, 50% was allotted based on statutory authorization and 18.4% was allotted for the reserve based on the capital budget approved by the AGM. (1) (1) Values above were approved by the General Shareholders Meeting held on April 17, 2013. However, we clarify that, due to adjustments to the IFRS, the net profit was adjusted to R\$ 37,825,725 thousand.
c. Arrangements for distribution of dividends	According to Article 44 of the bylaws, at least 25% (twenty five percent) of annual net profits, adjusted according to the law, will be provided for the payment of dividends.		

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Pursuant to Art. 5, §5 of the bylaws, the holders of preferred shares of Class A and special class, shall have their right to participate in the dividend to be distributed and calculated as per Chapter VII of the Bylaws, according to the following criterion:

(a) Priority in the reception of dividends corresponding to (i) 3% (three per cent) at least of the net asset value of the share, calculated based on the financial statements analyzed that served as reference for the payment of dividends or (ii) 6% (six per cent) calculated on the part of the capital to which that class of share belongs, whichever is the greatest of these.

(b) Right to participate in the distributed incomes, under equal conditions with common shares, after them, guaranteeing a dividend equal to the priority minimum set up pursuant to a above.

d. Frequency of dividend distribution In accordance with the Dividend Policy adopted by the Company, payments are made semiannually in the months of April and October.

e. Eventual restrictions to dividend distribution none none none

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(Reais)	Fiscal Year Ended December 31, 2013	Fiscal Year Ended December 31, 2012	Fiscal Year Ended December 31, 2011
Adjusted net income for dividend payments	99,069,960.97	8,647,979,792.46	34,927,194,656.24
Percentage of dividend over the adjusted net profit	100.00	100.000000	26.000000
Rate of return in relation to equity	0.10000	6.000000	26.000000
Dividend distributed	9,319,275,000.00	8,647,979,792.46	9,062,863,757.00
Net income retained	24,161,826.66	599,031,296.74	0.00
Date of approval of the retention	04/17/2014	04/17/2013	

01/01/2013 to 12/31/2013

Share Type	Share Class	Distributed Dividend	Amount (Unit)	Dividend Payment
Common		Interest on Capital	2,263,206,859.28	04/30/2013
Preferred	Preferred Class A	Interest on Capital	1,397,943,140.72	04/30/2013
Common		Mandatory Dividend	489,342,023.63	04/30/2013
Preferred	Preferred Class A	Mandatory Dividend	302,257,976.37	04/30/2013
Common		Interest on Capital	2,624,124,419.28	10/31/2013
Preferred	Preferred Class A	Interest on Capital	1,620,875,580.72	10/31/2013
Common		Mandatory Dividend	384,207,050.57	10/31/2013
Preferred	Preferred Class A	Mandatory Dividend	237,317,949.43	10/31/2013

Table of Contents**01/01/2012 to 12/31/2012**

Share Type	Share Class	Distributed Dividend	Amount (Unit)	Dividend Payment
Common		Interest on Capital	2.035.913.849,00	30/04/2012
Preferred	Preferred Class A	Interest on Capital	1.237.985.533,00	30/04/2012
Common		Interest on Capital	1.675.236.084,00	31/10/2012
Preferred	Preferred Class A	Interest on Capital	1.034.763.916,00	31/10/2012
Common		Mandatory Dividend	1.646.850.049,47	31/10/2012
Preferred	Preferred Class A	Mandatory Dividend	1.017.230.360,99	31/10/2012

01/01/2011 to 12/31/2011

Share Type	Share Class	Distributed Dividend	Amount (Unit)	Dividend Payment
Common		Mandatory Dividend	1,239,392,442.00	10/31/2011
Common		Mandatory Dividend	2,996,720,323.00	08/28/2011
Common		Interest on Capital	1,372,512,161.00	04/30/2012
Preferred	Preferred Class A	Mandatory Dividend	761,470,697.00	10/31/2011
Preferred	Preferred Class A	Mandatory Dividend	1,858,179,678.00	08/26/2011
Preferred	Preferred Class A	Interest on Capital	834,588,457.00	04/30/2012

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3.6 Statement of Dividends on account of retained earnings or reserves

Dividends distributed to (in R\$ thousands):	Fiscal Year Ended December 31		
	2013	2012	2011
Retained Earnings			
Constituted Reserves	9,220,205	740,520	

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3.7 Debt

Fiscal year	Total amount of the debt (of any nature)	Type of index	Debt Index	Description and reason for the use of another index of indebtedness
12/31/2013	139,760,000,000.00	Debt ratio	0.919	
12/31/2013	0	Other indexes	1.226	<p>Gross adjusted debt/EBITDA. Gross debt is the sum of Loans and short-term debt, Portion of the stock of long-term loans and Loans and long-term financing. adjusted EBITDA (EBITDA) is calculated as described in section 3.2.b of this reference form, excluding non-recurrent items. For more information on how to reconcile the EBIDTA and the adjusted EBIDTA, see item 10.1 (a).</p> <p>The debt ratio Gross Debt / Adjusted EBITDA shows the approximate time necessary for a company to pay all its debt with its cash flow.</p> <p>The Company adopts the debt ratio gross debt / Adjusted EBITDA and interest coverage ratio Adjusted EBITDA / Interest expenses. These indexes are widely used by the market (rating agencies and financial institutions) and serve as a benchmark to assess the financial situation of the Company.</p>
12/31/2013	0	Other indices	17.096	<p>Adjusted EBITDA / Interest expenses The adjusted EBIDTA is calculated as described in item 3.2.b of this Reference form, excluding non-recurrent items. For more information on how to reconcile the EBIDTA and the adjusted EBIDTA, see item 10.1 (a). Interest expenses include the sum of all appropriated or adjusted interests, paid or not, at certain times, that result from benefits debt.</p> <p>The interest coverage index (Adjusted EBITDA / Interest Expenses) is used to determine a company's cash flow capacity to comply with its debt payments</p> <p>The Company adopts the Gross debt/ adjusted EBIDTA debt rate and the adjusted EBIDTA/interest expenses interest coverage rate. These indices are widely used by the market (rating agencies and financial institutions) and they are a baseline to which to compare Vale's</p>

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Type of debt	Less than 1 year (R\$)	Between 1 and 3 years (R\$)	Between 3 and 5 years (R\$)	Over 5 years (R\$)	Total (R\$)
Collateral	357,000,105.43	658,143,405.44	658,143,405.44	1,736,283,187.49	3,409,570,103.80
Floating					
Guarantee					
Unsecured obligations	22,160,999,894.5	6,899,147,638.69	14,417,682,183.66	92,872,600,179.28	136,350,429,896.20
Total	22,518,000,000.00	7,557,291,044.13	15,075,825,589.10	94,608,883,366.77	139,760,000,000.00

Note: Information in this item refers to the Company's consolidated financial results shown in items 3.7 and 3.8 does not represent the Company's level of indebtedness, but represents the total of the obligations based on the addition of the outstanding and non-outstanding liabilities. The collateral debt amount is guaranteed with real assets. The remaining debt does not have any collateral. Debts that lack collateral or floating guarantees, whether or not they have personal guarantees, have been classified as unsecured obligations.

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3.9 Other information that the Company deems relevant

The Company's main financial contracts, as well as the securities representing the circulating debt issued by the Company (for more information on such securities, see item 18.5 of this Reference Form) have clauses specifying advances maturity of pending amounts for the event of cross acceleration from other financial contract signed with the same party and/or other financial contracts.

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4.1 - Description of risk factors

Risks relating to the Company

The mining sector is highly exposed to the cyclicity of global economic activities and requires significant capital investments.

The mining sector is primarily a supplier of industrial raw material. Industrial production tends to be the most cyclical and volatile component of global economic activities, affecting the demand for minerals and metals. At the same time, investment in mining requires a substantial amount of resources, in order to replenish and maintain the reserves, expand the production capacity, build infrastructure and preserve the environment. The sensitivity to the industrial production, along with the need for significant long-term capital investments, are important sources of risks to the financial performance and growth prospects of Vale and the mining industry in general.

The Company may not be able to adjust the volume of production in time or cost-effectively in response to changes in demand.

In periods of high demand, Vale's capacity to rapidly increase production is limited, which may make it impossible to meet the demand for its products. Moreover, the Company may be unable to complete expansions and new Greenfield projects in time to take advantage of the increasing demand for iron ore, nickel and other products. When demand exceeds its production capacity, the Company may meet its customers excess demand by purchasing iron ore, iron ore pellets or nickel from its joint ventures or third parties and resell them, which would increase its costs and reduce its operating margins. If it is unable to meet its customers' excess demand this way, Vale could lose customers. In addition, operating close to full capacity may expose the Company to higher costs, including demurrage fees due to capacity restraints in its logistics systems.

In contrast, operating at significant idle capacity in periods of weak demand may expose Vale to higher unit production costs since a significant portion of its cost structure is fixed in the short-term due to the intensive need of capital by mining operations. In addition, efforts to reduce costs during periods of weak demand may be limited by previous rules and labor and federal agreements.

Concessions, authorizations, licenses and permits are subject to expiration, restriction or renewal and to various other risks and uncertainties.

Vale's operations depend on the granting of authorization and concessions by regulatory organizations from the government of countries where Vale works. The Company is subject to the laws and regulations of several jurisdictions, which can change at a moment's notice. Such

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changes may require changes in Vale's technologies and operations, resulting in unexpected capital expenses.

Some of Vale's mining concessions are subject to fixed expiration dates and can only be renewed for a limited number of times, and for limited periods. In addition to mining concessions, Company may obtain various authorizations, licenses and permits from government and regulatory agencies regarding the planning, maintenance, and operation of the Company's mines, as well as its logistics infrastructure, which may be subject to fixed due dates or to periodic reviews or renewals. Although the Company expects renewals to be granted when and as requested, there is no guarantee that such renewals will be granted as usual, as well as there is no guarantee that new conditions will not be imposed in this regard. Fees due by mining concessions may substantially increase over time in comparison with the original issuance of each operating license. If that is the case, the Company's business objectives can be affected by the costs of maintenance or renewal of its mining concessions. Thus, it is necessary to continually assess the mineral potential of each mining concession, especially at the time of renewal, in order to determine if maintenance costs of mining concessions are justified by the results of future operations, and thus be able to let some concessions expire. There are no guarantees that such concessions will be granted under terms favorable to the Company, as well as there are no guarantees as to estimate future mining activities or operation goals.

In many jurisdictions where the Company has exploration projects, it may be required to return to the Government a certain portion of the area covered by the operating license as a condition for renewing license or obtaining a mining concession. This retrocession obligation may lead to a substantial loss of part of the mineral deposit originally identified in its feasibility studies. For more information on mining concessions and similar rights, see "Regulatory Issues".

The Company's projects are subject to risks that may result in increased costs or delay in their implementation.

The Company is investing to maintain and increase its production and logistics capacity, as well as to expand the portfolio of minerals produced. Vale regularly analyses the economic viability of its projects. As a result of this analysis, the Company may decide to postpone, stay, or interrupt the execution of some of them. Its projects are subject to various risks that may adversely affect its growth and profitability prospects, including:

- It may have to deal with delays or costs higher than expected in order to obtain the necessary equipment or services and to implement new technologies to build and operate a project.
- Its efforts to develop projects according to the schedule may be hampered by the lack of infrastructure, including reliable telecommunication services and power supply.
- Suppliers and other corporate contractors may not comply with their contractual obligations to the Company.
- The Company may experience unexpected weather conditions or other force majeure events.

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- The Company may fail to obtain, experience delays or have higher than expected costs in obtaining the necessary permits and licenses for building a project.
- Changes in market conditions or legislation may make the project less profitable than expected at the time its operation begins.

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- There may be accidents or incidents during project implementation.
- It may be difficult to find appropriate skilled professionals.

Operational problems may materially and negatively affect the Company's business and financial performance.

An inefficient project management and operational incidents may lead to the suspension or reduction of the Company's operations, causing an overall decrease of productivity. Operational incidents may result in important failures in essential plant and machinery. There are no guarantees that project management will be efficient or that other operational problems will not occur. Any damage to the Company's projects or delays in its operations caused by inefficient project management or operational incidents may materially and negatively affect its business and operating results.

The Company's business is subject to various operational risks that can adversely affect the results of its operations, such as:

- Unexpected weather conditions or other force majeure events may occur.
- Adverse mining conditions may delay or hinder its ability to produce the expected amount of minerals and to meet the specifications required by customers, which may lead to price reductions.
- There may be accidents or incidents during the business operations, involving its mines, and related infrastructure, plants, railways, ports and vessels.
- Delays or disruptions in the transportation of its products, including railways, ports and vessels.
- Some of its projects are located in regions where tropical diseases, AIDS and other communicable diseases represent a major public health issue and pose risks to the health and safety of its employees.
- Labor disputes may disrupt its operations from time to time.

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- Changes in the market or legislation may affect the economic perspectives of an operation making it incompatible with the Company's business strategy.

The Company's business may be negatively affected if its counterparties fail to meet their obligations.

Customers, suppliers, corporate contractors and other counterparties may not perform the contracts and obligations assumed before the Company, which may have an adverse impact on the Company's operations and financial results. The ability of its suppliers and customers to meet their obligations may be adversely affected in times of financial stress or economic recession. Suppliers are also subject to capacity constraints in times of high demand, which may affect their ability to meet their obligations to Vale.

The Company currently operates and has projects related to significant parts of its pelletizing, bauxite, nickel, coal, copper and steel businesses through joint ventures with other companies. Important parts of its investments in power and its oil and gas projects are operated through consortia. Its forecasts and plans

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for these joint ventures and consortia assume that its partners will observe their obligations to make capital contributions, purchase products, management, and, in some cases, provide skilled and competent personnel. If any of its partners fails to observe its commitments, the affected joint venture or consortium may not be able to operate in accordance with its business plans, or the Company may have to increase the level of its investment to implement these plans.

Additionally, some of the Company assets can be controlled and managed by partners in joint ventures that may not comply fully with Company procedures, including health, safety, environment, and common rules. Failure, by any of the Company partners, to adopt any rules, controls or procedures equivalent to Company rules, controls and procedures may increase costs, reduce production or cause environmental, health or security incidents or accidents, which could adversely affect Company results and reputation.

The Company's business is subject to environmental, health and safety incidents or accidents.

The Company has operations involving the use, handling, storage, elimination and disposal of hazardous materials into the environment and the use of natural resources. Besides, the mining sector is generally subject to significant risks and hazards, including the imminent risk of fire or explosion, toxic gas leak, leak of pollutants or other hazardous materials, incidents involving rock slides in underground mining operations, incidents involving mobile equipment or machinery, etc. These situations may be caused by accidents or violation of operational standards, resulting in a significant incident, including damage or destruction of mineral assets or production facilities, injury or death of employees, damages to the environment, production delays, financial losses and possible legal liabilities. The Company has rules on health and safety, environment and risk management systems and processes in place to minimize the risk of such incidents or accidents. Despite our rules, policies and controls, our operations remain subject to incidents or accidents that may adversely affect our business or reputation.

Natural disasters can cause serious damages to the Company's operations and projects in countries where it operates and/or may have a negative impact on its sales to countries adversely affected by such disasters.

Natural disasters such as windstorms, droughts, floods, earthquakes and tsunamis can adversely affect the Company's operations and projects in countries where it operates, as well as possibly generating a reduction in sales to countries negatively affected which include shortage in power supply and destruction of industrial infrastructure facilities. Furthermore, although the physical impacts of climate change on its businesses still are highly uncertain, the Company may experience changes in rainfall patterns, water shortages, rising sea levels, increased intensity of storms and floods as a result of climate change, which can adversely affect its operations. In the past few years, at specific occasions, the Company has found that force majeure events have

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happened due to severe climate changes. On December 27, 2013, for instance, we have stated force majeure in several of four agreements for the sale of iron ore, due to adverse climate conditions in the Southeast of Brazil, which caused suspension in mining and transporting activities, creating serious challenges for operations in our Southeast System. The respective force majeure event was solved on January 6, 2014.

The Company may not have an adequate insurance coverage for certain business risks.

The Company's businesses are generally subject to numerous risks and uncertainties that could result in damage or destruction of properties, facilities and equipment. Vale's insurance against risks that are typical in such business may not provide adequate coverage. Risk insurance (including liability for environmental pollution or certain hazards or interruptions of certain business activities) may not be available at a reasonable cost or at all. Even when it is available, the Company can self-insure by determining that this will have better cost-benefit. As a result, accidents and other negative events involving its mining, production or logistics facilities may have an adverse effect on its operations.

The Company reserve estimates may materially differ from the mineral quantities that it may be able to actually recover; its estimates of mine life may prove inaccurate; and market price fluctuations and changes in operating and capital costs may render certain ore reserves uneconomical to mine.

Company reported reserves correspond to estimated quantities the Company determines to be economically mined and processed under present and anticipated conditions to extract their mineral content. There are numerous uncertainties inherent in estimating quantities of reserves and in projecting potential future rates of mineral production, including factors beyond Company control. Reserve reporting involves estimating deposits of minerals that cannot be measured in an exact manner, and the accuracy of any reserve estimate is based on the quality of available data and engineering and geological interpretation and judgment. Thus, no assurance can be given that the amount of ore indicated in those reports will be effectively recovered or that it will be recovered at the rates anticipated by the Company. Reserve estimates and estimates of mine life may require revisions based on actual production experience and other factors. For example, fluctuations in the market prices of minerals and metals reduced recovery rates or increased operating and capital costs due to inflation, exchange rates, changes in current regulations or other factors may render proven and probable reserves uneconomical to exploit and may ultimately result in a restatement of reserves. This reformulation can affect the rates of depreciation and amortization and cause a negative impact on the Company's financial performance.

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The Company may not be able to replenish its reserves, which could adversely affect its mining prospects.

The Company is engaged in mineral exploration, which is highly uncertain in nature, involves several risks and is many times non-productive. Its exploration programs, which involve significant capital expenditures, may fail to result in the expansion or replenishment of reserves depleted by current production. If the Company fails to develop new reserves, it will not be able to sustain its current level of production beyond the remaining lives of its existing mines.

The feasibility of a new mining project may change over time

Once mineral deposits are discovered, it can take a number of years from the initial phases of exploration until production is possible, during which the economic feasibility of production may change. Substantial time and expenditures are required to:

- Determine mineral reserves through drilling;

- Determine appropriate mining and metallurgical processes for optimizing the recovery of metal contained in ore;

- Obtain environmental and other required licenses;

- Construct the necessary mining and processing facilities and infrastructure required for the development of new projects (greenfield);
and

- Obtain the ore and/or extract the minerals from the ore.

If a project proves not to be economically feasible by the time the Company is able to explore it, the Company may sustain significant losses, and eventually be compelled to reduce such assets. In addition, potential changes or complications involving metallurgical and other technological processes arising during the life of a project may result in delays cost overruns that may render the project not economically feasible.

The Company faces rising extraction costs or investment requirements over time as mineral reserves deplete.

Mineral reserves are gradually reduced in the ordinary course of a mining operation. As mining progresses, distances to the primary crusher and to waste deposits become longer, pits become steeper, open mines become underground mines, and underground operations become deeper. Additionally, for some types of reserves, the mining level is reduced and hardness increases in greater depths. As a result, over time, the Company usually experiences increase in extraction costs per unit in each mine, or there may be a need for additional investments, including adjustment or construction of processing

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plants and expansion or construction of disposal barriers. Many of its mines have been operated for extended periods of time and it is likely that the Company needs to increase extraction costs per unit in these operations in particular.

Labor disputes may disrupt the Company's operations from time to time.

The Company has a substantial number of employees and some subcontractors' employees are represented by unions and are subject to collective bargaining agreements or other labor agreements that are subject to periodic negotiation.

Additionally, the Company is subject to periodical and regular investigations by the Ministry of Labor and Employment and the Labor Prosecution Office aiming compliance with labor rules, including those related to labor health and security. These investigations may cause fines and processes that could adversely and materially affect the businesses, the results and financial conditions of the Company.

Strikes and other labor disruptions in any of the Company's activities could adversely affect the operation of its facilities, the completion period and the cost of main projects. For more information on labor relations, see item 14 of this Reference Form. Moreover, we may be adversely affected by work stoppages involving third parties that may provide goods or services to the Company.

The Company may face shortages of equipment, services and skilled personnel.

The mining sector has faced global shortage of mining and construction equipment, spare parts, contractors and other skilled personnel during periods of high demand for minerals and metals and intensive development of mining projects. The Company may experience longer periods for the supply of mining equipment and face problems with the quality of outsourced engineering, construction and maintenance services. The Company competes with other mining companies and other extraction companies in relation to the hiring of highly skilled managers and staff with relevant technical and mining expertise, and may not be able to attract and retain such people. Shortages at peak periods can cause a negative impact on its operations, resulting in higher costs with investments, production disruptions, higher inventory costs, project delays and possible reduction in production and revenue.

Higher costs of energy or energy shortages may adversely affect the Company's business.

Energy costs are a significant component of the Company's production cost, representing 10.2% of the total cost of goods sold in 2013. To meet its energy demand, the Company depends on the following resources: Oil byproducts which accounted for 46% of all energy needs in 2013, electricity (25%), coal (7%), natural gas (16%) and other sources of energy (6%), using amounts converted to tons of oil equivalent (TOE).

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Expenses with fuel accounted for 7.5% of its cost with goods sold in 2013. Increases in oil and gas prices negatively affect profit margins regarding its logistics services, mining business, and iron ore pelletizing, fertilizers and nickel.

Expenses with electricity accounted for 2.7% of its total cost of goods sold in 2013. If the Company cannot ensure safe access to electricity at affordable prices, it may be forced to reduce production or may experience higher production costs, both of which can adversely affect its operating results. The Company faces the risk of energy shortages in countries where it has operations and projects, due to excessive demand, lack of infrastructure or adverse weather conditions such as floods or droughts.

Electricity shortages have already occurred in different parts of the world, and there is no guarantee that growth in capacity of power generation in countries where the Company operates is sufficient to meet increased consumption in the future. Future shortages and government efforts to respond to or prevent electricity shortages may have a negative impact on the cost or supply of electricity to the Company's operations.

Exchange rate volatility of currencies in which the Company conducts its operations relative to U.S. dollars could adversely affect its financial condition and operating results.

A substantial portion of the Company's revenues and debt is expressed in U.S. dollars, and exchange rate fluctuations can result in (i) losses regarding its net debt expressed in U.S. dollars and its accounts receivable and (ii) losses in fair value regarding its currency derivatives used to stabilize its cash flow in U.S. dollars. In 2013, the Company had exchange losses in the amount of US\$ 2.8 billion, while in 2012 and 2011, the Company faced exchange losses of US\$ 1.9 billion and US\$ 1.4 billion, respectively. Moreover, the exchange rate volatility of the Brazilian real, Canadian dollar, Australian dollar, and Indonesian rupiah and other currencies against the U.S. dollar affects the Company's results, since most of its goods are sold is expressed in US dollar, and most of the cost of goods sold is expressed in currencies other than the U.S. dollar, primarily in real (54% in 2013) and Canadian dollars (14% in 2013), while Company income is expressed primarily in U.S. dollars. The Company expects that currency fluctuations will continue to affect its revenues, expenses and cash flow.

The significant volatility in currency exchange rates may also result in the interruption of foreign exchange markets and may limit the Company's ability to transfer or exchange certain currencies into US dollars and other currencies for the purpose of making timely payments of interest and principal on its debts. Central banks and governments of countries where the Company operates may impose restrictive foreign exchange policies in the future and levy taxes on foreign exchange transactions.

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The integration between the Company and acquired companies may be more difficult than anticipated.

The Company may not be able to successfully integrate its acquired businesses. The Company has partially increased its business through acquisitions and part of its future growth may depend on acquisitions. The integration of acquired businesses may take longer than expected and the costs related to the integration of those businesses may be higher than expected. Completed acquisitions may not result in increased revenues, cost economy or operational benefits as initially expected at the time of conception. Acquisitions may lead to substantial costs as a result, for example, impairment amortization, unexpected contingencies arising out of acquired enterprises, impossibility of maintaining a key team, inconsistent standards, checks, procedures and policies between the Company and the acquired business, which may adversely affect its financial condition and the results of operations. Additionally, management focus may be deviated from ordinary responsibilities to integration-related issues.

Failures on Company information technology systems or difficulties in the integration of new corporate resources planning software may affect regular businesses of the Company.

The Company counts on information technology systems (IT) for the operation of many of its business processes. Failures to such IT systems may, whether caused by accident or ill-intended acts, may cause disclosure or robbery of sensitive information, resource deviation and interruption to commercial operations.

Additionally, the Company is in the middle of the integration of the new corporate resource planning software to its IT systems. Should it not be able to replace, update, or alter its current IT systems to be adapted to this new software at the appropriate time and with low cost, its ability to capture and process financial transactions may be affected adversely. Deploying the software may be more expensive or take longer than expected; causing loss of data or failures in the system that could affect the regular operation of Company businesses. Should it be able to successfully manage the deployment of the new software, results from its operations may be adversely affected.

The Company is involved in several lawsuits that may adversely affect its business, if rulings are not favorable to the Company.

The Company is involved in several lawsuits in which plaintiffs claim substantial amounts of money. The outcome of these lawsuits is uncertain and may result in obligations that may materially and negatively affect its business and the value of its shares, ADSs and HDSs. For more information, see item 4.3 of this Reference Form.

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Company's governance processes and compliance with its obligations may fail to avoid regulatory fines and damages to its reputation.

The Company operates in a global environment and its activities extend across multiple jurisdictions and complex regulatory structures with an increase in its legal obligations around the world. Its governance process and compliance with obligations, which include the identification and mitigation of risks through internal controls focused in the information published in their own financial reports, may not be able to avoid future violations of the law and accounting and governance standards. The Company may be subject to violations of its Code of Ethics and Conduct, business conduct protocols and fraudulent and dishonest behavior by its employees, contractors and other agents. Failure by the Company to comply with applicable laws and other rules can result in fines, loss of operating licenses and damages to its reputation.

Investors may find it difficult to comply with any judgment rendered outside Brazil against the Company or any of its affiliates.

Company investors can be located in jurisdictions outside Brazil and may file claims against the Company or management members with courts within their jurisdictions. The company is a Brazilian company and most of its officers and members of the Board of Directors are Brazilian residents. Most of Company's assets and the assets of its officers and members of the Board of Directors will be probably located in jurisdictions other than the jurisdictions of its investors. The investors, in their jurisdictions, may not be able to serve notices against the Company or its manager's resident outside their jurisdictions. Additionally, a foreign decision may be enforced in Brazilian courts, without a new analysis on merits provided that it is previously confirmed by the Brazilian Superior Court of Justice, which confirmation will be granted as long as such judgment: (a) meets all the formal requirements to be enforced pursuant to the legislation in force in the country where it was rendered; (b) has been rendered by a competent court after due process against the company or after sufficient evidence of contempt of court by the company, pursuant to the legislation in force; (c) is not subject to appeal; (d) has been authenticated by the Brazilian consulate in the country where it was rendered and is accompanied by a sworn translation into Portuguese; and (e) is not contrary to the sovereignty of Brazil, its public policy or morality. Therefore, investors may not obtain favorable decisions outside their jurisdictions in judicial processes filed against the Company or its managers passed by courts in their jurisdictions with decisions on the basis of the legislation in force in those jurisdictions.

Risks relating to Company's controlling shareholder or parent group

The Company's controlling shareholder exerts significant influence over Vale and the Brazilian government holds certain veto rights.

On December 31, 2013, Valepar S.A. (Valepar) held 52.7% of the common shares and 32.4% of the Company's total capital. As a result of its stock ownership, Valepar may elect the majority of members of the Board of Directors and can control the outcome of some actions requiring shareholder approval. For a description of the Company's ownership structure and of Valepar shareholders' agreement, see item 15 of this Reference Form.

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The Brazilian government owns 12 special class preferred shares (golden shares) of Vale, granting limited veto power over certain matters regarding the Company, such as changes of corporate name, location of main office and corporate purpose related to mining exploration. For a detailed description on the veto power of golden shares, see item 18.1 in the Reference Form.

Risks relating to Company suppliers

Several Company activities depend on the provision of products and services supplied by third parties. In view of that, Vale maps several risks of supply interruption related to its suppliers. At the limit, these interruptions may cause serious consequences to Company operations and projects.

Furthermore, for information about risks relating to Company suppliers, please see Risk Factors under "The Company face shortages of equipment, services and skilled personnel". The higher energy cost or lack of energy could adversely affect Company business, as above.

Risks relating to Company customers

Company business could be adversely affected by demand reduction for products manufactured by its customers, including steel (for iron ore and coal operations), stainless steel (for nickel operations), and agricultural commodities (for fertilizer operations).

The demand for iron ore, coal and nickel depends on global demand for steel. Iron ore and pellets, which together accounted for 73.0% of Company net operating revenues in 2013 are used in the production of carbon steel. Nickel, which accounted for 8.3% of Company net operating revenues in 2013 are mainly used to produce stainless and alloy steels. Demand for steel depends heavily on global economic conditions as well as on a series of regional and sectorial factors. The prices of the different types of steel and the performance of the global steel industry are highly cyclical and volatile and these business cycles in the steel industry affect the demand for and the prices of its products. Besides, the vertical integration of the steel and stainless steel industry and the use of scrap could reduce the global transoceanic trade of iron ore and primary nickel. The demand for copper is affected by the demand for copper wire and a sustained decline in the demand in the construction industry could have an adverse impact on Company copper businesses. The demand for fertilizer is affected by agricultural commodities prices in the international and domestic markets, and a sustained decline in the price of one or more agricultural commodities may cause an adverse impact on the Company's fertilizer business.

Risks relating to the fields of economy in which the Company operates

Prices charged by the Company, including prices of iron ore, nickel and copper, are subject to volatility.

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The iron ore prices are defined based on a variety of pricing options, which generally use spot price indices as a basis for determining prices to customers. Nickel and copper prices are based on prices reported for these metals in the

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commodity exchange markets, such as the London Metal Exchange (LME) and the New York Mercantile Exchange (NYMEX). Company products prices and revenues for these products are therefore volatile and can adversely affect its cash flow. World prices for these metals are subject to significant fluctuations and are affected by many factors, including effective and expected global macroeconomic and political conditions, levels of supply and demand, availability and cost of substitutes, inventory levels, and investments from commodities funds, and actions of participants in commodities markets.

The nickel industry had a strong supply growth in the past few years, which has continued to push prices in 2013. Nickel refining in China, using mainly imported nickel and related raw material, has had an estimated growth of 560,000 metric tons from 2006 to 2013. In 2013, the estimated Chinese production of pig iron nickel and iron nickel has continued to increase representing 25% of the world's nickel output. Other long term nickel production is also in ramp and will continue to increase global nickel supply in the next few years.

In January 2014, the Indonesian government approved a law that limits the sale and exportation of unprocessed nickel. Indonesia is currently an important nickel producer, and as consequence of this new law, we expect the offer of nickel at international markets to decline, caused nickel prices to increase. Should this measure not be in effect, or should it have an impact other than Company expectations, there may be a need of reviewing our projections for future nickel prices.

Risks relating to the regulation of the sectors in which the Company operates

Regulatory, political, economic and social conditions in the countries in which the Company has operations or projects could adversely affect its business and the market prices of its securities.

Vale's financial performance may be negatively affected by regulatory, political, economic and social conditions in the countries where the Company has significant operation. In many of these locations, Vale is open to risks, such as potential renegotiations, annulments or changes imposed by existing contracts, property expropriation or nationalization, currency exchange, legislation changes, local regulations and policies, political instability, bribery, extortion, corruption, civil war, acts of war, guerrilla activities, terrorism. The Company is also faces the risk of having to submit to foreign jurisdiction or arbitration or to be forced to execute a court order against a sovereign nation within its own territory.

Company operations rely on authorizations and concessions from governmental regulatory agencies in the countries where the company operates. For further details about the authorizations and concessions that its operations rely on, please refer to item 7 in this Reference Form. The Company is subject to laws and regulations in many jurisdictions that can experience changes at any time, and changes of laws and regulations may require modifications in its technologies and operations and result in unexpected capital expenditures.

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Actual or potential political or social changes and changes in economic policy may undermine investors' confidence which could hamper investments and therefore reduce still negatively affect economic and other conditions under which the Company operates, so as to adversely affect its business.

Disagreements with local communities where the Company operates may have a negative impact on its business and reputation.

Legal disputes with communities where the Company operates may appear. Although we contribute to local communities through taxes, royalties, employment and business opportunities and social programs, community expectations are complex and involve multiple stakeholders with different interests and constant evolution. In some cases, our operations and mineral reserves are located on lands or near lands owned or used by indigenous or aboriginal tribes, or other groups. Some of these indigenous populations may have rights to review or participate in the management of natural resources, and the Company discusses and negotiates with them in order to minimize the impacts of operations or to have access to their lands.

Some Company mining operations and other operations are located in territories where property may be subject to disputes or uncertainties, or in areas destined to be used for agriculture, or for purposes of agrarian reform, which may cause disputes with land owners, communities and local government. The Company checks and negotiates with these groups in order to reach a common agreement regarding land access and how to minimize the impact from our operations.

Disagreements or disputes with local groups, including indigenous or aboriginal tribes, may cause delays or interruptions in operations, adversely affect the Company's reputation or hinder its ability to work in mineral reserves and conduct operations. Protesters have acted in the past to disrupt Company operations and projects and may continue to do so in future. Although we are engaged in active discussions with all stakeholders and we defend ourselves vigorously against illegal acts, future attempts by protestors to cause harm to its operations could have a material adverse effect on its business.

The Company may experience adverse effects of changes in government policies or trends as nationalization of funds, including the imposition of new taxes or royalties on mining activities.

Mining is subject to government regulation in the form of specific taxes, fees and other contributions, as royalties on mining activities, which can have a significant impact on Company operations. In the countries where the Company operates, governments may impose existing taxes, fees or different contributions, or increase the existing rates for taxes, fees and different contributions, including royalties, reduce fiscal exemptions and benefits, solicit, or yet, compel renegotiation of fiscal stabilization agreements or, also, modify the basis on which they are calculated, in a manner unfavorable to the

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Company. Governments that have undertaken to create a stable tax and regulatory environment may shorten the duration of these commitments.

It is also possible that the Company must comply with internal benefit requirements in some countries, such as local processing rules, import taxes, or restrictions, or fees on transformed ore. Imposition or increase of such taxes or fees may significantly increase the risk profile and operational cost in these locations. The Company and the mining industry are subject to an increased nationalization trend related to mineral resources in certain countries where it operates, which may cause reductions in operations, tax increases or even expropriation and nationalization.

The Company may have its businesses affected by environmental, health and safety regulations, including regulations relating to climate change.

Almost all the aspects of Company's operations, products, services and projects all over the world are subject to environmental, health and safety regulations, which may expose the Company to increased liability and costs. These regulations require that the Company obtains environmental licenses, permits and authorizations for its operations and conducts environmental impact assessments in order to obtain approval for its projects, and permit to start construction. Besides, all significant changes required in existing operations must also undergo the same procedure. Difficulties to obtain operating licenses may cause delays in the deployment of projects or cost increases. Environmental regulations also impose rules and control standards on activities relating to research, mining, pelletizing, railway and maritime transportation services, ports, decommissioning, refining, distribution and marketing of products. These regulations may give rise to significant costs and liabilities. Besides, community associations and other stakeholders may request an increase in sustainable and socially responsible measures and development, and the efforts may lead to the creation or review of governmental rules and policies, which could entail significant cost increases and reduce Company profitability. Litigation relating to these or other matters may adversely affect the Company financial condition or cause harm to its reputation.

It is worth noting that according to the National Environmental Council (CONAMA) Resolution no. 237/97, the maximum validity for environmental licenses is five (5) years for prior license, six (6) years for installation licenses, and 10 (ten) years for operation licenses.

Lack of licenses or authorizations from competent environmental authorities to build, deploy, alter, improve and activities operation and/or enterprises potentially polluting and users of natural resources subject the violator to criminal and administrative penalties. The value of the fine will depend on the evaluation of any eventual associated environmental damage. Additional to fines, violator may be subject to sanctions as suspension of activities, deactivation, and demolition, and others, which are also applicable should the Project constructor fail to comply with terms set forth in the environmental licensing.

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Environmental regulations in many of the countries where Vale operates have become stricter in recent years and more regulations or a more aggressive enforcement of regulations already in force are likely to adversely affect the Company by imposing restrictions on its activities and products, by establishing new requirements relating to the emission and the renewal of environmental licenses, increasing costs or forcing the Company to get engaged in area expensive regeneration ventures. For example, changes in the Brazilian legislation to protect underground hollows have forced the Company to conduct large technical studies to participate in complex discussions with competent administration entities, discussions that are still ongoing. Therefore, Vale cannot yet assess the regulatory impact on its operations, though it is possible that in some operations and iron ore mining projects it may be forced to limit or alter mining activities, incurring on additional costs to conserve underground hollow or to make up for the impact inflicted on them, the consequences of which may be relevant to output volumes, cost or reserves in the Company's iron ore business.

Concerns over the climate change and efforts to comply with international regulations could lead governments to impose limits on carbon emission, to impose taxes on gas the emission of greenhouse effect gases, and establish commercial emission conditions applicable to Company operations, which could adversely affect its operating costs or its investment requirements. For example, in 2012, the Brazilian government conducted public hearings to present and discuss control plans for carbon emission in mining activities under the terms on the carbon emission law (National Climate Change Policy), and the Australian government introduced a carbon pricing mechanism that came into force in July, 2012 and that requires certain companies, Vale included, to purchase carbon emission permits. Furthermore, the International Maritime Organization is studying mechanisms, such as carbon price, to reduce greenhouse effect gases from international transportation, which may increase the Company's international transportation prices.

Risks relating to the foreign countries in which the Company operates

Economic developments in China may cause a negative impact on the Company's revenue, cash flow and profitability.

China has been the main driver of global demand for minerals and metals in recent years. In 2013, Chinese demand represented 64.3% of global transoceanic demand for iron ore, 50% of global demand for nickel, and 43% of the global demand for copper. The percentage of the Company's net operating revenues attributable to sales to consumers in China was 40.5% in 2013. Therefore, any contraction in China's economic growth may result in reduction on the demand for products, leading to lower revenues, cash flow and profitability. Poor performance of the Chinese real estate sector, the highest consumer of carbon steel in China, would also cause a negative impact on the Company's results.

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Risks relating to Company's ADSs and HDSs (American Depositary Shares and Hong Kong Depositary Shares)

If holders of ADRs or HDSs exchange the ADSs or HDSs, respectively, for underlying shares, they risk losing the ability to remit abroad funds corresponding to the sale in foreign currency.

The custodian of shares underlying the Company's ADSs and HDSs keeps records with the Central Bank of Brazil, entitling him to remit U.S. Dollars abroad by way of payment of dividends and other distributions relating to the shares underlying ADSs and HDSs or to the disposal of the underlying shares. In the event holders of ADRs or HDRs exchange ADSs or HDSs for underlying shares, they shall be entitled to use the custodian's records of US dollars for only five days from the date of exchange. Upon said term, holders of ADRs or HDRs can no longer hold and remit foreign currency abroad through the sale of underlying shares or distributions regarding such shares, unless they obtain their own registration, pursuant to the terms of Resolution No. 2,689 of the National Monetary Council (CMN), which confers on registered foreign investors the right to buy and sell securities at BMF&BOVESPA. If holders of ADRs or HDRs try to obtain a registration, they may incur expenses or suffer delays in the registration process, which may delay the receipt of dividends and other distributions with respect to the underlying shares or capital return in a timely manner.

The Company is unable to assure holders of ADR or HDR that their custodian registration or any registration will not be affected by future legislation modifications or additional restrictions applicable to holders of ADR or HDR, the disposal of underlying shares or the repatriation of resources obtained through disposal will not be taxed in the future.

Holders of ADR and HDR may not be able to exercise their pre-emptive rights relating to shares underlying their ADSs and HDSs.

ADR and HDR may not be able to exercise their preemptive rights or other rights relating to the underlying shares. The ability of HDR and ADR holders to exercise their preemptive rights is not guaranteed, especially if the law applicable in holders' jurisdiction (for example, the Securities Act in the United States or the Companies Ordinance in Hong Kong) demands that a registration declaration be effective or that an exemption from registration be available relating to those rights, as is the case in the United States, or for any document enabling preemptive rights to be registered as a prospectus, as is the case in Hong Kong. The Company is not bound to make a registration statement in the United States, or make any other record with respect to preemptive rights in any other jurisdiction, or to take measures that may be necessary to grant exemptions from available registration and it cannot ensure to holders that it shall make any registration statement or take such measures. The Company is not required to extend the preemptive rights to the holders of HDR through the depository.

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ADR and HDR holders may encounter difficulties to exercise their voting rights.

Holders of ADR or HDR do not have the same rights as shareholders. They only hold contract rights established in their favor under their respective deposit contracts. ADR and HDR holders are not entitled to take part in shareholders meetings and may vote by means of instructions delivered to the depositary. In fact, the ability of an ADR and HDR holder to instruct the depositary on how to vote will depend on the term and procedures to provide instruction directly or through a custodian and the holder liquidation system. With respect to ADSs, if no instruction is received, the depositary may, subject to certain limitations, appoint an attorney designated by the Company.

Legal protections for holders of Company securities differ from one jurisdiction to another and may be inconsistent, unknown or less effective than investors' expectations.

Vale is a global company whose securities are listed on many markets and which investors are located in many different countries. Investors legal protection systems vary across the world, sometimes in relation to important aspects, and investors must be aware that, as far as the Company's securities are concerned, the protections and remedies available to them may be different from those they are used to in their markets. The company is subject to securities laws applicable in several countries, which provisions and monitoring and enforcement practices are different. The only Corporations Act applicable to the Company is the Brazilian equity companies' law, with specific and substantial legal rules and procedures. The Company is also subject to corporate governance standards in various jurisdictions in which its securities are listed, but, as a foreign private issuer, the Company is not obliged to follow many of the corporate governance rules which apply to domestic issuers in the United States with securities listed on the New York Stock Exchange and is not subject to U.S. proxy voting rules. Likewise, the Company has been granted waivers and exemptions regarding certain requirements provided for in the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited (HKEx Listing Rules), in the regulations on Takeovers and Mergers and Share Repurchases and in the Securities and Futures Ordinance of Hong Kong, which are generally applicable to issuers listed in Hong Kong.

4.2 Comments on expectations for changes in exposure to risk factors

We constantly analyze the risks that the company is exposed to and which may adversely affect our business, financial situation and results of our operations. We permanently monitor changes in the macro-economic and sectorial scenario which might impact our activities, by tracking the main performance indicators. Our policy is one of continuous focus on financial discipline and conservative cash management. At present we do not identify any scenario which would lead to a reduction or increase in the risks mentioned in in item 4.1 of this Reference Form. .

Please find below the measures taken by the Company to mitigate some of the risk factors presented in Item 4.1 of this Reference Form:

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The Company may not be able to adjust the volume of production in time or cost effectively in response to changes in demand.

The Company seeks to continually develop technology solutions for excellence in operational performance.

Concessions, authorizations, licenses and permits are subject to expiration, restriction or renewal and to various other risks and uncertainties.

To deal with this challenge, the Company seeks to be a sustainable operator, always trying to be a catalyst for local development. Specifically on the environmental aspects, the Company has actions to improve efficiency in the licensing processes, such as a greater integration between environment and project development teams, the development of a Guide to Best Practices for Environmental Licensing and Environment, the appointment of teams of highly qualified specialists, a greater interaction with environmental agencies and the creation of an Executive Committee to streamline internal decisions.

Company's projects are subject to risks that may result in increased costs or delays that may jeopardize their successful implementation.

As a measure to mitigate projects' risks, Vale invests in training its employees working in the planning and execution of projects, and has taken actions to streamline the environmental licensing that has been the main reason for delays, such as creating a Guide to Best Practices of Environmental Licensing and Environment. Besides, the Company has implemented the dissemination of information and prevention campaigns to improve standards of health and safety of employees.

Vale aims to control and manage environmental liabilities at its units. Contaminated areas are considered to be those where there is proven pollution caused by the deposition, accumulation, storage and infiltration of substances or residues, implying adverse impacts on assets to be protected. If there is any suspected contamination, Vale aims to carry on successive environmental studies aiming to limit the extension of environmental degradation and potential risks to health and environment. Discovery of contamination requires measures to be taken by government agents, agents of the entity causing the environmental damage and owners. Corrective measures should be applied aiming to establish quality levels compatible to a specific

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future use. Thus, upon detecting the need to remove contamination identified in the area, Vale aims to prepare the Remediation Plan, according to applicable rules. After the remediation, results found are monitored for a period of time to be defined by the environmental entity. Monitoring results will indicate the remediation efficiency.

Eventual use restrictions arising out of previously existing contamination and that is found after remediation of deactivated areas should be made public, by changing the registry before the appropriate registrar.

Operational problems may materially and negatively affect the company's business and financial performance.

Along with the project development process, the Company has adopted an integrated risk assessment, which anticipates potential problems and allows mitigation plans. The methodological rigor promotes a higher accuracy of estimates, transparency and predictability in project development, as well as it ensures compliance with environmental regulations and health and safety requirements, and minimizes impacts on communities.

The company's business may be negatively affected if its counterparties fail to meet their obligations.

The Company always seeks high-level partners and keeps a fair and close relationship over time. Additionally, Vale tries to assess the quality of its counterparts' credits to define their exposure based on this evaluation.

Natural disasters can cause serious damages to the company's operations and projects in countries where it operates and/or may have a negative impact on its sales to countries adversely affected by such disasters.

The Company has adopted measures that include business continuity plans that provide immediate responses to protect people, assets and the company's image, alternative solutions to guarantee business continuity and fast recovery for return to normal production flow and monitoring and weather forecast systems. Moreover, the geographical diversification of its assets and sales to different countries and regions collaborate to reduce this risk.

The company may not have an adequate insurance coverage for certain business risks.

For cases where there is a limitation on purchased coverage, the Company uses its captive insurers to absorb some of the risks. In addition, it seeks to maintain a long-term relationship with the insurance and reinsurance market, and in all insurance lines, it works with the diversification of counterparties.

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It is important to emphasize that the Company only mitigates part of the risks through insurance policies, applying the operational risk management methodology to prioritize the risks and, for the most relevant ones, developing controls and action plans to mitigate the risks.

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The company faces an increase in extraction costs as mineral reserves are reduced.

As for the risks listed above, Vale seeks to have an extensive and high quality asset base in the business in which it operates, without relying solely on certain mines, thereby, diversifying risks. The Company invests heavily in mineral exploration since, with more samples, the estimation risk is reduced.

It continuously resupplies its reserve base through new projects to avoid depletion of mines. Moreover, it has a presence in several minerals and geographic locations, which also helps to diversify risks.

Labor disputes may disrupt the Company's operations from time to time.

The Company believes that staff is one of its competitive advantages, and seeks to treat all employees in the fairest possible way. The Company promotes a work environment conducive to dialogue, in which all employees are encouraged to share with their colleagues and superiors their concerns of any nature.

The company may face shortages of equipment, services and skilled personnel.

The Company works to increasingly integrate strategic planning, anticipating the demand for equipment and skilled workforce, as well as investing in strategic contracts with suppliers and initiatives to train specialized technicians, engineers and employees engaged in project implementation.

Higher costs of energy or energy shortages may adversely affect the company's business.

In order to mitigate the risk of power outages and/or costs, the Company manages a portfolio focused on power generation, comprised by self-production hydroelectric plants and long term supply agreements, based on current and projected energy needs of its mining operations.

The volatility of the exchange rate of currencies in which the company conducts its operations relative to US dollars could adversely affect its financial condition and operating results.

The Company's cash flow exchange exposure is assessed in conjunction with other market risk exposures - prices of products and supplies and interest rates - and mitigated when deemed necessary to support the growth plan, strategic planning and the Company's business continuity. Various forms of mitigation may be used: financial transactions through the use of derivatives in order to hedge, committed lines of credit

guaranteeing liquidity, or any strategic decisions aimed at reducing the risk of cash flow. For more details, see item 5.2 of this Reference Form.

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Integration between the Company and acquired companies, that are an important part of the Company's strategies, may be more difficult than anticipated.

In order to mitigate the risk of integration, Vale works with a broad management focus on acquisitions and leverages the previously acquired knowledge.

The company is involved in several lawsuits that may adversely affect its business, if rulings are not favorable to the Company.

Mitigation measures include the use of defenses presented by the Company based on legal opinions, consolidated legal doctrine, as well as in the predominant case law in the Higher Courts. The internal guidance and consultancy work is based on these same guidelines, sticking to the facts presented.

The Company's governance and compliance processes may not be able to avoid regulatory penalties and damages to its reputation.

The Company has internal controls and mechanisms to detect control failures and obtain information on cases of breach of conduct, especially through the Whistleblower Channel.

The Company may be negatively affected by changes in government policies, including the application of new taxes or royalties on mining activities.

As safety measures, the Company systematically monitors the changes previously mentioned to react quickly, when applicable participates in discussions with the government through representative bodies of the mining sector and always seeks to operate in the most sustainable possible manner.

Environmental, health and safety regulations, including regulations relating to climate change, may affect the Company's businesses.

The Company operates responsibly in all locations where it is present, respecting the communities and the environment. In order to be globally known as an example of excellence in the management of health and safety, the Company has been continually improving its systems.

The adverse economic developments in China may cause a negative impact on the Company's revenue, cash flow and profitability.

The Company mitigates this risk, which is reflected in prices, when deemed necessary to support its growth plan, strategic planning and business continuity.

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4.3 - Publicly known and relevant in-court, administrative or arbitration proceedings

On December 31, 2013, the Company was not party in arbitrations.

(i) Labor

On December 31, 2013, the Company was defendant in 22,703 labor lawsuits, in a total of R\$9.1 billion, for which there is R\$1.6 billion provision due to risks involved. Labor lawsuits filed against the Company relate to matters as overtime, time *in itinere*, health hazard and dangerous conditions premium, salary equity, and outsourcing, among others.

The tables below present an individual description of labor suits relating to the business of the Company and/or its subsidiaries.

1) Claim no. 01266-2006-012

Jurisdiction	6th Panel Supreme Labor Court
Instance	3rd Instance
Date of filing	11/27/2006
Parties in the suit	Public Prosecutor for Labor matters (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	R\$ 757,727.42
Main facts	The Public Prosecutor for Labor matters of Minas Gerais filed, on November 27, 2006, a public civil action seeking to prevent the outsourcing of operation of machines and equipment used for mining, such as wheel loaders, bulldozers and drills, monitoring and reading of instruments in the tailings dams and waste dumps, and preparation and execution of fire-plan (detonation).

On August 20, 2009, the ruling was issued (partially favorable) ordering Vale to refrain from outsourcing the services mentioned above, performing such activities, therefore, with its own employees. The court stated that such services were the main activities of the Company and thus could not be outsourced.

On October 15, 2009, Vale filed an appeal against this decision. The Prosecution Office has also appealed.

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On February 22, 2010, the Superior Regional Labor Court of the Third Region (TRT3) rejected Vale's appeal and partially accepted the appeal filed by the public prosecution office, granting the legal protection sought, forcing Vale to immediately comply with the decision.

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On May 18, 2010, Vale filed an appeal to the Supreme Labor Court (TST), claiming the violation of article 129, III, of the Federal Constitution, and article 83 of the Complementary Law No. 75/93, as well as of divergent case law based on the lack of collective interests authorizing the filing of the public civil action by the Prosecution Office, which could result in the lack of competence of such office to file such a claim and, consequently, dismissal of the action without appreciation on merits (article 267, I and VI and article 295, V, of the Code of Civil Procedure).

Vale has also claimed the violation of Article 5, items XXII, LIV and LV, of the Federal Constitution and of Article 899 of the Consolidation of Labor Laws (CLT), because of the inapplicability of the mortgage ordered by the Regional Labor Court without an enforcement procedure. Finally, Vale claimed the violation of items II and XIII, of Article 5, and sole paragraph of article 170, both of the Federal Constitution, in view of the violation of the right to freely work, provided that the legal requirements are met, considering that activities performed by service providers are specialized and can be legitimately agreed.

On May 21, 2010, in the files of the action filed by Vale, the TST accepted the preliminary order to suspend anticipated effects determining immediate compliance with the decision.

On July 9, 2010, Vale's appeal to the TST was dismissed by the TRT on the grounds that the lower court ruling did not violate any federal law or any predominant case law, against which decision Vale filed an interlocutory appeal on July 19, 2010 to the TST, which is still pending judgment, where it seeks acceptance of the appeal and assessment by the TST.

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Chances of loss	Probable
Analysis of impact in the case of losing the suit/ Lawsuit s relevance to the Company	In case of maintenance of the unfavorable decision, Vale is obliged, in Minas Gerais, to refrain from outsource services previously mentioned, having to perform such activities through its own employees; and to provide for the termination of contracts of outsourcing which may have as their purpose such services.
Amount provisioned (if any)	R\$ 209,488.55
Notes	There is only one labor claim filed by the employee who is on the list attached to the files of the Public Civil Action at stake who claims to be an employee of Vale. Initially, this was procedure no. 2102-2011-054, at the Court of Congonhas, however, due to decision regarding court competence, the claim was remitted to the Labor Court of Ouro Preto, where it is now procedure no. 1562-2012-069. The claim was judged to be inapplicable regarding recognition of employment relationship. An appeal was filed by the plaintiff, through which the plaintiff was successful regarding the compensation for hours <i>in itinere</i> , and the inapplicability of the employment relationship claim was sustained. The decision judging the appeal was not subject to appeals, reason why it became final and ended this procedure on February 24, 2014.
2) Claim no. 0000676-11.2012.5.24.0041	
Court	Labor Court of Corumbá Mato Grosso do Sul
Instance	1st Instance
Date of filing	10/24/2012
Parties in the suit	Public Prosecutor for Labor matters (plaintiff) and Mineração Corumbaense Reunida - MCR (defendant)
Amounts, goods or rights involved	R\$ 115,219.67
Main facts	The Labor Prosecution Office of Mato Grosso do Sul filed a public civil action claiming that MCR should be compelled to comply with labor safety rules set forth in Labor Regulatory Rules. On December 12, 2012, MCR filed its defense, claiming that it has Always complied with Regulatory Rules and that the accident reported in the action has not occurred due to non-compliance by the employee with the safety rules and

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procedures required by the Company.

Upon the initial hearing, the court determined an examination to find whether or not there is non-compliance with Regulatory Rules.

The examination report is under conclusion.

Chances of loss	Possible
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	In case of unfavorable decision, MCR must deploy safety rules deemed to be non-complied with, and the possibility of fines to the Employee Support Fund, at the currently estimated amount of R\$ 115,219.67.
Amount provisioned (if any)	Not applicable.
3) Claim n. 00329.2006.92020003	
Jurisdiction	Labor Court of Maruim Sergipe
Instance	3rd Instance (Supreme Labor Court)
Date of filing	01/23/2001
Parties in the suit	Vale S.A. (defendant) and Union for workers extracting iron, basic and precious metals-Sindimina (plaintiff)
Amounts, goods or rights involved	Guarantee of the operational activities at the potassium chlorate mine in Sergipe.
Main facts	Lawsuit brought by SINDIMINA union in the State of Sergipe on January 23, 2011, aiming to improve the suitability of the working conditions of employees in the underground potash mine in Sergipe to bring them up to regulatory standard NR 15, especially as regards the temperature of the mine and noise level. Vale filed the defense on February 14, 2001, claiming the lack of competence of the Union to file the action and the lack of infringement against regulating rule NR-15, which would be proved in the Discovery phase.

On February 20, 2006, the ruling was issued determining the adoption of measures, within 30 days, to improve the cooling of the mine, otherwise the activities would be interrupted until the implementation of such measures, and a daily fine of R\$ 100,000 would be applied. On September 25, 2006, Vale filed an appeal to the Regional Labor Court (TRT), which was partially granted, on August 07, 2007, to exclude the interruption of mine activities and the payment of a daily fine of R\$ 100 thousand from the conviction.

On November 29, 2007, Vale filed an Appeal before the Supreme Labor Court (TST) claiming compliance with the legal standards applicable to the activity.

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On December 19, 2012, the TST rejected Vale's appeal, and on February 6, 2012, Vale filed another appeal known as motion for clarification. In March 2012, the motion was dismissed by the TST, and Vale filed another appeal, to the Individual Bargaining Session 1 (SDI-1, internal division of TST) and also an Extraordinary Appeal to the Federal

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Supreme Court STF). Both of these appeals are still pending. Vale has been negotiating to reach a possible settlement, motivating suspension of the suit for 180 days.

Chances of loss

Probable

Analysis of impact in the case of losing the suit/ Reasons for importance for the Company

Any unfavorable decision may risk imposing an obligation to do so, fines and, in the worst case scenario, total or partial closure of the activities of the underground mine for exploitation of Potassium Chlorate/Sergipe, or a monetary penalty for illegal operation. The Company is taking precautionary measures to ward off the effects of any unfavorable decision, through improvements in working conditions.

Amount provisioned (if any)

No amount has been allocated since Plaintiff's claim refers to an obligation to do something (that is, to adapt working conditions to the relevant laws and regulations), with no impact on past and current results. It should be noted that, notwithstanding the outcome of the claim, Vale is already making improvements in the mine conditions. Moreover, the decision provides for the payment of a daily fine if the company continues to develop the mine activities without taking into account the obligation to adapt working conditions to the relevant laws and regulations as provided for in the court ruling.

Therefore, the Company will only be subject to a fine (i) when the decision becomes final (res judicata) and (ii) if an expert evidence demonstrates that the measures adopted by the company were not sufficient to adjust the working environment to the court ruling.

(ii) Taxes

The tables below present a description of individual tax cases considered relevant to the business of the company and/or its subsidiaries.

As result of some tax exceptions engaging companies at Vale group, the Company creates a provision totaling, on December 31, 2013, the amount of R\$ 771 million, of which (i) R\$321 million are related to controlled companies abroad, (ii) R\$173 million are related to Brazilian controlled companies, (iii) R\$ 141 million relate to provisions related to CFEM-related procedures (described in item 4.6(ii)in this Reference Form), and (iv) R\$136 million related to other tax procedures of the Company.

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With regard to the processes listed below which challenge the taxation of IRPJ and CSLL on profits from Company's affiliates abroad, it is important to notice that (i) regarding the period from 2009 onwards, tax authorities may issue new tax assessments to ensure the right to collect from the remaining balance of values of said taxes, should they understand that the calculation done by the Company is not correct; (ii) regarding the portion of IRPJ and CSLL questioned in Writ of Mandamus no. 2003.51.01.002937-0 (item 1 in this section), the Company adhered to the new Special Installment Program established by Law 12.865, dated October 9, 2013 (Special Installment Program); and (iii) regarding the other portion of IRPJ and CSLL discussed in Writ of Mandamus no. 2003.51.01.002937-0 (item 1 in this section), related to the period between 2002 (containing generating facts occurring in the period between 1996 and 2002), part of the debts related to year 2005 (related to tax credits that appear in Active Debt Certificates no. 70.2.12.000303-20 and 70.6.12.000814-20, arising out of Administrative Procedure no. 18471.001.243/2007-69, and supported in Tax Collection an no. 0015197-06.2012.4.02.5101), and year 2013 and following, were not object of adherence to the installment program.

Debts related to the years between 1996 and 2002 were not included in the tax recovery program due to the retroactive nature of the tax law, principle violated by the sole paragraph of article 74 in MP 2158/01, which, created only in 2001, intended, under legal fiction, require taxation of past events (1996 to 2001) in 2002. regarding the portion of the tax credit for year 2005, there is no adherence, as the portion corresponding to the requirement of taxes arising out of accrued compensated tax losses in prior years (1996 to 2002). Regarding the years 2013 and following, there is no adherence considering that the installment program allows for the payment of debts which generating facts occurred solely by December 31, 2012. These years, therefore, are outside of the scope of the program.

Additionally, considering the decision favorable to the Company in May 2012, attributing suspensive effects to the extraordinary appeal and, consequently dismissing the applicability of amounts being questioned, duly approved by the Plenary in April 2013, there is no need to post any bond while such favorable decision is still in force. In this sense, the company has used all the surety bonds and cancelled a pledge related to the third act of infringement (2007). [For now, we wait for a statement by the court regarding the use period of the value seized in fiscal collection 2012.5101.013553-4 (R\$ 55 million, which is the only guarantee that was still in effect.) for payment of the debt with deductions provided for under the terms in the Special Installment Payment legislation (REFIS)

Additionally, the special appeal addressed to the Superior Court of Justice (STJ), filed in the Writ of Mandamus no. 2003.51.01.002937-0 was included in the judgment agenda of October 22, a 2013, but was removed upon request by the Federal Prosecution Office. After an opinion submitted by the Federal Prosecution Office, the judgment of said appeal was scheduled for the session to be held on November 26, 2013, when Reporting Justice an Napoleão Maia,

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recognized (admitted) in part the appeal, and in this portion, he granted it, while Justice Sérgio Kukina partially granted the appeal, and, in that portion, denied it. This judgment was resumed on March 25, 2014, when Minister Ari Pargendler presented his vote, accompanying the reporting judge Napoleão Nunes Maia Filho, considering inapplicable the taxation of profit from foreign companies controlled by Vale, since international treaties against double taxation should prevail. The judgment session ended on April 24, 2014, when the First Panel of the STJ decided, by majority of votes, in favor of Vale. Waiting the decision to be published.

The appeal presents the following issues: (i) illegal nature of the taxation regime on profits from affiliates domiciled abroad introduced by article 74 of the Preliminary Order no. 2.158-35/01 and regulated by Normative Instruction 213/2002, by violation against infra-constitutional rules ruling on the generating facts for IR and CSLL; (ii) the illegal nature of the taxation with positive results on asset equivalence set forth in article 7th, Normative Instruction no. 213/2002. The Company claims (iii) dismissal of taxation on profit from affiliates domiciled in Belgium, Denmark, and Luxembourg, due to an TDTs signed by Brazil and these countries (discussion relates to article 7 in the treaties, which sets forth about the exclusive competence of the countries where the States are located to tax on profits); and (iv) non-application of the 75% fine on debts determined under Acts of Infringement related to Administrative procedures nos. 18471.001243/2007-69, 18471.000141/2008-15, 12897.000868/2009-98 and 12897.000023/2010-36, as the appeal filed against the rejection decision was attributed with suspensive effects, which would reestablish the preliminary order obtained by Vale before, suspending the applicability of these tax credits at the time of preparation of the acts of infringement by the supervising entity.

Debts listed in said Writ of Mandamus and in discussion on the records of the following processes were included in the Special Installment Program: (i) Tax Collection 0023959-11.2012.4.02.5101 (IRPJ and CSLL debts related to years 2003 to 2006); (ii) Tax Collection 2011.51.01.518168-2 and Motion for Tax Collection 2011.51.01.509917-5 (IRPJ and CSLL debts related to year 2007); (iii) Tax Collection 0023958-26.2012.4.02.5101 (IRPJ and CSLL debts related to year 2007); (iv) Tax Collection 0011487-75.2012.4.02.5101 (CSLL debts related to year 2008); (v) Tax Collection 0011476-46.2012.4.02.5101 and Motion for Tax Collection 0013553-28.2012.4.02.5101 (IRPJ debts related to year 2008); and (vi) Tax Collection 0023974-77.2012.4.02.5101 (CSLL debts related to year 2008).

As determined in the legislation applicable to the Special Installment Program, on November 29, a 2013, the Company made the initial payments of values due as IRPJ and CSLL on the profit of affiliates located abroad, due to adherence to the installment program. At the time, the Company also formally adhered to the terms of the Special Installment Program, upon delivering the respective attachments set forth by Joint Order PGFN/RFB no. 9/2013. Monthly payment of the installments has been duly made, ever since.

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Adherence to the Special Installment Program implied payment to the Federal Revenue Secretariat of R\$5.940 billion by the end of November 2013 and payment of R\$16.273 billion paid in 179 months, and the first installment was paid on December 31, 2013, in the amount of R\$ 91,825 thousand, adjusted by the SELIC interest rate. Thus, the present net value of the payment flow is estimated by the Company at R\$14.425 billion.]

The total liability for the years 2003 to 2012, including filed and unfiled periods for the Company and its affiliates, was estimated at R\$ 45.0 billion - R\$ 17,084 billion as principal, R\$ 9,831 billion as fine, R\$ 11,983 billion as interest and interest on fines, and R\$ 6.094 billion as fees.

Among options offered by the legislation, the Company opted for the payment in cash of the principal related to years 2003, 2004 and 2006 and dividing, into installments, the principal, fines, and interest related to 2005, and 2007 to 2012. According to the legislation, in case of cash payment, only the principal of the tax is due while in the installment payment, 80% of fines are exempted, as well as 50% of interest and 100% of fees.

The option chosen by the Company presents estimated face value of R\$ 22.214 billion, where R\$ 16.222 billion as principal, R\$ 1.565 multibillion as fine, and R\$ 4.427 billion as interest and interest on fines. Reduction of the principal is due to the discount of R\$798 million due to accrued losses in Brazil. The current value of this option after tax benefits is R\$ 14.425 billion, and it appears to be a better option compared to total payment in cash as it reduces the pressure on liquidity and minimize the present value of payments.

Participation on REFIS had impact of US\$ 6.7 billion (R\$ 14.8 billion) on the net profit in 2013. In following years, financial expenses will include interest comprising the payments made under REFIS. Future cash flows will be affected by monthly installments.

On this matter, it is important to note that on December 18, 2013, to comply with requirements in Law an 12.865/13, the Company submitted the petition to the records of said proceedings before the Superior Court of Justice (STJ), requiring partial dismissal of the decision and waiver of arguments under which the respective actions are grounded, according to partial waiver/dismissal parameters in the Writ of Mandamus no. 2003.51.01.002937-0.

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1) Writ of Mandamus 2003.51.01.002937-0

Jurisdiction	Superior Court of Justice and the Federal Supreme Court
Instance	3rd instance
Date of Filing	02/03/2003
Parties in the suit	Vale (Plaintiff/Appellant) and National Tax Authority (Defendant/Appellee)
Amounts, goods or rights involved	Not applicable
Main facts	In February 2003, Vale filed a Writ of Mandamus to ensure the right not to be subject to income tax and social contribution as far the profits of its subsidiaries and affiliates abroad were concerned, according to the sole paragraph of article 74 of the Provisional Executive Order 2.158-34/2001, and later amendments.

Arguments of the Company:(i) section 74 of the Provisional Measure overlooks the treaties against double taxation signed by Brazil; (ii) the National Tax Code forbids the aforementioned taxation as set forth by the Provisional Measure; (iii) even if section 74 of the Provisional Measure were valid, exchange variation should be excluded from the assessment of due taxes; and (iv) the rule IN 213/2002 is illegal and (v) violation of the principle of prior taxation related to generating facts occurring before December 2001.

In February 2003, an injunction request was granted to suspend the collection of the tax credit resulting from the challenged legislation, so that the rules of Law No. 9.532/97 would continue to apply.

In August 2005, a rejection ruling was issued, causing revocation of the injunction previously obtained by Vale.

Vale filed an appeal which was received on September 29, 2005, which reestablished the suspension to enforce the tax credit obtained by the Company in the injunction.

On March 29, 2011, the Federal Regional Court of the 2nd Region (TRF 2nd Region) dismissed the appeal, rejecting the arguments of Vale.

After reviewing the ruling, published on May 30, 2011, Vale has changed the prognosis from remote to possible, as reflected in its financial statements for June 30, 2011, filed on July 28, 2011. On

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June 3, 2011, Vale filed an appeal

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(motion for clarification) against the decision by the 2nd Region TRF, pointing out omissions regarding the exchange rate variation and on the unconstitutionality of the sole paragraph of article 74 of Provisional Executive Order, in addition to a contradiction relative to the application of treaties to avoid double taxation. The contradiction claimed by Vale is based on the fact that such challenged decision states, at the same time, that (a) Article 7 of the treaties against double taxation prohibits Brazil from taxing profits of affiliates and subsidiaries abroad, (b) that treaties prevail against internal laws and (c) that, however, such provision does not prevent the application of article 74 of the Provisional Executive Order 2158-35/01.

On November 28, 2011, the ruling which judged the motion (motion for clarification) partially in favor of Vale was published determining exclusion of exchange rate variation on the amount of foreign investment, but rejecting the other requests and the suspension of the tax credit granted by the appeal.

On December 13, 2011, Vale filed a Special Appeal at the Superior Court of Justice (STJ) and an Extraordinary Appeal at the Supreme Court of Justice (STF).

The Special and Extraordinary Appeals were admitted on May 7, 2012, the same day that Vale filed for a Preliminary Order before the Superior Court of Justice (STJ) and the Federal Supreme Court (STF) requesting attribution of suspensive effects to the Extraordinary Appeal. The Preliminary Orders aimed to suspend the application of tax credits. At the STJ, although the preliminary order was granted initially, the decision judging the preliminary order rejected Vale's claim, cancelling the preliminary order. At the STF, the preliminary order was granted on May 9, 2012 and confirmed by the panel at the STF on April 10, 2013, reason why it remains in force.

On October 22, 2013, the Special Appeal by Vale (STJ) was included in the judgment agenda, but was later removed by the Federal Prosecution Office that, subsequently, issued an opinion unfavorable to Vale's claim.

On November 26, 2013, the First Panel of the STJ resumed the judgment of the appeal, when the Reporting Justice and Napoleão Maia partially

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granted the appeal and, in this portion, granted the appeal, while Justice Sergio Kukina also granted in part the appeal and, in this portion, he denied it. This judgment was resumed on March 25, 2014, when Minister Ari Pargendler presented his vote, accompanying the reporting judge Napoleão Nunes Maia Filho, considering inapplicable the taxation of profit from foreign companies controlled by Vale, since international treaties against double taxation should prevail. The judgment session ended on April 24, 2014, when the First Panel of the STJ decided, by majority of votes, in favor of Vale. Waiting the decision to be published.

Chances of loss

Possible (regarding the remaining discussion which debt will not be subject to adherence to the tax recovery program).

Analysis of impact in the case of losing the suit/ Reasons for importance for the Company

In the event of a final unfavorable decision, regarding all arguments raised by the Company, the Brazilian Tax Authority may collect income taxes and social contributions on profits of subsidiaries and/or affiliates abroad, taking into account the principle of the due process of law in the specific administrative and in-court collection procedures. This impact refers to the period which is not object of dismissal/waiver, for adherence to the Special Installment Plan, corresponding to the amount of R\$ 1,438,234,037.07, as IRPJ, and R\$ 393,930,377.85, as CSLL (December/2013), totaling R\$ 1,832,164,414.92. Amounts related to debts in 1996 and 2002, the 2005 portion and 2013 are not included.

Amount provisioned (if any)

Not applicable.

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- Notes
- 1 On September 20, 2012, Vale received a summoning by the Federal Revenue of Brazil recognizing extinction of values related to Exchange rate variation, in the approximate value of R\$1.6 billion. Such extinction is due to the partially favorable decision issued in the judgment of an appeal (motion for stay) by the Company in this Writ of Mandamus 2003.51.01.002937-0, as described above in the item Main Facts .

 - 2 The judgment of this direct claim of unconstitutionality (ADI) filed by the Confederação Nacional da Indústria (CNI) questioning constitutionality of article 74 in the Provisional Order 2.158-35/01 returned on April 3, 2013. On April 10, 2013, the result of such ADI was issued, and it was defined that article 74 is not applicable to affiliates located in countries without favored taxation (non-fiscal heavens), but is applicable to companies located in countries with favorable taxation (fiscal heavens). There was a decision for the retroactive nature of the sole paragraph of article 74 in the MP, implying the impossibility to apply this legislation to generating facts prior to 2002. On the same date, Extraordinary Appeals filed by Cooperativa Agropecuária Mourãoense - COAMO and EMBRACO were judged. The preliminary order of Vale was maintained under unanimous voting, as seen in an item 1.1.

 - 3 - On December 18, 2013, in compliance with the terms in Law and 12.865/13, the Company filed a petition to the Superior Court of Justice requesting partial dismissal of the discussion and, also, waiving arguments under which the claim is grounded. On February 19, 2014, in the files of the Special Appeal, a partial waiver to the rights grounding the action was filed under terms required by Vale. The partial waiver produces effects in every tax contingency related to this issue, listed below

1.1) Development of Writ of Mandamus 2003.51.01.002937-0: Injunction no. 3.141

Court	Federal Supreme Court
Instance	3rd Instance
Date of filing	05/07/2012

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Parties to the claim	Vale (plaintiff) and Federal Government (defendant)
Values, assets or rights involved	Not applicable
Main factors	<p>On May 7, 2012, Vale filed for an Injunction to attempt to attribute suspensive effects to the Extraordinary Appeal filed in the Writ of Mandamus (item 1) aiming suspension of the applicability of amounts for IRPJ and CSLL being discussed.</p> <p>On May 9, 2012, Justice Marco Aurélio Mello , from the Federal Supreme Court granted the injunction in this sense. On May 25, 2012, the Union filed an appeal. On May 28, 2012, the Union filed an appeal (interlocutory appeal) against the decision granting the appeal. On June 8, 2012, Vale filed its response to this appeal. On April 10, 2013, there was a decision rejecting, unanimously, the Union Appeal (interlocutory appeal) and maintaining the injunction favorable to Vale. This decision was published on September 30, 2013 and no appeal was filed. Therefore, unless the judges reconsider their decision, the suspensive effect will have effects until judgment of the extraordinary appeal. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On February 14, 2014, a decision was issued determining the filing of a copy of the partial waiver request and the approving decision issued under the main Writ of mandamus (item 1 above). On February 24, 2014, Vale provided requested documents and the files moved to be appreciated by the reporting judge.</p>
Probability of loss	Possible (regarding the remaining discussion, which debt will not be subject to adherence to the tax recovery program).
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	In the event of any unfavorable outcome, there is a chance to require guarantee for amounts under discussion. This impact relates to the period that is not subject to dismissal/waiver for adherence to the Special Installment Program.
Allocated amount (if any)	None.

2) Tax Assessment Notice no. 18471.001243/2007-69

Court	Tax Appeals Administrative Council
Instance	2nd administrative instance
Date of filing	12/10/2007

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Parties to the claim	National Tax Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	Total debt R\$ 1,832,164,414.92 (December 2013)
Main factors	<p>On November 12, 2007, Vale was made aware of the Tax Assessment Notice which object is the collection of supposed income tax and social contribution debts levied on the accounting gain regarding the ownership equity of foreign subsidiaries in the 1996 to 2002 base years.</p> <p>On December 10, 2007, Vale filed the defense (Impugnation), arguing that such requirements were not valid and that no penalty could be applied because the injunction issued in favor of Vale in the writ of mandamus no. 2003.51.01.002937-0 (item 1 above) was still in force. The Internal Revenue Trial Service (DRJ, for its acronym in Portuguese) partially granted the impugnation.</p> <p>On August 18, 2008, Vale filed an appeal. The National Tax Authority also filed an Appeal regarding the partial reduction of the social contribution collection.</p> <p>At the judgment of these appeals, held on May 19, 2010, some of Vale's arguments were not assessed by the Administrative Council of Tax Appeals - CARF, because, according to this entity, the matter was deemed to be subject to assessment by the Judicial Branch. Additionally, (i) Vale's argument regarding the running of the statute of limitations as far the collections of taxes referring to generating facts occurring in 1996 and 1997 were concerned, was rejected, (ii) the application of a fine against Vale was canceled, and (iii) the appeal from the National Tax Authority was dismissed.</p> <p>On September 26, 2011, Vale filed a new appeal (motion for clarification) stating the existence of omissions in the decision by CARF, and the appeal was rejected.</p> <p>On October 3, 2011, the National Tax Authority filed an appeal (special appeal) before the Superior Chamber of Tax Appeals against the CARF decision, in the portion that cancelled the penalty. Vale responded to the appeal filed by the National Tax Authority, as well as to the Superior Chamber against the CARF decision, regarding dismissal of the claim on the statute of limitations.</p> <p>On January 24, 2012, the Special Major Taxpayer</p>

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Office (DEMAC, for its acronym in Portuguese), ex officio, interpreting the decision of the Federal Regional Court of the 2nd Region in the writ of mandamus no. 2003.51.01.002937-0 (item 1 above) in the sense that there is an overlapping between the discussions in this administrative proceeding and in that writ of mandamus, rejected all administrative appeals and ordered the immediate collection of part of the credits that are currently object of Tax Assessment no. 0015197-06.2012.4.02.5101 (item 2.2). Therefore, the appeals filed by Vale and the National Tax Authority against the CARF decision have not been assessed by the Superior Chamber of Tax Appeals.

Vale filed a writ of mandamus (no. 0001899-44.2012.4.02.5101 item 2.1 below) to attempt to reverse the order of DEMAC and ensure the regular development of the administrative process. Alongside, the Company filed a request for reconsideration at DEMAC, which was denied and, ever since, the files are with the judge, waiting to proceed.

Probability of loss

Remote

Analysis of impact in case of loss/Reasons for the importance of the claim to the Company

In the event of any unfavorable outcome, the taxes on the accounting gain regarding the ownership equity of foreign subsidiaries discussed under this tax assessment notice may be levied. Any financial impact, however, shall only occur in case of a final unfavorable decision in the in-court collection claim.

Allocated amount (if any)

None.

2.1) Writ of mandamus. 0001899-44.2012.4.02.5101 related to the Tax Assessment Notice no. 18471.001243/2007-69

Court	28th Federal Court of Rio de Janeiro
Instance	1st Instance
Date of filing	02/06/2012
Parties to the claim	Vale (plaintiff) and DEMAC (defendant)
Values, assets or rights involved	Not applicable
Main factors	On February 6, 2012, Vale filed a Writ of Mandamus to suspend the order of DEMAC and ensure the

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development of the administrative proceeding no. 18471.001243/2007-69 (item 2 above). The injunction request was denied, and Vale filed an appeal (interlocutory appeal) against this decision and a request for reconsideration. Both were rejected. Currently, the files are with the judge, waiting to proceed.

Probability of loss	Possible.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable
Allocated amount (if any)	None

2.2) Tax Collection no. 0015197-06.2012.4.02.5101 regarding the Tax Assessment Notice no. 18471.001243/2007-69

Court	5th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	03/13/2012
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	R\$ 1,832,164,414.96 (December/2013), value already included in the amount of the main administrative process described in item 2 above, added with legal fees.
Main factors	<p>On March 12, 2012, the National Tax Authority filed a claim to collect income taxes and social contributions presumably due, in view of the decision from DEMAC mentioned in item 2 above. On April 25, 2012, the National Tax Authority filed a petition requesting seizure of dividends to be distributed by Vale on April 30, 2012.</p> <p>On April 26, 2012, Vale filed a petition challenging the request from the National Tax Authority and offering, alternatively, a bank guarantee to secure the debt. On the same day, the court accepted the offering of the guarantee, presented by Vale on April 27, 2012.</p> <p>On May 8, 2012, the National Tax Authority presented a request to block monies through the BACENJUD system - through which the judge directly accesses all bank accounts in the country - that, upon objection by Vale, was rejected due to</p>

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the preliminary order granted by Minister Marco Aurélio de Mello, suspending application of tax credits, object of this enforcement (item 1.1. above). Vale then requested acknowledgement of the lack of need to guarantee the execution since application of credits is suspended and dismissal of the previously granted surety bond, granted by the Court. Faced with such decision, on May 14, 2012, Vale paid the bail. Due to the aforementioned injunction granted in the provisional remedy cited in item 1.1, the lawsuit has been stayed, as the national Tax Authority cannot collect non-applicable credits.

Probability of loss	Remote
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	In the event of any unfavorable outcome related to the injunction object of item 1.1 above, Vale may have to present a new guarantee of the amounts in question under this collection.
Allocated amount (if any)	None

3) Notice of Infraction nº 18471.000141/2008-15

Jurisdiction	Administrative Council of Fiscal Resources
Instance	2nd administrative instance
Date of filing	03/28/2008
Parties in the suit	Federal Revenue Secretariat (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Total debt R\$ 14,216,698,702.56 (in November 2013, date adhering to REFIS)
Main facts	On February 29, 2008, Vale became aware of the tax assessment notice which object is the collection of supposed income tax and social contribution debts levied on the accounting gain regarding the ownership equity of foreign subsidiaries in the 2003 to 2006 base years.

On March 28, 2008, Vale filed the defense (impugnation), arguing, in short, that such requirements were not valid and the penalty applied inapplicable, because the injunction issued in favor of Vale in the writ of mandamus no. 2003.51.01.002937-0 was still in force (item 1). The Internal Revenue Trial Service (DRJ, for its acronym in Portuguese) rejected the impugnation.

On August 18, 2008, Vale filed an appeal against the decision, reinforcing the arguments included in

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its impugnation.

At the trial, in May 19, 2010, the Tax Appeals Administrative Council (CARF, for its acronym in Portuguese) annulled the decision by DRJ, determining a new decision be given, assessing the applicability of the International Convention to which Brazil is a signatory and which purpose is to avoid double taxation between countries, since this argument was not assessed by DRJ.

On September 26, 2011, the National Tax Authority filed an appeal (motion for clarification) against the CARF decision. National Tax Authority At the trial on October 3, 2011, CARF partially accepted the motion, only to clarify the omission e textually determine the nullity of the decision by DRJ.

On December 6, 2011, the National Tax Authority filed a petition that, the Judicial Branch while assessing an appeal (motion for clarification) in the writ of mandamus no. 2003.51.01.002937-0 (item 1 above), had acknowledged the simultaneous nature, that is, the identity between matters addressed in this administrative procedure and that judicial process, which, according to the National Tax Authority, would cause nullity of the decision by CARF that annulled the decision by DRJ and, therefore, again prevailing the DRJ decision rejecting Vale's impugnation, the process should be directed to the collection sector of the National Tax Authority.

On December 22, 2011, Vale filed a petition alleging that the Judicial Branch had not recognized said concurrency, reason why the claim by the National Tax Authority could not be accepted.

On January 18, 2012, the President of the 2nd Chamber of CARF issued a monocratic decision, taking for granted the arguments of the National Tax Authority to revoke the decision by CARF which annulled the decision by DRJ.

On January 25, 2012, Vale filed a writ of mandamus (item 3.1 below) alleging the illegality of the decision by the President of the 2nd Chamber of CARF, which was suspended due to a preliminary injunction obtained by VALE determining the regular processing of the administrative claim.

Alongside this writ of mandamus (item 3.1 below), in the administrative sphere, Vale filed an appeal (hierarchical) against the decision by the President of the 2nd Chamber of CARF, addressed to the Ministry

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of Finance. Regarding the writ of mandamus (item 3.1 below), the National Tax Authority filed a claim to suspend the injunction order (No. 0009426-51.2012.4.01.0000) and on March 13, 2012, a decision was published suspending the effectiveness of the injunction obtained by the Company in the writ of mandamus. Vale then filed an appeal (interlocutory appeal) in order to reverse such decision, which was denied.

On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of credits, distributed the Tax Assessment to collect amounts under discussion (item 3.2 below). Vale filed for injunction to attribute a suspensive effect to the extraordinary appeal filed in the writ of mandamus (item 1 above), with consequent suspension of applicability of amounts related to IRPJ and CSLL being questioned. On May 9, 2012, Justice Marco Aurélio Mello, from the Federal Supreme Court granted the injunction, confirmed by unanimity of votes on April 10, 2013. This decision was published on September 30, 2013 and no appeal was filed. Therefore, unless the judges reconsider their decision, the suspensive effect will have effects until judgment of the extraordinary appeal.

Chances of loss

Not applicable, as the debt has been eliminated upon adherence to REFIS (Special Installment Program under Law 12865/13)

Analysis of impact in the case of losing the suit/ Reasons for importance for the Company

Not applicable due to adherence to REFIS.

Amount provisioned (if any)

None

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3.1) Writ of mandamus. 0004826-69.2012.4.01.3400 related to the Tax Assessment Notice no. 18471.000141/2008-15

Court	14th Federal Court of the Federal District
Instance	1st Instance
Date of filing	01/25/2012
Parties to the claim	Vale (plaintiff) and President of the 2nd Chamber of the Tax Appeals Administrative Council (defendant)
Values, assets or rights involved	Not applicable
Main factors	<p>On January 25, 2012, Vale filed a writ of mandamus against the decision of the President of the 2nd Chamber of CARF (item 3 above). On January 27, 2012, an injunction order was issued to suspend the effects of the decision mentioned above and to determine the regular processing of administrative claims no. 18471.000141/2008-15 (item 3 above) and 12897.00868/2009-98 (item 4 below). The National Tax Authority filed a claim to suspend the injunction request (no. 0009426-51.2012.4.01.0000) and, on March 12, 2012, a decision was issued suspending the validity of the injunction obtained by the Company, in the writ of mandamus (item 3 above). Vale then filed an appeal (interlocutory appeal) which was rejected. After, in April 2012, a petition was filed notifying about the preliminary order granted by Minister Teori Zavascki, suspending collection of allegedly due values. The decision on the writ of mandamus is still pending. On November 25, 2013, a decision in favor of Vale was published.</p> <p>On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On February 13, 2014, the judge issued na order determining that he was not entitled to appreciate the waiver request as he understood that, after publication of the decision, the judge ends with his jurisdictional activity and should be limited to correcting possible material and calculation errors.</p>
Probability of loss	Not applicable due to adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable due to adherence to REFIS.

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Allocated amount (if any) None

3.2) Development of Notice of Infraction no. 18471.000141/2008-15: Tax Assessment Notice no. 0023959-11.2012.4.02.5101

Court 7th Tax Collection Court of Rio de Janeiro

Instance 1st federal instance

Date of filing 3/13/2012

Parties to the claim National Tax Authority (Plaintiff) and Vale (Defendant)

Values, assets or rights involved R\$ 14,216,689,702.56 (in November 2013, date adhering to REFIS), without reduction factors provided for in the tax recovery program. Amount included in the main administrative procedure described in item 3 above.

Main factors On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of credits, filed a tax enforcement act to collect IRPJ and CSLL allegedly due, which, in their understanding, would be possible considering the decision by the President of the 2nd Chamber of CARF, mentioned in item 3 above.

On May 11, 2012, Vale filed a petition informing the granting of the injunction by the STF suspending the applicability of credits (item 1.1 above) and, on the same date, a decision was pronounced suspending this tax collection. On December 18, 2013, Vale presented a petition claiming the loss of object of the collection due to adherence to REFIS. On February 24, 2014, an order was issued determining (a) the National Treasury should comment regarding the notified payment, and (b) the presentation by Vale of a legible power of attorney, which has been complied with by the Company. We are waiting for the National Treasury to comment on the order

Probability of loss Not applicable, as the debt has terminated upon adherence to REFIS.

Analysis of impact in case of loss/Reasons Not applicable, as the debt has terminated upon adherence to REFIS.

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for the importance of the claim to the Company

Allocated amount (if any) None

4) Notice of Infraction nº 12897.000868/2009-98

Court	Administrative Tax Revenue Council
Instance	2nd administrative instance
Date of filing	01/11/2010
Parties in the suit	Federal Revenue Secretariat (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Total debt R\$ 17,656,913,530.85 (November 2013, date adhering to REFIS)
Main facts	On December 14, 2009, Vale became aware of the tax assessment notice which object is the collection of supposed income tax and social contribution debts levied on the accounting gain regarding the ownership equity of foreign subsidiaries in the 2007 base year.

On January 11, 2010, Vale filed the response (impugnation), arguing, in short, that such requirements were not valid and the penalty was non-applicable because the injunction issued in favor of Vale in the writ of mandamus no. 2003.51.01.002937-0 was still in force (item 1 above). The Internal Revenue Trial Service (DRJ, for its acronym in Portuguese) rejected the impugnation against the company.

On July 8, 2010, Vale filed an appeal against this decision, reinforcing the arguments included in its impugnation.

On November 23, 2011, while judging the appeal, CARF decided to send the files back to DRJ so that a new decision would be issued to replace the previous one, and that the applicability of the Convention to avoid double taxation be assessed.

On December 6, 2011, the National Tax Authority filed a petition that, while judging the an appeal (interlocutory appeal) in the files of the writ of mandamus no. 2003.51.01.002937-0 (item 1 above), the Court had had acknowledged the simultaneous nature, that is, the identity between matters addressed in this administrative procedure and that judicial process, which, according to the National Tax Authority, would cause nullity of the

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decision by CARF that annulled the decision by DRJ and, therefore, again prevailing the DRJ decision rejecting Vale's impugnation, the process should be directed to the collection sector of the National Tax Authority.

On December 22, 2011, Vale filed a petition alleging that the Judicial Branch had not recognized said concurrency, reason why the claim by the National Tax Authority could not be accepted.

Upon analysis of the claims by both parties, the President of the 2nd Chamber of CARF issued a decision, accepting the arguments of the National Tax Authority so as to revoke the CARF decision annulling the DRJ decision.

On January 25, 2012, Vale filed a writ of mandamus (item 3.1 above) alleging the illegality of the decision by the President of the 2nd Chamber of CARF, which was suspended due to a preliminary order obtained by Vale determining also the regular processing of the administrative claims. In addition to this writ of mandamus (item 3.1 above), in the administrative sphere, Vale filed an appeal (hierarchical) against the decision by the President of the 2nd Chamber of CARF, addressed to the Ministry of Finance.

Regarding the writ of mandamus (item 3.1. below), the National Tax Authority (Union) filed a claim to suspend the injunction order (No. 0009426-51.2012.4.01.0000) and on March 13, 2012, a decision was published suspending the effectiveness of the injunction obtained by the Company in the writ of mandamus. Vale then filed an appeal (interlocutory appeal) in order to reverse the decision, which was denied.

On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of distributed the Tax Assessment to collect amounts under discussion (item 4.4)

Vale filed for injunction (item 1.1 above) to attribute a suspensive effect to the extraordinary appeal filed in the writ of mandamus (item 1 above), with consequent suspension of applicability of amounts related to IRPJ and CSLL being discussed. On May 9, 2012, Justice Marco Aurelio Mello, of the Federal

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Supreme Court, granted the injunction, confirmed by unanimity of votes on April 10, 2013. This decision was published on September 30, 2013 and no appeal was filed. Therefore, unless the judges reconsider their decision, the suspensive effect will have effects until judgment of the extraordinary appeal.

Chances of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Not applicable, as the debt has terminated upon adherence to REFIS.
Amount provisioned (if any)	None.

4.1) Writ of mandamus 2011.51.01.005614-9 related to the Tax Assessment Notice no. 12897.000868/2009-98

Court	32nd Federal Court of Rio de Janeiro
Instance	Awaiting admissibility judgment to file at 2nd instance
Date of filing	04/29/2011
Parties to the claim	Vale (Plaintiff) and National Tax Authority (Defendant)
Values, assets or rights involved	Amount already included in the value of the main administrative process described in item 4 above.
Main factors	<p>On March 15, 2011, Vale received a letter collecting income taxes and social contributions which, according to the National Tax Authority, would not be the object of the appeal filed by the Company in the administrative procedure. (item 4 above)</p> <p>On March 23, 2011, Vale filed a petition requesting the cancellation of the collection on the grounds that the claimed values were indeed covered by the appeal.</p> <p>On April 15, 2011, Vale received a notice from the National Tax Authority announcing the maintenance of the collection.</p> <p>On April 29, 2011, Vale filed a writ of mandamus to suspend the collection. The preliminary order requested in this writ of mandamus was rejected.</p> <p>On May 25, 2011, the Company filed an appeal (interlocutory appeal) against the decision that rejected the request for injunction to suspend the collection. On July 15, 2011, the request to suspend</p>

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the effects of the previous decision in this appeal was rejected as well. On January 15, 2013, the ruling denying the writ of mandamus was issued. On January 30, 2013, Vale filed an appeal against the decision. On March 14, 2013, the judge received the appeal and attributed suspensive effect. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. The files were remitted to be appreciated by the judge.

Despite of the unfavorable decision issued in this writ of mandamus, application of tax credits discussed herein is suspended due to the STF decision (item 1.1 above).

Probability of loss Not applicable, as the debt has terminated upon adherence to REFIS.

Analysis of impact in case of loss/Reasons for the importance of the claim to the Company Not applicable, as the debt has terminated upon adherence to REFIS.

Allocated amount (if any) None.

4.2) Tax Collection no. 2011.51.01.518168-2 regarding the Tax Assessment Notice no. 12897.000868/2009-98 dated 1/11/10

Court	11th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	07/08/2011
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	R\$ 33,903,846.09 (November 2013, date adhering to REFIS) included in the amount of the main administrative process described in item 4 above, added with legal fees.

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Main factors	<p>On July 8, 2011, the National Tax Authority filed a claim to collect income taxes and social contributions presumably due, in view of the collection letter mentioned in item 4.1. above.</p> <p>On August 29, 2011, Vale submitted a surety bond guarantee regarding the tax collection, which was expressly approved by the National Tax Authority.</p> <p>On September 28, 2011, Vale filed a defense (motion to stay under No. 2011.51.01.509917-5), requiring the suspension of the collection until the final judgment of the main writ of mandamus (item 1 above) and the cancellation of the Company's Debt Certificate due to a material error, in view of an inconsistency of the amounts indicated therein.</p> <p>On September 13, 2012, the National Tax Authority presented its response to Vale's motion for collection.</p> <p>Applicability of tax credits discussed herein is suspended due to the preliminary order by the STF (item 1.1 above), enabling cancellation, on July 4, 2013 of the surety bond presented as guarantee. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS.</p>
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.
Allocated amount (if any)	None.
4.3) Motion to Stay Collection no. 2011.51.01.509917-5 regarding the Tax Assessment Notice no. 12897.000868/2009-98 dated 01/11/10	
Court	11th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	09/28/2011
Parties to the claim	Vale (plaintiff) and National Tax Authority (Defendant)
Values, assets or rights involved	Value already mentioned in item 4.2 above.
Main factors	On September 28, 2011, Vale filed a defense (motion to stay)

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requiring the suspension of the collection until the final judgment of the main writ of mandamus (item 1 above) and the cancellation of the Company's Debt Certificate, that grounds this tax collection, due to a material error, in view of an inconsistency of the amounts indicated therein. On September 13, 2012, the National Tax Authority filed response to the motion for stay. Vale commented on the response by the National Tax Authority (response) and filed an appeal (motion for stay), requesting that the court commented about the suspension request for the collection based on the STF decision (item 1.1 above). The appeal was granted and the process was suspended. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS.

Probability of loss Not applicable, as the debt has terminated upon adherence to REFIS.

Analysis of impact in case of loss/Reasons for the importance of the claim to the Company Not applicable, as the debt has terminated upon adherence to REFIS.

Allocated amount (if any) None.

4.4) Development of the Notice of Infraction no. 12897.000868/2009-98: Tax Assessment 0023958-26.2012.4.02.5101

Court 7th Tax Collection Court of Rio de Janeiro

Instance 1st federal instance

Date of filing 05/8/2012

Parties to the claim National Tax Authority (Plaintiff) and Vale (Defendant)

Values, assets or rights involved R\$ 17,623,009,684.76 (November 2013, date adhering to REFIS) included in the main administrative procedure described in item 4 above, added with legal fees.

Main factors On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of credits, filed a tax enforcement act to collect IRPJ and CSLL allegedly due, which, considering the administrative decision

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mentioned in item 4 above.

Applicability of tax credits discussed herein is suspended due to a preliminary order by the STF (item 1.1 above). Vale filed a petition claiming suspension of the collection based on this decision. The claim was granted and the process is suspended. . On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS. On February 20, 2014, an order was issued determining (a) the National Treasury should comment regarding the notified payment, and (b) the presentation by Vale of a legible power of attorney, which has been complied with by the Company. The National Treasury failed to comment under the legal term, and on March 26, 2014, a decision was issued determining suspension of the process.

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.
Allocated amount (if any)	None.

5) Notice of Infraction no. 12897.000023/2010-36

Jurisdiction	Administrative Tax Revenue Council
Instance	2nd administrative instance
Date of filing	02/12/2010
Parties in the suit	Federal Revenue Secretariat (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Total debt R\$ 4,691,806,328.15 (November 2013, date adhering to REFIS)
Main facts	On January 18, 2010, Vale became aware of the tax assessment notice which purpose is the collection of alleged income tax and social contribution debts levied on the accounting gain regarding the ownership equity of foreign subsidiaries during the 2008 base year.

On February 2, 2010, Vale filed a defense (impugnation), arguing in short that such requirements were not valid and that penalty is non-applicable because the injunction issued in favor of Vale in the writ of mandamus no.

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2003.51.01.002937-0 was still in force (item 1 above). The Internal Revenue Trial Service (DRJ, for its acronym in Portuguese) rejected the impugnation.

On July 8, 2010, Vale filed an appeal against this decision, reinforcing the arguments previously submitted in the impugnation. Such appeal is still pending judgment.

On December 6, 2011, the National Tax Authority filed a petition alleging that, while judging the appeal (motion for clarification) in the writ of mandamus no. 2003.51.01.002937-0 (item 1 above), the Court had acknowledged the simultaneous nature, that is, the identity between matters addressed in this administrative procedure and that judicial process, requiring the claim to be directed to the Tax Authority collection sector.

On January 17, 2012, Vale filed a petition alleging that the Court had not recognized said simultaneous nature and that the claim by the National Tax Authority could not be accepted.

The President of the 3rd Chamber of the 1st Section of CARF determined that the claim be directed to the National Tax Authority Office of origin. On March 16, 2012, Vale received a letter requiring the payments of the amounts *sub judice*.

On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 above and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority, even with the suspended application of credits, filed a tax enforcement act to collect credits in question (item 5.6).

Vale filed for injunction (item 1.1 above) to attribute a suspensive effect to the extraordinary appeal filed in the writ of mandamus (item 1 above), with consequent suspension of applicability of amounts related to IRPJ and CSLL being discussed. On May 9, 2012, Justice Marco Aurélio Mello, from the Federal Supreme Court granted the injunction, confirmed by unanimity of votes on April 10, 2013. This decision was published on September 30, 2013 and no appeal was filed. Therefore, unless the judges reconsider their decision, the suspensive effect will have effects until judgment of the extraordinary appeal.

Chances of loss

Not applicable, as the debt has terminated upon

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	adherence to REFIS.
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Not applicable, as the debt has terminated upon adherence to REFIS.
Amount provisioned (if any)	None.
5.1) Writ of mandamus 2010.51.01.017597-3 related to the Tax Assessment Notice no. 12897.000023/2010-36, dated 02/12/10:	
Court	Federal Regional Court of the 2nd Region
Instance	2nd Instance
Date of filing	09/28/2010
Parties to the claim	Vale (Plaintiff) and National Tax Authority (Defendant)
Values, assets or rights involved	Amount already included in the value of the main administrative process (item 5 above, and legal fees).
Main factors	<p>On August 19, 2010, Vale received a letter requesting the payment of income taxes and social contributions which, according to the National Tax Authority, would not be the object of the appeal previously filed by the Company in the administrative procedure (item 5 above).</p> <p>On August 23, 2010, Vale filed a petition requesting the cancellation of the collection on the grounds that the claimed values were indeed covered by the appeal, which judgment is still pending (item 5 above).</p> <p>Given the acceptance of the arguments submitted by Vale, related to calculation errors, the National Tax Authority reduced the amount charged and issued a new collection letter, received by Vale on September 6, 2010.</p> <p>Due to the partial maintenance of the collection, on September 28, 2010, Vale filed a writ of mandamus. The injunction request was granted to suspend the collection of debts required by the National Tax Authority.</p> <p>Against this decision, the National Tax Authority filed an appeal (interlocutory appeal), which was denied.</p>

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On December 16, 2011, an unfavorable judgment was rendered, as the Court deemed that such values would not be the object of the administrative appeal filed by the Company. (item 5 above)

Against this decision, Vale filed an appeal on January 9, 2012. After the reply by the appellee (National Tax Authority), the files were remitted to the TRF 2nd Region, to judge the appeal. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On March 7, 2014, a decision was issued approving the waiver. On March 28, 2014, files were remitted to the National Tax Authority.

Despite of the unfavorable decision issued in this writ of mandamus and the pending judgment of the appeal and the possibility of an appeal being filed by the National Tax Authority against the decision approving the waiver, , application of tax credits discussed herein is suspended due to the STF decision (item 1.1 above).

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.
Allocated amount (if any)	None.

5.2) Tax Collection no. 0011487-75.2012.4.02.5101 regarding the Tax Assessment Notice no. 12897.000023/2010-36 dated 02/12/10

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	01/26/2012
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	R\$ 21,731,827.64 (November 2013, date adhering to REFIS) included in the amount of the main administrative process described in item 5 above, added with legal fees.
Main factors	On January 26, 2012, the National Tax Authority filed a claim to collect income taxes and social

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contributions presumably due, in view of the collection letter mentioned in item 5.1.

On February 2, 2012, Vale posted a bond to secure the tax collection claim and on February 6, 2012, the Court issued a decision considering such bond. Applicability of tax credits discussed herein is suspended due to a preliminary order by the STF (item 1.1 above). On May 7, 2013, the decision was issued suspending the process based on the STF decision and dismissing the need of guarantee of collected values, also authorizing cancellation of the surety bond presented by Vale. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS. On January 24, 2014, the files were remitted to the National Tax Authority.

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS.
Allocated amount (if any)	None.

5.3) Motion to Stay Collection no. 0013552-43.2012.4.02.5101 regarding the Tax Assessment Notice no. 12897.000023/2010-36 dated 02/12/10

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	03/08/2012
Parties to the claim	National Tax Authority (Defendant) and Vale (Plaintiff)
Values, assets or rights involved	Value already mentioned in item 5.2 above.
Main factors	On March 8, 2012, Vale filed a defense (motion to stay) against the tax collection in item 5.2 above. Among other arguments, Vale argued that the applicability of tax credits under discussion is suspended due to a preliminary order by the STF (item 1.1. above).

On May 9, 2013, the decision was published extinguishing the motion for stay, and the court understood that in view of the suspended applicability of credits and the decision issued in the collection an (item 5.2 above) authorizing

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cancellation of the guarantee, Vale had lost its legal interest in the motion, noting yet that new motions for stay could be filed should the collection follow its regular course (in case of the suspension determined by the STF ends).

On August 30, 2013, the final decision was certified and the process was offset. Action ended..

Probability of loss	Action ended
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Action ended
Allocated amount (if any)	None

5.4) Tax Collection no. 0011476-46.2012.4.02.5101 regarding the Tax Assessment Notice no. 12897.000023/2010-36 dated 02/12/10

Court	4th Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	01/26/2012
Parties to the claim	Federal Taxpayer Authority (plaintiff) and Vale (defendant)
Values, assets or rights involved	R\$ 60,325,116.23 (November 2013, date adhering to REFIS), as IRPJ, value already included in the amount of the main administrative process described in item 5 above, added with legal fees.
Main factors	<p>On January 26, 2012, the National Tax Authority filed a claim to collect income tax presumably due, in view of the collection letter mentioned in item 5.1, requesting the blockage of Vale credits in procedure no. 20035101.024181-3, underway at the 12th Federal Court of Rio de Janeiro. On February 2, 2012, Vale entered the records, filing a surety bond to guarantee collection.</p> <p>On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the judge, upon request by the National Tax Authority, blocked on line R\$ 55,654,046.21 in cash, through the BACENJUD system - through which the judge directly accesses all bank accounts in the country. Vale filed an appeal (interlocutory appeal)</p>

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against this decision. The applicability of tax credits under discussion is suspended according to a preliminary order by the STF (item 1.1 above), reason why on May 14, 2012, a court order suspended the lawsuit.

On May 14, 2014, Vale filed a petition claiming the release of the value blocked online. On May 15, 2013, the Surety Bond was returned to the Company and, subsequently, an order was issued determining that the National Tax Authority should comment regarding the claim to release the blocked value. On June 18, 2013, the National Tax Authority commented contrary to the claim to cancel the online blocking. On July 9, 2013, a decision was issued cancelling the online blocking of Vale credits in procedure no. 2003.5101.024181-3, however, the order maintained the online blocking. On December 18, 2013, Vale filed a petition claiming loss of objecting of this collection due to adherence to REFIS.

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Based on legal determination, due to adherence to the tax recovery program (REFIS), the value deposited judicially, resulting from money attachment, will be converted into income in favor of the Federal Government, becoming final payment, upon application of reduction factors determined by Law 12.865/13. Possible remaining balance may be raised by Vale
Allocated amount (if any)	None.

5.5) Motion to Stay Collection no. 0013553-28.2012.4.02.5101 regarding the Tax Assessment Notice no. 12897.000023/2010-36 dated 02/12/10

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	03/08/2012
Parties to the claim	National Tax Authority (Defendant) and Vale (Plaintiff)
Values, assets or rights involved	Value already mentioned in item 5.4 above.

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Main factors	<p>On March 8, 2012, Vale filed a defense (motion to stay) against the tax collection in item 5.4 above.</p> <p>The applicability of tax credits being discussed is suspended by a decision by the STF (item 1.1 above), reason why on May 10, 2012 a decision suspended the suit. On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS.</p>
Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Based on legal determination, due to adherence to the tax recovery program, the value deposited judicially, resulting from money attachment, will be converted into income in favor of the Federal Government, becoming final payment, upon application of reduction factors determined by Law 12.865/13. Possible remaining balance may be raised by Vale.
Allocated amount (if any)	None.

5.6) Development of Notice of Infraction no. 12897.000023/2010-36: Tax Assessment Notice no. 0023974-77.2012.4.02.5101

Court	1st Tax Collection Court of Rio de Janeiro
Instance	1st federal instance
Date of filing	05/08/2012
Parties to the claim	National Tax Authority (Plaintiff) and Vale (Defendant)
Values, assets or rights involved	R\$ 4,609,749,384.28 (November 2013, date adhering to REFIS), value included in the main administrative procedure described in item 5 above, added with legal fees)
Main factors	<p>On May 8, 2012, before publication of the unfavorable decision by the STJ, in the injunction related to item 1 and, thus, when the suspensive effect of the preliminary order granted was still in effect, the National Tax Authority filed a tax assessment notice to collect the amounts of IRPJ and CSLL supposedly due, considering the administrative decision mentioned in item 5 above.</p> <p>The Tax Authority filed a request to block and seize monies through the BACENJUD system, which was denied. Vale informed in the files that the applicability of tax credits is suspended by a preliminary order by the STF (item 1.1 above), which caused the judge to determine suspension of</p>

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the collection.

On May 11, 2012, Vale filed a petition informing about the attribution of suspensive effect to the extraordinary appeal filed in the writ of mandamus no. 0002937-09.2003.4.02.5101 due to preliminary order request filed in the (items 1 and 1.1 above) and requesting suspension of the enforcement, which was granted on the decision on May 17, 2012. On May 22, 2012, Vale filed an appeal (motion for clarification), which was accepted to clarify that the enforcement will remain suspended until notice of the final judgment of the extraordinary appeal filed by Vale (item 1 above). On December 18, 2013, Vale filed the waiver petition for purposes of adhering to REFIS.

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS
Allocated amount (if any)	None.

5.7) Development of Notice of Infraction no. 12897.000023/2010-36: Writ of mandamus no. 35681-31.2012.4.01.3400

Court	1st Tax Collection Court of the Federal District
Instance	1st federal instance
Date of filing	07/13/2012
Parties to the claim	Vale (Defendant) and National Tax Authority (Plaintiff)
Values, assets or rights involved	Not applicable
Main factors	On July 13, 2012, Vale filed a writ of mandamus to annul the measure taken by the President of the 3rd Chamber of the 1st CARF Section, which ordered the early dismissal of administrative process no. 12897.000.023/2019-36 (item 5).

On July 19, 2012, a decision denied the injunction that had not been requested by the Company. Vale filed a petition for reconsideration, in an attempt to correct the decision that, by mistake, rejected an alleged request of preliminary order which was not even made. However, the request was denied.

In view of this decision on August 22, 2012, Vale

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filed an appeal, which was not granted. On July 8, 2013, the decision was published determining the claim was inapplicable and extinguishing the suit. Vale filed an appeal (motion for stay) and, after submission of an opinion by the Federal Prosecution Office, the files were remitted to the judge's office. On July 8, 2013, an unfavorable decision was issued, and on July 25, 2013, Vale filed an appeal. Files were received by the Federal Regional Court on October 18, 2013 and we are waiting the judgment on the petition notifying adherence to REFIS.

Probability of loss	Not applicable, as the debt has terminated upon adherence to REFIS
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable, as the debt has terminated upon adherence to REFIS
Allocated amount (if any)	None.

6) Administrative Proceeding no. 16682.721173/2013-04

Court	Office of Large Taxpayers - DEMAC / RJ
Instance	1st Administrative Instance
Date of filing	11/14/2013
Parties to the claim	Federal Revenue (plaintiff) and Vale (defendant)
Values, assets or rights involved	R\$ 1,158,135,533.96 (December/2013REFIS).
Main factors	On November 14, 2013, the Office for Large Taxpayers - body of the Federal Tax Authority - filed an Act of Infringement to collect a fine due to alleged omissions and errors in data presented in magnetic files, related to operations carried out in calendar years 2008, 2009, and 2010. Magnetic files were presented to prove the relation between entrance and exit tax documents supporting the PIS and COFINS credit operation requested in the refund claim. On December 13, 2013, Vale submitted its defense (impugnation), based on the following arguments: (i) the fine was applied in a wrong way; (ii) this is an alleged continuous infringement, which would cause reduction to the fine; (iii) infringement against the principles of proportionality and reasonability; (iv) contradiction

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between the checking term and the fiscal statement generating the act of infringement and decisions regarding claimed PIS and COFINS credits, (v) impossibility to apply a fine due to insufficient description of goods; and (vi) mistakes made by the supervision, while calculating gross income. On December 16, 2013, the files were forwarded to the Judgment Unit of the Federal Revenue Office of Brazil, in Ribeirão Preto - SP, where they wait to be appreciated.

Probability of loss	Possible.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable.
Allocated amount (if any)	Not applicable.
Notes	Resulting from Civil Investigation conducted by the Federal Prosecution Office no. 0718500.2012.0059

7) Administrative Proceeding no. 16682.721227/2013-23

Court	Office of Large Taxpayers - DEMAC / RJ
Instance	1st Administrative Instance
Date of filing	11/14/2013
Parties to the claim	Federal Revenue (plaintiff) and Vale (defendant)
Values, assets or rights involved	R\$ 607,344,889.57 (December/2013REFIS)
Main factors	On November 14, 2013, the Office for Large Taxpayers - body of the Federal Tax Authority - filed an Act of Infringement to collect a 50% fine over a declined claim related to PIS and COFINS credit refund linked to exporting operations in the period between the first quarter 2008 and the fourth quarter 2010. On December 13, 2013, Vale submitted its defense (impugnation), based on the following arguments: (i) lack of final credit creation, (ii) controversial case law regarding the concept of input for purposes of PIS and COFINS credit and difficulties faced by the Company regarding its right to credit and compensations applied; (iii) lack of proportionality in the fine; (iv) fine applied separately, as a means to threaten the taxpayer. On December 16, 2013, the files were forwarded to

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the Judgment Unit of the Federal Revenue Office of Brazil, in Ribeirão Preto - SP. On March 21, 2014, the files were forwarded to the Guiding and Tax Assessment Division of the Office for Large Taxpayers of the Federal Revenue of Brazil in Rio de Janeiro - DEMAC/RJ, where they wait to be appreciated.

Probability of loss	Possible.
Analysis of impact in case of loss/Reasons for the importance of the claim to the Company	Not applicable.
Allocated amount (if any)	Not applicable.
Notes	Derived from MPF nº 0718500.2012.00599

(iii) Civil

The tables below present a description of individual civil nature processes considered relevant to the business of the company and/or its subsidiaries.

1) Claim no. 0063023-34.2008.8.19.0001

Jurisdiction	41st Civil Court of the Court of Justice of Rio de Janeiro
Instance	1st Instance
Date of filing	03/17/2008
Parties in the suit	Vale (plaintiff) and Movimento dos Sem Terra - MST (defendant)
Amounts, goods or rights involved	Protection of the company's assets and guarantee of its operations
Main facts	Vale filed a suit with a request for anticipated relief obliging the defendant to cease attacks, violent acts or incitements which cause the operational stoppage of the company by the MST. The claim for anticipated relief was granted, establishing that the MST must refrain from such acts. The MST failed to comply with the decision, reason why Vale

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	requested an increase in the established fine in the event of noncompliance, which was granted by the court.
	Recently, both parties engaged into an effort to come to a possible settlement for this case.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	The lawsuit was initiated in order to ensure the protection of the assets of the company and its operational activities. A possible unfavorable decision can increase the exposure of the company to MST attacks.
Amount provisioned (if any)	None.
2) Claim no. 0015963-69.2006.4025101	
Jurisdiction	7th Specialized Panel of the Federal Circuit Court of Appeals of the 2nd Region (Court of Origin: 30th Court of the Federal Court of Rio de Janeiro)
Instance	2nd Instance
Date of filing	08/18/2006
Parties in the suit	Federal Rail Network (Rede Ferroviária Federal S.A.), succeeded by the Federal Union (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	R\$ 3,885,191,684.41
Main facts	The plaintiff filed a claim against the Company to receive an indemnity claiming that it suffered losses arising out of contractual default on the part of Vale.
	The contract concluded between the parties involved railway transposition in the city of Belo Horizonte.
	The parties have reached a settlement, through which the construction costs of the new railroad segment will be offset from an eventual conviction of Vale, if any, if the claim is judged in favor of the Federal Government. This agreement was legally approved. On June 25, 2012, a sentence rendered the lawsuit unfounded. The Federal Government filed an appeal that is awaiting judgment.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Any unfavorable decision could generate a financial loss for the company, in the light of the amounts involved.

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Amount provisioned (if any)	None
3) Claim no. 0009362-71.1997.4.02.5001	
Jurisdiction	5th Panel of the Federal Circuit Court of Appeals of the 2nd Region
Instance	2nd Instance
Date of filing	11/10/1997
Parties in the suit	Federal Public Prosecutor Espírito Santo (plaintiff) and Federal Union, Gerdau, Açominas S.A., Companhia Siderúrgica de Tubarão, Usinas Siderúrgicas de Minas Gerais S.A., Vale, Odacir Klein, Luis Andre Rico Vicente, Jorge Eduardo Brada Donato, José Armando Figueiredo Campos, Rinaldo Campos Soares, João Jackson Amaral, Claudio José Anchieta de Carvalho Borges, Ivo Costa Serra and Companhia Docas do Espírito Santo - CODESA (defendants)
Amounts, goods or rights involved	Incalculable amount application for annulment of the concession contract for use of port terminals for the Tubarão Complex.
Main facts	This is a Public Civil Action which aims to annul the authorization by which Vale and some of the other defendants operate the Port Terminal at Praia Mole, in the State of Espírito Santo. In November 2007, after 10 years of conducting the proceedings, there was a decision judging the requests to be inapplicable and recognizing the validity of concession contracts that allow exploitation of port terminals located in Praia Mole. On July 3, 2012, the decision was upheld by the Federal Circuit Court of Appeals of the 2nd Region (TRF2) when the appeal filed by the Prosecutor's office was heard, filed against the decision by the TRF2, on October 23, 2012, special (STJ) and extraordinary (STF) appeals. Both appeals await at the TRF2 to be analyzed regarding applicability and subsequent forwarding to the STJ and STF, respectively to be appreciated.
Chances of loss	Remote
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the Company	Incalculable amount
Amount provisioned (if any)	None

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4) Claim no. 0024892-89.2011.8.13.0570

Court	1st Civil Court of the District of Salina / MG
Instance	1st Instance
Date of filing	09/14/2011
Parties in the suit	Minas Gerais State's Prosecutor (Plaintiff), Vale S.A., Minas Gerais Land Institute - ITER, Manoel da Silva Costa Junior, Evandro Carvalho, Mauro Eurípedes Rocha Mendes, Ricardo de Carvalho Rocha, Luciana Rocha Mendes, Orozino Marques de Carvalho, Adelzuih Marques Santos, Altemar Alves Ferreira, Breno Rodrigues Mendes (Defendants).
Amounts, goods or rights involved	Compensation for damages to the State of Minas Gerais in the minimum amount of R\$ 200 million, civil fine in an amount of no less than R\$ 600 million, plus the lands acquired by Vale.
Main facts	<p>This is a Public Civil Action filed by the State's Prosecutor (MP) against Vale and other 10 defendants, in which the Prosecutor claimed that <i>an organized group of people acted with the intention of illegally taking ownership of lands belonging to the State of Minas Gerais</i>. The MP requested an injunction determining defendants' <u>unavailability, with the exception of Vale</u>, up to R\$ 200,000,000.00, in addition to the search and seizure of tangible properties and the lifting of tax and bank secrecy. The petition was granted by the court and upheld by Minas Gerais' Court of Justice.</p> <p>At the end, the Prosecutor petitioned the <i>stay of all effects with consequent annulment of all agricultural title that had been issued by the ITER involving the lands located in the Municipalities of Salinas, Santa Cruz de Salinas, Padre Carvalho, Fruta de Leite, Rubelita, between January 2007 and August 2011</i>; that the ITER was convicted <i>to hire, at their own expense, a specialized company to audit all legitimate titles issued by the State of Minas Gerais, whose amount could correspond to R\$ 200,000,000.00, a civil fine in the amount of no less than R\$ 600,000,000.00, the loss of public roles and positions, the stay of political rights, and a ban from providing service or benefitting in any way from the government</i>. Vale filed its defense (objection) on March 15, 2012 and the decision has not been issued yet.</p>
Chances of loss	Possible
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the	Damages to the Company's image as its name is associated with land-grabbing in the Northern region of the State of Minas Gerais, and due to the annulment of acquisition and loss of amounts paid

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Company	by Vale (approximately R\$ 35 million)
Amount provisioned (if any)	None
5) Special Appeal 1.262.401 - BA	
Court	Superior Court of Justice
Instance	3rd instance
Date of filing	08/26/2005
Parties in the suit	Interunion Capitalização S.A. (plaintiff) and Companhia Paulista de Ferro Ligas CPFL (defendant)
Amounts, goods or rights involved	R\$ 921,165,598.90.
Main facts	Interunion filed a collection claim against CPFL (Vale affiliate) to receive R\$248,968,222.18, corresponding to 200 debentures object of the agreement that, although named Forward Purchase and Sale of Debentures, was indeed a debenture Lease Agreement. The defense (motion for stay) filed by CPFL was rejected, causing the filing of an appeal to the Court of Justice of Bahia. While judging this appeal, the Court of Justice of Bahia sustained the rejecting decision, causing the filing of a special appeal (STJ) by CPFL. STJ accepted the special appeal by CPFL, determining extinction of the claim, understanding that Interunion failed to appropriately show the calculation performed, which is not dispensable to file a collection claim. Against the ZSTJ decision, Interunion filed a series of appeals (motion for stay, motion of difference, interlocutory appeal and new motion for stay), which were all rejected successively. Interunion, then, filed an extraordinary appeal (addressed to the STF). Upon analysis of admissibility, the STJ understood that the appeal was not applicable, rejecting it, that is, its remittance to the STF to have analysis of the merit, under the terms in the decision published on March 10, 2014. Against this inadmissibility decision, Interunion filed an appeal (interlocutory appeal) waiting to be judged by the Vice-presidency of the STJ, and eventual remittance to the STF.
Chances of loss	Probable (15.8%) and Remote (84.22%)
Analysis of impact in the case of losing the suit/ Reasons why it is relevant to the	Eventual unfavorable decision in the process would cause financial losses to the Company.

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Company

Amount provisioned (if any) R\$ 145,335,483.98.

(IV) Environmental

The tables below present a description of individual environmental nature processes considered relevant to the business of the company and/or its subsidiaries.

1) Claim no. 0317.02.002974-8

Jurisdiction 2nd Civil Court of Itabira - Minas Gerais
 Instance 1st Instance
 Date of filing 09/26/1996
 Parties in the suit City of Itabira (plaintiff) and Vale (defendant)
 Amounts, goods or rights involved R\$ 3,706,892,276.82

Main facts The municipality of Itabira seeks compensation for expenses that it alleges to have incurred with public services rendered as a consequence of Vale's mining activities. The case was suspended, pending judgment of a writ filed by Vale to be used in this lawsuit, so that favorable evidence produced in another lawsuit could be used (item 2 below). On January 2012, the writ was judged against Vale.

However, this case remains suspended because the court in the first degree has not yet received from the Court of Justice of Minas Gerais information on the writ. After this communication, the lawsuit may resume its normal course. However, the parties filed a joint petition on March 12, 2013 requesting suspension of the suit to attempt a settlement.

Chances of loss Total amount divided into possible loss (15%) and remote loss (85%).

Analysis of impact in the case of losing the suit/ Reasons for importance for the Company Any unfavorable decision in the lawsuit would generate great financial losses for the Company, although there is no risk of stoppage of activities.

Amount provisioned (if any) None.

2) Claim no. 0317.02.007032-0

Jurisdiction 1st Civil Court of Itabira - Minas Gerais

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Instance	1st Instance
Date of filing	08/22/1996
Parties in the suit	City of Itabira (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	R\$ 3.201,227,083.78
Main facts	Suit filed in the municipality of Itabira, in the State of Minas Gerais, in which the plaintiff claims that the operations of the iron mines in Itabira caused environmental and social damage and requires the restoration of the site and the implementation of environmental programs in the region. Expert witnesses were used in this case, and the report issued jointly by IBAMA and FEAM was favorable to Vale. Nevertheless, the Municipality requested the production of new expert evidence, which was accepted by the judge. For this purpose, a multidisciplinary team from the Federal University of Lavras as appointed. On November 6, 2012, there was a settlement hearing in which the petition to stay the lawsuit was granted until May 6, 2013 in order to form the parties. The parties filed a joint petition on March 12, 2013 requesting suspension of the suit to attempt a settlement.
Chances of loss	Total amount divided into possible loss (7%) and remote loss (93%).
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Any unfavorable decision in the lawsuit would generate great financial losses for the Company, although there is no risk of stoppage of activities.
Amount provisioned (if any)	None.
3) Process no. 26.295.47.2012.4.3700	
Jurisdiction	8th Federal Court of São Luís Maranhão
Instance	1st instance
Date of filing	07/22/2012
Parties in the suit	Sociedade Maranhense de Direitos Humanos, Conselho Indigenista Missionário (CIMI), Centro de Cultura Negra do Maranhão CNN (plaintiffs) and IBAMA and VALE (defendants).
Amounts, goods or rights involved	R\$ 720,000,000.00 or higher
Main facts	The public civil action aims the suspension of the licensing process for the Expansion of Carajás Railroad. For that, plaintiffs claim that the environmental licenses granted by IBAMA are based

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on an environmental study which is insufficient to characterize globally impacts caused by the work, as well as fragmenting environmental licenses in order to uncharacterized the company's obligation for environmental compensation due in view of the enterprise. In the end, after criticisms to the required licensing model, plaintiffs claim the nullity of the process and licensing.

In July 2012, the court granted a preliminary order, determining suspension of all Works and activities related to the expansion of the Carajás Railroad. Vale and IBAMA filed appeals (interlocutory appeals), aiming to reverse the decision, and filed before the Presidency of the TRF of 1st Region (DF) a claim to suspend the preliminary order, claiming that (i) the risk of serious irreversible economic losses arising out of any eventual maintenance of such preliminary decision, as well (ii) as the fact that the environmental study prepared by Vale fully complied with the terms in CONAMA RES 237, while there are no grounds for the claim regarding the serious risk of social-environmental unbalance. The suspension request was accepted by the Presidency of the TRF of the 1st Region, and the plaintiffs appealed against this decision (interlocutory), but were not successful and the decision favorable to Vale was maintained.

At the first instance, Vale and IBAMA filed their defenses claiming (a) the regular nature of the licensing process, (b) the clear definition, in the study, of all diagnosis regarding the impacts on areas and communities under direct and indirect influence of the work (including traditional communities), and (c) the need to respect the competence and technical skills held by IBAMA to carry out and conclude the environmental study. In recent decision, the federal judge accepted the claim by the Federal Public Defense Office to appear as plaintiff. Vale filed an appeal (interlocutory) against this decision, aligned with the opinion by the Federal Prosecution Office (MPF), in the sense of lack of legitimacy of the Public Defense to be party in the claim.

Chances of loss

Remote.

Analysis of impact in the case of losing the suit/ Reasons for importance for the Company

Eventual decision unfavorable to Vale, may compromise the licensing process for the expansion of EFC, with impacts on logistic operations of VALE to deploy the production transportation plan for Project S11D.

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Amount provisioned (if any)	None.
4) Process no. 0021337-5220114.01.3700	
Jurisdiction	8th Federal Court of São Luís Maranhão
Instance	1st instance
Date of filing	11/04/2011
Parties in the suit	Federal Prosecution Office (plaintiff) and IBAMA and VALE (defendants)
Amounts, goods or rights involved	R\$ 700,000.00 or more
Main facts	<p>Public Civil Action that aims to impose onto the company and to IBAMA the duty of redoing part of the environmental study that was used as basis to the licensing process for the expansion of Carajás Railroad, due to alleged failure of indication of impacts caused by the expansion of EFC onto <i>quilombolas</i> communities located close to segment 20 of the EFC, in Maranhão (communities of Monge Belo and Santa Rosa dos Pretos).</p> <p>On March 8, 2012, the Court approved the agreement entered by and between the parties, under which, Vale agreed upon: (i) transfer the amount of R\$700,000.00, to be managed by the Cultural Foundation Palmares and applied in the structural and cultural development of communities which protection is the object of this claim; (ii) carry out environmental studies of environmental recovery actions with hydric bodies located in the inside of quilombolas lands of Monge Belo and Santa Rosa dos Pretos; (iii) build, subsequently, four bridges in the inside of segment 20 of EFC, each one within a maximum period of 18 months, starting on the date of licensing by IBAMA; (iv) alter all the level passages related to each bridge to be built, signaling and lighting the passages to be used by the communities; (v) place fences on both sides of the EFC at the segment 20, protecting the areas used as crossing by people and animals.</p>
Chances of loss	Probable.
Analysis of impact in the case of losing the suit/ Reasons for importance for the Company	Despite of an agreement signed in this claim, under which the company agrees upon several obligations related to the social-economic aspects of the area, eventual non-compliance of such agreement may, in the worst scenario, motivate judicial decisions that suspend expansion and operation of EFC in the area,

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compromising logistic operations of the railroad for indefinite period.

Amount provisioned (if any) R\$700,000.00

4.4 In-court, administrative or arbitration proceedings that are not confidential involving managers, former managers, controllers, former controllers or investors

1) Claim no. 005530-40.2007.8.19.0001

Jurisdiction	Prosecution in progress before 48th Civil Court of the Justice Court of Rio de Janeiro. Interlocutory Appeal before the 2nd Section of the Special Court of the STJ and Extraordinary Appeal still not delivered to the STF.
Instance	3rd Instance
Date of filing	05/09/2007
Parties in the suit	Petros (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Vale was requested to make an escrow deposit as payment on March 8, 2010 in the amount of R\$ 346,773,910.20, due to the temporary collection claim filed by Petros. Although no final decision has been rendered yet, on August 23, 2011, Petros, to increase the amount deposited in escrow, presented a surety bond issued by Banco Bradesco in the amount of R\$ 497.0 million.
Main facts	Petros filed an action claiming the receipt of purges made because of inflation arising from the economic plans called Plano Verão and Plano Collor on amounts paid under forward contracts for buying and selling gold concluded with Vale from 1988.

These contracts were paid up and settled by Petros at that time. However, Petros started legal proceedings aimed at applying the decision on a matter taken in the STJ for savings accounts books, to contracts concluded with Vale. Vale maintains that the inflationary adjustments are not due; however, all decisions have been unfavorable to the company. Currently the original process is in the provisional implementation stage, as there are appeals waiting to be judged. The special appeal filed by Vale was rejected by the STJ. Currently, there is an appeal (interlocutory appeal) filed by the Company waiting to be judged by the STJ. The preliminary decision, - as there are appeals waiting to be judged - Vale was determined to pay R\$ 346,773,910.20 claimed by PETROS in the lawsuit.

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Chances of loss	<p>To increase the amount deposited in escrow, Petros presented a bank surety bond in the amount of R\$ 497 million. Should the appeal is successful and there are changes in the merit of the case, Vale may be entitled to recover the amount provided to Petros. There also is an extraordinary appeal filed by Vale to be processed and judged by the STF.</p> <p>Probable</p>
Analysis of impact in the case of losing the suit	<p>If a decision unfavorable to Vale becomes final (res judicata), the Company shall not have to pay anything else taking into account the escrow deposit of R\$ 346,773,910.20 mentioned above.</p> <p>Additionally, such a decision can open a precedent for similar judgments in other cases where future contracts for sale of gold are in dispute (total of 12 cases, including this one. For more details see item 4.6 of this Reference Form).</p>
Amount provisioned (if any)	<p>No amount has been allocated given the escrow deposit made by Vale, which was withdrawn by Petros, upon the presentation of bank guarantee.</p>
2) Claim no. 0079940-46.2010.4.01.3800	
Jurisdiction	18th Federal Court of Belo Horizonte Minas Gerais
Instance	1st Instance
Date of filing	02/18/2004
Parties in the suit	<p>Transger S/A (plaintiff) and Ferrovia Centro Atlântica S/A, Mineração Tacumã Ltda, KRJ Participações S/A, CPP Participações S/A, Carmo Administração e Participações Ltda, Fundação Vale do Rio Doce de Seguridade Social - Valia and Companhia Siderúrgica Nacional - CSN (defendants)</p>
Amounts, goods or rights involved	<p>Incalculable Request for annulment of the General Meeting.</p>
Main facts	<p>The plaintiff brought a lawsuit requesting additionally to compensation, annulment of the General Meeting authorizing the capital increase of Ferrovia Centro-Atlântica S.A. (FCA) in 2003 on the grounds of alleged practice of abusive acts by FCA s controlling group. The decision that judged the action to be well founded, was annulled by the Court of Justice of Minas Gerais, and determined the production of new expert evidence. During the preparation of the new expert evidence, the National Agency of Land Carriage (ANTT, according to the initials in Portuguese) stated its interest in participating in the case and, for this reason, the</p>

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jurisdiction in this procedure was transferred to the Federal Justice of Minas Gerais.

The judge of the 18th Federal Court of Belo Horizonte issued a decision recognizing the jurisdiction of the Federal Courts to judge the case because of ANTT's interest in the maintenance of the concession and accurateness of the administrative act. ANTT appeared in the files, ratifying its understanding regarding the validity of the act authorizing increase of FCA's capital stock.

All parties were summoned to present final arguments, including ANTT, and the files were forwarded to the judge on October 30, 2013 to prepare the decision.

Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Incalculable amount
Amount provisioned (if any)	None

3. Procedure No. 0529364272010.8.13.0145

Jurisdiction	7th Civil Court of Juiz de Fora/Minas Gerais
Instance	1st Instance
Date of filing	August 20, 2010
Parties in the suit	SUDFER (plaintiff), and MRS Logística S.A., Companhia Siderúrgica Nacional S.A., Minerações Brasileiras Reunidas S.A. (MBR), Usiminas Usinas Siderúrgicas de Minas Gerais, Gerdau S.A. and Vale S.A. (defendants)
Amounts, goods or rights involved	Incalculable
Main facts	Plaintiff filed a claim alleging that MRS Logística adopted a tariff policy aiming to favor its controlling group, specifically the defendants; a complaint was even filed before CVM, which through the appointed Committee of Inquiry- acknowledged that the complaint filed by Clube SUDFER on the irregularities of the group was true. Based on this claim, plaintiff requested: 1) to order the defendants to hire with a subsidiary on equal terms, taking into consideration the maximum allowable tariff; 2) to order the Defendants to pay any and all direct material damages imposed on MRS Logística until the improper practice has been stopped, due to the

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unfair reduction of the profits of the company, due to the non-payment of dividends, and due to the payment of less dividends in view of the reduced tariffs charged to the controlling group.

In January 2011, Vale and MBR filed their pleas.

Main proceedings will be suspended until final decision on procedural issues (incompetence exception) claimed by the defendants, thus aiming that the justice if the court is competent to hear the case or whether in fact the competent forum is Rio de Janeiro. The motions were received by the Court of Justice of the State of Minas Gerais. We are waiting for the decision to be final (res judicata) and for the files to be sent to the Court of Justice of the State of Rio de Janeiro.

Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Any unfavorable decision in the lawsuit would generate financial losses for the Company and would damage its image.
Amount provisioned (if any)	None

4) Procedure No. 0497166342010.8.13.0145

Jurisdiction	8th Civil Court of Juiz de Fora Minas Gerais
Instance	1st Instance
Date of filing	August 23, 2010.
Parties in the suit	SUDFER (plaintiff) and Júlio Fontana Neto, Henrique Aché Pillar, José Paulo de Oliveira Alves, Pablo Javier de La Quintana Bruggemann, Lauro Henrique Campos Rezende, Wanderlei Viçoso Fagundes, Hugo Serrado Stoffel, Guilherme Frederico Escalhão, Delson de Miranda Tolentino, Marcus Jurandir de Araújo Tambasco, Chequer Hanna Bou-Habib, Roberto Gottschalk, Joaquim de Souza Gomes, Luiz Antônio Bonaguara, Companhia Siderúrgica Nacional S.A., Minerações Brasileiras Reunidas S.A., Usiminas Usinas Siderúrgicas de Minas Gerais, Gerdau S.A., and Vale S.A. (defendant)
Amounts, goods or rights involved	Incalculable

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Main facts	The Plaintiff requires compensation for moral damages based on the claim that the image of Clube SUDFER was enormously damaged for 9 years, and that said company did not receive dividends, and thus, was in pre-insolvency status. Plaintiff also requires shares to be sold under same conditions as it had the right to purchase at the time of the 2nd offer of shares made by MRS Logística, besides the loss of earnings by the dividends not received. MBR, like Vale, is one of the defendants because it is the controlling shareholder of MRS. On March 15, 2012, Vale, MBR and the managers Chequer Hanna Bou-Habib, Guilherme Frederico Escalhão, Hugo Serrado Stoffel and Roberto Gottschalk submitted their arguments. Vale also raised procedural issues (lack of competence exception), aiming to have the claim remitted to Rio de Janeiro. There was a decision accepting this claim and determining remittance of the files to the court in Rio de Janeiro. As appeals are applicable, this decision is not final yet. While the decision is not final, the discussions on merits are suspended.
Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Any unfavorable decision in the lawsuit would generate financial losses for the Company and would damage its image.
Amount provisioned (if any)	None
5) Procedure No. 2010.51.01.002548-3	Writ of Mandamus
Jurisdiction	32nd Federal Court of Rio de Janeiro
Instance	1st Instance
Date of filing	10/25/2012
Parties in the suit	Clube SUDFER (Plaintiff) and the President of the Tangible Values Commission - CVM, Alberto Regis Távora, Chequer Hanna Bou-Habib, Vale S.A., Companhia Siderúrgica Nacional S.A., Delson de Miranda Tolentino, George Josef Schmidt, Godofredo Mendes Vianna, Henriq Ache Pillar, Inacio Clemente da Silva, Joao Paulo do Amaral Braga, Joaquim de Souza

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Gomes, Jose Paulo de Oliveira Alves, Julio Cesar Pinto, Julio Fontana Neto, Klaus Helmut Schweizer, Lauro Henrique Campos Rezende, Luiz Antonio Bonaguara, Marcus Jurandir de Araujo Tambasco, Marianne von Lachmann, Minerações Brasileiras Reunidas S.A. (MBR), Pablo Javier de la Quintanna Bruggemann, Rinaldo Campos Soares, Valter Luis de Sousa, Wanderlei Vicoso Fagundes, Otavio de Garcia Lazcano, Andreas Walter Brehm, Guilherme Frederico Escalhão, Hugo Serrado Stoffel, Oscar Augusto de Camargo Filho, Roberto Gottschalk, Estela Maria de Almeida Palombo, Mauro Rolf Fernandes Knudsen (defendants).

Amounts, goods or rights involved

Incalculable

Main facts

Plaintiff requested a preliminary order to determine, until decision on the merits of this writ of mandamus, to immediately suspend sanctioning administrative case no. 14/05 to avoid the National Finance System's Appeals Council from examining the mandatory review filed by the CVM, in that administrative procedure. Additionally to the suspension preliminary order on merits, the plaintiff requested recognition of irregularities in the sanctioning administrative case no. 14/05, and consequent annulment of the judgment pronounced by that sanctioning administrative case, thus determining that the records are sent back to the CVM for a new trial, which shall be presided by a new panel, and recognizing all of the barred and /or suspicious directors who participated in the 1st trial, for they rendered their vote in a lawsuit that, according to the plaintiff, is clearly fraudulent, and violated the principles of impartiality, morality, legitimacy, impersonality, adversarial proceedings and full defense, in addition to the disposition of the Federal Constitution from 1988 and of law no. 6.404/76. The injunction was granted determining the sanctioning administrative proceeding no. 14/2005 was suspended under referred terms. The CVM president filed an appeal (interlocutory appeal) against this decision. The appeal was granted, and the decision determining suspension was annulled.

Appearing in this lawsuit, the Federal Prosecution Office (MPF) expressed an opinion that all defendants should be cited in the administrative proceedings in question, since the outcome of this

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writ of mandamus will directly affect all the parties, and the right to a full defense and of adversarial proceedings, must be ensured, given their interest in the case. The judge ordered the inclusion of all parties as defendants and citation of the companies' shareholders and managers.

On June 8, 2011 Vale, MBR and the following managers - Andreas Walter Brehm, Guilherme Frederico Escalhão, Hugo Serrado Stoffel, Roberto Gottschalk, Oscar Augusto de Camargo Filho, Inácio Clemente da Silva and Chequer Hanna Bou-Habib - presented their defenses. The plaintiff must provide for the citation of other defendants to move the procedure along.

Without a judicial decision determining suspension of the process, the CRSFN, in September 2013, judged CVM's mandatory appeal (*de oficio*), confirming the decision issued by CVM Panel, absolving all the defendants.

Chances of loss	Remote
Analysis of impact in the case of losing the suit / Relevance to the Company	Any unfavorable decision in the lawsuit would generate financial losses for the Company and would damage its image.
Amount provisioned (if any)	None

6) Procedure no. 0393909-98.2012.8.19.0001

Jurisdiction	3rd Corporate Court of Rio de Janeiro
Instance	1st instance
Date of filing	10/05/2012
Parties in the suit	Carteira Administradora Coletiva Dynamo, Ruth Cazal, Fernanda Cazal, Roberto Amaral de Almeida Rocha, Alexandra Lima Alves Derenzi, Breno Wajchenberg, Roka Fundo de Investimento Multimercado, and Investe Clube de Investimentos (plaintiff) and Vale (defendant)
Amounts, goods or rights involved	Around R\$ 50 million.
Main facts	Plaintiff's claim that Vale had issued debentures based on deeds that provided for security deadline conditions other than those agreed upon at general meeting, reason why they claim Vale is condemned to pay the debentures according to the estimated

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compensation at the general meeting minutes. Vale was cited on May 27, 2013 and filed its defense on June 17, 2013. The court of the 13th Civil Court understood that, due to the issue within, the procedure should proceed at one of the corporate courts. The process was forwarded to the 3rd Corporate Court.

Chances of loss	Possible
Analysis of impact in the case of losing the suit / Relevance to the Company	Eventual unfavorable decision in the procedure would cause financial losses to the Company.
Amount provisioned (if any)	None.

4.5 Relevant confidential claims

On December 31, 2013, the Company was not a party in any relevant and sensitive cases.

4.6 Publicly known and relevant repeated or related in-court, administrative or arbitration proceedings

(i) Labor

This item 4.6 of the Reference Form highlights the amount allocated in relation to repeated or related claims. Given the size of the company, the number of employees and service providers and the number of labor claims, only those repetitive processes that represent more than 5% (five percent) of all claims filed against the Company on December 31, 2013, described in the table below, namely: joint/subsidiary liability (13%), overtime (10%), additional payment due to unhealthy or risky work environments (7%), fines (7%) and commuting hours (6%).

Fact and/or legal cause	The more recurring objects are subsidiary/joint liability, overtime, additional payment for hazardous/unhealthy conditions, hours <i>in itinere</i> and fines.
Amounts involved	R\$ 3.4 billion
Amount provisioned	R\$ 852.4 million
Company practice or that of subsidiary which caused the contingency	Difference of interpretation between the Company, employees and unions to various facts, legal and regulatory instruments concerning the issues above.

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(ii) Tax

Fact and/or legal cause	Discussion about the taxable base for the calculation of the Financial Compensation for Exploring Mineral Resources – CFEM (for its acronym in Portuguese)
Amounts involved	R\$ 4,568 billion (including interest and fines by December 31, 2013).
Amount provisioned (if any)	R\$ 141.4 million.
Company practice or that of subsidiary which caused the contingency	Vale is involved in many administrative and legal proceedings concerning the collection of CFEM credits. Such claims result from tax assessments by the National Department of Mineral Production DNPM, an independent government agency under the control of the Ministry of Mines and Energy and involve discussions on the alleged difference in values resulting from tax deductions and travel expenses, arbitration and prescription term for collection, incidence of CFEM on pellets and on final clients sales invoicing abroad and irretroactivity of IN 6/00.. In 2013, the Company paid values related to external transportation and, additionally, values analyzed by the Workgroup (comprised by Vale and DNPM members) went down.
Fact and/or legal cause	Collection of State VAT (ICMS) on interstate transfer of ore.
Amounts involved	<u>Pará:</u> Original total amount: R\$ 1.2 billion (12/31/2013)
Amount provisioned (if any)	None.
Company practice or that of subsidiary which caused the contingency	Vale contests the ICMS (value-added tax) allegedly due to the State of Pará because there were disagreements in the calculation basis of the taxes due in the interstate transfer of iron between Pará and Maranhão, resulting in six (6) acts of infringement filed in 2010 and 2013. The first three (3) acts of infringement, which total updated value sums R\$ 610 million, related to generating facts occurring in 2007 to 2009, are judicially claimed.
	Vale has presented a surety bond as well as its

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defense, which is waiting to be appreciated by the judge. Regarding the other three (3) acts of infringement, related to generating facts occurring in 2010 to 2011, summing R\$ 583 million, Vale presented administrative defense and waits for judgment. In any case, Vale claims that the ICMS, in interstate transfer, should incur on the cost price under the terms of the Complementary Law (LC) no. 87/96, as the goods are produced and are not non-industrialized product.

(iii) Civil

Fact and/or legal cause	Twelve pension funds claim receipt of purges made because of inflation arising from economic plans called Plano Verão and Plano Collor on amounts paid under contracts for buying and selling gold concluded with Vale from 1988. More specifically, in the Petros case, which is the most significant one in amount terms, Vale was condemned to pay the R\$ 346,773,910.20 (item 4.4, table 1, above).
Amounts involved	R\$ 186,872,375.96, corresponding to the total amount from the other 11 cases, that is, excluding the Petros case, which is dealt with separately.
Amount provisioned (if any)	R\$ 5,336,727.00 related to the ELETROS case.
Company practice or that of subsidiary which caused the contingency	The contingency has been generated according to the edition of economic plans called Plano Verão and Plano Collor, both created by the Federal Government between 1989 and 1991. The contracts in discussion around these were all paid by Vale and considered to be settled by the plaintiffs at the time. However, the plaintiffs started legal proceedings aimed at extending application of the decision on a matter judged in the STJ for savings accounts books, to contracts concluded with Vale. The Company maintains that repayment of inflationary purges is not due.

4.7 Other significant contingencies

Vale was involved in discussion with Swiss authorities regarding the granting of tax benefits to its Swiss subsidiary, Vale International. The dispute was resolved in December 2012 when Vale International paid the additional federal taxes

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claimed by the Swiss federal authorities, in four payments in the total amount of CHF 212 million Swiss francs. The first payment of CHF 53.2 million was made in January 2013 and payment of the last installment is expected in 2015.

Vale International's federal and regional tax exemptions were renewed at a rate of 80% through 2015, and are subject to certain conditions related to employment, real estate investment, and collaboration with Swiss universities.

Relevant Conduct Modification Agreements and Terms of Commitment

The Company is a party in the following relevant terms of commitment and conduct modification agreements:

Cooperation Agreement not resulting from Administrative / Legal Proceeding

Origin: Terms of Engagement signed with the Indigenous Community (TI) Mãe Maria

- | | | |
|----|--|---|
| a) | Parties | Vale, Indigenous Association Te Mêmppapytarkate Akrätikatêjê da Montanha, Jê Jôkrityiti (Akrâkaprekti) Association, Indigenous Association Parkatêjê Amjip Tar Kaxuwa and Indigenous Association Kyikatêjê and Fundação Nacional do Índio FUNAI, with the Federal Prosecution Office at Marabá, acting as intervening party. |
| b) | Agreement Date | 03/01/2012, 07/27/2012, 07/24/2012, and 08/02/2012 |
| c) | Description of the facts that have led to entering this agreement | Based on its social accountability policy, Vale already had entered into Engagement Agreements with the indigenous individuals from the Mãe Maria TI, which expired in 2012.

Therefore, due to the influence of the Carajás Railroad (EFC) on this community, Vale decided to continue to send funds to meet the urgent needs of the individuals from this community, making sure that the Indigenous Component study and Basic Environmental Plan (PBA) were conducted, documents that are required for the licensing process to expand the Carajás Railroad, now, with FUNAI, helping communities to manage funds. |
| d) | Commitments made | To continue to invest in the implementation of projects in productive activities. On the other hand, indigenous communities commit not to stop any productive activity or invade Vale facilities, in particular the Carajás Railroad, and they also authorize the Indigenous Component |

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		study and the Basic Environmental Plan (PBA), documents required for the licensing process to the project to expand the Carajás Railroad.
e)	Deadline, if any	Many different deadlines, with commitment to be met up to the end of the study of Indigenous Component and Basin Environmental Plan (PBA).
f)	Information about the conduct adopted to comply with the commitments made in the agreement	The Community Relations Director had two focal points monitoring compliance with the commitment made in the Engagement Agreement, in particular the transfer of financial resources.
g)	Consequences in the event of noncompliance	Failure to comply with the commitments made would immediately lead to social/indigenous movement that may have implications on the company's railroad operations (interference in the railroad line). Said manifestations by the indigenous people also tend to restrict freedom of access of Vale's teams and hired third parties who run diagnostics or conduct studies on the environment and communities under the direct and indirect influence of the activities developed by the Company in the regions covered by the agreement, threatening the environmental licenses granted by the environmental entity, weakening Vale's position at the institutional level, with not prejudice to the executive measures to be taken by the Federal Prosecution Office, IBAMA, FUNAO, and the other autarchies involved with the protection of indigenous rights.
h)	Other notes	-

Legal Agreement

Origin: Proceeding no. 21337.52.2011

a)	Parties	Vale, Federal Prosecution Office, Palmares Cultural Foundation, National Institute for Colonization and Land Reform, and the Brazilian Institute for the Environment and Renewable Natural Resources.
b)	Agreement Date	03/08/2012
c)	Description of the facts that have led to entering this	The Federal Prosecution Office has accused Vale, who subsidized the licensing process for the Carajás Railroad expansion project, of

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agreement	lacking the environmental study investigating the diagnostic impact of the expansion on the two <i>quilombo</i> communities located in the State of Maranhão.
d) Commitments made	(i) Transfer the amount of R\$ 700,000.00 to the Palmares Foundation to help with the construction of clinics and of an educational center; and (ii) Development of a study of the local environmental impact, recovery of waterways, and the building of overpasses in the next four years, as specified in the legal agreement schedule.
e) Deadline, if any	Sparse deadlines, with commitment to be met through the end of the Carajás Railroad expansion project. Among them are: (i) the already made payment of R\$ 700,000.00 to the communities to finance the building of social devices in the community and Palmares Foundation; (ii) development of an environmental study already done and the adoption of measures to mitigate the impact of the Company's operations and activities in the region; (iii) building of four overpasses for the communities that are parties in the agreement and with a deadline of construction extending over four years; and (iv) improvement of the current passageways until the overpasses are built in the region. These commitments are underway.
f) Information about the conduct adopted to comply with the commitments made in the agreement	The General Manager of Project Relations, who works under the Director of Northern Logistic Projects (DIPL), focuses on engineering and public relations, monitoring compliance with the activities developed by Vale. The commitments and deadlines reflect the item above.
g) Consequences in the event of noncompliance	The Federal Prosecution Office may request that the Company comply with the commitments made, under penalty of a fine determined by a competent federal judge.
h) Other notes	-

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Conduct Modification Agreement (TAC) no. 283/2004

Origin: Preparation Proceeding no. 0203/01 - Regional Labor Public Prosecution Office of the 1st region Rio de Janeiro

- | | | |
|----|---|---|
| a) | Parties | Labor Prosecution Office and Vale S.A. |
| b) | Agreement Date | 12/15/20014 |
| c) | Description of the facts that have led to entering this agreement | Legal obligation to train and hire people with disabilities to meet legal requirements, including regarding the quota set forth in article no. 93 of Law no. 8.212/91 |
| d) | Commitments made | Initially, professionally train about 34 to 40 disabled people to start. To develop a national program. To enter into partnerships with Organization like SENAI for training. During training, to provide transportation, food, and medical care. After training, to hire people with disabilities. |
| e) | Deadline, if any | The TAC is renewed yearly and it indicates the year's quota for training and hiring. |
| f) | Information about the conduct adopted to comply with the commitments made in the agreement | Development of an inclusion program for people with disabilities. |
| g) | Consequences in the event of noncompliance | R\$ 1,000.00 per worker that is not trained and hired, within the quota for that particular year |
| h) | Other notes | The TAC allows Vale to fail to fully comply with the quote set forth by Law no. 8.212/91, while complying with obligations set forth therein. If there is noncompliance with the TAC, Vale must immediately meet the quote specified by the Law, losing this requirement provided by the Agreement. |

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Environmental Obligation Agreement: TCA at do Pico do Itabirito

Origin: Public Civil Investigation no. 319.02.0001-8 MPMG

a)	Parties	Minerações Brasileiras Reunidas S.A., Vale S.A., Ministério Público Estadual-MG, Instituto Estadual de Florestas, Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável de Minas Gerais, and AngloGold Ashanti Brasil Mineração Ltda.
b)	Agreement Date	7/9/2010
c)	Description of the facts that have led to entering this agreement	Agreement signed for the enforcement of protection measures to the area known as Pico do Itabirito and archeological site of Cata Branca.
d)	Commitments made	Environmental and landscape remediation in protected areas.
e)	Deadline, if any	Schedule presented to the State Prosecution Office expected conclusion: July 2015.
f)	Information about the conduct adopted to comply with the commitments made in the agreement	Procedures to recover areas in progress, with fencing and signage as archeological site, environmental education programs and environmental remediation project at the area known as Pico do Itabirito.
g)	Consequences in the event of noncompliance	Fine R\$2,500.00/day delaying enforcement of the agreed and non-complied with portion.
h)	Other notes	-

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4.8 Rules of the country of origin and of the country in which the securities are held in custody

Not applicable to the Company, as it is not a foreign issuer.

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5.1 Description of the main market risks

Considering the nature of the business and operations of the Company, the main factors of market risk to which the company is exposed are:

- exchange rates and interest rates;
- product and inputs prices;

Exchange risk and interest rate

The Company's cash flow is subject to the volatility of several currencies, since its products prices are indexed predominantly on the US dollar while a significant portion of its costs, expenses and investments are indexed in other currencies, in particular in Brazilian real and Canadian dollars.

The company is also exposed to interest rates on loans and financing. Debts with floating interest rate in US dollars consist mainly of loans that include exportation pre-payment operations and loan from commercial banks and multilateral organizations. Overall, these debts are indexed with rates that are subject to Libor (London Interbank offered Rate) variations. While considering the effect of interest rate volatility onto cash flow, the Company considers possible effect of natural hedge between fluctuations in US interest rates and prices of commodities in the decision making process for financial investments.

On December 31, 2013, 71% of our debt was in American dollars (US\$), corresponding to R\$ 47,887.4 million, of which R\$ 32,575.0 million were tied to fixed interest rates and R\$ 15,312.4 million were tied to Libor. Another 22% of the debt is in Brazilian Real (R\$), corresponding to R\$ 15,188.3 million, of which R\$ 6,250.0 million were tied to the IBR Rate, R\$ 8,201.7 million were tied to the TJLP (long term interest rates) and R\$ 736.6 million to fixed interest rates.

For more information about risks on exchange and interest rates, see item 4.1 in this Reference Form.

Risk of product and inputs prices

The company is exposed to market risks related to price volatility for commodities and inputs. The Company's main products are: iron ore and pellets, nickel, copper products, fertilizers and coal. The Company's main input are different material and equipment, including tires, transporting belts, parts and components of mining equipment, rail equipment, industrial facilities and workshop maintenance, fuels and gases, and electric power.

For more information on the risk of product prices, see item 4.1 in this Reference Form.

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5.2 Description of the policy for management of market risks

The Company understands that risk management is essential to support its growth plan, strategic planning and financial flexibility. Therefore, Vale has developed its risk management strategy with the objective of providing an integrated view of risks to which it is exposed. To do this, it not only assesses the impact of variables negotiated in the financial market on business results (market risk), but also those arising from a liquidity risks, risks from the obligations assumed by third parties to the Company (credit risk), those inherent to inappropriate and deficient internal processes, personnel, systems or external events (operational risk), and others.

Vale's Board of Directors established a policy of corporate risk management for purposes of supporting the growth plan, the strategic planning, and continuity of Company businesses, in addition to strengthening the Vale Group's capital structure and asset management, ensuring an appropriate flexibility in financial management, maintaining the necessary level of solidity for the level of investment, as well as strengthening corporate governance practices.

The policies of corporate risk management determine that Vale should measure and monitor its corporate risk in a consolidated manner, for purposes of ensuring that the total level of corporate risk is aligned with guidelines set by the Board of Directors and the Executive Directors.

The Risk Management Executive Committee, created by the Board of Directors, is responsible for supporting the Executive Directors in risk assessment and for issuing opinions related to Company risk management. It is also responsible for supervising and reviewing the principles and instruments used in corporate risk management.

The Executive Directors are responsible for approving the developments of policies in rules, regulations and responsibilities and informing the Board of Directors on such procedures.

Rules and guidelines used in risk management complement the corporate risk management policy and define Company practices, procedures, controls, roles and responsibilities related to risk management.

When needed, the company may allocate specific risk limits to management activities requiring those, including, without limitation, limits on market risk, corporate and sovereign risks, according to acceptable limits to corporate risk.

a. Risks for which protection is sought

Vale is exposed to the behavior of several market risk factors (especially the price of products and input, exchange rates and interest rates) that could impact its cash flow. Assessment of this potential impact, arising out of the volatility of risk factors and its correlations, is performed periodically to support

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the decision making process, the Company growth strategy, ensuring financial flexibility and monitoring volatility of future cash flows.

Thus, when needed, market risk mitigation strategies are assessed and deployed in line with such goals. Some of these strategies use financial instruments, including derivatives. Portfolios comprised of financial instruments are monthly monitored in a consolidated manner, allowing the follow-up of financial results and their impact on cash flow.

b. Asset protection strategy (hedge)

In line with Vale risk management policy, commodities-related risk mitigation strategies may also be used to adequate the risk profile and reduce the cash flow volatility. For these mitigation strategies, the company mainly uses forwards, future, or zero-cost collars operations.

In the case of cash flow exchange hedge involving income, costs, expenses and investments, the main risk mitigation strategies are currency and swap operations.

Vale deployed hedge operations to protect its cash flow against market risk from its debts especially exchange risk. Swap operations are used to convert debts in reais and euros into US dollars that mature on similar dates or, in some cases, earlier - than debt final maturity date. Their amounts are similar to the payment of interest and principal, according to market liquidity risks.

Swap operations that mature earlier than debts final maturity are renegotiated through time in order to have matching or close - maturity dates. Therefore, on the settlement date, the swap results will compensate part of the Exchange rate variation on Vale obligations, helping to stabilize the cash flow.

In the case of debt instruments denominated in reais, if there is real (R\$) increase (decrease) before the North-American dollar (US\$), the negative (positive) impact in Vale's debt service (interest and/or principal payment), in North-American dollars, will be partially offset by the positive (negative) effect from the swap operation, regardless of the US\$/R\$ Exchange rate on the date of payment. The same reasoning is applicable to debts denominated in other currencies and their respective swap operations.

c. Instruments used for asset protection (hedge)

Protection programs and hedge programs employed by Vale, and their objectives include:

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- Protection program of loans and financing in reais, indexed to CDI: In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert the cash flow of debt, indexed to the CDI to U.S. dollars, in loans and financing contracts. In these operations, Vale pays fixed

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and / or floating rates (Libor) in U.S. dollars and receives remuneration linked to the CDI.

- Protection program of loans and financing in reais, indexed to TJLP: In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert the cash flow of debt indexed to the TJLP(1) to U.S. dollars, in loans and financing contracts with BNDES. In these operations, Vale pays fixed and/or floating rates (Libor) in U.S. dollars and receives remuneration linked to the TJLP.
- Protection program of loans and financing in reais with fixed rates: In order to reduce the volatility of the cash flow, swap transactions have been made in order to convert the cash flow of debt denominated in reais at fixed rate to US dollars in loans contracts with BNDES. In these operations, Vale pays fixed rates in U.S. dollars and receives fixed rates in reais.
- Protection Program for loans and financing in Euros: In order to reduce the volatility of the cost of debt in US dollars, swap transactions were made to convert the cash flow of debts in euros for U.S. dollars. These operations were used to convert the flow of part of the debts in euros, with nominal value of up to 750 million each, issued in 2010 and 2012 by Vale. In these operations, Vale receives fixed rates in Euros and pays compensation linked to fixed floating rates in US dollars.

On December 31, 2013, the amount of the principal and of the debt's interest rate in Brazilian real converted through swaps in US dollars was R\$ 14,295.0 millions (US\$ 6,102.2 millions) and the amount of the principal and of the debt's interest rate in Euros converted through swaps into US dollars was 1,000 million (US\$ 2,148.9 millions). The average cost of these operations was 2.87% per year after the swapping. Due to the market's liquidity conditions, the average term of swap operations may be lower than the debt's average term.

- Exchange hedge program for disbursements in Canadian dollars: In order to reduce the volatility of cash flow, forward operations were made to mitigate the exchange exposure arising out of the unmatched currencies in US dollars revenue and Canadian dollars disbursements.
- Protection program for nickel operations: The objective of this program is to reduce the volatility of cash flows, and eliminate the decoupling between the pricing of the nickel purchase (concentrated, cathode, sinter, and other types) and the resale period of the processed product. The products purchased are raw material used in the process of production of refined nickel. In this case, operations usually made are the selling of nickel for future liquidation either in the Stock Market (LME) or over-the-counter.

(1) Due to liquidity restrictions in the TJLP derivative markets, some swap operations were contracted according to CDI equivalence.

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- Sales program for nickel at a fixed price: aiming to maintain its exposure to fluctuations in the price of nickel, it has been carried out derivative transactions to convert to a floating-price basis commercial nickel contracts with those clients seeking to fix the price. The operations are intended to ensure that prices for these sales are equivalent to the average price of the London Metal Exchange (LME) upon physical delivery to the customer. Typically, operations made within this program are purchases of nickel for future liquidation, either in the Stock Market (LME) or over-the-counter. These operations are reverted before the original maturity date in order to match with the dates of liquidation of the commercial contracts that had a fixed price.
- Protection program for selling of copper scrap: Hedge operations were made in order to reduce the volatility of the cash flow and eliminate the mismatching between the pricing period of the purchase of copper scrap. Copper scrap bought is combined with other inputs in order to manufacture copper for final customers. In this case, operations usually made are sales for future liquidation either in the Stock Market (LME) or over-the-counter.
- Hedge Program for purchase of fuel oil - Bunker Oil: In order to reduce the impact of fluctuations in the price of fuel oil (Bunker Oil) when procuring freight, and hence reduce the volatility of Company's cash flow, hedge operations were carried out. The operations are usually made by the contracting of future purchases.

Hedge Accounting

According to the Accounting for Derivative Financial Instruments and Hedging Activities pronouncement, all derivatives, assigned in hedge relations or not, are recorded in the balance sheet at fair value and gains and losses in fair value are recorded in the current result, unless when qualified as hedge accounting. A derivative should be assigned in hedge to be qualified as hedge accounting. These rules include determining which portions of hedge are deemed to be effective or non-effective. In general, a hedge relation is effective when a change in fair value is compensated by an equal and contrary change in the fair value of the hedged item. According to these rules, effectiveness tests are run to evaluate the effectiveness and quantify the non-effectiveness of the hedges.

A cash flow hedge is a protection against the exposure to volatility in the expected future cash flow, attributable to a specific risk, as a future purchase or sale. If a derivative is designated as cash flow hedge, the effective portion in the changes of derivative fair value is recorded in other comprehensive income, and recognized in the result when the hedged item affects the period result. The non-effective portion of the changes in derivative fair value designated as hedge is recorded in result. If a portion of the derivative contract is excluded for effectiveness test purposes (for instance the value in time), the value of such excluded portion is included in the result.

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d. Parameters used for managing those risks

The parameters used to check the qualification or disqualification of the Company's exposure are:

- (i) verification of execution of the programs mentioned in 5.2(c) above;
- (ii) analysis and constant monitoring of the contracted volumes, and
- (iii) adjustment to the adequacy of maturity dates, taking into account their corresponding protection or hedge strategies, guaranteeing the framing of our exposures. The failure to match exposure and protection strategies may occur if:
 - a. the protection volumes/amounts are higher than the respective exposure volumes/amounts;
 - b. the exposure that is protected ends; or
 - c. the maturity dates of protection strategies and the respective exposures no longer match.

To avoid potential non-matching due to item (iii.a) above, the criterion adopted is periodic follow up of volumes/amounts to be realized used as basis to propose strategy proposals. In the case of protection of input prices, for instance, if consumption updated estimates point to a decrease in volumes compared to initial estimates used to propose protection strategies, protection strategy volumes will be adjusted accordingly.

To avoid potential non-matching due to item (iii.b) above, if during periodic follow up the initial exposure fails to be realized, the protection strategy ends immediately (unwind position).

To avoid potential non-matching due to item (iii.c) above, the company constantly checks the alignment between protection strategies and the initially estimate exposure maturity.

e. If the Company uses various financial instruments with various objectives for asset protection (hedge) and what these goals are

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When needed, the company may allocate specific risk limits to management activities requiring those, including, without limitation, limits on market risk, corporate and sovereign risks, according to acceptable limits to corporate risk.

- Sale of Vale's future gold production (byproduct): Vale Switzerland S.A. concluded, after approval by the Board of Directors, final contracts with Silver Wheaton Corp. (SLW), a Canadian company with shares negotiated in the Toronto Stock Exchange and New York Stock exchange, to sell 70% of the payable gold flow produced as a byproduct in certain nickel mines in Sudbury for 20 years, and with Silver Wheaton (Caymans) Ltd. to sell 25% of the payable gold flow produced as a

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byproduct in the Salobo copper mine for the longevity of the mine. In addition to the original payment of US\$ 1.9 billion in cash, Vale Switzerland received 10 million SLW warrants at a strike price of US\$ 65.00 for 10 years. Additionally, Vale will receive cash payments in the future for every ounce (oz.) of gold delivered to SLW as per the agreement, at the lowest value between US\$ 400 per ounce (plus an annual adjustment for the 1% inflation starting in 2016 in the Salobo case) and the market price. The transaction releases a considerable amount contained in the Vale's world class base metal assets, to the extent that it attributes to the payable gold flow produced as a byproduct of Salobo the amount of US\$ 5.32 billion, in addition to the payment of US\$ 400 per ounce of gold delivered, given that there will be no additional expenses for extracting the gold found in the copper concentrate produced in Salobo.

- Position in embedded derivatives: Vale's cash flow is also vulnerable to several market risks associated with contracts that contain embedded derivatives or that work as derivatives. From Vale's perspectives, these include, but are not limited to, commercial contracts, purchase agreements, lease agreements, bonds, insurance policies and loans. The embedded derivatives observed on December 31, 2013 were the following: 1) Purchase of intermediate products and raw materials. Purchase agreements for raw materials and nickel concentrate that contain price provisions based on the future price of copper and nickel. These provisions are considered embedded derivatives. 2) Gas purchase for the pelleting company in Oman. The *Companhia de Pelotização Vale Omã* (LLC), a Vale subsidiary, has a natural gas purchase agreement with a clause establishing an award that may be paid if the sale price for Vale's pellet is greater than a specific price pre-determined in the gas supply contract. This clause is considered an embedded derivative.

f. Organizational structure for risk management control

The Executive Board for Risk Management, created by the Board of Directors, is the main body in the risk management structure, being responsible for supporting the Executive Board in risk assessment and for issuing opinions on the risk management at Vale Group. It is also responsible for monitoring and managing corporate risks, as well as supervising and reviewing the main corporate risk management principles and instruments, in addition to periodically reporting to Vale Executive Directors on the main risks and respective exposures. For more information about the members of our Executive Board for Risk Management, see item 12.7 in this Reference Form.

The financial committee is responsible for issuing opinions on Vale corporate risk policies. The Board of Directors is responsible for approving such policies.

The Executive Board is responsible for approving policy developments into rules, regulations and responsibilities and for notifying the Board of Directors on such procedures.

Risk management guidelines and instructions complement the corporate risk management policy and define practices, processes, controls, roles and responsibilities in the Company regarding risk management.

In Vale, the area formally responsible for risk management is the Corporate Risk Management Department, directly responding to the Financial and Investor Relations Executive Directors, and includes Market and Credit Risk Management,

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Operational Risk Management, Internal Controls and Insurance. Depending on the type of risk, management is centralized or decentralized. Several other departments act jointly in the integrated risk management process.

The recommendation and implementation of derivative-related financial operations are carried out by independent areas. It is the responsibility of the area of risk management to define and propose to the Executive Board for Risk Management operations or measures to mitigate market risk consistent with Vale's strategy. It is the responsibility of the financial area to carry out the transactions involving derivative contracts. The independence between areas ensures effective control over these operations.

g. Adequacy of the operational structure and internal controls to verify the effectiveness of the policy adopted

In case of market risks, the monitoring and periodic assessment of Vale's consolidated position of financial instruments used to mitigate market risks allow it to keep pace with the financial results and the impact on cash flow and ensure that the goals originally outlined are met. The fair value calculation of the positions is made available monthly for management monitoring.

Several areas act as *compliance* in the process of risk management: the back-office, part of the General Board of Financial, is responsible for confirming the financial characteristics of transactions as well as the counter-parties with which the operations were performed, report the fair value of the positions. This area also assesses whether the operations were performed according to internal approval given. As well as this area, the area of internal controls, which is part of the Department of Corporate Risk Management, acts to verify the integrity of the controls that mitigate risks in the contracted transactions within the above mentioned governance criteria.

In case of other risks, additionally to the risk management area, there are several other areas responsible for risk management.

Additionally, internal audit also participates in the compliance process with regulations.

5.3 Significant changes in key market risks

There were not significant changes in the main market risks during the period.

5.4 Other relevant information

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In line with the integrated view of risks exposure, Vale considers in risk management, additionally to market risk management, liquidity risk, the risk from the obligations assumed by third parties to the Company (credit risk),

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those inherent to inappropriate and deficient internal processes, personnel, systems or external events (operational risk), and others.

Credit Risk

Vale's credit risk arises from potential negative impacts in its cash flow due to uncertainty in the ability of having counterparts meet their contractual obligations, and transaction with derivative warrants, deposit payments to suppliers, and cash investments. To manage that risk, Vale has procedures and processes, such as credit limits control, obligatory exposure diversification through several counterparts and monitoring the portfolio's credit risk.

Vale's counterparts may be divided into three categories: clients, responsible for obligations represented by receivables related to sales in installments; financial institutions with whom Vale maintains its cash investments or acquires transactions with derivatives; and suppliers of equipment, products and services, in case of anticipated payments.

Regarding credit risk, the company adopts the following management standards:

Credit Risk Assessment for commercial operations (sales to customers)

For the commercial credit risk, which arises from sales of products and services to final customers, the Risk Management Department, according to current powers, approves or requests the approval of credit risk limits for each counterpart. Besides that, the Executive Board annually sets global commercial credit risk limits for client portfolio.

Vale attributes a credit risk classification for each client based on a credit risk assessment quantitative method, using three main information sources: i) the expected default frequency (Expected Default Frequency or EDF) found by the KMV model (Moody's); ii) credit ratings attributed by the main international rating agencies; and iii) client's financial statements to make an economic-financial analysis based on financial indicators.

Whenever deemed appropriate, the quantitative credit analysis is complemented by a qualitative analysis which takes into consideration the payment history of that counterpart, the time of relationship with Vale and the strategic position of the counterpart in its economic sector, and other factors.

Depending on the counterpart's credit risk or the consolidated credit risk profile of Vale, risk mitigation strategies are used to minimize the Company credit risk in order to achieve the acceptable risk limit approved by the Executive Board. The main credit risk mitigation strategies include credit insurance, mortgage, credit letter and corporate collaterals.

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Vale has a well-diversified accounts receivable portfolio from a geographical standpoint, China, Europe, Brazil and Japan being the regions with more significant exposures. According to each region, different guarantees can be used to enhance the credit quality of the receivables.

The Company controls its account receivables portfolio through Credit and Cash Collection committees, in which representatives from risk management, cash collection and commercial departments periodically monitor each counterpart position. Additionally, Vale maintains credit risk systemic controls that block additional sales to counterparties with past due receivables.

Credit Risk Assessment for treasury operations (cash flow investments and derivative operations)

The control of the exposure from cash investments and derivatives instruments is done through the following procedures: annual approval by the Executive Board on credit limits by counterpart, control of portfolio diversification, counterparties' spread variations and overall credit risk of treasury portfolio. There is also a monitoring of all positions, control of exposure versus limits, and periodical reporting to the Executive Board for Risk Management.

The calculation of exposure to a specific counterpart that has derivative transactions with Vale, we consider the sum of exposures of each derivative acquired with this counterpart. The exposure for each derivative is defined as the future value calculated by the due date, considering a variation of market risk factors affecting the value of the derivative instrument.

Vale also uses a risk assessment classification to evaluate the counterparties in treasury operations, following a method similar to that used for commercial credit risk management, for purposes of calculating the possibility of counterpart default.

According to the type of counterpart (banks, insurance companies, countries or corporations), different variables are used: i) the expected default frequency from the KMV model; ii) credit spreads found in CDS (Credit Default Swaps) or in the Bond Market; iii) credit ratings attributed by the main international rating agencies; and iii) client's financial statements to make an economic-financial analysis based on financial indicators.

Liquidity Risk

The liquidity risk arises from the possibility that Vale might not perform its obligations on due dates, as well as face difficulties to meet its cash flow requirements due to market liquidity constraints.

To mitigate such risk, Vale has a revolving credit facility to help manage short term liquidity and to enable more efficiency in cash management, being consistent with the strategic focus on cost of capital reduction. The revolving

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credit lines available were acquired from a syndicate of several global commercial banks

Operational Risk

Operational risk management is the structured approach Vale uses to manage the uncertainties related to the eventual deficiency or default in internal processes, personnel, systems, and external events, in compliance with the ISO 31000 s principles and guidelines.

The main operational risks are monitored periodically, securing the effectiveness of current key controls in of prevention/mitigation and the execution of risk treatment strategy (establishment of new controls and action plans, changes in environmental risk, transfer of part of the risk by acquiring insurance, etc.).

Therefore, it is Vale policy to maintain a clear perspective of the main risks, allocating capital to approach them systematically and efficiently way.

Capital Management

The purpose of the Company capital management policy is to seek a structure that ensures continuity of its business, in the long term. In this view, the Company has been able to generate value to shareholders, through the payment of dividends and capital gains, while maintaining a debt profile appropriate to its activities, with well-distributed amortization along the years (on average 10 years), thus avoiding concentration in a specific period.

Insurance

Vale acquires several types of insurance policies, including: operational risk insurance, engineering (project) insurance, credit risk insurance, liability, life insurance for employees, etc. The coverage of these policies, similar to those used in general in the mining industry, are acquired according to company s defined goals, the corporate risk management practices and limitations imposed by the global insurance and reinsurance markets.

Insurance management is done with the support of insurance committees existing in different operational areas of the Company. Management instruments used by Vale include captive reinsurers that allow for the retention of part of the risk, acquiring insurances on competitive basis, as well as direct access to the main insurance and reinsurance international markets.

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6.1/6.2/6.4 Establishment of the Company. Company Lifetime and Date of Filing with CVM

Date of Establishment of Issuer	01.11.1943
Legal Form of the Issuer	Mixed economy Company
Country of Establishment	Brazil
Company Lifetime	Company lifetime Undetermined
Date of Filing with CVM	01.02.1970

6.3 Brief History

Vale was initially founded by the Brazilian Federal Government (Government of Brazil) on June 1, 1942, through Decree-Law No. 4352, and definitively on January 11, 1943, by the Assembly for the Definitive Constitution of the Companhia Vale do Rio Doce S.A., in the form of mixed economy company, aiming to mine, trade, transport and export iron ore from the Itabira mines, and run the Vitória-Minas Railroad (EFVM), which carried iron ore and agricultural products from Vale do Rio Doce, in south-eastern Brazil, to the port of Victoria, located in Espírito Santo.

The privatization process was initiated by the Company in 1997. Under Privatization Decree PND-A-01/97/VALE and the Resolution of the National Privatization Council - CND paragraph 2, of March 5, 1997, the Extraordinary General Assembly approved on April 18, 1997 the issue of 388,559,056 participatory non-convertible debentures, with a view to guaranteeing its pre-privatization shareholders, including the Federal Government itself, the right to participation in revenues from Vale's and its subsidiaries' mineral deposits, which were not valued for purposes of fixing the minimum price in the auction for the privatization of Vale. The Participatory Debentures were allocated to the shareholders of Vale in payment of the redemption value of preferred class B shares issued as bonus, in the proportion of one share owned by holders of class A common and preferred shares at the time, through the part capitalization of Vale's revenue reserves. The Participatory Debentures could only be traded with prior authorization of CVM, as of three months from the end of Secondary Public Offering of Shares under the privatization process.

On May 6, 1997 the privatization auction was held, when the Brazilian government sold 104,318,070 Vale common shares, equivalent to 41.73% of the voting capital for Valepar SA (Valepar), for approximately R\$ 3.3 billion.

Later, under the terms of the Bid, the Brazilian government sold another 11,120,919 shares representing approximately 4.5% of the outstanding common shares and 8,744,308 class A preferred shares, representing 6.3% of class A shares in circulation, through a limited offer to the employees of Vale.

On March 20, 2002 a Secondary Public Offering of Shares issued by Vale was held, in which the Brazilian Government and the National Bank for Economic and Social Development (BNDES) each sold 34,255,582 Vale common shares.

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The demand by investors in Brazil and abroad was substantial, exceeding supply by about three times, which led to the sale of the entire batch of 68,511,164 shares. A portion of about 50.2% was posted in the Brazilian market and the remainder was sold to foreign investors. Later, on October 4, 2002, the proper certification of the Participatory Debentures was obtained from CVM, the Securities Commission, allowing their trading on the secondary market.

Vale in 1997

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Vale in 2013

The following describes the most significant historical events in the history of the Company since its incorporation:

1942

- President Getulio Vargas, by Decree-Law n° 4352 of June 1, 1942, sets out the basis on which

Companhia Vale do Rio Doce SA would be organized. By Decree-Law, the Brazilian Company for Mining and Metallurgy and Mining Company Itabira would be expropriated.

1943

- Vale is constituted on January 11, 1943, as mixed economy Company, pursuant to Decree-Law n ° 4.352/42.

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- Listing of Vale shares on the Rio de Janeiro Stock Market (BVRJ) in October 1943.

1944

- First business with Vale shares on the BVRJ occurred in March 1944.

1952

- The Brazilian Government takes definitive control of Vale's operational system.

1953

- First shipment of iron ore to Japan.

1954

- It revises its business practices abroad, and proceeds to directly contact steel mills, without the intermediation of traders.

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1962

- Signed long-term contracts with Japanese and German steel mills.

1964

- Opening of Vale's first office outside of Brazil in Dusseldorf, Germany.

1966

- Opening of the Port of Tubarão, in Vitória, in Espírito Santo. This is connected to the iron ore mines by the Vitoria to Minas Railroad.

1967

- Geologists of the Southern Mining Co., a subsidiary of United States Steel Corp. (U.S. Steel), record the occurrence of iron ore in Carajás, Pará State.

1968

- Vale shares become part of the IBOVESPA index.

1969

- Inauguration of Vale's first Pellet Plant in Tubarão, in Espírito Santo, with capacity for 2 million tons/year.

1970

- Agreement makes Vale the majority shareholder of the Carajas venture in Para State, along with U.S. Steel.

1972

- Vale signs agreement with Alcan Aluminum Ltd. of Canada for a project to mine bauxite in Rio Trombetas, where Mineração Rio do Norte (MRN) was set up.

1974

- Vale becomes the largest exporter of iron ore in the world, with 16% of seaborne iron ore market.

1975

- For the first time, Vale issues bonds in the international market, worth 70 million marks, with the intermediation of Dresdner Bank.

1976

- Decree No. 77.608/76 grants Vale the concession to construct, use and operate the railroad between Carajás and São Luís, in Pará and Maranhão states, respectively.

1977

- Vale announces priority for the Carajas Project, in order, from 1982, to start the export of iron ore through the Port of Itaqui (MA).

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1979

- Beginning of the effective implementation of the Carajás Iron Ore Project, adopted as the main goal of Vale's business strategy.

1980

- Federal Government approves the Carajas Iron Project and gives financial backing.

1982

- With the start of Valesul Alumínio SA operations in Rio de Janeiro, Vale joins the aluminum sector and helps to reduce imports of the metal into Brazil.

1984

- Inauguration of Vale office in Japan.

1985

- On February 28, the Carajás railroad (EFC) is inaugurated and handed over to Vale.
- Inauguration of the Carajás Iron Ore Project, which increases the productive capacity of the company, now organized in two separate logistic systems (North and South).

1986

- Start of operation of the Port Terminal of Ponta da Madeira, in São Luís in the state of Maranhão.

1987

- The EFC begins operating on a commercial scale.

1989

- Implementation of the Profit Sharing Program for Vale employees.

1994

- In March, Vale launches its program for American Depositary Receipts (ADR) Level 1, negotiable on the OTC market of the United States.

1995

- Vale is included in the National Privatization Program by Decree No. 1510 of June 1, signed by the President.

1996

- On October 10, the National Privatization Council (CND) approves the model for privatization of Vale.

1997

- BNDES releases on March 6, the terms of the bidding for the privatization of VALE.
- On April 18, Vale issues 388,559,056 Participatory Debentures that can only be traded with prior authorization of the CVM, as of three months from the end

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of Secondary Public Offering of Shares under the terms of the privatization process.

- On May 6, Vale is privatized in an auction held at the Stock Exchange of Rio de Janeiro. Valecom consortium, put together by the Votorantim Group, and the Brazil Consortium, led by Companhia Siderurgica Nacional (CSN) took part in the auction. The Brazil Consortium buys 41.73% of common shares of VALE for US\$ 3,338 million at present-day values.

1998

- In the first year after privatization, Vale reaches 46% growth in profit over 1997.

1999

- It has the largest profit in its history so far: US\$ 1.251 billion.

2000

- On February 2, Vale opened the Container Terminal of the Port of Sepetiba.
- In May, Vale acquires Mineração Socoimex S.A. and S.A. Mineração da Trindade (Samitri), companies producing iron ore, initiating the consolidation of the market for Brazilian iron ore.
- On June 20, Vale announced the listing of its American Depositary Receipts (ADRs), representing preferred shares of the Company on the New York Stock Exchange (NYSE) in a DR Level II program approved by the CVM.
- On August 31, the Extraordinary General Meeting approves the merger of a wholly owned subsidiary Mineração Socoimex S.A, without issuing new shares, aiming to add to the assets of the Company the Gongo Soco mine, with reserves of high grade hematite in the iron quadrangle in Minas Gerais.

2001

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- In February, the Board of Directors of Vale authorizes the start of the process of divesting its holdings in the sector of pulp and paper.
- On February 19, the shares of S.A. Mineração da Trindade (Samitri) are incorporated by Vale, with no increase of capital and without issuing new shares, by using shares held in treasury, as authorized by the CVM.
- In March, shareholdings involving Vale and CSN are unwound.
- In April, Vale acquires 100% shareholding in Ferteco Mining SA, the third largest producer of iron ore in Brazil at the time.
- On October 1, the General Assembly of Shareholders approves the incorporation of wholly owned subsidiary S.A. Mineração da Trindade (Samitri), in line with guidelines for administrative and financial streamlining.

2002

- In March, the pellet plant in Sao Luis, in Maranhão state, is officially opened.
- On March 21, the comprehensive sale offer of 68,511,164 Vale common shares owned by the Brazilian Government and BNDES is concluded, of which approximately 50.2% was placed in the Brazilian market and the remainder sold to outside investors. The selling price in Brazil was R\$ 57.28 per share and abroad US\$ 24.50 per ADR.

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- Vale common shares start to be traded on the NYSE in the form of ADRs, in program level III.
- The Company's common shares also start to be traded on the Madrid Stock Exchange - Latibex.
- The foundation stone of the Sossego Copper Project, State of Pará, is laid.
- On October 4, VALE obtains from the CVM the registration of Publicly Traded Participatory Debentures.
- On December 16, the General Assembly of Shareholders approves Vale's Dividend Policy in order to increase both transparency and financial flexibility, taking into account the expected path of the Company's cash flow.
- On December 27, the Extraordinary General Meeting approves the Amendment to the Bylaws in order to (i) expand the Company's activities in energy and logistics, (ii) adjust the Statutes to the new rules introduced by Law No. 10303 of October 31, 2001 and (iii) introduce the principles of best corporate governance practices.

2003

- On February 14, Vale completes the acquisition of 100% stake in Elkem Rana AS (Rana), a Norwegian producer of ferroalloys, for the price of US\$ 17.6 million.
- On March 31, Vale acquires 50% stake in Caemi Mineracao e Metalurgia S.A. (Caemi) for US\$ 426.4 million.
- On August 29, Vale incorporates the wholly owned subsidiaries Celmar S.A. - Indústria de Celulose e Papel S.A. and Ferteco Mineração S.A.
- On November 7, Vale completes the restructuring of shareholdings in logistics companies, which was aimed at the elimination of the relationship between Vale and CSN in the shareholding structure of the Ferrovia Centro-Atlantica SA (FCA), Companhia Ferroviária do Nordeste (CFN) and CSN Aceros S.A. (CSN Aceros).

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- On December 12, Vale adheres to Level 1 of the Program for Differentiated Corporate Governance Practices established by the BM&F Bovespa Exchange.

- Continuing the process of simplifying its operating structure, on December 30, Vale incorporates the following wholly owned subsidiaries: Rio Doce Geologia e Mineração S.A. Docegeo (Docegeo), Mineração Serra do Sossego S.A. (MSS), Vale do Rio Doce Alumínio S.A. Aluvale (Aluvale) and Mineração Vera Cruz S.A. (MVC).

2004

- On July 02, the Sossego mine, the first copper mine in Brazil, opens in the State of Pará. This project was completed in record time.

- In November, Vale wins an international bidding for coal mining in the Moatize region of northern Mozambique.

- In December, Vale signs a memorandum of understanding with ThyssenKrupp Stahl AG (ThyssenKrupp) for the construction of an integrated steel slab plant with a capacity of 5 million tons in the State of Rio de Janeiro.

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2005

- Vale is the first Brazilian company to achieve a risk score greater than the host country and the only one to have this recognition for three different rating agencies: reaching, thus, Investment Grade, given by Moody's, and confirmed by Standard & Poor's and Dominion Bond.

- In July, Vale Belvedere Pty Ltd. signs an agreement with two Australian mining companies to carry out studies to exploit the Belvedere Underground Coal Project, located in the State of Queensland, Australia.

- On September 22, it launches *Vale Investir*, a program that allows investors to automatically reinvest Brazilian funds from shareholders payments - dividends and/or interest on capital - to buy shares of the Company.

- In November, Vale agrees to acquire a minority stake in Ceara Steel, a steel slab project aimed at exporting from the state of Ceará, with a nominal capacity of 1.5 million tons of slabs per year.

- The Company consolidates its entry into the copper concentrate industry, with the first full year of operation of the Sossego Mine and sales to 13 customers in 11 different countries.

- In the last quarter of 2005, Vale acquires 99.2% of Canico Resources Corp. (Canico), which owns the lateritic nickel project Onça Puma, located in Para State, for approximately US\$ 800 million.

2006

- In January, Vale acquires mineral resources, land and mining equipment from the Rio Verde Mineração (Rio Verde) for US\$ 47 million.

- In February, the acquisition of all shares of Canico is completed, these being removed from trading on the Toronto Stock Exchange.

- In March, it inaugurated the expansion of production capacity is inaugurated of alumina refinery Alunorte - Alumina do Norte do Brazil S.A. (Alunorte), located in Barcarena in the State of Pará.

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- On May 3, Vale completes incorporation of shares of Caemi, now holding 100% of the shares.
- On July 3, Vale buys 45.5% stake in Valesul Alumínio S.A. and now owns 100% of the shares.
- On August 11, the Company announces that it intends to offer to acquire all common shares of Inco Limited (Toronto Stock Exchange - TSX and New York Stock Exchange - NYSE under the symbol N) (Inco). The offer is consistent with long-term corporate strategy and strategy for the non-ferrous metals business of Vale.
- In the third quarter, Vale divides the administration of former Southern System for production and distribution of iron ore into two departments: the South-eastern System and the Southern System, and began to report production separately for each system.
- In September, Mineracoes BR Holdings GmbH buys 25% stake in a joint venture, Zhuhai YPM, to build a new pellet plant in Zhuhai, in the region of Guandong, China.
- On October 5, Vale opens the Brucutu Project, the largest mine/plant complex in the world for initial production capacity of iron ore, located in São Gonçalo do Rio Abaixo in Minas Gerais.

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- On October 26, Vale concludes the financial settlement of a major part of the acquisition of Canadian miner Inco Ltd., the second largest nickel producer in the world, effecting payment of US\$ 13.3 billion for the purchase of 174,623,019 shares issued by Inco. On November 6, Vale joins the control group of Usinas Siderúrgicas de Minas Gerais S.A. - Usiminas.

2007

- In January, Vale completed the expansion of iron ore production capacity in Carajás, which now reaches 100 million tons per year.
- On January 30, the acquisition of Inco (now Vale Canada Limited) is ratified at Vale Extraordinary General Meeting. The nickel business is now managed from Toronto as well as activities related to marketing and sales of metals. With the completion of its acquisition of Inco, Vale becomes the second largest mining and metals company in the world by market value.
- On February 16, Vale announces secondary public offering of shares of Log-In Logística Intermodal SA (Log In).
- On February 26, Vale signs a sale and purchase agreement to acquire the Australian AMCI Holdings Australia Pty Ltd. (AMCI), which operates and controls coal assets through holdings in joint ventures.
- In March, Vale acquires an 18% stake in Ferro-Gusa Carajás S.A. (FGC), which belonged to Nucor do Brasil S.A for 20 million dollars, and now holds a 100% stake in FGC.
- In May, Vale signs a usufruct contract, and now controls the entire capital of the MBR, for the following 30 years.
- On May 2, Vale signs a freight contract for 25 years with Bergesen Worldwide (B.W. Bulk), which provides for the construction of the four largest bulk carriers in the world, each with a capacity of 388 thousand tons.
- On June 28, the Government of Mozambique approved the mining contract for the operation, by Vale, of the Moatize coal project in the province of Tete in the northwest of the country.
- On August 30, shareholders meeting at an Extraordinary General Meeting, ratify the acquisition of control of AMCI by the Company.

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- On November 29, Vale begins to use the brand Vale in all countries where it operates and at the same time takes on a new global identity.
- On December 21, Vale signs an agreement for commercial exploitation for 30 years of 720 km of the Norte-Sul Railroad (FNS).

2008

- In the first half of 2008, Vale launches operations to increase capacity in the production of pellets in Samarco, a (50% -50%) joint venture with BHP Billiton in the Brazilian State of Espírito Santo.
- Vale leases three pellet plants in the Tubarão complex, in Vitória, State of Espírito Santo, owned by the JVs in which it participates (Itabasco, Kobrasco and Nibrasco).

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- On May 5, Vale signs a sale and purchase agreement to acquire the mining and surface rights in the municipalities of Rio Acima and Caeté, State of Minas Gerais.
- In July, Vale makes a global offering of 256,926,766 ordinary shares and 189,063,218 preferred shares, including ADSs, in order to promote investment and strategic acquisitions as well as maximizing the financial flexibility of the Company. The aggregate value of Vale's global offer, after underwriting discounts and commissions, including the values of the exercise of further stock options, was US\$ 12.2 billion. In August, exercising the option of complementary lot, Vale issues 24,660,419 class A preferred shares.
- In connection with the offer above, Vale lists and trades its common and preferred ADSs on Euronext Paris.
- On August 3, Vale orders the building of 12 large ships for carrying iron ore, buys used vessels and signs long term freight contracts. The total investment was US\$ 1.6 billion for the construction of new ships and US\$ 74 million for the purchase of used ships.
- On August 14, Vale announces its intention to invest in building a new steel plant in Marabá in Para State, with an annual production capacity of 2.5 million metric tons of semi-finished steel.
- On October 31, Vale announces a reduction in its rate of production of iron ore, pellets, nickel, manganese, ferro-alloys, aluminum and kaolin, in the face of the impact of global economic crisis on the demand for minerals and metals.
- On December 16, Vale signs with African Rainbow Minerals Limited (ARM) and its subsidiary TEAL Exploration & Mining Incorporated (TEAL) a contract providing for the acquisition of 50% of the capital of a joint venture to hold TEAL subsidiaries for CAD \$ 81 million, therefore increasing the strategic options for Vale to grow in the copper business in Africa.
- On December 23, Vale signs a sale and purchase agreement to acquire 100% of the coal exporting assets of Cementos Argos SA (Argos) in Colombia for US\$ 306 million.

2009

- On January 30, Vale signs with Rio Tinto plc (Rio Tinto) a sale and purchase agreement for the acquisition, through cash payment, of iron ore and potash assets, located in Brazil, Argentina and Canada.

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- On March 24, Vale completes the previously announced transaction, and creates a 50%-50% joint venture with ARM for future development and operation of the assets of TEAL, expanding in December 2008 the strategic options for growth in the copper business in Africa.

- On March 27, Vale initiates the construction of the Moatize project, in Tete province, Mozambique. The project involves investments of US\$ 1.3 billion and has a nominal production capacity of 11 million metric tons (Mt) of coal, comprising 8.5 Mt of metallurgical coal and 2.5 Mt of thermal coal.

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- On April 1, the Company concluded the acquisition of the assets of export thermal coal with Argos in Colombia.
- On April 16, Vale completes the sale of all of its 14,869,368 common shares issued by Usiminas and linked to the steel mill's existing shareholders agreement.
- On May 21, the Board of Directors of Vale approve the revised 2009 investment budget for US\$ 9.035 billion as compared with the US\$ 14.235 billion announced on October 16, 2008.
- On May 22, the Extraordinary General Meeting of Vale approves the proposal to change its name from Companhia Vale do Rio Doce SA to Vale SA.
- On June 23, Vale launches a project to produce biodiesel to fuel its operations and projects in northern Brazil, to begin in 2014, using palm oil (dende oil) as feedstock, which will be produced by a consortium between Vale and Biopalma Amazonia SA (Biopalma).
- On July 13, the Company announces that its unionized employees in Sudbury and Port Colborne in Ontario, Canada, are on strike. The same happens on the 1st of August, with the unionized employees of its operation in Voisey's Bay in the province of Newfoundland and Labrador, Canada.
- On July 22, Vale signs a memorandum of understanding (MOU) with ThyssenKrupp to raise its stake in ThyssenKrupp CSA Siderurgica do Atlantico Ltda. (TKCSA) from 10% to 26.87% through a capital injection of EUR \$ 965 million.
- On September 18, Vale completes the acquisition of the operations of iron ore in Corumbá, located in Mato Grosso do Sul, owned by Rio Tinto PLC (Rio Tinto) and other controlled entities.
- On October 19, the Board of Directors of Vale approves the investment budget for 2010, including expenditures of US\$ 12.9 billion dedicated to sustaining existing operations and promoting growth through research and development (R & D) and project execution.

2010

- On January 22, integrated subsidiary Valesul Alumínio S.A. (Valesul) enters into an agreement to sell its aluminum assets located in Rio de Janeiro to Alumínio Nordeste S.A., a Metalis group company, for US\$ 31.2 million.

- On the same date, Vale approves at a Special Shareholders Meeting the incorporation of integrated subsidiaries Sociedade de Mineração Estrela de Apolo S.A. (Estrela de Apolo) and Mineração Vale Corumbá S.A. (Vale Corumbá).

- During the first half of the year, Vale closes agreements with its customers in the iron ore business to shift from annual contracts to contracts with values adjusted on a quarterly basis. The new contracts offer more efficiency and transparency for iron ore prices and make it possible to differentiate qualities,

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which help stimulate long-term investment. Besides, customers can learn in advance the price to be paid in the following quarter.

- In the second quarter, Vale acquires a 51% interest in VBG - Vale BSGR Limited (VBG) (formerly BSG Resources (Guinea) Limited), which holds iron ore concession rights in Simandou South (Zogota) and iron ore exploration permits in Simandou North (Blocks 1 & 2), Guinea.

- Through a series of transactions in 2010, Vale acquires the phosphate operations of Vale Fertilizantes S.A. (Vale Fertilizantes, formerly Fertilizantes Fosfatados S.A. Fosfertil) and Vale Fosfatados S.A. (formerly Bunge Participações and Investimentos S.A.). The total cost of these acquisitions was US\$ 5.829 billion. The sellers included Bunge Ltd., the Mosaic Company (Mosaic), Yara Brasil Fertilizantes S.A. and other Brazilian companies.

- In May, Vale Internacional S.A. enters into an agreement with Oman Oil Company S.A.O.C. (OOC), an integrated subsidiary of the government of the sultanate of Oman, for the sale of a 30% interest in Vale Oman Pelletizing Company LLC (VOPC), for US\$ 125 million.

- In July, Vale sells to Imerys S.A. 86.2% of its interest in Pará Pigmentos S.A. (PPSA), a kaolin producer, along with other kaolin mining rights, for US\$ 71.3 million (equivalent to R\$ 126.1 million).

- In July, Vale concludes the transaction announced on March 31, 2010, by virtue of which it sells 35% of the total capital of MVM Resources International B.V. (MVM) to Mosaic for US\$ 385 million, and 25% of the total capital of MVM to Mitsui, for US\$ 275 million. MVM manages and operates Bayóvar phosphate rock project in Peru.

- In August, Vale Emirates Ltd. acquired 51% interest in Sociedade de Desenvolvimento do Corredor Nacala S.A. (SDCN) from the Mozambican company Insitec SGPS SA (Insitec) for US\$ 21 million (equivalent to R\$ 36.6 million on the date of disbursement).

- In the fourth quarter, Vale lists Depositary Receipts representing its common and preferred Class A shares (HDRs) on Hong Kong Limited Stock Exchange (HKEx). The HDRs start to be traded on December 8, 2010.

2011

- On February 28, Vale announces the completion of the operation with Norsk Hydro ASA (Hydro), announced on May 2, 2010, to transfer all its interests in Albras - Alumínio Brasileiro S.A. (Albras), Alunorte - Alumina do Norte do Brasil S.A. (Alunorte) and Companhia de Alumina do Pará (CAP), receiving in return, through the subsidiary Vale Austria Holdings GmbH, currently known as Vale International Holdings GmbH (Vale Austria), 22% of the outstanding common shares of Hydro and US\$ 503 million in cash. Additionally, Vale Austria sold 60% of Mineração Paragominas S.A. (Paragominas) to Hydro for US\$ 578 million in cash. The remaining 40% will be sold in 3 and 5 years.

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- In February 2011, Vale pays US\$ 173.5 million to acquire the control of Biopalma, in the State of Pará, to produce palm oil (dende oil) as feedstock to manufacture biodiesel.
- On April 28, the Board of Directors approves the acquisition, subject to certain conditions, of up to 9% of the capital of Norte Energia S.A. (NESA), a stake previously held by Gaia Energia e Participações S.A (Gaia). NESA is a company whose sole purpose is the implementation, operation and management of Belo Monte hydroelectric power plant in Pará. In June 2011, Vale concluded the acquisition of 9% of the equity of NESA.
- In June 2011, Vale Emirates Ltd. acquired additional 16% equity of Sociedade de Desenvolvimento do Corredor Nacala S.A. (SDCN) for US\$ 8 million, equivalent to R\$ 12.8 million. The acquisition is aligned with the Company strategy to develop the logistic corridor of Nacala, and continued with the acquisition of 51% of SDCN in September 2010. SDCN has a concession to create the required logistic structure for the flow resulting from coal production expansion in Moatize.
- In July 2011, Vale Logística Integrada S.A. signed an agreement to create a joint venture with Vale Fertilizantes for purposes of exploring the concession of Terminal Portuário da Ultrafertil (TUF), in the city of Santos, State of São Paulo, with imported cargos of sulfur, ammonia and fertilizers in general, being strategically linked to Vale's railroads, upon payment of R\$150 million to Vale Fertilizantes and capital investment in the joint venture of R\$432 million to fund TUF investment project.
- In December 2011, Vale concluded, by its wholly-owned subsidiary Mineração Naque S.A. a public offer auction (IPO) to acquire outstanding shares issued by Vale Fertilizantes. As a result of the IPO, Vale acquired 211,014 common shares and 82,919,456 preferred shares issued by Vale Fertilizantes, representing 83.8% of outstanding common shares and 94.0% outstanding preferred shares of Vale Fertilizantes. Common and preferred shares were acquired by the par value of R\$25.00, in a total amount of R\$2.078 billion.

2012

- On February 9, the Board of Directors approved the execution of a lease agreement of potassium mining rights and assets with Petróleo Brasileiro S.A. - Petrobras, for 30 years, which allows continuing with potassium extraction in Taquari-Vassouras and development of the Carnalita Project in the State of Sergipe.
- In April, Vale sold its 61.5% interest in Cadam S.A. concluding the divestment operation by selling the kaolin business beginning in 2010 with the sale of the interest in Pará Pigmentos S.A.
- In June, together with Vale International GmbH and Vale Internacional S.A., Vale concluded the sale of its thermal coal operations in Colombia to CPC S.A.S., an affiliated company of Colombian Natural Resources S.A.S. (CNR), for US\$ 407 million in cash.

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- In May, Vale entered into an operational lease with its affiliate Hispanobras, where Vale leases its pelleting plants owned by Hispanobrás for three years, subject to automatic renewal. The operation was concluded in July 2012.

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- On June 7, Vale Emirates Ltd. acquired an additional 18% interest in Sociedade de Desenvolvimento do Corredor Nacala S.A. (SDCN), holder of the concessions to create the logistic corridor of Vale in Nacala, Mozambique, for US\$ 18.5 million. Consequently, Vale holds 85% of the shares of SDCN.
- On June 27, Vale was granted the prior license (LP) for the iron ore project Carajás S11D, the largest project in the history of Vale, and the largest project in the history of iron ore, with nominal capacity of 90 million annual metric tons (Mtpa) of iron ore. The LP is part of the first phase of licensing of this enterprise. This license signals the approval of its location, conception, and environmental feasibility, establishing the basic requirements to be complied with in the subsequent deployment phase.
- In August, Vale Internacional has informed that it signed a sale agreement for US\$ 600 million and subsequent long term freight agreement for 10 large ore carriers with Polaris Shipping Co. Ltd. (Polaris).
- In October, Vale and Vale Internacional completed the sale of its manganese and ferroalloy operations in Europe to subsidiaries of Glencore International Plc. (Glencore), for US\$ 160 million in cash. Vale also retained Glencore as its marketing agent outside Brazil for metallurgic manganese ore for a five-year period.
- On October 4, the first copper concentrate was produced, upon conclusion of the commissioning of the copper mine processing plant in Lubambe, in the Konkola North project, that includes an underground mine, plant, and related infrastructure, located in the copper belt in Zambia, with estimate nominal capacity of 45,000 metric tons per year of copper concentrate. This operation is part of a joint venture with African Rainbow Minerals Limited, holding 80% of the operation, and the remaining 20% is held by Zambia Consolidated Copper Mines Ltd.
- On December 20, Vale concluded the annual evaluation of Onça Puma and aluminum assets, implying recognition of the impairment before tax of US\$8.2 billion, with accounting impact on 2012 4Q.

2013

- On January 31, Vale concluded the option exercised in June 2010, acquiring an additional 24.5% interest in the Belvedere coal project (Belvedere) from Aquila Resources Limited (Aquila), for A\$150 million (equivalent to US\$ 156 million using the AUD/USD rate of 1.04). As a whole, Vale paid US\$338 million for 100% of Belvedere. Belvedere is a future opportunity of growth and is comprised of an underground coal mine located in the South of Bowen Basin, close to the town of Moura, in the State of Queensland, Australia.
- On February 28, Vale concluded the final agreements with Silver Wheaton Corp. (SLW), Canadian company with shares negotiated at the Toronto Stock Exchange and the New York Stock Exchange, to sell 70% of payable gold flows produced as byproduct of some Sudbury nickel mines for 20 years and with Silver Wheaton (Caymans) Ltd. to sell 25% of payable gold flows produced as byproduct of the Salobo copper mine during the mine lifetime, for the initial payment of US\$ 1.9 billion in cash, 10 million in SLW warrants with exercise price of US\$ 65 and 10 year term. Additionally, Vale will receive cash payments

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in the future for each ounce (oz) of gold provided to SLW under the terms in the agreement, at the lowest value between US\$ 400 per ounce (plus annual inflation adjustment of 1% starting in 2016 for Salobo) and the market price.

- On March 11, Vale informed the Government of the Republic of Argentina that the company had suspended deployment of the Rio Colorado project in Argentina.
- On March 14, Vale exercised the preemptive right provided for in the incorporation agreement of Consórcio Capim Branco, acquiring a 12.47% interest of Suzano Papel e Celulose S.A for R\$ 223,030,470.52 in the capital of hydroelectric plants Capim Branco I & II. Consequently, Vale holds 60.89% on Capim Branco I & II, capable of generating 1,524 gigawatts hour per year of power by the end of the concession in 2036.
- On April 29, Vale received the environmental operation license (LO) for railroad terminal Ponta da Madeira (PDM), in the state of Maranhão, issued by the State Secretary of Environment and Natural Resources of Maranhão. The PDM railroad terminal is part of CLN 150, which allows expansion of Carajás logistic capacity to 150 million annual metric tons.
- On May 6, Vale received the environmental installation license (LI) and authorization to remove vegetation for the railroad branch to connect Serra Sul de Carajás to Estrada de Ferro Carajás (EFC), in the State of Pará, issued by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), which allows beginning the construction of the 101 km railroad branch to connect the storage yard of S11D to EFC. The railroad branch is part of the CLN S11D project, which allows expansion of Carajás logistic capacity to 230 million annual metric tons of iron ore.
- On September 18, Vale entered into agreements to sell 20% of the total capital of VLI S.A. (VLI) to Mitsui & Co. Ltd. (Mitsui) for R\$ 1.5 billion and 15.9% of the capital of VLI for R\$ 1.2 billion to the Investment Fund of the Severance Fund – FGTS (FI-FGTS), which is managed by Caixa Econômica Federal.
- On November 14, Vale announced the sale of all its 22% interest in Norsk Hydro ASA (Hydro) for NOK 25.00 per share, summing NOK 11.196 billion, equivalent to US\$ 1.822 billion (equivalent to R\$ 4.218 billion).
- On November 27, Vale announces adherence to the federal tax refinancing agreement (REFIS) related to the payment of income tax and social contribution on net profit of affiliates abroad on profit generated abroad in the period between 2003 and 2012, according to terms set forth by Law 12.865/2013 and Provisional Order no. 627/ 2013. Adherence to REFIS implied the payment to the Federal Revenue Secretariat of R\$ 5.965 billion by the end of November and R\$ 16.360 billion in 179 months, where monthly installments are adjusted according to the SELIC interest rate. Thus, the current net value of payments was estimated by Vale at R\$ 14.425 billion.
- On December 12, Vale concluded the sale of Sociedad Contractual Minera Tres Valles, cathode copper production company in the area of Coquimbo in Chile, for US\$ 25 million (equivalent to R\$ 54 million) to Inversiones Porto San Giorgio S.A (ISG), company controlled by the Chilean group Vecchiola S.A.

- On December 19, Vale entered into agreements with CEMIG Geração e Transmissão S.A. to sell 49% of its 9% interest in Norte Energia S.A. (Norte

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Energia), company responsible for building, operating and exploring the hydroelectric plant of Belo Monte for approximately R\$ 200 million, and creation of a joint venture comprised of power generation assets.

- On December 20, Vale signed an agreement with Israel Chemicals Ltd. (ICL) to sell its 44.25% interest in Fosbrasil, company producer of purified phosphoric acid, located in Cajati, State of São Paulo, for US\$ 52 million.
- On December 23, Vale entered into an agreement with a fund managed by Brookfield Asset Management (Brookfield) to sell 26.5% of its interest in the capital of VLI, for R\$ 2 billion.
- On December 23, Vale informed that it filed with the Superior Court of Justice (STJ) on December 19, a petition for partial dismissal in the process discussing the legality of taxation of profit from affiliates abroad. This dismissal refers to the period between 2003 and 2012. Vale informed that it will continue questioning taxation applicable to the period between 1996 and 2002 and 2013. Should there be a winning decision, Vale will claim immediate return of values paid relative to the period between 2003 and 2012, according to installment payment under the terms in Provisional Order no. 627/2013 and as mentioned in relevant fact published on November 27, 2013, and it will suspend payments for outstanding installments.
- On December 26, Vale promoted an auction, under the terms in CVM Instruction no. 168/1991, as amended, to sell 28,737,367 common shares issued by Log-in Logística Intermodal S.A. (Log-in), company listed in BM&FBOVESPA (ticker symbol: LOGN3), corresponding to all common shares issued by Log-in then held by Vale, for R\$ 8.11 per share, totaling R\$ 233 million. This transaction was concluded on January 2, 2014.

2014

- In January, Vale updated its Code of Ethics and Conduct for purposes of obtaining better alignment with its mission, vision, and values, reinforcing ethical standards and updating aspects of the anticorruption and antitrust laws.
- On February 18, Vale closed the offer of infrastructure debentures for R\$ 1 billion and will use net funds from this offer on investments related to the Company infrastructure projects deemed to be priority, under the terms in article 2 in law no. 12.431/2011, as amended.
- In March, the National Bank of Social and Economic Development (BNDES) approved the funding agreement for R\$ 6.2 billion for the deployment of the Carajás Serra Sul S11D and CLN S11D projects. The funding term is for ten years and funds will be disbursed in up to three years, according to the project schedule.

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- On April 14, the transaction announced on September 18, 2013 was concluded, with the transfer of 20% of the capital stock of VLI to Mitsui by R\$ 1.5 billion and 15.9% to Fundo de Investimento do Fundo de Garantia do Tempo de Serviço - FGTS (FI-FGTS), which assets are managed by Caixa Econômica Federal, for R\$ 1.2 billion.

- In April, the Republic of Guinea revoked the mining rights for the Simandou and Zogota concession areas held by VBG.

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6.5 Main corporate events with the company and its affiliates

2011

Sale of aluminum assets

On February 28, 2011, Vale announced the completion, of the operation with Norsk Hydro ASA (Hydro), company listed in the Oslo Stock Exchange and London Stock Exchange (ticket symbol: NHY), to transfer, through subsidiary Vale Austria Holdings GmbH (Vale Austria), all its interests in Albras - Alumínio Brasileiro S.A. (Albras), Alunorte - Alumina do Norte do Brasil S.A. (Alunorte) and Companhia de Alumina do Pará (CAP), along with their respective rights of exclusivity, commercial agreements and net debt of US\$ 655 million (equivalent to R\$ 1.0888 billion) for 22% of the outstanding common shares of Hydro, after issuance on February 28, 2011, and US\$ 503 million (equivalent to R\$ 836 million) in cash, after adjustments.

Besides, Vale Austria created a new company, Mineração Paragominas S.A. (Paragominas), and transferred the bauxite mine of Paragominas and all the other mining rights relating to bauxite in Brazil. As a part of this operation, Vale Austria sold 60% of Paragominas to Hydro for US\$ 578 million in cash (equivalent to R\$ 960 million) after adjustments to the working capital. The remaining portion will be sold in two equal parts, 3 and 5 years after conclusion of the transaction, for US\$ 200 million in cash each.

Pursuant to the terms of the agreement, Vale Austria transferred to Hydro: (a) 51% of the total capital of Albras; (b) 57% of the total capital of Alunorte; (c) 61% of the total capital of CAP; and sold (d) 60% of the total capital of Paragominas.

Vale Austria subscribed 447,834,465 shares of Hydro or 22% of its 2,035,611,206 outstanding shares, approximately US\$ 3.5 billion (equivalent to R\$ 5.866 billion) according to the closure price of Hydro, and NOK/USD exchange rate on February 25, 2011.

Acquisition of Biopalma in Brazil

In February 2011, Vale acquired the majority stock of Biopalma da Amazônia S.A. Reflorestamento, Indústria e Comércio, in the State of Pará (Biopalma). The amount of the transaction was R\$ 173.5 million, paid in cash and at present Vale owns a 70% interest in this partnership. The right to vote is regulated by the shareholder s agreement. Biopalma will produce palm oil (dende oil) as feedstock to manufacture biodiesel, and most of the production will be used for a B20 blend (a mixture of 20% of biodiesel and 80% of regular diesel oil), as a fuel for our fleet of locomotives, equipment and heavy machinery. Our investment in production of biodiesel forms part of our strategic

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focus on global sustainability. The operation was approved by Brazilian regulating authorities on May 18, 2011.

Acquisition of interest in the Usina Hidrelétrica de Belo Monte

On April 28, 2011, the Board of Directors approved the acquisition of up to 9% of the capital of Norte Energia S.A. (NESA), a stake then held by Gaia Energia e Participações S.A (Gaia). NESA is a company whose sole purpose is the implementation, operation and management of Belo Monte hydroelectric power plant in the Brazilian State of Pará. Vale reimbursed Gaia for its capital contributions to NESA and undertook to make future capital contributions as a result of the acquired stock interest, estimated at R\$ 2.3 billion (equivalent to US\$ 1.4 billion). This acquisition is consistent with the Company strategy to reduce operating costs and minimize the price of power and the risks of supply. The operation was completed on June 30, 2011, upon transfer to Vale of 9% of the shares issued by NESA, held by Gaia, and execution of the amendment to NESA's shareholders' agreement to regulate the entrance of Vale, and other terms. The operation was filed before CADE - the Administrative Board for Economic Defense and approved with no restrictions on August 31, 2011.

Takeover to acquire shares of Vale Fertilizantes S.A.

In June 2011, Vale announced submission to the Board of Directors of a proposal by the executive directors for a takeover of up to 100% of shares issued by the subsidiary Vale Fertilizantes, aiming to close its capital. The takeover was approved by the Board of Directors on June 30, 2011 and was registered before the Brazilian Securities Commission (CVM) on July 15, 2011. The offer's tender was issued on November 10, 2011. The Takeover comprised the payment for shares in cash by the subsidiary Mineração Naque S.A., at R\$25.00 per share, either common or preferred shares issued by Vale Fertilizantes, corresponding to a 41% premium over the average price of preferred shares traded in the last 20 trading days prior to the disclosure of the offer, in June 2011. On December 12, 2011, Vale concluded the Offer, resulting in the acquisition of 211,014 common shares and 82,919,456 preferred shares issued by Vale Fertilizantes, representing 83.8% of the common shares and 94.0% of preferred shares. On December 23, 2011 a Fertilizantes has its registration as open capital company cancelled before CVM. On January 24, 2012, Vale Fertilizantes redeemed 5,314,386 shares, balance of shares issued by the company, and Vale now holds, through subsidiaries, 100% of common and preferred shares issued by Vale Fertilizantes. The total disbursement by Vale and Vale Fertilizantes was R\$2.2 billion.

Agreement to explore concession of port terminal in Santos

In July 2011, Vale Logística Integrada S.A. signed an agreement to incorporate TUF Empreendimentos e Participações S.A., a *joint venture* with Vale Fertilizantes for purposes of exploring the concession of the Terminal

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Integrador Portuário Luiz Antonio Mesquita (TIPLAM – former TUF). TIPLAM is located in the city of Santos, State of São Paulo, and moves imported cargo of sulfur, ammonia and fertilizers in general, strategically connected to Vale's railroads. The joint venture positions Vale to serve, in a competitive way, the agribusiness growth in Brazil.

2012

Lease of mining potash rights and assets

On April 23, 2012, Vale signed with Petróleo Brasileiro S.A. (Petrobras) the renewal of the lease agreement for potash mining rights and assets in Sergipe for a thirty-year period that allows continuing to mine potash in Taquari-Vassouras and the development of the Carnalita project. In the production phase, there is an estimate that Carnalita will be the largest potash operation in Brazil, with estimate production capacity of 1.2 million tons of potash per year. The agreement is in line with Vale's growth strategy to become one of the world leaders in the fertilizing industry.

Sale of interest in CADAM

On April 26, 2012, Vale signed the sale agreement for its 61.5% interest in Cadam S.A (CADAM), for US\$ 30.1 million (equivalent to R\$ 58.0 million on the transaction date), to KaMin LLC (a North-American closed capital company). CADAM is a producer of kaolin operating with open pit mines in the state of Amapá, a processing plant and a private port, both in the state of Pará. The mine and the plant are connected by a 5.8 km pipeline. Vale will receive US\$ 30.1 million for the shareholding control of CADAM, to be paid in five years. Operation was concluded on May 7, 2012. The sale of CADAM is part of the Company's continuous efforts to optimize its asset portfolio. With the sale of Pará Pigmentos S.A. (PPSA), in 2010, the sale of CADAM consolidates the sale of the kaolin business. Vale's growth strategy to create sustainable value encompasses several options and active portfolio management is very important to optimize capital allocation and focus administration.

Sale of Coal Assets from Colombia

On May 25, 2012, with Vale International Holdings GmbH and Vale Internacional S.A., Vale signed an agreement to sell its thermal coal operations in Colombia to CPC S.A.S, a subsidiary of Colombian Natural Resource S.A.A (CNR), a private company, for US\$ 407 million in cash (equivalent to R\$ 843 million on the transaction date), and subject to regulatory approval. The sale was concluded on June 25, 2012.

The thermal coal operations in Colombia are an integrated mine-railway-port system that consists of: (a) 100% of the El Hatillo coal mine and the coal deposit in Cerro Largo, both of which are located in Cesar's department; (b) 100% of Sociedad Portuária Rio Córdoba (SPRC), a coal port operation on

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Colombia's Atlantic Coast; and (c) participation in 8.43% of the Ferrocarriles Del Norte de Colombia S.A. (FENOCO) railway, which has the concession and operated the railways that connect the coal mines to SPRC.

The sale of the thermal coal operation in Colombia is part of continued efforts to optimize the company portfolio of assets. Vale's strategy for sustainable growth and value creation encompasses multiple options, and management of its portfolio of assets is important to optimize the allocation of capital and focus the attention of the administration.

Sale of manganese ferroalloy assets in Europe

On July 10, 2012, with Vale Internacional S.A., Vale signed an agreement to sell its manganese ferroalloy operations in Europe to Glencore Internacional Plc. subsidiaries, a company listed in the London and Hong Kong stock markets, for US\$ 160 million (equivalent to R\$ 325 million) in cash. The manganese ferroalloy operations in Europe consist of: (a) 100% of Vale Manganese France SAS, located in Dunkirk, in France; and, (b) 100% of the Vale Manganese Norway AS, located in Mo I Rana, Norway. The sale was concluded on October 31, 2012, upon checking compliance with all conditions. The sale of the manganese ferroalloy operations in Europe is part of continued efforts to optimize the company portfolio of assets. Vale's strategy for sustainable growth and value creation encompasses multiple options, and management of its portfolio of assets is important to optimize the allocation of capital and focus the attention of the administration.

Sale of marine transport assets

On August 31, 2012, Vale Internacional signed an agreement to sell, for US\$ 600 million and posterior chartering, of 10 large ore carrier ships with Polaris Shipping Co. Ltd. (Polaris). These ships were acquired in 2009 / 2010 and converted from oil tankers to ore carriers, each with an approximate capacity of 300,000 DWT, so that Vale Internacional would have at its disposal a marine fleet dedicated to the transport of iron ore to its clients. The sold ships will be chartered by Vale through long term chartering contracts signed with Polaris. In addition to freeing capital, the transaction preserves Vale's ability to transport iron ore by sea having the ships at its disposal, but eliminating the risks involved in ownership and operation. This transaction is part of continued efforts to optimize the company portfolio of assets, improving capital allocation and reinforcing the balance sheet.

Sale of fertilizer assets

On December 18, 2012, Vale Fertilizantes S.A. signed with Petrobras an agreement to sell Araucária Nitrogenados S.A. (Araucária), a nitrogen production operation located in Araucária in the state of Paraná, for US\$ 234 million. The purchase price will be paid by Petrobras in quarterly payments, 100% adjusted by the Interbank Deposit Certificate (CDI), in amounts that are

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equivalent to the royalties owned by Vale Potássio do Nordeste S.A. relative to the potash assets leasing and mining rights at Taquari-Vassouras and the Carnalita project. Araucária has an annual production capacity of approximately 1.1 million tons of ammonia and urea. The divestment of assets like Araucária, which do not have synergy with the Company's portfolio, is consistent with efforts to improve the allocation of capital and revenue generation to complement the financing of investments considered a priority, with great potential for value generation. The Araucária sale also contributed to a reduction in investments to sustain existing operations in the amount of US\$ 50 million per year.

The operation was approved without restrictions by CADE on May 15, 2013.

Sale of participation in oil and gas concession

On December 21, 2012, Vale signed an agreement with Statoil Brasil Óleo e Gás Ltda (Statoil) to sell its 25% participation in the BM-ES-22A concession in the Espírito Santo Basin for the amount of US\$ 40 million (equivalent to approximately R\$ 90 million), in cash. Besides, the sale exempts Vale from investment liabilities in the amount of US\$ 60 million until the end of 2013. The completion of this transaction was on March 19, 2014. Vale's strategy for sustainable growth and value generation encompasses multiple options, and the active management of its portfolio is an important action to optimize the allocation of capital and to focus management efforts.

2013

Increase in interest on the Belvedere coal project

On January 31, 2013, Vale Belvedere Pty Ltd. signed agreements to conclude a purchase option exercised in June 2010, through which it acquired an additional 24.5% interest in the Belvedere coal project from a subsidiary of Aquila Resources Limited (Aquila). The purchase price of A\$ 150 million (equivalent to US\$ 156 million using the AUD/USD rate of 1.04), is equivalent to the market value determined by an independent evaluator retained by Vale and Aquila at the time. As result of this transaction, Vale Belvedere Pty Ltd. increased its interest in Belvedere to 100%. Additionally, Vale Belvedere Pty Ltd. agreed upon paying A\$ 20 million (equivalent to US\$ 21 million) to settle litigations and disputes related to Belvedere with Aquila.

As a whole, Vale paid US\$338 million for 100% of Belvedere. Belvedere is a future opportunity of growth and is comprised of an underground coal mine located in the South of Bowen Basin, close to the town of Moura, in the State of Queensland, Australia. The project was approved by Vale's Board of Directors. According to preliminary estimates, the Belvedere project has the potential to reach a production capacity of 7.0 million metric tons per year, mostly of metallurgical coal.

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Increased interest in hydroelectric plants of Capim Branco I & II

On March 14, with Cemig Capim Branco Energia S.A., upon exercising the preemptive right provided for in the incorporation agreement of Consórcio Capim Branco, Vale acquired for R\$ 223,030,470.52 a 12.47% interest of Suzano Papel e Celulose S.A. and Suzano Holding S.A. in the capital of hydroelectric plants Capim Branco I & II. Consequently, Vale holds 60.89% on Capim Branco I & II, capable of generating 1,524 gigawatts hour per year of power by the end of the concession in 2036. The acquisition of additional interest in hydroelectric plants Capim Branco I & II adds value to the extent that it provides an immediate reduction in the power cost for our operations, being a low risk investment and with return clearly higher than the capital cost for Vale.

Sale of interest in VLI

On September 18, Vale entered into agreements to sell 20% of the total capital of VLI to Mitsui & Co. Ltd. (Mitsui) for R\$ 1.509 billion and 15.9% of the capital of VLI for R\$ 1.2 billion to the Investment Fund of the Severance Fund – FGTS (FI-FGTS), which is managed by Caixa Econômica Federal. This transaction was concluded on April 14, 2014. Values arising out of the sale to FI-FGTS and R\$ 800 million of the sale funds to Mitsui will be comprised by a capital investment in VLI, who issued new shares for Mitsui and FI-FGTS. Values invested in VLI will be used to fund part of VLI investment plan. The remaining funds from this transaction, R\$ 709 million, was paid directly to Vale by Mitsui.

Additionally, on December 23, 2013, Vale entered into an agreement with a fund managed by Brookfield Asset Management (Brookfield) to sell 26.5% of its interest in the capital of VLI, for R\$ 2 billion. The conclusion of this transaction is subject to the approval by competent government authorities, including the Administrative Council of Economic Defense – CADE and ANTT – National Agency of Terrestrial Transportation. Upon conclusion of this transaction, Vale's interest in VLI will be reduced to 37.6%. Vale, Mitsui FI-FGTS, and Brookfield will jointly control VLI, under a shareholders' agreement.

Sale of all shares of Norsk Hydro

On November 14, Vale announced the sale of all its 22% interest in Norsk Hydro ASA (Hydro), held by its subsidiary Vale Austria Holdings GmbH, currently known as Vale International Holdings GmbH (Vale Austria), for NOK 25.00 per share, summing NOK 11.196 billion, equivalent to US\$ 1.822 billion (equivalent to R\$ 4.243 billion). Vale Austria has held such shares since 2011, when it restructured the portfolio of aluminum assets. Upon conclusion of this transaction, Vale Austria no longer holds interest in Hydro.

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Sale of interest in Tres Valles

On December 12, 2013, Vale concluded the sale of Sociedad Contractual Minera Tres Valles (Tres Valles) for US\$ 25 million (equivalent to R\$ 54 million) to Inversiones Porto San Giorgio S.A (ISG), company controlled by the Chilean group Vecchiola S.A.

Tres Valles is a cathode copper production company in the area of Coquimbo in Chile. The transaction included the entire 90% interest held by Vale in the capital of Tres Valles and some specific mining rights held by Vale in the area of Coquimbo. Tres Valles owns underground and open-air mines and has a production capacity of up to 18,500 metric tons per year of cathode copper.

Sale of power generation assets

On December 19, 2013, Vale entered into agreements with CEMIG Geração e Transmissão S.A. (CEMIG GT) to sell 49% of its 9% interest in Norte Energia S.A. (Norte Energia), company responsible for building, operating and exploring the hydroelectric plant of Belo Monte for approximately R\$ 200 million, and creation of a joint venture comprised of power generation assets.

For this purpose, two different enterprises were created to cover power generation projects and assets. In the first one, Aliança Norte Energia Participações S.A., Vale will hold 51% of the capital, arising out of the investment of its current 9% interest in the total capital of Norte Energia and later sale of 49% of the capital of such enterprise to CEMIG GT. Thus, Vale's interest in the capital of Norte Energia will be reduced to 4.59% and Vale will proportionally reduce the provision of guarantees associated to the funding structure of project Belo Monte.

The second enterprise, Aliança Geração de Energia S.A., will be incorporated by Vale and CEMIG GT, respectively holding 55% and 45% of the total capital, upon investment of their interest on the following power generation assets: Porto Estrela, Igarapava, Funil, Capim Branco I & II, Aimorés, and Candonga. Such plants have attributable installed capacity of 1,158 MW and insured power of an average of 652 MW. The provision of power for Vale operations is ensured under a long term agreement with Aliança Geração de Energia S.A., in order to maintain the same amount of power currently provided to our operations.

The transaction is subject to regulatory approval and other usual terms applicable to similar transactions. Final values of these operations are subject to specific adjustments, under the terms and conditions set forth in investment agreements.

Sale of purified phosphoric acid assets

On December 20, 2013, Vale signed an agreement with Israel Chemicals Ltd. (ICL) to sell its 44.25% interest in Fosbrasil, company producer of purified phosphoric acid, located in Cajati, State of São Paulo, for US\$ 52 million. The

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effectiveness of such transaction is subject to compliance with current prior terms and approvals, including approval by the Administrative Council of Economic Defense (CADE).

Sale of Log-in shares

On December 26, Vale promoted an auction, under the terms in CVM Instruction no. 168, dated December 23, 1991, as amended, to sell 28,737,367 common shares issued by Log-in Logística Intermodal S.A. (Log-in), company listed in BM&FBOVESPA (ticker symbol: LOGN3), corresponding to all common shares issued by Log-in then held by Vale, for R\$ 8.11 per share, totaling R\$ 233 million. This transaction was concluded on January 2, 2014.

Acquisition of Tecnored Desenvolvimento Tecnológico S.A. (Tecnored)

On February 27, 2014, Vale acquired the interest held by BNDESPAR and Logos Tecnocon, representing respectively 31.8% and 19.0% of the capital of Tecnored. The transaction value was R\$38.1 million, to be adjusted between July 1, 2013 and the date of payment), with possible additional payment of up to R\$ 138.9 million to be done between 2019 and 2029, subject to the successful deployment of the developed technology. As result of this transaction, Vale increased its interest to 100% in Tecnored. The technology used by Tecnored may help extend the use life of Vale mines and reduce the environmental impact, as it allows the production of pig iron with different concentration grades and quality, even ultrafine ore, which currently are deposited in rejection basins.

6.6 Information on bankruptcy filing based on relevant values, or judicial or extrajudicial recovery

Not applicable. There are no bankruptcy filings based on relevant values, or judicial or extrajudicial recovery of the Company.

6.7 Other relevant information

Review of the iron ore project Simandou, in the Republic of Guinea.

On April 30, 2010, Vale acquired from BSG Resources Ltd. (BSGR) a 51% stake in BSG Resources (Guinea) Ltd. (currently named VBG - Vale BSGR Limited (VBG), which at the time held concessions for iron ore in Guinea, Simandou South (Zogota) and exploration permits for Simandou North (Blocks 1 & 2), in the Republic of Guinea. In April, 2014, the Republic of Guinea revoked the mining rights for the Simandou and Zogota concession areas held by VBG. For more information, see item 7.5 (a) in this Reference Form.

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7.1 Description of activities engaged by the issuer and its subsidiaries

Vale is one of the largest mining companies in the world and the largest in the Americas by market value. The Company is the largest iron ore producer and second largest nickel producer in the world. Vale also produces manganese ore, ferroalloys, copper, thermal and metallurgical coal, phosphates, potash, cobalt, and platinum group metals (PGMs), gold, silver, cobalt, potash, phosphates, and other fertilizers. To sustain its growth strategy, Vale is actively engaged in mineral exploration in 11 countries. The Company operates large logistics systems in Brazil and in other areas of the world integrated with its mining operations, including railroads, maritime terminals and ports. In addition, the Company has a portfolio of maritime freight, floating transfer stations and a distribution center to support distribution of iron ore worldwide. Vale also has significant investments in the sectors of energy and steel, directly or through subsidiaries and joint ventures.

7.2 Information on operational segments

a. Products and services marketed in each operating segment

(i) Bulk Materials Includes extraction of iron ore and production of pellets, as well as the North, Southern and Southeastern transportation systems, including railroads, ports, maritime terminals, and ships linked to these operations. Manganese ore and the production of ferroalloys and coal are also included in this segment.

(ii) *Base metals* Includes the production of non-ferrous minerals, including production of nickel (co-products and by-products), copper and investments in aluminum partnerships.

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(iii) *Fertilizers* Includes three important nutrient groups: potassium, phosphates and nitrogen. This is a business segment, reported as of 2010, that is being formed through acquisitions and organic growth.

(iv) *Logistics* Includes the system of cargo transportation for third parties, divided into ports, rail and maritime transport and shipping services.

(v) *Other investments* Includes investments in joint ventures and affiliates in other businesses.

The information presented to upper management regarding performance of each segment are usually originated from accounting records maintained according to generally accepted accounting principles in Brazil, with some minimum relocations between segments.

b. Revenue from the segment and its participation in the Company's net revenues

In R\$ thousands Segment	2013		Fiscal year ending on December 31 2012		2011	
	Net Revenue	% of total	Net Revenue	% of total	Net Revenue	% of total
Bulk Materials	77,856,142	76	69,369,114	76	78,129,764	77
Base Metals	15,745,886	16	13,933,389	15	16,069,590	16
Fertilizers	6,037,774	6	7,008,169	8	5,551,489	6
Others	1,849,945	77	958,810	1	804,837	1
Total Revenue	101,489,747	100	91,269,482	100	100,555,680	100

c. Profit or loss resulting from the segment and its participation in the Company's net income

In R\$ thousands Segment	2013		Fiscal year ending on December 31 In R\$ thousands		2013	
	Profit/Loss	% of total	Profit/Loss	% of total	Profit/Loss	% of total
Bulk Materials	7,060,036	n/a	19,914,832	201	36,566,000	97
Base Metals	(781,142)	679	(9,009,025)	-91	3,008,738	8
Fertilizers	(6,088,378)	n/a	2,346,358	24	42,000	
Others	(71,823)	62	(3,226,950)	-33	(1,652,013)	-4
Discontinued operations - General load	(3,602)	3	(133,519)	-1	(139,000)	-1
Net Profit of the Period	(115,091)		9,891,696		37,825,725	

7.3 Information on products and services related to the operating segments

- a. Characteristics of the production process
- b. Characteristics of the distribution process
- c. Characteristics of the markets, in particular:
 - i. competition conditions in the markets

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- ii. participation in each market
- d. Possible seasonality

1. Bulk materials

The Company's bulk materials business includes iron ore prospecting, pellet production, coal production, manganese prospecting, and ferroalloy production. Each activity is described below.

1.1 Iron Ore and pellets

1.1.1 *Iron ore operations*

Vale runs the majority of its iron ore operations in Brazil mainly through Vale S.A. and our wholly-owned subsidiary Mineração Corumbaiense Reunida S.A. (MCR) and our subsidiary MBR. Our mines, which are all open-pit and our operations are concentrated essentially in three systems: the Southeastern System, the Southern System and the Northern System, each with its own transportation capacity. Vale also has mining operations in the Central western System through the joint venture Samarco Mineração S.A. (Samarco), a joint venture with BHP Billiton plc, where Vale holds 50% interest. All iron ore operations in Brazil are held under concession by the federal government, which are granted for undetermined period.

Vale Northern System	Carajás, Pará	Open-pit mines and ore processing plants. Divided into North Range, South Range, and East Range. Since 1985, we have been conducting mining activities in the Serra Norte, which is divided into three main mining bodies (N4W, N4E and	High grade hematite (66.7% on average).	One-pit mining operations. The beneficiation process consists simply of sizing operations, including screening, hydrocycloning, crushing and filtration. The beneficiation process produces sinter feed, pellet feed, and granulated ore.	Power provided by the national power network, acquired from regional power companies.	The iron ore is transported by the Carajás Railroad (<u>EFC</u>) to the Ponta da Madeira maritime terminal in the state of Maranhão.
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N5). A new processing plant has started in the last quarter 2013.

Southeastern System	Iron Quadrangle region of the state of Minas Gerais	Three locations: Itabira (two mines, with three important processing plants), Minas Centrais (three mines, with three important processing plants and one secondary plant) and Mariana (three mines and four processing plants).	The ore reserves have high ratios of itabirite ore relative to hematite ore. Itabirite ore has iron grade between 35% and 60% and requires concentration to achieve shipping grade.	Open-pit mining operations. We generally process the run-of-mine (ROM) by means of standard crushing, followed by classification and concentration steps, producing sinter feed, lump ore and pellet feed in the beneficiation plants located at the mining sites.	Power provided by the national power network, acquired from regional utility companies or produced directly by Vale.	The Vitória a Minas Railroad (<u>EFVM</u>) connects these mines to the Tubarão port.
Southern	Iron	Three major	The ore reserves have	Provided by the	Power	Our affiliate MRS

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Firm / Mining System	Location	Description / History	Mining	Operations	Power source	Access / Transportation
System	Quadrangle region of the state of Minas Gerais	locations: Minas Itabirito (four mines, with three major beneficiation plants and three secondary beneficiation plants); Vargem Grande (three mines and two major beneficiation plants); and Paraopeba (four mines and three beneficiation plants).	high ratios of itabirite ore relative to hematite ore. Itabirite ore has iron grade between 35% and 60% and requires concentration to achieve shipping grade.	national power grid. Acquired from regional power companies or directly produced by Vale.	provided by the national power network, acquired from regional power companies or produced directly by Vale.	transports our core products from the mines to Guaíba Island and Itaguaí maritime terminals in the state of Rio de Janeiro.
Central western System (1)	State of Mato Grosso do Sul	Comprised of Urucum and Corumbá mines. Open-pit mining operations.	The iron ore reserves in Urucum and Corumbá contain a high level of hematite ore that mainly generates granulated ore.	Open-pit mining operations. The mine operates through standard crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional power companies.	The iron ore products from the Urucum and Corumbá mines are delivered to clients through Vale barges sailing on Paraguay and Paraná rivers.
Samarco	Iron Quadrangle region of the state of Minas Gerais	Integrated system comprised of two mines, two processing plants, two pipelines, three pellet plants and a port.	Itabirite	Open-pit mining operations. Both processing plants located in the facility process ROM by means of standard crushing, classification and concentration steps, producing sinter feed, lump ore and pellet feed.	Power provided by the national power network, acquired from regional power companies.	Samarco mines serve Samarco processing plants by two pipelines of approximately 400 km. These pipelines transport the iron ore from the processing plants to the pelleting plants and from the pelleting plants to the port, in the State of Espírito Santo.

(1) Part of our operations in the Central western System is conducted by MCR.

1.1.2. Iron Ore Production

The following table sets forth information about our iron ore production.

Mine/Plant	Type	Production for fiscal year ended on December 31			Recovery Process (%)
		2011 (million metric tons)	2012	2013	
Southeastern System					
Itabira					
Cauê	Open pit	18.6	17.8	15.9	62,3
Conceição	Open pit	21.4	19.9	18.1	68,8
Minas Centrais					
Água Limpa(1)	Open pit	5.0	4.6	4.4	47,5
Gongo Soco (3)	Open pit	5.3	4.4	4.7	100,0
Brucutu	Open pit	30.9	31.7	28.7	73,7
Mariana					
Alegria	Open pit	14.7	14.7	15.8	82,7
Fábrica Nova	Open pit	13.2	13.0	12.5	67,3
Fazendã	Open pit	11.1	9.5	9.3	100,0
Total Southeastern System		120,2	115.6	109.5	
Southern System					
Minas Itabirito					
Segredo/João Pereira	Open pit	11.8	12.2	12.0	75,6
Sapocado/Galinheiro	Open pit	18.6	19.6	19.0	69,2

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Mine/Plant	Type	Production for fiscal year ended on			Recovery Process (%)
		2011	December 31 2012 (million metric tons)	2013	
Vargem Grande					
Tamanduá(8)	Open pit	8.8	9.7	6.7	81,3
Capitão do Mato	Open pit	7.3	7.3	9.9	81,3
Abóboras	Open pit	5.3	5.6	5.4	100,0
Paraopeba					
Jangada	Open pit	5.1	6.1	6.9	94,2
Córrego do Feijão	Open pit	6.8	6.8	5.8	94,2
Capão Xavier(9)	Open pit	8.4	9.6	9.2	87,1
Mar Azul (3)	Open pit	4.1	3.3	4.2	100,0
Total Southern System		76,3	80,3	79,0	
Centralwestern System					
Corumbá	Open pit	4.1	4.6	4.5	79,8
Urucum	Open pit	1.5	1.8	2.0	69,3
Total Centralwestern System		5,6	6,4	6,5	
Northern System					
<i>Serra Norte</i>					
N4W	Open pit	38.9	39.3	31.3	93,5
N4E	Open pit	20.1	18.7	19.9	93,5
N5	Open pit	50.8	48.8	53.6	93,5
Total Northern System		109,8	106,8	104,9	
Vale		311,8	309,0	299,8	
Samarco (2)		10,8	10,9	10,9	
Total		322,6	320,0	310,7	

(1) *The mine and the Água Limpa plant are owned by Baovale, in which we own 100% of the voting shares and 50% of the total shares. Production figures for Água Limpa were not adjusted to reflect our ownership interest*

(2) *Production figures for Samarco, in which we have a 50% interest, have been adjusted to reflect our ownership interest.*

(3) *Production numbers for these mines or plants include minor operations elsewhere with low production levels and reserves.*

1.1.3. Iron Ore Pellet Operations

Directly and through joint ventures, Vale produces iron ore pellets in Brazil, in Oman and in China, as shown in the table below. Our estimated total nominal capacity is 57.2 million tons per year (Mtpa), including the full capacity of our Oman pelleting plants, but without our joint ventures Samarco, Zhuhai YPM Pellet Co., Ltd. (Zhuhai YPM) and Anyang Yu Vale Yongtong Pellet Co., Ltd. (Anyang). Of our total 2013 pellet production, including the production from our joint ventures, 61.4% corresponded to blast furnace pellets, and 38.6% corresponded to direct reduction pellets, which are used in steel mills that employ the direct reduction process rather than blast furnace technology. We meet all the iron ore needs of our pelletizing plants and part of the iron ore needs for Samarco and Zhuhai YPM. In 2013, we sold 10.2 million metric tons to Samarco and 1.2 million metric tons to Zhuhai YPM.

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Firm / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
<u>Brazil:</u> Vale Tubarão (State of Espírito Santo)	Our two wholly-owned pelleting units (Tubarão I and II) and leasing of five plants. The iron ore is received from our mines in the Southeastern	29.2	Power provided by the national power network, acquired from regional power	Pelleting operations held in Tubarão I and II are suspended since November 13, 2012, due to changes in the demand of the	100.0	

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Firm / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
	System and distribution is done by our logistics infrastructure.		companies or produced directly by Vale.	steel industry for raw material (reduction in pellet consumption in favor of <i>sinter feed</i>)		
Fábrica (State of Minas Gerais)	Part of the Southern System. Receives iron ore from the mine Fábrica. Production is transported through MRS and EFVM.	4.5	Power provided by the national power network, acquired from regional utility companies or produced directly by Vale...		100.0	
Vargem Grande (State of Minas Gerais)	Part of the Southern System. Receives iron ore from the Pico and Vargem Grande mines, and production is transported through MRS.	7.0	Power provided by the national power network, acquired from regional power companies or produced directly by Vale..		100.0	
São Luís (State of Maranhão)	Part of the Northern System. Receives iron ore from Carajás and production is delivered to customers through our Ponta da Madeira maritime terminal.	7.5	Power provided by the national power network, acquired from regional power companies or produced directly by Vale..	On October 8, 2012, we suspended operations at the pelleting plant in São Luís, for reasons similar to the ones that led to the suspension of operations at the Tubarão I and II plants.	100.0	
Samarco	Three pelleting units with nominal capacity of 22.3 Mtpa. Pelleting units are located at Ponta Ubu, in Anchieta, Espírito Santo.	22.3	Power provided by the national power network, acquired from regional power companies or produced directly by Samarco.	In 2014, we started operation of a fourth pelleting plant with capacity of 8.3 Mtpa, to increase Samarco's pelleting nominal capacity to 30.5 Mtpa.	50.0	BHP Billiton plc
<u>Oman:</u> Vale Oman Pelletizing Company LLC (<u>VOPC</u>)	Vale Industry Complex. Two pelleting plants (total capacity of 9.0 Mtpa for direct reduction pellets). Pelleting	9.0	Power provided by the national power network.	In the last quarter of the year, the unit reached monthly nominal capacity. Total volume produced in 2013	70.0	Oman Oil Company S.A.O.C.

plants are integrated
to our distribution
center with nominal
capacity of 40.0

was 8.28 million tons
per year.

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Firm / Plant	Description / History	Nominal capacity (Mtpa)	Power source	Other information	Our participation (%)	Partners
	Mtpa.					
China:						
Zhuhai YPM	Part of the Yueyufeng Steel Complex. Port facilities, we use to receive <i>pellet feed</i> from our mines in Brazil. Main customer is Zhuhai Yueyufeng Iron & Steel (<u>YYF</u>), also located in the Yueyufeng Steel Complex.	1.2	Power provided by the national power network.		25.0	Zhuhai Yueyufeng Iron and Steel Co. Ltd., Halswe Enterprises Limited
Anyang	Pelleting operation in China with production capacity of 1.2 Mtpa and which production started in March 2011.	1.2	Power provided by the national power network.		25.0	Anyang Iron & Steel Co. Ltd.

1.1.4 Pellet Production

The table below provides information regarding our main pellet production.

Firm	Fiscal year ending on December 31		
	2011	2012	2013
	(million metric tons)		
Vale(1)	39.0	43.3	39.0
Hispanobras(2)	2.1	1.1	
Samarco (3)	10.7	10.7	10.6
Zhuhai YPM (3)	0.3	0.2	0.2
Anyang (3)	0.2	0.2	0.2
Total Production	52.3	55.6	50.0

(1) The figure includes actual production, including the full production from our pellet plants in Oman and four pelleting plants we leased in 2008. We signed a 10-year operating lease contract for Itabrasco's pellet plant in October 2008. We signed a five-year operating lease contract for Kobrasco's pellet plant in June 2008, renewed for another five years in 2013. We signed a 30-year operating lease contract for Nibrasco's two pellet plants in May 2008.

(2) On July 1, 2012, we signed a three-year operating lease contract for Hispanobras' pelleting plant, and started consolidating production.

(3) Production figures for Samarco, Zhuhai YPM, and Anyang were adjusted to reflect our ownership interest.

1.1.5. *Clients, sales, and marketing*

We supply all of our iron ore and pellets (including our share in joint-venture pellet production) to the steel industry. Prevailing and expected levels of demand for steel products affect demand for our iron ore and pellets. Demand for steel products is influenced by several factors, such as global industrial production, civil construction and infrastructure investment.

In 2013, China accounted for 47.7% of our iron ore and pellet shipments, and Asia, as a whole, accounted for 64.9%, while Europe, in turn, accounted for 18.0%, followed by Brazil with 8%. Our ten largest customers collectively purchased 143.6 million metric tons of iron ore and pellets from us, representing 46.7% of our sales volumes of iron ore and pellets in 2013 and

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42.4% of our total iron ore and pellet revenues. In 2013, no individual customer accounted for more than 10.0% of our iron ore and pellet shipments.

In 2013, the Asian market (mainly Japan, South Korea, and Taiwan) and the European market were the primary markets for our blast furnace pellets, while the Middle East, North America and North Africa were the primary markets for our direct reduction pellets.

We strongly emphasize customer service in order to improve our competitiveness. We work with our customers to understand their main objectives and to provide them with iron ore solutions to meet specific customer needs. Using our expertise in mining, agglomeration and iron-making processes, we search for technical solutions that will balance the best use of our world-class mining assets and the satisfaction of our customers. We believe that our ability to provide customers with a total iron ore solution and the quality of our products are very important advantages helping us to improve our competitiveness in relation to competitors who may be more conveniently located geographically. In addition to offering technical assistance to our customers, we operate sales support offices in Tokyo (Japan), Seoul (South Korea), Singapore, Dubai (UAE), and Shanghai (China) which support the sales made by Vale International, wholly owned subsidiary of Vale International Holdings GmbH (former Vale Austria Holdings GmbH), located in St. Prex, Switzerland. These offices also allow us to stay in closer contact with our customers, monitor their requirements and our contract performance, and ensure that our customers receive timely deliveries.

We sell iron ore and pellets under different agreements, including long term agreement with customers and spot sales by means of auctions and business platforms. We adopt different price mechanisms for our sales, usually related to the Chinese spot market, including basically the following systems: (i) daily spot pricing, (ii) spot pricing after delivery, which is a temporary pricing and an adjustment invoice after delivery; (iii) current quarterly and monthly averages; and (iv) three month average with one-month delay.

1.1.6. Competition

The global iron ore and iron ore pellet markets are highly competitive. The main factors affecting competition are price, quality and range of products offered, reliability, operating costs and shipping costs.

Our biggest competitors in the Asian market are located in Australia and include subsidiaries and affiliates of BHP Billiton PLC (BHP Billiton), Rio Tinto Ltd. (Rio Tinto), and Fortescue Metals Group Ltd (FMG). Although the transportation costs of delivering iron ore from Australia to Asian customers are generally lower than ours as a result of geographical proximity, we are competitive in the Asian market for two reasons. First, steel companies generally seek to obtain the types (or blends) of iron ore and iron ore pellets that allow them to produce the intended final product in the most economical

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and efficient manner. Our iron ore has low impurity levels and other properties that generally lead to lower processing costs. For example, in addition to its high grade, the alumina grade of our iron ore is very low compared to Australian ores, reducing consumption of coke and increasing productivity in blast furnaces, which is particularly important during periods of high demand. When demand is very high, our quality differential usually is highlighted to customers. Second, steel companies often develop sales relationships based on a reliable supply of a specific mix of iron ore and iron ore pellets.

In terms of reliability, our ownership and operation of logistics facilities in the Northern and Southeastern Systems help us ensure that our products are delivered on time and at a relatively low cost. In addition, we continue developing a low-cost freight portfolio, aimed at enhancing our ability to offer our products in the Asian market at competitive prices and to increase our market share. To support this strategy, we built a distribution center in Oman and two floating transfer stations (STFs) in the Philippines and we are investing in another distribution center in Malaysia. We entered into medium and long-term freight contracts, and we own vessels known as Valemax, which reduce power consumption and green-house gas emissions, carrying a larger amount of cargo in a single trip, offering lower freight rates. These investments increase the speed and flexibility for customization and reduce the market time required for our products.

Our principal competitors in Europe are: Kumba Iron Ore Limited; Luossavaara Kiirunavaara AB (LKAB); Société Nationale Industrielle et Minière (SNIM); and Iron Ore Company of Canada (IOC), subsidiary of Rio Tinto. We are competitive in the European market for the same reasons we are competitive in Asia, but also due to the proximity of our port facilities to European customers.

The Brazilian iron market is also competitive. There are several smaller iron ore producers and new companies that are developing projects, such as Anglo Ferrous Brazil, MMX, Ferrous Resources and Bahia

Mineração. Some steel plants, as Gerdau S.A. (Gerdau), Companhia Siderurgica Nacional (CSN), V&M do Brasil S.A. (Mannesmann), Usiminas, and ArcelorMittal, also have iron ore operations. Although price is important, quality and reliability are important factors as well. We believe that our integrated transportation systems, our high quality ore and technical support make us a strong competitor in the Brazilian market.

Regarding pelleting, our main competitors are LKAB, Cliffs Natural Resources Inc., ArcelorMittal Canada (formerly Quebec Cartier Mining Co.), IOC, and Gulf Industrial Investment Co.

1.2 Coal

1.2.1 Operations

We produce metallurgic and thermal coal by our subsidiaries Vale Moçambique,

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which operates the Moatize mine, and Vale Australia, which operates coal assets in Australia by wholly-owned subsidiaries and joint ventures. We also hold minority interest in two Chinese companies, Henan Longyu Energy Resources Co., Ltd. (Longyu) and Shandong Yankuang International Coking Company Limited (Yankuang), as presented in the table below.

Company / Mining complex	Location	Description / History	Mining / Operations	Mining license	Power source	Access / Transportation
<u>Mozambique</u>						
Vale Moçambique Moatize	Tete, Mozambique	Open pit mine developed directly by Vale. Operations started in August 2011 and should achieve nominal production capacity of 11 Mtpa, comprised mainly of metallurgic coal. Vale holds 95.0% interest and the remaining shares are held by Empresa Moçambicana de Exploração Mineira, S.A.	Produces metallurgic and thermal coal. The main brand product of Moatize is Chipanga premium hard coking coal, but there is operational flexibility for other products. The ideal product portfolio will come as result of market surveys. Coal from mines is processed at a coal handling and preparation plant (<u>CHPP</u>) with capacity of 4,000 metric tons per hour.	Mining concession ends in 2032, renewable after this date.	Power provided by local utility companies. Supply of local back-up.	Coal is transported from the mine to the Beira Port through railroad Linha do Sena.
<u>Australia</u>						
Integra Coal	Hunter Valley, New South Wales	Open pit and underground mine acquired with AMCI Investments Pty Ltd (<u>AMCI</u>) in 2007, located 10 km to the Northeast of Singleton, in Hunter Valley, in New South Wales, Australia. Vale holds 61.2% interest and the remaining shares are held by Nippon Steel (<u>NSC</u>), JFE	Produces metallurgic and thermal coal. Operations include a coal underground mine that produces through the <i>longwall</i> methods and an open pit mine. The coal is processed in a coal handling and preparation plant (<u>CHPP</u>) with capacity of 1,200	Mining licenses expire in 2023, 2026, 2030, and 2032.	Power provided by the national power network, acquired from regional utility companies.	Production is carried in trains carried for 83 km to the Newcastle Port, New South Wales, Australia.

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		Group (<u>JFE</u>), Posco, Toyota Tsusho Australia, Chubu Electric Power Co.	metric tons an hour.			
Carborough Downs	Bowen Basin, Queensland	Acquired with AMCI in 2007, mining concessions in Carborough Downs include Rangal Coal Measures, from Bowen Basin, with the Leichardt and Vermont mines. Both mines offer cock and may be improved to produce metallurgic coal and pulverized injection coal (<u>ICP</u>). Vale holds 85.0% interest and the remaining shares are held by JFE, Posco and Tata Steel.	Metallurgic coal. The Leichardt mine is our main development goal and comprises 100% of our reserve and the basis of current resources. The Carborough Downs coal is processed at Carborough Downs CHPP, with processing capacity of 1,000 metric tons an hour, operating seven days a week.	Mining licenses expire in 2035 and 2039.	Power provided by the national power network, acquired from regional utility companies.	Product is carried in trains at the cargo railroad and carried for 163 km to the Dalrymple Bay Coal Terminal, in Queensland, Australia.

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Company / Mining complex	Location	Description / History	Mining / Operations	Mining license	Power source	Access / Transportation
Isaac Plains	Bowen Basin, Queensland	The Isaac Plains open pit mine, acquired with AMCI in 2007, is located close to Carborough Downs, in the center of Queensland. The mine is managed by Isaac Plains Coal Management, on behalf of the parties in the <i>joint venture</i> . Vale holds 50.0% of interest and the remaining shares are held by a Sumitomo subsidiary.	Metallurgic and thermal coal. Coal is classified as medium-volatile bitumen coal, with low sulfur content. Coal is processed at Isaac Plains CHPP, with capacity of 500 metric tons per hour.	Mining licenses expire in 2025.	Power provided by the national power network, acquired from regional utility companies.	Carried for 172 kilometers to the Dalrymple Bay Coal Terminal.
<u>China</u>						
Longyu	Henan Province, China	Longyu has two coal mines in operation, which are located 10 km and 5 km from the town of Yongcheng, in the Henan Province. Vale holds 25.0% and the remaining shares are held by Yongmei Group Co., Ltd. (formerly known as Yongcheng Coal & Electricity (Group) Co. Ltd.), Shanghai Baosteel International Economic & Trading Co., Ltd. and other minor shareholders. Vale acquired an interest in Longyu by acquiring shares recently issued.	Metallurgic and thermal coal and other related products.	Mining concessions end in 2034.	Power provided by the national power network, acquired from regional utility companies.	Products are carried by truck or train directly to customers in China or carried by truck or train to the Lianyungang port
Yankuang	Shandong Province, China	Metallurgic coking plant located 10 km from the town of Yanzhou, Shandong Province. Vale holds 25.0% and the remaining shares are held by Yankuang Group Co. and Itochu Corporation. The plant was comprised by three shareholders.	Metallurgic coking, methanol, tar oil and benzene. Yankuang has production capacity of 1.7 Mtpa of coking and 200,000 tap of methanol.		Power provided by the national power network, acquired from regional utility companies.	Most of the coking products are transported by train, while other products are carried by truck directly to our customers in China or by train to the Rizhao port.

1.2.2 Production

The table below presents information on our marketing coal production.

Operation	Mine type	Production during fiscal year ending December 31		
		2011	2012 (thousand metric tons)	2013
Metallurgic coal:				
<i>Vale Australia</i>				
Integra Coal(1)	Underground and open pit	467	962	1.410
Isaac Plains(2)	Open pit	635	709	656
Carborough Downs(3)	Underground	1,390	911	2.447
Broadlea (4)	Open pit	0	0	0
<i>Vale Moçambique</i>				
Moatize(5)	Open pit	275	2,501	2.373
Total metallurgic coal		2.766	5,083	6,885
Thermal coal:				
<i>Vale Colombia</i>				
El Hatillo(6)	Open pit	3,565		
<i>Vale Australia</i>				
Integra Coal(1)	Open pit	325	351	87
Isaac Plains(2)	Open pit	274	381	347
Broadlea(4)	Open pit	0	0	0
<i>Vale Moçambique</i>				
Moatize(5)	Open pit	342	1,267	1.444
Total thermal coal		4.506	1,999	1,878

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- (1) *These figures correspond to our participation of 61.2% in Integra Coal, a joint venture constituted as a partnership.*
- (2) *These figures correspond to our participation of 50.0% in Isaac Plains, a joint venture constituted as a partnership.*
- (3) *These figures correspond to our participation of 85.0% in Carborough Downs, a joint venture not constituted as a partnership.*
- (4) *Broadlea Coal has been under repair and maintenance since December 2009*
- (5) *Moatize started production in August 2011.*
- (6) *We sold the El Hatillo mine in the second half of 2012.*

1.2.3 Clients and sales

Coal sales at our operations in Australia are basically geared towards the Eastern Asian market. The coal sales from our Moatize operations, in Mozambique, aim global steel markets, including Asia, India, Africa, Europe and Americas. Our Chinese coal joint ventures directed their sales to the Chinese market.

1.2.4 Competition

The global coal industry, basically made up by the hard coal (metallurgical and thermal) and brown / lignite coal markets, is highly competitive.

The growing demand for steel, particularly in Asia, continues to promote a strong demand for metallurgical coal. Significant port and railroad limitations in some of the countries where our main providers are located may lead to a limited availability of additional metallurgical coal.

The increased steel demand, especially in Asia, /supports the Strong demand for thermal and metallurgic coal. If there is a strong offer at low prices for metallurgic coal in the new few years, investments in new greenfield projects may be reduced, which may cause unbalance in the offer in the long run. Additionally, port and railroad restrictions in certain supply areas may restrict production of metallurgic coal if there are no significant investments.

Competition in the coal industry is based mostly in production cost savings, coal quality, and transportation cost. Our main strong points are the geographical location of the current and future location of providers and production costs with regard to several other producers.

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The main participants in the transoceanic coal market are subsidiaries and affiliates and joint ventures BHP Billiton, Glencore Xstrata, Anglo American, Rio Tinto, Teck Cominco, Peabody, Walter Energy, and Shenhua Group, and others.

Table of Contents1.3 Manganese ore and ferroalloys*1.3.1 Manganese ore production and operations*

We conduct our manganese operations in Brazil through our wholly-owned subsidiaries Vale Manganês S.A. (Vale Manganês), Vale Mina do Azul S.A. and MCR. The Company's mines produce three types of manganese products:

- metallurgical ore used primarily in the production of ferroalloys;
- natural manganese dioxide, suitable for the manufacturing of electrolytic batteries; and
- chemical ore used in various sectors for the production of fertilizers, pesticides and animal feed, and is also used as pigment in the ceramics industry.

Mining complex	Company	Location	Description / History	Mining	Operations	Power source	Access / Transportation
Azul	Vale Mina do Azul S.A.	Pará	Open pit mining operations and local processing plants.	High content ore (minimum manganese content of 40%)	Crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utility companies.	Manganese ore is carried in trucks and by EFC to Ponta da Madeira maritime terminal.
Morro da Mina	Vale Manganês	Minas Gerais	Open pit mining operations and a large processing plant.	Low content ore (24% of manganese).	Crushing, followed by average/screening classification, producing granulated and fine for ferroalloy plants in Barbacena and Ouro Preto.	Power provided by the national power network, acquired from regional utility companies.	Manganese ore is carried in trucks to the ferroalloy plants in Barbacena and Ouro Preto.
Urucum	Urucum	Mato Grosso do Sul	Underground mining operations and local processing plants.	High content ore (minimum manganese content of 40%)	Crushing, followed by classification, producing granulated and fine.	Power provided by the national power network, acquired from regional utility companies.	The manganese ore is carried to the Rosario port (Argentina) in barges through the Paraguai and Paraná rivers.

The table below presents information on our manganese production.

Mine	Type	Production during fiscal year ending December 31			Process Recovery in 2013 (%)
		2011 (million metric tons)	2012	2013	
Azul	Open pit	2,1,	1,9,	1,9,	57,8
Morro da Mina	Open pit	0,1,	0,2,	0,1,	65,6
Urucum	Underground	0,3,	0,3,	0,4,	81,9
Total		2,5	2,4,	2,4,	

Table of Contents*1.3.2 Ferroalloy production and operations*

We conduct our ferroalloy businesses through our wholly-owned subsidiary Vale Manganês.

The production of ferroalloys consumes significant amounts of power, representing 6.3% of our total consumption in 2013. The power supply for our ferroalloy plants is provided through long-term power purchase contracts. For information on risks associated to possible power supply issues, see item 4.1 in this Reference Form.

We produce several types of manganese ferroalloys, such as high carbon and medium carbon manganese and ferro-silicon manganese.

Plant	Location	Description / History	Nominal capacity	Power source
Minas Gerais Plants	Cities of Barbacena and Ouro Preto	Barbacena has 6 furnaces, two refinery stations and a crushing plant. Ouro Preto has 3 furnaces.	74,000 tons are processed per year at the plant in Barbacena and 65,000 tons per year at the plant in Ouro Preto.	Power provided by the national power network. Power also supplied by independent producers under long term agreements.
Bahia Plants	City of Simões Filho	Four furnaces, two conversion process and one sintering plant.	150,000 tons per year	Power provided by the national power network. Power also supplied by independent producers under long term agreements.

The table below presents information on our production of ferroalloys.

Plant	Production during fiscal year ending December 31		
	2011	2012 (thousand metric tons)	2013
Barbacena	67	65	45
Ouro Preto	61	62	48
Simões Filho	76	79	82
Total	204	206	175

1.3.3. Manganese ore and ferroalloys: market and competition

The markets for manganese ore and ferroalloys are highly competitive. Competition in the manganese ore market takes place in two segments. High-grade manganese ore competes on a global seaborne basis, while low-grade ore competes on a regional basis. For some ferroalloys, high-grade ore is mandatory, while for others high- and low-grade ores are complementary. The main suppliers of high-grade ores are located in South Africa, Gabon, Australia and Brazil. The main producers of low-grade ores are located in Ukraine, China, Ghana, Kazakhstan, India and

Mexico.

The ferroalloy market is characterized by a large number of participants who compete primarily on the basis of price. The principal competitive factors in this market are the costs of manganese ore, power, logistics and reductants. We compete with stand-alone producers and integrated producers that also mine their own ore. Our competitors are located mainly in countries that produce manganese ore or steel.

2. Basic Metals

2.1. Nickel

2.1.1. Operations

We conduct our nickel operations mainly through our wholly-owned subsidiary

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Vale Canada, which operates two nickel production systems, one at the North Atlantic and one in Asia-Pacific. A third nickel production system, Onça Puma, in South Atlantic, has resumed ramp-up activities in the end of 2013. Our nickel operations are presented in the table below.

Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
<u>North Atlantic</u>						
Vale Canada	Canada Ontario	Sudbury, Integrated mining, crushing, smelting and refining operations to turn ore into refined nickel with nominal capacity of 66,000 metric tons of refined nickel per year and additional <i>feed</i> of nickel oxide to the refinery in Wales. Mining operations in Sudbury started in 1885. Vale acquired Sudbury upon acquiring Inco Ltd. in 2006.	Primarily underground mining operations with sulfate nickel with some copper, cobalt, PGMs, gold, and silver. The construction of the Totten mine concluded in 2013. We also conduct smelting and refining of nickel concentrate at our operations in Voisey s Bay. Additionally to producing finished nickel in Sudbury, we send an intermediate product, nickel oxide, to our nickel refinery in Wales to process it into end products. We also have capacity to send nickel oxide to our Asian refineries.	Patented mining rights with no expiration date; mining leases end in 2014 and 2032; and mining license with undetermined validity term.	Power provided by the Ontario power network and produced directly by Vale.	Located at the TransCanada road and two main railroads cross Sudbury. Finished products are delivered to the North-American market by truck. For customers abroad, products are loaded in containers and travel in intermodal model (truck / train / cargo vessel) for ports in Canada s eastern and western coast.
Vale Canada	Canada Thompson, Manitoba	Integrated mining, crushing, <i>smelting</i> and refining operations to turn ore into refined nickel with nominal capacity of 45,000 metric tons of refined nickel per year. Mining at Thompson was discovered in 1956 and acquired by Vale upon acquiring Inco Ltd. in 2006.	Primarily underground mining operations with sulfate nickel. These resources also contain some copper and cobalt. The local concentrate with nickel concentrate at our operations in Voisey s Bay for smelting and refining aiming to achieve a high quality nickel plate product. We are considering eliminating <i>smelting</i> and refining processes in Thompson, due to new federal rules of sulfur dioxide emissions to be in force in 2015.	Application before the Lease Council matures between 2020 and 2030; mining leases end in 2034.	Power provided by public utilities at the province.	Finished products are delivered to the North-American market by truck. For customers abroad, products are loaded in containers and travel in intermodal model (truck / train / cargo vessel) for ports in Canada s eastern and western coast.
Vale Newfoundland & Labrador Limited	Canada Voisey s Bay, Newfoundland & Labrador	Open pit mine and ore processing into intermediate products nickel and copper	Comprised by the Ovoid open pit mine and deposits with potential for underground	Mining concession end in 2027.	100% provided by Vale diesel generators.	Nickel and copper concentrates are carried to the

concentrate. Voisey Bay operations started in 2005 and were acquired by Vale in 2006.

operations at a later moment. We extract sulfate nickel ore, which also contain some copper and cobalt. Nickel concentrates are currently sent to our operations in Sudbury and Thompson, for final processing (smelting and refinery), while copper concentrate is sold in the market. When the Long Harbour

port by trucks and then are shipped on solid bulk vessels for external markets or our Canadian refining operations.

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Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
			refinery is operational, our Labrador nickel concentrate will be redirected to the facilities and will be processed as priority.			
Vale Europe Limited	UK Clydach, Wales	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 40 thousand metric tons per year. The Clydach Refinery started operations in 1902 and was acquired by Vale in 2006.	Processes a nickel intermediate product nickel oxide, provided by Sudbury or Matsuzaka to produce refined nickel as powder or pellets.		Power provided by the national power network.	Transported for the end customer in the United Kingdom and the continental Europe by truck. Products are sent to customers abroad by truck to the ports in Southampton and Liverpool, and shipped into ocean containers.
<u>Asia-Pacific</u>						
PT Vale Indonesia Tbk (<u>PTVI</u> , formerly known as PT International Nickel Indonesia Tbk)	Indonesia Sorowako, Sulawesi	Open pit mine and respective processing plant (producer of matte nickel, and intermediate product) with nominal capacity of approximately 80,000 metric tons of matte nickel per year. PTVI stock is traded at the Indonesia Stock Exchange. We indirectly hold 59.3% of the capital stock of PTVI and Sumitomo Metal Mining Co., Ltd (<u>Sumitomo</u>) holds 20.1% and Sumitomo Corporation hold 0.1% and the public holds 20.5%. PVTI was created in 1968, started operations in 1978 and was acquired by Vale in 2006.	PTVI extracts lateritic nickel ore and produces matte nickel which is sent to refineries in Japan. According to guaranteed sale agreements during the mine use life, PTVI sells 80% of its production to its wholly-owned subsidiary Vale Canada and 20% to Sumitomo.	The employment agreement ends in 2025, and is under negotiation with the Indonesian government.	Power produced at PVTI low cost hydroelectric power plants in the Larona River (there are currently three units). PTVI has thermal generators to complement its power supply with a power source that is not subject to hydrological factors.	Carried by truck for approximately 40 km to the river port, in Malili, and shipped in barges to load cargo ships to send to Japan.
Vale Nouvelle-Calédonie S.A.S (<u>VNC</u>)	New Caledonia Southern Province	Mining and processing operations (producer of nickel oxide and cobalt carbonate). VNC shares are held by Vale (80.5%), Sumic (14.5%) and Société de Participation	Our nickel operations in New Caledonia are in <i>ramp-up</i> . VNC uses a high-pressure acid leaching process (<u>HPAL</u>) to handle lateritic limonitic and lateritic	Mining concession ending between 2015 and 2051.	Power supplied by the national power network and independent producers.	Products are carried into containers and transported by truck for approximately 4 km to the Prony

Minière du Sud
Caledonien SAS
(SPMSC) (5%).

saprolitic ores. We expect to continue with the *ramp-up* in VNC in the next three years to reach nominal production capacity of 57,000 metric tons per year of nickel contained as nickel oxide, to be subsequently processed in our facilities in Asia, as 4,500 metric tons of cobalt as carbonate.

port.

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Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
Vale Japan Limited	Japan - Matsuzaka	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 60,000 metric tons per year. Vale holds 87.2% of shares, and Sumitomo holds the remaining stock. The refinery was built in 1965 and acquired by Vale in 2006.	Produces intermediate products to be subsequently treated in our refineries in China, Korea, and Taiwan, and nickel end products using matte nickel provided by PTVI.		Power provided by the national power network. Acquired from regional utilities.	Products are transported by public roads to customers in Japan. For customers abroad, products are carried into containers in the plant and sent through the Yokkaichi and Nagoya ports.
Vale Taiwan Ltd	Taiwan - Kaoshiung	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 18,000 metric tons per year. The refinery started production in 1983 and was acquired by Vale in 2006.	Produces refined nickel for the stainless steel industry, using intermediate products from our operations in Matsuzaka and New Caledonia.		Power provided by the national power network. Acquired from regional utilities.	Products transported by truck on public roads for customers in Taiwan. For customers abroad, products are carried into containers at the plant and sent through the Kaoshiung port.
Vale Nickel (Dalian) Co. Ltd	China - Dalian, Liaoning	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 32,000 metric tons per year. Vale holds 98.3% of shares and a Ningbo Sunhu Chemical Products Co., Ltd. holds the remaining 1.7%. The refinery started production in 2008.	Produces refined nickel for the stainless steel industry, using intermediate products mainly from our operations in Matsuzaka and New Caledonia.		Power provided by the national power network. Acquired from regional utilities.	Product carried by truck on public roads and railroads for customers in China. Also provided by containers for some foreign and domestic customers.
Korea Nickel Corporation	South Korea Onsan	Autonomous nickel refinery (producer of refined nickel), with nominal capacity of 30,000 metric tons per year. Vale holds 25.0% of shares and remaining shares are held by Korea Zinc Co., Ltd, Posteel Co., Ltd, Young Poong Co., Ltd. and others. The refinery started	Produces mainly refined nickel for the local stainless steel industry in Korea, using mainly intermediate products that contain about 75% of nickel (as nickel oxide) from our operations in Matsuzaka.		Power provided by the national power network. Acquired from regional utilities.	KNC production is transported by truck in public roads for customers in Korea and is exported in containers for customers abroad, starting at the Busan and Ulsan ports.

production in 1989.

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Mining System / Company	Location	Description / History	Operations	Mining license	Power source	Access / Transportation
<u>South Atlantic</u> Vale/Onça Puma	Brazil - Ourilândia do Norte, Pará	Mining, smelting, and refining operations producing high quality ferro-nickel to be used in the stainless steel industry	The Onça Puma mine is built over a nickel deposit of lateritic and saprolitic ore. The operation produces ferro-nickel through a rotating electric furnace process. We resumed operations with one single line in 2013, with the first production of metal in the fourth quarter in 2013. Nominal capacity of the single line operation is estimated at 25,000 metric tons per year. We will consider opportunities to restart operations at the second line, depending on market perspectives and performance of the single- line furnace.	Mining concession for undetermined period.	Power provided by the national power network, acquired from regional utility companies or produced directly by Vale.	Ferro-nickel is transported by paved public road and by EFC to Itaqui maritime terminal, in the state of Maranhão. Exporting operations are done in ocean containers.

(1) Sumic, a joint venture between Sumitomo and Mitsui, has the option of selling to us all its shares in VNC according to previously agreed upon conditions. Once VNC reaches pre-defined trade levels, Sumic will have an option to buy 6.5% of VNC capital stock, which could offset dilution of Sumic interest in VNC capital stock due to the agreement signed in October 2012. SPMSC must increase its share in VNC to 10% in two years starting at the beginning of the commercial production.

2.1.2 Production

The following table sets forth our annual mine production by operating mine (or on an aggregate basis for PTVI because it has mining areas rather than mines) and the average percentage grades of nickel and copper. The mine production at PTVI represents the product from PTVI's dryer kilns delivered to PTVI's smelting operations and does not include nickel losses due to smelting. For our Sudbury, Thompson and Voisey Bay's operations, the production and average grades represent the mine product delivered to those operations' respective processing plants and do not include adjustments due to beneficiation, smelting or refining. The following table sets forth information about ore production at our nickel mining sites.

	Production during fiscal year ending December 31								
	2011			2012			2013		
	(thousand metric tons, except percentages)								
Production	Grade		Production	Grade		Production	Grade		
	Copper (%)	Nickel (%)		Copper (%)	Nickel (%)		Copper (%)	Nickel (%)	
Ontario operating mines									

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Copper Cliff North	892	1.15	1.03	792	1.09	0.92	913	1.32	1.28
Creighton	991	1.72	2.22	797	1.80	1.84	915	2.01	2.19
Stobie	1,568	0.61	0.74	2,006	0.56	0.66	1,887	0.59	0.65
Garson	640	1.78	2.08	643	1.56	1.61	815	1.42	1.75
Coleman	1,363	3.02	1.77	1,062	2.58	1.51	1,515	3.15	1.52
Ellen	131	0.45	0.90	371	0.44	0.93	109	0.49	1.00
Totten	28	1.01	0.97	6	2.37	1.15	64	1.84	1.92
Gertrude				36	0.27	0.72	196	0.32	0.89
Total Ontario operations	5,612	1.61	1.45	5,714	1.29	1.14	6,414	1.61	1.33
Manitoba operating mines									
Thompson	1,182		1.76	1,160		1.86	1,175		2.07
Birchtree	721		1.36	643		1.34	613		1.39
Total Manitoba operations	1,903		1.61	1,804		1.67	1,788		1.84
Voisey s Bay operating mines									
Ovoid	2,366	2.39	3.38	2,351	1.94	3.11	2,318	1.68	2.89
Sulawesi operating mining areas									
Sorowako	3,848		1.95	3,678		2.02	4,369		2.00

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	Production during fiscal year ending December 31								
	2011			2012			2013		
	Production	Grade		Production	Grade		Production	Grade	
Copper (%)		Nickel (%)	Copper (%)		Nickel (%)	Copper (%)		Nickel (%)	
Mine operations in New Caledonia									
VNC	1,043		1,29	1,179		1,27	1,860		1,36
Mines in operation in Brazil									
Onça Puma	1,466		1,86	1,975		1,87	263		2,28

The following table sets forth information about our nickel production, including: (i) nickel refined at our facilities, and (ii) intermediates designated for sale. The figures below are reported on an ore-source basis.

Mine	Type	Production for fiscal year ending December 31		
		2011	2012	2013
(Thousands of metric tons)				
Sudbury (1)	Underground	59.7	65.5	69.4
Thompson (1)	Underground	25.0	24.2	24.5
Voisey s Bay(2)	Open pit	68.9	61.9	63.0
Sorowako (3)	Open pit	67.8	69.0	78.8
Onça Puma(4)	Open pit	7.0	6.0	1.9
New Caledonia (5)	Open pit	5.1	4.5	16.3
External (6)		8.0	5.9	6.4
Total(7)		241.5	237.0	260.2

(1) Primary nickel production only (i.e., does not include secondary nickel from unrelated parties).

(2) Includes finished nickel produced at our Sudbury and Thompson operations.

(3) We have a 59.2% interest in PTVI, which owns the Sorowako mines, and these figures include the minority interests.

(4) Primary nickel production only. Nickel found in iron nickel.

(5) We have an 80.5% interest in PTVI, and these figures include the minority interests.

Nickel found in NHC and NiO.

(6) Finished nickel processed at our facilities using feeds purchased from unrelated parties.

(7) These figures tolling of feeds for third-party.

2.1.3. Clients and sales

Our nickel customers are broadly distributed on a global basis. On December 31, 2013, 44% of our total nickel sales were delivered to customers in Asia, 28% to North America, 27% to Europe and 2% to other markets. We have short-term fixed-volume contracts with customers for the majority of our expected annual nickel sales. These contracts generally provide stable demand for a significant portion of our annual production.

Nickel is an exchange-traded metal, listed on the London Metal Exchange (LME), and most nickel products are priced according to a discount or premium to the LME price, depending primarily on the nickel product's physical and technical characteristics. Our finished nickel products represent what is known in the industry as primary nickel, meaning nickel produced principally from nickel ores (as opposed to secondary nickel, which is recovered from recycled nickel-

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containing material). Finished primary nickel products are distinguishable according to the following characteristics, which determine the product price level and the suitability for various end-use applications:

- Nickel content and purity level: (i) intermediate products present various levels of nickel content, (ii) nickel pig iron has 1.5% to 6% nickel, (iii) ferro-nickel has 10% to 40% nickel, (iv) finished nickel presenting less than 99.8% of nickel, including products such as Tonimet and Utility Nickel, (v) standard LME grade nickel has a minimum of 99.8% nickel, and (vi) high purity nickel has a minimum of 99.9% nickel and does not contain specific elemental impurities;
- Shape (such as pellets, discs, squares, strips and foams); and
- Size.

In 2013, the principal end-use applications for nickel were:

- Austenitic stainless steel (66% of global nickel consumption);
- Non-ferrous alloys, alloy steels and smelting (17% of global nickel consumption);
- Nickel plating (8% of global nickel consumption); and
- Specialty applications, such as batteries, chemicals and powder metallurgy (10% of global nickel consumption).

In 2013, 63% of our refined nickel sales were made into non-stainless steel applications, compared to the industry average for primary nickel producers of 34%, offering better stability for our sales volumes. As a result of our focus on such higher-value segments, our average realized nickel prices for refined nickel have constantly exceeded LME cash nickel prices.

We offer sales and technical support to our customers on a global basis. We have a well-established global marketing network for refined nickel, based in Toronto, Canada. We also have sales and technical support offices in St. Prex (Switzerland), Saddle Brook, New Jersey (United States), Tokyo (Japan), Shanghai (China), and Singapore.

2.1.4. Competition

The global nickel market is highly competitive. Our key competitive strengths include our long-life mines, our low production costs compared to other nickel producers, our sophisticated exploration and processing technologies, along with a diversified portfolio of products. Our global marketing reach, diverse product mix, and technical support direct our products to the applications and geographic regions that offer the highest margins for our products.

Our nickel deliveries represented 13% of global consumption for primary nickel in 2013. In addition to us, the largest suppliers in the nickel industry (each with their own integrated facilities, including nickel mining, processing, refining and marketing operations) are: Mining and Metallurgical Company Norilsk Nickel

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(Norilsk), Jinchuan Nonferrous Metals Corporation (Jinchuan), BHP Billiton, and Glencore Xstrata. Together with us, these companies accounted for about 47% of global finished primary nickel production in 2013.

While stainless steel production is a major driver of global nickel demand, stainless steel producers can use nickel products with a wide range of nickel content, including secondary nickel (scrap). The choice between primary and secondary nickel is largely based on their relative prices and availability. In recent years, secondary nickel has accounted for about 44-47% of total nickel used to manufacture stainless steels, and primary nickel has accounted for about 53-56%. Nickel pig iron is a low-grade nickel product made in China from imported lateritic ores (primarily from the Philippines and Indonesia) that is suitable primarily for use in stainless steel production. With nickel being sold at higher prices and a strong demand from the stainless steel industry, domestic production of nickel pig iron and low-content ferro-nickel has experienced ongoing growth in China. It is estimated that in 2013, Chinese production of nickel pig iron and ferro-nickel exceeded 490,000 metric tons, representing 25% of world primary nickel supply. Should the Indonesian mining law restricting exporting ores as raw material come into effect, the Chinese production of pig iron and ferro-nickel may be affected from now on.

Competition in the nickel market is based primarily on quality, reliability of supply and price. We believe our operations are competitive in the nickel market because of the high quality of our nickel products and our relatively low production costs.

2.2. Copper

2.2.1. *Operations*

We operate our copper businesses in Brazil at the parent-company level and in Canada and Chile through our wholly-owned subsidiaries.

Mining complex / Location	Location	Description / History	Mining / Operations	Mining License	Power source	Access / Transportation
<u>Brazil</u> Vale/Sossego	Carajás, State of Pará	Two main areas of copper, Sossego and Sequeirinho, and a processing facility to concentrate the ore. Sossego was developed by Vale and started production in 2004.	Copper ore is explored in an open pit mine and ROM is processed by primary crushing and transportation, SAG milling (a semiautogene mill using a large rotating drum full of ore, water and steel crushing spheres transform the ore	Mining concession for undetermined period.	Power provided by the national power network, acquired from Eletronorte, under long term power purchase agreement or produced.	The concentrate is transported by truck to the storage terminal in Parauapebas and, subsequently, is taken by the Carajás Railroad (EFC) to the Ponta da Madeira maritime terminal, in São Luís, Maranhão. We built an 85

into a fine paste),
milling, copper
fluctuation in
concentrate,
waste is disposed
of, concentrate,

km road
connecting
Sossego to
Parauapebas.

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discharge filter.						
Vale/Salobo	Carajás, State of Pará	Salobo I is in <i>ramp-up</i> to total capacity of 100,000 tpa of concentrate copper. We expect that Salobo will reach total capacity of 200.000 tpa in 2016, after expansion of Salobo II.	Our copper and gold mine in Salobo is an open pit mine and the mine operates by primary and secondary standard crushing, rollers, sphere milling, concentrate copper floating, residue disposal, concentrate closeness, disposal filter.	Mining concession for undetermined period.	Power provided by the national power network, acquired from Eletronorte under the terms of power purchase agreements or produced directly by Vale.	The concentrate is transported by truck to the storage terminal in Parauapebas and, subsequently, is taken by the Carajás Railroad (EFC) to the Ponta da Madeira maritime terminal, in São Luís, Maranhão. We built a 90 km road connecting Salobo to Parauapebas.

Canada

Vale Canada	Canada Ontario	Sudbury, See Basic metals Nickel Operations	We generate two - intermediate copper products: concentrate copper and copper anodes and cathodes of electrolytic copper as by product of nickel refining operations.	See table of our nickel operations.		
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Vale Canada/Voisey s Bay	Canada Voisey s Bay, Newfoundland & Labrador	See Basic metals Nickel Operations	At Voisey s Bay, we produce concentrate copper.	See table of our nickel operations		
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Chile

Tres Valles	Region of Coquimbo, Chile	Two copper oxide mines: Don Gabriel, open pit mine, and Papomono, an underground mine, as well as an SX-EW plant that produces copper cathodes. Vale holds 90.0% of the stocks and 100% of voting capital, the	We produce copper cathodes at the operation in Tres Valles, located in Salamanca, Coquimbo region. The plant has an annual production capacity estimate in 18,500 metric tons of copper cathode (metal plate) and this is our first cathode plant in industrial scale to	Mining concession for undetermined period.	Power provided by the national power network.	We transport copper cathode by truck from the plant to storage at San Antonio port.
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remaining part use
is held by hydrometallurgical
Compañía process.
Minera
Werenfried.

Zambia

Lubambe	Zambian Copperbelt	Lubambe copper mine (formerly known as Konkola North), includes an underground mine, plant and related	Nominal production capacity of 45,000 metric tons per year of concentrate copper. Production started	Mining concessions end in 2033.	Long term power supply agreement with a Zesco (power supplier	Concentrate copper is transported by truck to local smelters.
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infrastructure. in October 2012. owned by
 TEAL (our Zambia).
 50/50 joint
 venture with
 ARM) holds
 80% interest in
 Lubambe.
 Zambia
 Consolidated
 Copper Mines
 Investment
 Holding PLC
 Ltd. holds the
 remaining share
 (20%).

2.2.2. *Production*

The following table provides information about our production of copper.

Mine	Type	2011	Fiscal year ending December 31	
			2012	2013
(million metric tons)				
Brazil:				
Salobo:	Open pit		13	65
Sossego	Open pit	109	110	119
Canada:				
Sudbury	Underground	101	79	103
Voisey's Bay	Open pit	51	42	36
Thompson	Underground	1	3	2
External (1)		31	29	24
Chile:				
Tres Valles (2)	Open pit and underground	9	14	11
Zambia:				
Lubambe (3):	Underground		1	9
Total		302	<u>290</u>	<u>370</u>

(1) We process copper at our facilities using third party resources.

(2) We sold Tres Valles in December 2013. 2013 production by the end of October

(3) Vale's attributable production capacity of 40%

2.2.3. *Clients and sales*

The copper concentrate from Sossego and Salobo Phase I is sold under mid and long-term contracts executed with copper smelters in South America, Europe and Asia. We have medium- and long-term copper distribution agreements with Glencore Canada, to sell anode copper and a significant part of copper concentrate produced in Sudbury. Copper concentrate from Voisey's Bay is sold through mid-term agreements with clients in Europe. Electrolytic copper from Sudbury is sold in North America through short-term sale agreement.

2.2.4. *Competition*

The copper global market is highly competitive. It is produced by mining companies and customized smelters that cover all areas of the world; the customers are mostly producers of copper wires, rods and alloy. Competition takes place mostly at a regional level, and it is based mostly in production, quality, distribution reliability and logistics costs. The largest cathode copper

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producers in the world are Corporación Nacional del Cobre de Chile (CodeLco), Aurubis AG, Glencore Xstrata, Freeport-McMoRan Copper & Gold Inc. (Freeport-McMoRan), Jiangxi Copper Corporation Ltd and Xstrata, operating at the parent company level or through subsidiaries. Our participation in the global cathode copper market is negligible.

Copper concentrate and copper anodes are intermediate products in the copper production chain. The concentrate and anode markets are competitive, with several producers, but few participants and smaller volumes than the cathode copper market due to the high levels of integration of large copper producers.

In the copper concentrate market, the main producers are mining companies located in South America, Indonesia, and Australia, while the consumers are smelters located in Europe and Asia. Competition in the copper concentrate market takes place mostly at a global level, and it is based mostly in product cost, quality, logistics costs and distribution reliability. Main competitors in the copper concentrate market are BHP Billiton, Antofagasta plc, Freeport-McMoRan, Glencore Xstrata, CodeLco, and Rio Tinto, operating at a parent company level and through subsidiaries. Our market share in 2013 was approximately 4% of the total concentrate market.

The copper anode/blister market is very limited in this industry. In general, anodes are produced to supply the integrated refining of every company. Anode/blister trade is limited to facilities that have more smelting capacity than what the plant can handle or the financial situation regarding logistics costs is an incentive to purchase anodes from other smelters. The main competitors in the anode market in 2013 were CodeLco, Glencore Xstrata, China Nonferrous Metals, and Anglo American and Xstrata, operating at a parent company level or through its subsidiaries.

2.3. PGM and other precious metals

As by-products of our Sudbury nickel operations in Canada, we recover significant quantities of metals of the platinum group, as well as small quantities of gold and silver. We also recover gold as a by-product of our operations in Salobo and Sossego, in Carajás, in the State of Pará. We operate a processing facility in Port Colborne, Ontario, which produces PGMs, gold and silver intermediate products, using feeding from our operation in Sudbury. We have a refinery in Acton, England, where we process our intermediate products, as well as feeds purchased from unrelated parties and toll refined products. In the fiscal year ending on December 31, 2013, PGM concentrates from our Canadian operations account for 55% of our production, which also includes metals purchased from unrelated parties. Our base metal commercial department sells our PGMs and other precious metals, as well as products from unrelated parties and toll-refined products, based on commission.

In February 2013, Vale Switzerland S.A. signed an agreement with Silver

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Wheaton Corp. to sell 70% of the gold produced as a byproduct at its nickel mines in Sudbury, in Canada, in the next 20 years, and with Silver Wheaton (Caymans) Ltd. to sell 25% of payable gold flows produced as byproduct at its copper mine in Salobo, in Brazil, during the mine use life. Under the terms in the gold flow agreement, Silver Wheaton received 34,325 troy ounces of gold in 2013.

The following table presents information on production of the Company's precious metals.

Mine(1)	Type	Fiscal year ending December 31		
		2011	2012	2013
(Thousand troy ounces)				
Sudbury:				
Platina	Underground	174	134	145
Paládio	Underground	248	251	352
Ouro	Underground	182	69	91
Salobo:				
Ouro	Open pit		20	117
Sossego:				
Ouro	Open pit	90	75	78

(1) *Production figures exclude precious metals purchased from unrelated parties and toll-refined materials.*

2.4. Cobalt

We recover significant quantities of cobalt, classified as a minor metal, as a by-product of our nickel operations. In the year ending on December 31, 2013, we produced 1,550 metric tons of refined cobalt metal at our Port Colborne refinery and 685 metric tons of cobalt in a cobalt-based intermediate at our nickel operations in Canada and New Caledonia, and our remaining cobalt production consisted of 1,297 metric tons of cobalt contained in other intermediate products (such as nickel concentrates). As result of the ramp-up of VNC operations in New Caledonia, our production of intermediate cobalt as by-product of our nickel production will increase. We sell cobalt on a global basis. Our cobalt metal, which is electro-refined at our Port Colborne refinery, has very high purity levels (99.8%), value higher than specified in LME contract. Cobalt metal is used in the production of various alloys, particularly for aerospace applications, as well as the manufacture of cobalt-based chemicals.

The following table sets forth information on our cobalt production.

Mine	Type	Fiscal year ending December 31		
		2011	2012	2013
(Metric tons)				
Sudbury	Underground	593	589	853
Thompson	Underground	158	96	292
Voisey's Bay	Open pit	1,585	1,221	256
New Caledonia	Open pit	245	385	1,117
External sources (1)		93	52	13
Total		2,675	2,343	3,532

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(1) These figures do not include unrelated-party tolling of feeds for unrelated parties.

3. Fertilizers

3.1. Phosphates

We operate our phosphate business through our subsidiaries and joint ventures, as presented in the table below.

Firm	System	Our participation (%)		Our partners
		Voting	Total	
Vale Fertilizantes	Uberaba, Brazil	100.0	100.0	-
MVM Resources International, B.V	Bayóvar, Peru	51.0	40.0	Mosaic, Mitsui & Co.
Vale Cubatão	Cubatão, Brazil	100.0	100.0	-

Vale Fertilizantes is a company that produces phosphate rock, phosphate fertilizers (P), (e.g. monoammonium phosphate (MAP), dicalcium phosphate (DCP), triple superphosphate (TSP) and single superphosphate (SSP)) and nitrogen (N) fertilizers (e.g., ammonia and ammonium nitrate). It is the largest producer of phosphate and nitrogen crop nutrients in Brazil. Vale Fertilizantes operates the following phosphate rock mines by means of concessions for undetermined term: Catalão, in the state of Goiás, Tapira and Patos de Minas and Araxá, in the state of Minas Gerais, and Cajati, in the state of São Paulo, all in Brazil. In addition, Vale Fertilizantes has nine processing plants for the production of phosphate and nitrogen nutrients located in Catalão, Goiás; Araxá, Patos de Minas, and Uberaba, in Minas Gerais; Guará, Cajati, and three plants in Cubatão, in Sao Paulo. In July 2013, we concluded the sale of Araucária operations for US\$ 234 million dollars to Petrobras.

Since 2010, we also operate the Bayovar phosphate rock, in Peru, with nominal production capacity of 3.9 Mtpa, by means of one concession for undetermined term.

The following table contains information regarding Vale's phosphate rock production.

Mine	Type	Fiscal year ending December 31		
		2011	2012	2013
		(million metric tons)		
Bayóvar	Open pit	2,544	3,209	3,546
Catalão	Open pit	947	1,026	1,057
Tapira	Open pit	2,011	2,068	1,869
Patos de Minas	Open pit	44	44	53
Araxá	Open pit	1,231	1,084	1,111
Cajati	Open pit	582	550	640
Total		7,359	7,982	8,277

The following table contains information regarding our production of phosphate and nitrogen nutrients.

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Product	2011	Fiscal year ending December 31	
		2012	2013
		(million metric tons)	
Monoammonium phosphate (MAP)	823	1,201	1,128
Triple superphosphate (TSP)	811	913	905
Single superphosphate (SSP)	2,638	2,226	2,102
Bicalcium phosphate (DCP)	580	511	444
Ammonia	619	475	347
Urea	628	483	219
Nitric acid	468	478	416
Ammonium Nitrate	458	490	419

3.2. Potash

We conduct potash operations in Brazil at the parent-company level, by means of mining concessions for undetermined term. We entered a leasing agreement for Taquari-Vassouras, the only potash mine in Brazil (in Rosario do Catete, in the state of Sergipe), with Petrobras since 1992. In April 2012, we extended the concession for other 30 years. The following table sets forth information on our production of potash:

Mine	Type	2011	Fiscal year ending December 31		2013	Process Recovery in 2013
			(Thousands of metric tons)			
						(%)
Taquari-Vassouras	Underground	625	549	492	85.9	

3.3. *Clients and sales*

All potash sales from the Taquari-Vassouras mine are to the Brazilian market. In 2013, our production represented close to 6% of total potash consumption in Brazil. We have a presence and long-standing relationships with the major players in Brazil, with more than 60% of our sales allocated to four traditional clients.

Our phosphate products are sold mainly to the fertilizer industry. In 2013, our sales represented near 27% of the total phosphate consumption in Brazil, with imports representing a 56% of total supply. In the high concentration segment, Vale supplied over 32% of total consumption in Brazil, with products such as MAP, and TSP. In the low phosphate concentration nutrients segment, our sales represented near 33% of total consumption in Brazil with SSP and DCP products.

3.4. *Competition*

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The sector is divided into three major groups of nutrients: potash, phosphate and nitrogen. There are limited resources of potash around the world with Canada, Russia and Belarus being the most important suppliers, each one with a small number of producers. The sector presents a high level of investment and requires long time for a project to mature. In addition, the potash segment

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is highly concentrated, with 10 major producers holding over 95% of the total global production capacity. While potash is a scarce resource, phosphate is more available, but all major exporters are located in the northern region of Africa (Morocco, Algeria and Tunisia) and in the United States. The five major producers of phosphate rock (China, Morocco, United States, Russia, and Brazil) hold 79% of global production, of which around 14% is exported. Meanwhile, products with great added value, such as MAP and DCP are usually marketed instead of phosphate rock, due to cost-benefit relationship.

Brazil is one of the largest agribusiness markets in the world due to its high production, exportation and consumption of grains and biofuel. It is the fourth-largest consumer of fertilizers in the world and one of the largest importers of phosphates, potash, urea and phosphoric acid. Brazil imports 93% of its consumed potash, which corresponds to 8.1 Mtpa of KCL (potassium chloride) from Canadian, German, Russian, Belarusian, and Israelis in descending order, which represents a 15% increase compared to 2012. In terms of global potash consumption, China, the United States, Brazil, and India represent approximately 58% of global consumption, where Brazil is responsible for 17% of this total. Our fertilizer projects are highly competitive in terms of cost and logistics in the Brazilian market.

Most phosphate rock concentrate is consumed locally by downstream integrated producers, while logistics with the seaborne market correspond to 14% of total phosphate rock production. Major phosphate rock exporters are concentrated in North Africa, mainly through state-owned companies, with the Moroccan OCP Group holding 30% of the total seaborne market. Brazil imports 56% of the total phosphate nutrients it needs in both phosphate fertilizer products and phosphate rock. The phosphate rock imports supply non-integrated producers of phosphate fertilizers such as SSP, TSP and MAP.

Nitrogen-based fertilizers are basically derived from ammonia (NH₃), which, in turn, is produced from the nitrogen that is present in the air and in natural gas, making it a nutrient with high level of energy. Ammonia and urea are the main consumables of nitrogen based fertilizers. The consumption of nitrogen-based fertilizers presents a regional profile due to the high cost associated with transportation and storage of ammonia, which requires refrigerated and pressurized facilities. Consequently, only 11% of ammonia produced in the world is traded. North America is the largest importer, with 33% of the global market. Major exporters are Central America, Russia, East Europe, and the Middle East.

4. Infrastructure

4.1. Logistics Services

We have developed our logistics business based on the transportation needs of our mining operations, while we also provide transportation services for other customers.

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We conduct our logistics businesses at the parent-company level, through subsidiaries and joint ventures, as set forth in the following table. One of these subsidiaries is VLI S.A. (VLI), provider of logistic integrated solutions by the 9,742 km of railroads (FCA, FNS, EFVM and EFC), five inside terminals with total storage capacity of 509,320 tons and operations in three maritime and port terminals. Currently, we hold 64.1% of VLI capital stock, but we have agreed upon selling interest into VLI for Brookfield, and upon closure, we will hold 37.6% interest in VLI. Currently we classify VLI in our financial statement as an asset held for divestiture. For more information on said transaction, see item 6.5 in this Reference Form.

Firm	Business	Location	Our participation		Partners
			Voting	Total	
			(%)		
Vale	Port, maritime and railroad operations (EFVM e EFC).	Brazil			
VLI (1)	Port, maritime and railroad operations and land terminals. Holding specific cargo assets.	Brazil	37,6	37,6	FI-FGTS, Mitsui and Brookfield
FCA(1)(2)	Railroad operations.	Brazil	37,6	37,6	FI-FGTS, Mitsui and Brookfield
FNS (1)(2)	Railroad operations	Brazil	37,6	37,6	FI-FGTS, Mitsui and Brookfield
MRS	Railroad operations	Brazil	46.8	47.6	CSN, Usiminas and Gerdau
CPBS	Port, maritime and railroad operations	Brazil	100.0	100.0	
PTVI PTV	Port, maritime and railroad operations	Indonesia	59.3	59.3	Sumitomo, public investors
CPBS	Port, maritime and railroad operations	Brazil	100.0	100.0	
Vale Logística Argentina	Maritime operations.	Argentina	100.0	100.0	
CEAR(3)	Railroad.	Malawi	43.4	43.4	Mozambique, P.E. ports and railroads
CDN(4)	Maritime and railroad operations.	Mozambique	43.4	43.4	Mozambique, P.E. ports and railroads
CLIN	Maritime and railroad operations	Mozambique	80.0	80.0	Mozambique, P.E. ports and railroads
Vale Logistics Limited	Railroad operations.	Malawi	100.0	100.0	
Transbarga Navegación	River system in Paraguai and Paraná rivers (Comboios).	Paraguay	100.0	100.0	

(1) Vale owns 64.1% of the capital stock and voting capital of VLI. Upon conclusion of the sale to Brookfield, Vale will maintain rights to vote and total interest indicated in the table. Vale, Mitsui, FI-FGTS and Brookfield will jointly control VLI, under the terms of a shareholders agreement.

(2) FCA and FNS are controlled by VLI.

(3) Vale holds control of its participation in CEAR through 85% interest in SDCN.

(4) Vale holds control of its participation in CDN through 85% interest in SDCN.

4.1.1. Railroads

- Brazil

- Vitória a Minas railroad (EFVM) The EFVM railroad links our Southeastern System mines in the Iron Quadrangle region in the state of

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Minas Gerais to the Tubarão Port, in Vitória, in the state of Espírito Santo. We operate this 905-kilometer railroad under a 30-year renewable concession, which expires in 2027. The EFVM railroad consists of two lines of track extending for a distance of 601 kilometers to permit continuous railroad travel in opposite directions, and single-track branches of 304 kilometers. Industries are located in this area and major agricultural regions are also accessible to it. VLI holds rights to use the railroad transportation capacity at our EFVM line. In 2013, EFVM carried daily an average of 321,890 metric tons of iron ore, or a total of 77,53 billion ntk of iron ore and other cargo, of which 15.56 billion ntk, or 20.1%, consisted of cargo transported for customers, including iron ore for Brazilian customers. The EFVM railroad also carried 890 thousand passengers in 2013. On December 31, 2013, we had a fleet of 321 locomotives and 15,212 wagons at EFVM.

- Carajás railroad (EFC). The EFC railroad connects our mines in the Northern System in the Carajás region in the state of Pará to the maritime terminal Ponta da Madeira, in São Luís, in the state of Maranhão. We operate the EFC railroad under a 30-year renewable concession, which expires in 2027. EFC extends for 892 kilometers from mines in Carajás to the Ponta da Madeira maritime terminal located near the Itaquí Port. Its main cargo is iron ore, principally carried mainly for the Company. VLI holds rights to use the railroad transportation capacity at our EFC line. In 2013, EFC carried daily an average of 296,155 metric tons of iron ore. In 2013, the EFC railroad carried a total of 102.03 billion ntk of iron ore and other cargo, 3.50 billion ntk of which was cargo for customers, including iron ore for Brazilian customers. EFC also carried 308 thousand passengers in 2013. EFC supports the largest capacity train in Latin America, which measures 3.4 kilometers, weighs 41, 838 gross metric tons when loaded and has 330 cars. In 2013, EFC had a fleet of 266 locomotives and 16,434 wagons.

The principal items of cargo of the EFVM and EFC railroads are:

- Iron ore and iron ore pellets, carried for the Company and our customers;
- Steel, coal, pig iron, limestone and other raw materials carried for customers with steel mills located along the railroad;
- Agricultural products, such as grains, soybean meal and fertilizers; and
- Other general cargo, such as pulp, fuel and chemical products.

We charge market prices for customer freight, including iron ore pellets originating from joint ventures and other enterprises in which we do not have 100% equity interest. Market prices vary based on the distance traveled, the type of product transported and the weight of the freight in question, and are regulated by the Brazilian transportation regulatory agency, ANTT (Agência Nacional de Transportes Terrestres).

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- Centro-Atlântica railway (FCA). FCA is a VLI affiliate that operates a central-east regional railway network of the Brazilian national railway system under a 30-year renewable concession, which expires in 2026. The central east network has 7,220 kilometers extending into the states of Sergipe, Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro, Goiás and the Federal District. The railroad connects with the EFVM railroad near the cities of Belo Horizonte, in the state of Minas Gerais and Vitória, in the state of Espírito Santo. FCA operates on the same track gauge as the EFVM railroad and provides access to the Santos Port in the state of São Paulo. In 2013, the FCA railroad transported a total of 13.92 billion ntk of cargo essentially for customers. In 2013, FCA had a fleet of 891 locomotives and 16,744 wagons, including its own and leased wagons.

- Norte-Sul railway (FNS). FNS is a VLI wholly-owned subsidiary that operates under a 30-year renewable sub concession for commercial operation of a 724-kilometer stretch of the FNS railroad, in Brazil. Since 1989, we have operated a segment of the FNS, which connects to the EFC railroad, enabling access to the port of Itaqui, in São Luís, where our Ponta da Madeira maritime terminal is located. A 452-kilometer extension was concluded in December 2008. In 2013, the FNS railroad transported a total of 2.46 billion ntk of cargo for customers. This new railroad creates a new corridor for the transportation of general cargo, mainly for the export of soybeans, rice and corn produced in the center-northern region of Brazil. In 2013, FNS had a fleet of 41 locomotives and 639 wagons, including its own and leased wagons.

- MRS Logística S.A. (MRS) The MRS railroad is 1,643 kilometers long and links the Brazilian states of Rio de Janeiro, São Paulo and Minas Gerais. In 2013, the MRS railroad carried a total of 156.1 million metric tons of cargo, including 68.4 million metric tons of iron ore and other cargo from Vale.

- Africa

We are developing the Nacala logistic corridor, to connect the Moatize unit to the Nacala-à-Velha maritime terminal, located in Nacala, Mozambique and that crosses the Republic of Malawi. The Nacala corridor is a railroad and a port infrastructure, including greenfield railroads existing in Mozambique and Malawi and a new port for coal in Mozambique. These projects will allow the Moatize expansion and will offer support to our operations in Central and East Africa. In Mozambique, we are developing greenfield projects under two concession agreements maintained by our subsidiary Corredor Logístico Integrado de Nacala S.A. (CLN), which matures in 2043, subject to an extension and we will refurbish existing railroads under the concession granted by our subsidiary Corredor de Desenvolvimento do Norte S.A. (CDN), which matures in 2035. In Malawi, we are developing a greenfield railroad under the concession held by our subsidiary Vale Logistics Limited (VLL), which matures in 2041, subject to

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renewal. We will rehabilitate existing railroads under the concession held by our subsidiary Central East African Railway Company Limited (CEAR), which was extended to 2013, for a 30-year period starting from the beginning of railroad services under concession of VLL greenfield railroad. We will also invest in the construction of necessary connections in Moatize to a new deep water maritime terminal to be built in Nacala-à-Velha by CLIN. We continue to consider partnerships to future use and possible development of the Nacala Corridor.

4.1.2. *Ports and maritime terminals*

- *Brasil*

We operate a port and maritime terminals principally as means to conclude the delivery of our iron ore and pellets to bulk carrier vessels serving the seaborne market. For more information, see item 1.1 Iron Ore and Pellets in this section of the Reference Form. We also use our port and terminals to handle customers cargo. In 2013, 1.2% of the cargo handled by our port and terminals represented cargo handled for customers.

- Tubarão Port. The Tubarão Port, which covers an area of approximately 18 square kilometers, is located near the Vitória Port, state of Espírito Santo, and contains: (i) an iron ore maritime terminal which we operate directly, (ii) the Praia Mole Terminal, and (iii) the Terminal de Produtos Diversos, which is operated by VLI. The Iron Ore Maritime Terminal has two piers. Pier I can accommodate two vessels at a time, one of up to 170,000 DWT on the southern side and one of up to 200,000 DWT on the northern side. Pier II can accommodate one vessel of up to 405,000 DWT at a time, limited at 23 meters draft plus tide. In Pier I, there are two ship loaders, which can load up to a combined total of 13,500 metric tons per hour each. In Pier II there are two ship loaders that could work alternately and can each load up to 16,000 metric tons per hour continuously. In 2013, 101.6 million metric tons of iron ore and pellets were shipped through the terminal. The iron ore maritime terminal has a storage yard capacity of 3.4 million metric tons. Praia Mole Terminal is principally a coal terminal and handled 9.8 million metric tons in 2013. Terminal de Produtos Diversos handled 7.4 million metric tons of grains and fertilizers in 2013.

- Ponta da Madeira Maritime Terminal. The Ponta da Madeira Maritime Terminal is located near the Itaqui Port, state of Maranhão. Pier I can accommodate vessels displacing up to 420,000 DWT and has a maximum loading rate of 16,000 tons per hour. Pier I can accommodate vessels of up to 155,000 DWT and has a maximum loading rate of 8,000 tons per hour. Pier III, with two berths and three ship loaders, can accommodate vessels of up to 200,000 DWT on the south berth and 180,000 DWT on the north berth or two 180,000 DWT ships simultaneously), depending on tide conditions, with maximum loading rate of 8,000 metric tons per hour in each. Pier IV (south berth) can accommodate vessels displacing up to 420,000 DWT and two ship loaders operating alternately with maximum loading rate of 16,000 tons

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per hour. Cargo shipped through our Ponta da Madeira maritime terminal consists principally of our own iron ore production, except for Pier II, which is used for general cargo. Other cargo includes manganese ore produced by Vale and pig iron and soybeans for unrelated parties. In 2013, 107 million metric tons of iron were handled through the terminal. The Ponta da Madeira maritime terminal has a storage yard with capacity of 8.9 million metric tons, to be expanded to 10.7 million metric tons.

- *Itaguaí maritime terminal - Cia. Portuária Baía de Sepetiba (CPBS)*. CPBS is a wholly owned subsidiary that operates the Itaguaí terminal, in the Sepetiba Port, state of Rio de Janeiro. Itaguaí's maritime terminal has docks that allow the loading of ships up to 18 meters of draft and up to 200,000 DWT. In 2013, the terminal loaded approximately 21.9 million metric tons of iron ore
- *Guaíba Island maritime terminal*. We operate a maritime terminal on Guaíba Island in the Sepetiba Bay, in the state of Rio de Janeiro. The iron ore terminal has a pier that allows the loading of ships of up to 350,000 DWT. In 2013, the terminal loaded approximately 39.9 million metric tons of iron ore.
- *Inácio Barbosa maritime terminal (TMIB)*. Vale operates the Inácio Barbosa maritime terminal, located in the Brazilian state of Sergipe. The terminal is owned by Petrobras. Vale and Petrobras entered into a service agreement that provides for the operation of this terminal until June 2014. VLI and Petrobras entered into a consortium agreement that provides for TMIB operation by VLI for a 25 year period, beginning after receipt of all governmental approvals. This consortium agreement was approved by the Administrative Council of Economic Defense - CADE and ANTAQ (National Agency of Water Transportation) and is subject to approval by the Brazilian Port Authority (SEP).
- *Santos Maritime Terminal (TIPLAM , formerly TUF)*. We operate a maritime terminal in Santos, state of Sao Paulo. The iron ore terminal has a pier that allows the loading of ships of up to 67,000 DWT. In 2013, the terminal moved approximately 2.3 million metric tons of ammonia and bulk solids.
- Argentina

Vale Logística Argentina S.A. (Vale Logística Argentina) operates a terminal at the San Nicolas port located in the province of Buenos Aires, Argentina, where it has been authorized to use a 20,000 square meters storage yard until October 2016 and has executed an agreement with unrelated parties to an additional 27,000 square meters storage yard. We handled 1.17 million metric tons of iron ore and manganese through this port in 2013, from Corumbá, Brazil, through the Paraná and Paraguay rivers to be transported to Brazilian, Asian and European markets. The loading rate at this port is 15,000 tons per day and unloading rate of 11,000 tons per day.

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- Oman

Vale Oman Distribution Center LLC (VODC) operates a distribution center in Liwa, Oman. The maritime terminal has a 1.4 km deep water pier, which is integrated to a storage Yard with movement and processing capacity of 40 Mtpa of iron ore and pellets per year. The nominal loading capacity of this port is 10,000 tons/day and nominal unloading of 9,000 tons/day.

- Indonesia

PTVI owns and operates two ports in Indonesia to support its nickel mining activities.

The Balantang Special Port is located in Balantang Village, South Sulawesi, and has two types of piers with total capacity of 6,000 DWT: one barge skidder of up to 4,000 DWT for bulk dry volume and a dock for general cargo of up to 2,000 DWT.

The Harapan Tanjung Mangkasa Special Port is located in Lampia Village, South Sulawesi, with armoring buoys that can accommodate vessels displacing up to 20,000 DWT, and a terminal that can accommodate fuel tankers with displacing up to 2,000 DWT, with total capacity of 22,000 DWT.

- New Caledonia

We have and operate a port in Prony Bay, South Province, New Caledonia. This port has three terminals, including a passenger boat terminal for two vessels of up to 50 meters, a dock for dry bulk material for vessels of up to 55,000 DWT to unload at 10,000 tons a day and a general cargo dock for vessels of up to 215 meters. The general cargo dock can receive containers at 10 units per hour, liquid fuels (GLP, BPF, Diesel) at 600 cubic meters per hour, and *break-bulk*. The containers patio, a covered area of about 13,000 square meters, can receive up to 800 units. A bulk storage patio is linked to the port by a belt with storage capacity of 90,000 tons of limestone, 95,000 tons of sulfur and 60,000 tons of coal.

4.1.3. *Navigation*

We continue to develop and operate a low cost fleet of vessels, comprised of company-owned vessels and leased vessels through mid and long-term lease agreements, to support our bulk material businesses. In the end of 2013, 29 of our vessels were operating, including 15 Valemax vessels, with capacity of 400,000 DWT, and other 14 capesize vessels and up, with capacities varying between 150,000 to 250,000 DWT. We also lease 16 Valemax vessels under long-term agreements. We are expecting the delivery of additional four Valemax vessels from a Chinese provider in 2014. To support our strategy to deliver iron ore, Vale holds and operates two floating transfer stations in the Subic Bay, the Philippines, that transfers iron ore from our Valemax vessels to smaller vessels that deliver the cargo to its destination. With this service, we

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expect to improve our ability to offer our iron ore products to the Asian market at competitive prices and to increase our market share in China and the global seaborne market. In 2013, we carried approximately 135 million metric tons of iron ore and pellets on CFR basis. (cost and freight)

On the Paraná and Paraguay fluvial system, we transport iron ore and manganese through our subsidiary, Transbarga Navigacion, which transported by rivers 2.09 million tons in 2013 and our subsidiary, Vale Logistica Argentina, which loaded 1.17 million tons of ore through the port of Saint Nicolas in seaborne vessels in 2013. In 2010, we also purchased two new convoys (two tugboats and 32 barges) which will start operating in 2014.

We also operate a fleet of 24 tugboats in maritime terminals in Brazil, specifically in Vitória, state of Espírito Santo; Trombetas and Vila do Conde, state of Pará; São Luís, state of Maranhão; Mangatiba, state of Rio de Janeiro, and Aracaju, state of Sergipe.

4.1.4. Energy

Vale manages its power generation portfolio based on the current and projected energy needs of its operations, with the goal of reducing energy costs and minimizing the risk of energy shortages.

• **Brazil**

Energy management and efficient supply in Brazil are priorities for us, given the uncertainties associated with changes in the regulatory environment, and the risk of rising prices. In 2013 our total installed energy capacity in Brazil was 1.2 GW. We use the electricity produced by these plants for our internal consumption needs. We currently have nine hydroelectric power plants and four small-sized hydroelectric plants in operation. The hydroelectric power plants of Igarapava, Porto Estrela, Funil, Candonga, Aimorés, Capim Branco I, Capim Branco II and Machadinho are located in the Southern and Southeastern areas and the Estreito plant is located in the Northern area. As soon as operations entered with CEMIG GT are concluded, the joint venture Aliança Geração will hold interest in our company and CEMIG GT at the following hydroelectric plants: Porto Estrela, Igarapava, Funil, Capim Branco I e II, Aimorés and Candonga.

Additionally to these plants in operation, we also have 9.0% of the stocks in Norte Energia S.A. (NESA), a company incorporated with the sole purpose of deploying and operating the Belo Monte Hydroelectric Plant, in Pará. After conclusion of the transactions with CEMIG GT, we will indirectly hold 4.59% in Norte Energia, through Aliança Norte Energia. Our interest on NESSA capital, and for the establishment of a joint venture comprised of assets of the Belo Monte Project, grants us the right to acquire 9% of the power generated by the plant, which had been acquired under a long term power purchase agreement,

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signed with Norte Energia. For more information on this operation, see item 6.5 in this Reference Form.

We also produce palm oil in the State of Pará, which will be used to produce biodiesel. Biodiesel will be mixed with regular diesel to produce a fuel known as B20 (with 20% biodiesel), to be used in our fleet of locomotives, trucks, and heavy machinery used in operations of the North System.

- **Canada**

In 2013, our hydroelectric power plants in Sudbury generated 20% of the electricity requirements of our Sudbury operations. The power plants consist of five separate generation stations with an installed capacity of 56 MW. The output of the plants is limited by water availability, and by restrictions imposed by a water management plan regulated by the Government of the Province of Ontario. In 2013, the average requirements for power was 197 MW to all surface plants and mines in the Sudbury area.

In 2013, diesel generation provided 100% of the electric requirements of our Voisey's Bay operations. We have six diesel generators on-site, of which only four are in operation, producing an average of 12 MW.

- **Indonesia**

Energy costs are a significant component of our nickel production costs for the processing of saprolitic lateritic ores at PTVI operations in Indonesia. A great portion of the PTVI's electric furnace power requirements are supplied at low-cost by its three hydroelectric power plants located in the Laron River: (i) the Laron plant with average generation capacity of 165 MW, (ii) the Balambano plant with average generation capacity of 110 MW; and (iii) the Karebbe plant with average generation capacity of 90 MW. These plants help reducing the costs by replacing the diesel used in power generation for hydroelectric power, reducing CO₂ emissions, replacing non-renewable power generation, which allow us to increase current nickel production capacity in Indonesia.

5. **Other Investments**

Vale owns 50.0% of capital stock of California Steel Industries, Inc. (CSI), a producer of flat rolled steel and pipes, located in the United States. The remaining 50% belongs to JFE Steel. CSI's annual production capacity is of about 2.8 million metric tons of flat rolled steel and pipes.

We hold a 26.9% stake in ThyssenKrupp Companhia Siderúrgica do Atlântico (TKCSA), an integrated producer of steel plates located in the state of Rio de Janeiro. The plant was commissioned in 2010, and produced 3.6 Mt in 2013. The plant will have final production capacity of 5.0 Mtpa and will require 8.5 million metric tons per year of iron ore and pellets, supplied exclusively by Vale.

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We are also engaged in two other steel projects in Brazil: Companhia Siderúrgica do Pecém (CSP), which is being constructed, and Aços Laminados do Pará (Alpa), which is under analysis considering discussions pending with the Brazilian government.

Additionally, we hold minor interest in two bauxite mining companies, both in Brazil: Mineração Rio do Norte S.A. (MRN) and Mineração Paragominas S.A. (Paragominas), and we have agreed upon transferring our interest in Paragominas to Hydro in two equal installments in 2014 and 2016. For more information on this transaction, see item 6.5 in this Reference Form.

Lastly, we have an onshore and offshore hydrocarbon exploration portfolio in Brazil and in Peru, which is currently under review, and, consequently, some concessions may be terminated or granted, provided that there is compliance with appropriate regulatory terms.

e. Key consumables and raw materials:

i. Description of the relationships with suppliers, including whether they are subject to governmental control or regulation, identifying the institutions and applicable legislation

We are committed to build a sustainable business model and contribute to a just, environmentally balanced and economically prosperous society. We adopt the strategy in relation to our suppliers to maintain a long-term relationship in order to promote partnerships aimed at gains for both parties, through continuous innovation and development and supply of goods and quality services at a compatible cost.

In order to achieve continuous improvement and contribute to advances in the production chain, the management of relationships with our suppliers comprises the following steps:

(i) Certification and registration of suppliers based on our values, taking into account also the identification and analysis of supply risks (environmental, institutional, labor, social security, financial, health and safety, ethics, and social responsibility);

(ii) *Third party Due Diligence*, process to run a search on third parties that have transactions with Vale, contributing to mitigate, without limitation, reputation risks, engagement with slavery work and other events that violate anticorruption laws applicable to Vale, as the *Foreign Corrupt Practices Act* - FCPA and the *UK Bribery Act* ;

(iii) periodic performance evaluations to ensure compliance with applicable requirements and as defined in the contracting stage, as well as adherence to agreement expectations;

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(iv) Development and support in suppliers' training; and

(v) Promotion and prospection of new suppliers.

Under the UN's Universal Declaration of Human Rights, we respect and promote human rights in our activities, through our production chain and in regions where we operate.

In this sense, we aim to establish commercial relationships with suppliers who share our principles and values and who respect human rights.

Our principles and values are disclosed to our suppliers in our Suppliers' Code of Ethics and Conduct, document signed by all the companies that have entered into a supply agreement with Vale.

All the suppliers are subject to a search in the list of companies disclosed at the website of the Ministry of Labor and Employment (MTE) that includes the name of employers found to be engaged in employing workers under slave work or analogous conditions, whether individuals or companies, and the list CEIS (National Registry of Suspected Companies) that lists companies with no good standing and suspended by the federal government.

The guidelines and criteria we adopt to evaluate our suppliers are based on the above mentioned environmental legal requirements applicable to suppliers whose operational processes involve the use of natural resources or are potentially polluting or likely to cause environmental degradation. In addition to these legal aspects, our Environmental Management criteria and the principles of our Sustainable Development Policy are considered.

With regard to recipients of waste generated in our production processes, they all are subject to audit by the Department of the Environment and Sustainable Development during their initial approval and periodic revalidation.

The main environmental laws applicable to this process are:

a) Environmental Permit

- Federal Law 6938/81 - National Environmental Policy

- CONAMA Resolution (National Council for the Environment) 237/97

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- Complementary Law 140/11
- CONAMA Resolution (National Council for the Environment) 01/86.
- Federal Law 10165/00
- Federal Law 12651/12
- IBAMA (Brazilian Institute of Renewable Natural Resources) Normative Instructions 96/06 and 97/06.

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b) Pesticides

- Federal Law 7802/99
- Federal Decree 4047/02
- Law 6360/76 - ANVISA - National Agency for Sanitary Surveillance

c) Transportation of Dangerous Goods

- Decree 96044/88
- ANTT Resolution (National Ground Transportation Agency) 420/02

d) Radioactive Material

- CNEN Resolution (National Nuclear Energy Council) NE 2.01
- CNEN Resolution (National Nuclear Energy Council) NE 5.02

e) Explosive Materials

- Federal Decree 3665/00

f) Controlled Chemicals

- Ministry of Justice Decree 1274/2003.

ii. Potential dependence on few suppliers

The main consumables purchased by us in fiscal year ending on December 31, 2013 were: (i) materials and other equipment, including tires, conveyor belts, parts and components, mining equipment, railroad gear, industrial installations and maintenance workshops, which accounted for 16.3% of cost of goods sold (COGS) in the year, (ii) fuel and gas, which contributed 7.6% to COGS, and (iii) electricity with 3% of COGS. Moreover, the rendering of various services, such as operational services, maintenance of equipment and facilities, and transportation services represented 2.6% of COGS in the year ending on December 31, 2013.

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The main categories of equipment purchased by the Company were handling, transportation, and locomotive equipment, and infrastructure. Our largest group of suppliers of these types of equipment were CATERPILLAR, GE TRANSPORTATION, METSO, SANDVIK, AND LETOURNEAU, accounting jointly for 5% of total purchases of the Company in the year ending on December 31, 2013.

Fuel consumption is quite intense, especially in operations and transport of iron ore. Our main supplier of this consumable item is Petrobras Distribuidora, which accounted for approximately 87% of our purchase of fuels in the year ending on December 31, 2013.

In 2013, we used 59% of the electricity provided by self-production and the remaining portion was consumed through purchase of power in the market, which main suppliers were Cemig, Eletronorte, and Enertrade.

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Our 10 largest input, equipment and service providers represented 22% of our total purchases by December 31, 2013.

iii. Possible volatility in their prices

We have some contracts where prices are pegged to market indexes (parametric formulas) and therefore subject to these volatilities. Prices can also vary in relation to historical prices depending on offer versus demand in the market at the time of competition.

7.4 Customers that accounted for more than 10% of total net revenues

In 2013, no customers accounted for more than 10% of our net revenue.

7.5 Relevant effects of state regulation on the Company's activities

a. Need for government authorization for the exercise of activities and long-standing relationship with the government to obtain such permits

We are subject to a wide range of governmental regulations in all jurisdictions where we operate worldwide. The following discussion summarizes the regulations that have the most significant impact on our operations.

Mining rights

Mining and mining processing are subject to a very strict regulation. In order to conduct mining activities, we generally require some governmental and private permits, which differ in form depending on the jurisdiction but may include concessions, licenses, prospecting applications, permits, releases, authorizations or franchises (all of which we generically refer to below as concessions). Some concessions have indefinite duration or duration linked to depletion of the reserve, but many have specific expiration dates, and may be renewable or not. The legal and regulatory regime governing concessions differs among jurisdictions or even locations, and there are considerable differences between applicable legal and regulatory regimes, depending on the jurisdiction. In many jurisdictions, mineral resources belong to the State and may only be extracted upon obtaining the appropriate federal government approval (see Regulation on mining activities). In other jurisdictions, as Canada, a substantial part of our mining operations is conducted pursuant to mining rights or leases, often from government agencies.

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The table below summarizes our principal mining concessions and other similar rights. In addition to the concessions described below, we have exploration licenses covering 5.63 million hectares in Brazil (out of which, 4.32 million are already under application) and 10.6 million hectares in other countries.

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Location	Concession or other right	Approximate area covered (in thousand hectares)	Expiration date
Brazil	Exploration Concession	662,076	Undetermined
Canada	Exploration Concession (name varies according to the province)	279,977	2014-2034
Indonesia	Employment Agreement (<i>Contract of Work</i>)(1)	190.510	2025
Australia	Exploration Concession (<i>Mining concessions</i>)	19.209	2015-2041
New Caledonia	Exploration Concession (<i>Mining concessions</i>)	21.269	2015-2051
Peru	Exploration Concession (<i>Concesión de Exploración</i>)(2)	154,867	Undetermined
Argentina	Exploration Concession (<i>Manifestación de Descubrimiento</i>)	161,628	Undetermined
Chile	Exploration Concession (<i>Concesión de Explotación</i>)	64.697	Undetermined
Mozambique	Exploration Concession (Mining Concession) (3)	23.780	2032

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- (1) This may be extended for at least a 10-year period.
- (2) The above represents merely licenses with exploration concession.
- (3) Our mining concessions cover approximately 23,780 hectares. Land licenses granted by the Council of Ministries, required to explore and use our concession currently encompass 22,096 hectares.

Many concessions impose specific obligations on the concessionaire governing such matters as how operations are conducted and what investments are required. Our ability to maintain our mining rights depends on meeting these requirements, which often involve significant capital expenditures and high operating costs.

Regulation of mining activities

- *Brazil.* Mining activity in Brazil is currently ruled by the 1967 Brazilian Mining Code, which provides for different enjoyment regimes for mineral substances, which differ according to the mineral to be explored and the size of the Project to be developed. Currently, there are five mining enjoyment regimes, namely: Research Authorization, Concession, License Registry or Mining Licensing, Permission to Explore and monopoly. The Federal Government has sent to the National Congress in June 2013, the proposal for a new Brazilian Mining Code, which is under discussion. This proposal includes, among others, maintenance of the main rights on mining licenses existing until the date of promulgation, a review on royalties with a 4% limitation, new concessions for exploration for a period of up to 40 years (renewable for periods of up to 20 years) through bidding processes, and creation of a Mining Agency aiming to simplify the process to grant mining rights.
- *Indonesia.* a mining law became effective in Indonesia in 2009, introducing a new licensing regime (*Ijin Usaha Pertambangan*, or IUP) and requiring some adjustments and final replacement of current mining agreements with the government of Indonesia. Deployment of the regulations has been gradually issued by the government, and we expect new regulations to be issued, in 2014. Asia-Pacific PT Vale Indonesia Tbk (PTVI) currently holds no IUP licenses. In September 2012, PTVI started to renegotiate the Contract of Work, as determined by the 2009 mining law. The government of Indonesia intends to adjust the area size and concession size, the term and the amendment means of the agreement and financial obligations (royalties and fees), sale conditions, and seek to introduce internal processing and refining requirements, as well as property requirements, to allow the use of internal services and products. PTVI presented its position on each of these aspects, and the negotiation conclusion is expected to the first half in 2014.
- *New Caledonia.* A mining law was passed in New Caledonia in March 2009 which states that for new mining projects, formal authorization is required, rather than a simple declaration. We filed a new license

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application in March 2014. Under the terms of said law, government entities may take up to three years to issue the authorization, however we have an expectation to receive it in the next twelve months. Our current license will remain valid and in force until the application is approved. Although we believe it is unlikely that the authorization application will be rejected, the governmental entities may impose new conditions regarding the authorization. Additionally, local authorities of New Caledonia proposed the creation of a protected tropical zone covering 27% of the total area of VNC, with potential to affect mining activities. The protected tropical zone proposed also matches the area of the next facility to store disposals, which could raise the need of additional investments by Vale.

- *Guinea.* Vale acquired with BSG Resources Ltd. (BSGR), on April 30, 2010 51% interest in BSG Resources (Guinea) Ltd., today known as VBG - Vale BSGR Limited (VBG), that held at the time iron ore concessions in South Simandou (Zogota) and exploration licenses in North Simandou (Blocks 1 & 2), at the Republic of Guinea. In April 2014, the Republic of Guinea revoked the mining rights for the Simandou and Zogota concession areas held by VBG. The decision made by the government of Guinea is based on the fraudulent behavior related to the acquisition of minority stakes and refers to a Technical Commission to Review Mining Agreements and Titles (Technical Committee), concluding that mining concessions were contaminated by corruption acts by BSGR. The Technical Committee did not find any engagement by Vale in fraudulent practices related to the acquisition of mining rights, that occurred more than one year before Vale made any investment in VBG, and recommended that the government of Guinea should adopt measures to exclude VBG and BSGR, as well as BSGR affiliates, from any mining rights relocation process. However, the Committee has not suggested prohibitions in case Vale was party in such proceedings. Vale acquired its interest in VBG following comprehensive *due diligence* carried out by expert personnel and based on representations and guaranties that BSGR had acquired all mining rights legally and with no undue or corrupt promise or payment. Vale severely condemns the use of corruption practices, reiterates its commitment with transparent corporate governance and is considering its legal rights and options.

- *Mozambique.* The government submitted to the Congress, in Mozambique, a mining bill in December 2012. Changes expected include introduction of national acquisition prevalence, submitting transfers of mining rights and shareholding interest to local legislation and governmental approval, requiring foreign companies to make partnerships with local service providers and reduce terms for exploration activities. Additionally, a regulation for reoccupations, issued in June 2012, contains stricter requirements that may cause increase in costs and delays to deploy our projects. Additionally, the Government of Mozambique approved a new regulation for explosives, in effect since

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August 2013, that may cause significant increases in the cost of importing important explosives for mining activities in Tete. Upon being aware of concerns of different companies in the extraction segment, the Government analyses the possibility of diminishing taxes related to importing costs, but, to this date, it has not yet commented if and when these changes should be deployed.

Environmental regulations

We are subject to environmental regulations that apply to the specific types of mining and processing activities we conduct. We require approvals, licenses, permits or authorizations from governmental authorities to operate, and in most jurisdictions the development of new facilities requires submission of environmental impact statements for approval and often to make investments to mitigate environmental impacts. We must also operate our facilities in compliance with the terms of the approvals, licenses, permits, or authorizations.

We are adopting measures to improve effectiveness of the licensing process, including better integration between environmental and project development teams, the deployment of the Best Practices Guide for Environmental Licensing, deployment of highly qualified expert teams, better integration with environmental regulators and the creation of an Executive Committee to issue license-related internal decisions.

Environmental regulations affecting company operations relate, among other matters, to emissions into the air, soil and water; recycling and waste management; protection and preservation of forests, coastlines, cavities, watersheds and other features of the ecosystem; water use, climate change and decommissioning and reclamation.

Legislation on protected areas

Forest damage or destruction or damage or destruction of other kinds of natural vegetation in a Permanent Protection Area (APP), defined under the terms in Federal Law 12.651/12, without authorization by the competent entity or in non-compliance with the authorization, causes the violator to be subject to a fine that varies from R\$5,000.00 to R\$50,000.00 per hectare or fraction, according to Federal Decree 6.514/08. Additionally, removal of trees from an APP may cause the violator to be subject to fines that vary from R\$5,000.00 to R\$20,000.00, as well as compelling the owner or holder of the area to promote recomposition of the vegetation. Competent authorities may also suspend or demolish the work, after evaluating the seriousness of the circumstances.

Federal Law 12.651/12 also sets forth the obligation of owners or holders of rural properties to maintain the Legal Reserve area duly protected, area which should correspond to 20% of the total area of a rural property, except in the Legal Amazonian area, where the percentage equals to 80% in forest areas and 35% in cerrado areas. Recently, the Rural Environmental Registry was set up

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where Legal Reserve areas must be registered before the local, state, or federal entity.

Conservation Units (UCs), in turn, are established in Federal Law 9.885/00, and any interference in the limitations may occur only under the terms in the legal instrument that created the UC area and the respective management plans. Furthermore, any interference in environmentally protected areas requires prior authorization by entities responsible for its management. The lack of approval by the managing body and non-compliance with rules set forth in the management plan characterize administrative infringement subject to penalty of, respectively, R\$500.00 to R\$10,000,000.00 and R\$500.00 to R\$10,000.00, /without prejudice to other sanctions as, for instance, suspension and interdiction of activities.

Pollution/contamination rules

Separation, collection, storage, transportation, treatment, and final disposal of residues are regulated by Brazilian legislation, which also provides that the parties outsourcing these activities are jointly responsible with the outsourcers. Administrative sanctions applicable to any inappropriate disposal, whether or not it results in pollution, include, among others, suspension of the activity or work, and fines of up to R\$50,000,000.00.

Inappropriate disposal of solid residues produced by Company activities, as well as accidents resulting of transportation of such residues, may cause ground and underground water contamination and give rise to the obligation to recover such areas and compensate, in the civil sphere, additionally to administrative and criminal sanctions.

Appropriate transportation, treatment, and final disposal of residues are subject to prior approval by the competent environmental entity. Residue treatment activities, especially, are subject to licensing.

The holder of a contaminated property must automatically repair any environmental damage or adverse impact, regardless of the contamination cause, which may cause significant expenses. Note that the responsibility for an environmental damage is not subject to the statute of limitations, that is, it never matures over time.

Cavities

Natural underground cavities, popularly known as caverns, represent fragile ecosystems that comprise the national speleological assets. Intervention in natural underground cavities can only occur as provided for in Federal Decree 6.640/2008, which amended the text in Federal Decree 99.556/1990, which provides for the possibility of irreversible impacts, according to the degree of relevance of the cavity. Normative Instruction 2/2009 from the Ministry of Environment regulated Federal Decree 99.556/1990, establishing the

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methodology to be used in studies to classify the degree of relevance of the cavities. Compliance with said rules impose the need of carrying out broad technical studies and complex discussions with environmental regulatory agencies in Brazil, regarding this issue. The occurrence of natural underground cavities may interfere in the schedule, plan, or Project assessment and, thus, we may be forced to limit or alter our mining plans, or incur on additional costs to preserve the cavities or compensate the impact on them, which may affect our production volumes, costs or mineral reserves, as applicable.

Archeological sites and historical and cultural interest areas

The Federal Constitution provides that the government and the civil society are responsible for protecting the cultural heritage. In areas with the potential of having archeological sites and historic and cultural interest areas, the Company must obtain the appropriate authorization from the National Institute of Historical and Artistic Heritage (IPHAN) prior to beginning its work. Non-authorized interference on cultural, historical, and archeological areas is considered to be an administrative infringement, subject to suspension and fines of R\$10,000.00 to R\$100,000.00.

Hydric resources

The Company must obtain the rights to use hydric resources and should pay for the rights to use. According to the National Policy of Hydric Resources, the following rights on the following uses of hydric resources are subject to the grant by the Public Authority: (1) derivation or capture of portion of water existing in a water body for final consumption; (2) extraction of water from underground water reserve for final consumption or as input of productive process; (3) release of sewage in water bodies, as well as other liquid or gas residue, whether or not treated, for purposes of diluting, transporting, or final disposition of them; (4) use of hydroelectric potential, and (5) other uses that alter the regime, the quantity, and quality of the water existing in a water body.

Carbon emissions and climate change

Climate changes may adversely affect technical requirements of Company projects, the way it uses its equipment and the way it provides its services, adversely affecting the schedule of Company projects and increasing their costs.

Environmental Liability

Environmental liability may occur in three different and independent spheres: (i) civil; (ii) administrative and (iii) criminal.

- *Civil Liability:* the entrepreneur, regardless of the existence of guilt, must compensate or repair damages caused to the environment and third

